An Exploration of the Relationship between Gendered Racial Microaggressions and Elevated Ambulatory Blood Pressure among Early Middle-aged African American Women in Atlanta, GA

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Abstract

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For African Americans, racism, race-related stressors and discrimination have been linked to many negative mental and physical health outcomes, such as symptoms of post-traumatic stress disorder (PTSD), sleep disorders, obesity, and cardiovascular disease (CVD). Though experiences of racism have strong linkages to physiological health disparities, there is a dearth of literature that captures the unique, intersectional experience of African American women. Black women disproportionately experience cardiovascular disease morbidity and mortality. This research utilized the Weathering Hypothesis and Allostatic Load Theory, combined with the historical Black feminist Intersectionality Framework, to hypothesize that chronic exposure to stress leads to early health deterioration for Black women. This research question focused on Essed's concept of gendered racism (1991) – the simultaneous experience of racism and sexism – to highlight one form of interpersonal discrimination – gendered racial microaggressions. Gendered racial microaggressions are everyday, subtle, and indirect demonstrations of oppression based on race and sex. The primary objective of this research is to explore the relationship between chronic exposure to gendered racial microaggressions and ambulatory blood pressure (ABP) over the course of 48 hours in healthy Black women between the ages of 30 and 45 in Atlanta, GA.

Participants were 395 Black women who completed Jioni Lewis' 23-item Gendered Racial Microaggressions survey, which assesses lifetime exposure to gendered racial microaggressions via four subscales: (1) sexual objectification, (2) silenced and marginalized, (3) strong Black woman stereotype and (4) angry Black woman stereotype. Participants wore an ABP monitor for 48 hours that recorded systolic blood pressure (SBP) and diastolic blood pressure (DBP) readings every 30 minutes during waking hours and every hour during nighttime. Regression modeling was conducted to assess the potential interaction between gendered racial microaggressions and 48-hour daytime and nocturnal ambulatory blood pressure, as well as hypertensive status at the baseline study visit, after adjusting for other blood pressure risk factors, such as smoking and body mass index.

Based on these analyses, there was no statistically significant relationship between gendered racial microaggressions and ABP. This may be due to other variables that mediate or moderate this relationship, such as resilience factors or coping. A post-hoc analysis was completed with depression as an outcome, based on theoretical models and other research. There was a significant positive relationship between gendered racial microaggressions and depression. This novel research builds upon the dearth of literature that examines the interpersonal and psychophysiological stressors that may contribute to the health of African American women.

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Chapter 1: Introduction

Background

Cardiovascular disease (CVD) is the number one killer of Americans, taking approximately 859,000 lives annually (American Heart Association (AHA), 2015; Centers for Disease Control and Prevention (CDC), 2019a; Million Hearts, 2019). This is nearly as many people as cancer, accidents, and lower respiratory conditions combined (Million Hearts, 2019). Cardiovascular disease includes several illnesses and conditions, such as heart disease, heart attacks, stroke, heart failure, and arrhythmia (AHA, 2017; Benjamin, Muntner, & Bittencourt, 2019). These conditions cause 1 in 3 deaths in the United States (CDC, 2019a; Million Hearts, 2019). Heart health outcomes vary by population, with women and Black[1] women carrying the highest burden. Cardiovascular disease is the number one killer of all American women (AHA, 2015; Go et al., 2014). Black women, in particular, disproportionately experience cardiovascular disease morbidity and mortality (AHA, 2015; Go et al., 2014).

Not only is it physiologically and financially burdensome to the individuals who are suffering, but cardiovascular disease also presents an economic burden on healthcare and society (CDC, 2019a; Million Hearts, 2019). The United States spends about $213.8 billion per year on cardiovascular diseases; that is 1 in 6 U.S. healthcare dollars (CDC, 2019a; Million Hearts, 2019). There has been a trend in the direct and indirect costs of cardiovascular disease since 1996, increasing from $103.5 billion in 1996 reaching nearly $351.2 billion in 2015, though this trend is expected to remain moderately stable through 2035 (Benjamin, Muntner, & Bittencourt, 2019). Thus, cardiovascular disease persists as a public health issue.

[1] For the purposes of this thesis, *Black* and *African American* will be used interchangeably.

Hypertension

Hypertension, diabetes, high low-density lipoprotein (LDL) cholesterol, obesity, unhealthy diet, and a sedentary lifestyle are among the leading cardiovascular disease risk factors (CDC, 2019a; CDC, 2019b). Hypertension, or high blood pressure, is the most common modifiable cardiovascular disease risk factor (Kulshreshtha, 2019; Merz, Ramineni, & Leong, 2018). According to the American Heart Association 2019 report, 45.6% of adults in the United States had hypertension from 2011 to 2014 (Benjamin, Muntner, & Bittencourt, 2019). Though rates are declining, presently, 1 in 3 Americans have high blood pressure, and an increasing number of youth are being diagnosed with it (CDC, 2019b). Consuming large amounts of sodium is one of the major contributors to an individual having high blood pressure (CDC, 2019b). However, there are other factors that put individuals at risk of getting high blood pressure, such as other behavioral factors, environmental conditions and family history.

Physical inactivity, poor nutrition, smoking and second-hand smoke exposure are some behavioral and lifestyle factors that contribute to an individual's overall cardiovascular health and cardiovascular disease risk (AHA, 2016; CDC, 2019a; Sabzmakan et al., 2014; Van Camp, 2014). The World Health Organization has also included psychosocial stress as a lifestyle factor that impacts cardiovascular disease risk (2017). Different demographic groups experience different types and different degrees of psychosocial stressors.

Racism

Racism is being increasingly explored as a psychosocial stressor that impacts minority health. There are various ways in which racism is defined. One widely accepted definition of racism is a system of "beliefs, attitudes, institutional arrangements, and acts that tend to denigrate

individuals or groups because of phenotypic characteristics or ethnic group affiliation" (Clark, Anderson, Clark, & Williams, 1999; Lewis, Williams, Peppers, & Gadson, 2017). Racism is a systematic abuse of power that can be "active and explicit, passive or implicit, or [anywhere] between this binary" (Came & Griffith, 2018). This definition lends itself to be useful because it encompasses the many expressions of racism, including racially prejudiced behaviors between individuals and larger social and collective systems (Bobo, 2017). These power inequalities result in inequities in resources, capacities, and opportunities between different racial groups (Paradies et al., 2015). Racism is violent, organized, and as Rittel and Webber (1973) describe it, "wicked" because it is so complex and pervasive that it is nearly resistant to a solution (Came & Griffith, 2018).

Manifestations of Racism

Like its definition, racism manifests itself in many different ways including interpersonal discrimination and institutional racism, as well as interethnic and intraethnic group racism (Bailey et al., 2017; Berger & Sarnyai, 2014; Black, Johnson, & VanHoose, 2015; Clark et al., 1999; Gee & Payne-Sturges, 2004; Williams, Lawrence, & Davis, 2019). The most foundational of these is institutional racism, or structural racism, which serves as a backdrop for all racially driven processes and permeates social systems and collective institutions (Bailey et al., 2017; Henkel, Dovidio, & Gaertner, 2006; Jones, 2000). Institutional racism, coined by Pan-African leader Stokely Carmichael, is an often legal set of societal norms that gives groups differential access to services and opportunities (Jones, 2000; San Juan, 1992). Institutional racism is seen in social, educational, and residential segregation, workplace protocols and hiring practices, prejudiced incarceration, and healthcare access and quality, making it difficult for certain racial and ethnic

communities to live prosperous, abundant, and healthy lives (Bailey et al., 2017; Black, Johnson, & VanHoose, 2015; Clark et al., 1999; Henkel, Dovidio, & Gaertner, 2006).

Institutional racism is, in essence, the social capital that makes interpersonal racism possible. It "energizes and drives the ways in which racism is sustained via interpersonal, cultural, and institutional actions" (Harrell et al., 2011). Discriminatory acts among individuals are the most commonly identified, everyday manifestations of racism (Gee & Payne-Sturges, 2004; Jones, 2000). Interpersonal racism can be classified as either intergroup racism, occurring towards someone of a different race, or intragroup racism, occurring towards someone of the same race, as Clark et al. describes it (1999). Interpersonal racism includes intentional and unintentional actions towards or against another person because of their race. These actions are dictated by societal norms and include overt name-calling, physical harm to another person because of their race, and microaggressions (Gee & Payne-Sturges, 2004; Jones, 2000; Pierce, Carew, Pierce-Gonzalez, & Wills, p. 66, 1978).

Racism in Health

Population health and healthcare has not been shielded from the effects of racism (Berger & Sarnyai, 2015; Bhopal, 1998). In the 19th century, the central principle of biomedical thinking and practice was that Europeans and their descendants had anatomical and physiological superiority to other ancestral groups—a concept directly paralleling racist ideology (Bhopal, 1998). This principle, to varying degrees, is still taught today in many hospitals and medical training institutions, impacting medical practices and ultimately the health of minority populations (Yudell, Roberts, DeSalle, & Tishkoff, 2016). For example, studies have shown that Black patients have less productive interactions with non-Black physicians (Penner et al., 2010).

There are several other pathways that have been utilized to describe how racism is harmful to health, shown in Figure 1.1, including adverse socioeconomic exposures, maladaptive coping mechanisms, and physical and verbal threats (Bailey et al., 2017; Berger & Sarnyai, 2015; Harrell et al., 2011; Williams & Mohammad, 2013). For example, environmental and economic injustices describe why there have been strategic placement of toxic waste sites, garbage dumps, and other environmental pollutants in neighborhoods where there are many poor, people of color (Bailey et al., 2017; Williams, 1999). These socioeconomic exposures explain why nearly three years after the Flint Water Crisis, residents of Flint, Michigan still do not have clean drinking water and how that impacts their wellbeing. Another pathway can be seen in maladaptive behaviors, such as increased tobacco use, overeating, and alcohol use, which are used to help individuals cope with interpersonal experiences of racism (Bailey et al., 2017). Using maladaptive coping mechanisms puts an individual at risk for chronic illnesses, such as heart disease and cancer, and other detrimental health effects (Clark et al., 1999). Paradies et al. (2013) conceptually linked an additional pathway between racial discrimination and health via assault, which leads to consequences such as physical injury (2013). These pathways that describe how racism impacts health typically exist concurrently and the exposure to them can cause an accumulative effect over time and generations (Alvarez, Liang, & Neville, 2016; Bailey et al., 2017; Berger & Sarnyai, 2015).

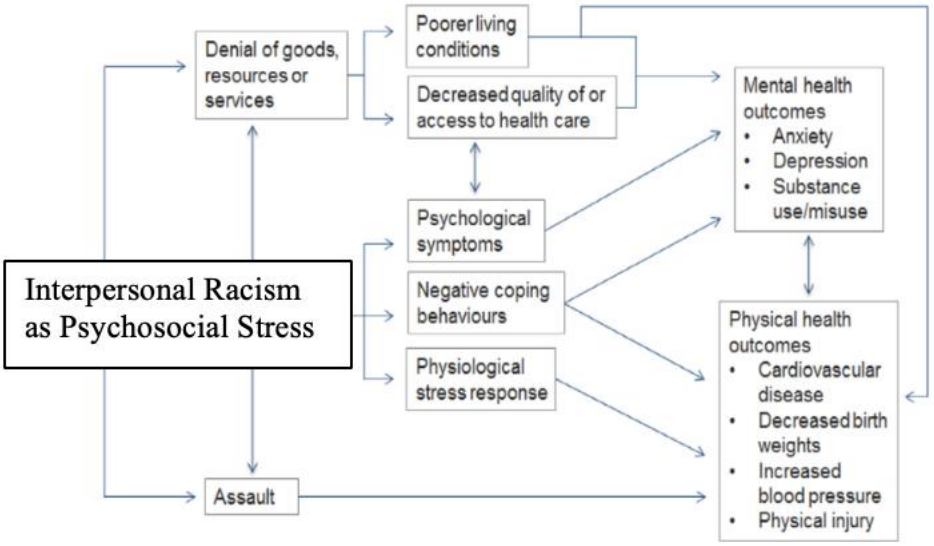

Figure 1.1 Racism and Health Pathways (adapted from Paradies et al., 2013)

This study, however, will focus on a pathway that identifies racism as a form of psychosocial stress and trauma, not as solely an experience that leads to stress (Bailey et al., 2017; Berger & Sarnyai, 2015; Clark et al., 1999). We have adapted the original Paradies et al. 2013 model to operationalizes interpersonal racism as a type of psychosocial stress in Figure 1.1. Psychosocial stressors are factors associated with physiological arousal, that generate a bodily response (Bailey et al., 2017; Berger & Sarnyai, 2015). These experiences initiate a sequence of neurobiological and behavioral responses that impact an individual's overall health (Bailey et al., 2017). The example that is salient to this research is the body's cardiovascular response to stress. Stress changes the body's cardiovascular functionality via activation of the sympathetic-adrenal-medullary (SAM) axis, adapting cortisol and adrenaline hormonal mediators (Berger & Sarnyai, 2015; Rice, 2012; Zeiders, Landor, Flores, & Brown, 2018). These neurobiological responses increase blood pressure (BP), heart rate, and inhibit vasoconstriction (Berger & Sarnyai, 2015). Empirical evidence supports that similar to the way in which the body responds to other chronic

stressors unrelated to race, there is a probable bodily adaptation to acute and chronic exposures to racism (Bailey et al., 2017; Black, Johnson, & VanHoose, 2015).

Additionally, Paradies et al. (2013) theoretically links racism to mental health outcomes, such as depression. Depression is of particular importance because it has been implicated as a cardiovascular disease risk factor (Bhat, Beilin, Robinson, Burrows, & Mori, 2017). The relationship between depression and blood pressure, however, is not as clear. Some studies found a positive relationship, some studies found no relationship, and depressive symptoms are often confounded with other factors, such as age and behavioral and lifestyle risk factors. Bhat, Beilin, Robinson, Burrows, and Mori (2017) found an inverse relationship between depression and systolic blood pressure among a cohort of 1014 participants. In another sample of 245 hypertensive Black women, however, depression was found to be a mediator of the relationship between stress and blood pressure, and the women with higher depression levels also had higher diastolic blood pressure (Artinian, Washington, Flack, Hockman, & Jen, 2006). Aligning with this model, depression can be explored as a mediating variable between experiencing racism and blood pressure. Evidence indicates that racism takes a toll on the individuals who experience it and there is a consistent relationship between it and psychological distress (Brondolo, Pierre, & Lane, 2016; Paradies et al., 2013). Moreover, hypertension and depression share common physiological pathways and therefore can be used to understand how racism impacts blood pressure.

Racism and Health Disparities in the Black Community

Racism is increasingly being recognized as a major factor contributing to the health disparities that exist between white people and marginalized minority populations, especially the African American community (Black, Johnson, & VanHoose, 2015; Paradies et al., 2015). For

centuries Black people, or descendants of the African diasporas to the Americas including African Americans, Caribbean Americans, and Africans in America, have arguably carried the largest burden of racism in the United States (Clark et al., 1999).

For Black people, experiences of racism, race-related stressors, and discrimination have been strongly linked to adverse mental health outcomes, such as symptoms of post-traumatic stress disorder, anxiety, distress and depression (Bailey et al., 2017; Lewis et al., 2015). Studies suggest that racism is actually negatively associated with favorable mental health outcomes like self-esteem and wellbeing (Bailey et al., 2017; Paradies, et al., 2015).

Racial minorities are more likely to suffer from many physical illnesses and diseases than whites (Bailey et al., 2017). Of those minority groups, African Americans have higher rates of chronic illnesses and non-communicable diseases, such as high blood pressure, diabetes, and cerebrovascular disease than their white peers (Brown, O'Rand, & Adkins, 2012; CDC, 2018). These disparities have been regularly documented throughout the last few decades and demonstrate that belonging to a specific racial group not only impacts one's day to day life but their overall health trajectory (Jones, 2000). Racism as a stressor that catalyzes the growth in health disparities is emerging as the focus of numerous academic studies (Bailey et al., 2017; Lewis & Neville, 2015).

Racial Microaggressions

Pierce, Carew, Pierce-Gonzalez, and Wills (1978) first defined the term microaggression as "subtle, stunning, often automatic, and nonverbal exchanges which are 'put-downs' toward people of color" (pg. 66). Microaggressions can be experienced anywhere but are common in school or the workplace (Lewis & Neville, 2015; Sue, 2010). These, often unconscious,

expressions of racism are a threat to the victims (Lewis & Neville, 2015; Sue et al., 2007). Racially motivated microaggressions are normative and regularly experienced, such as when a person of color is assumed to be a server at a business dinner or when a white woman sees a Black man walking towards her and she clutches her purse closer (Sue et al., 2007).

Gendered Racism

Black women sit in a very unique position in experiencing racism in society. To understand how racism impacts Black women, it is necessary to conceptualize the multiple facets that are woven into the identity of a Black woman (Crenshaw, 1989; Lewis & Neville, 2015; Lewis & VanDyke, 2018). Understanding all of these experiences, however, is nearly impossible to do given the varied identities that Black women may subscribe to, including but not limited to race, womanhood, and sexuality (Beal, 2008). These identities often constitute major forms of oppression in the United States. Oppression is "any unjust situation where, systematically and over a long period of time, one group denies another group access to the resources of society" (Collins, 2000). Black women experience a unique form of oppression and marginalization because they hold at least two marginalized identities - woman and Black.

Sometimes, Black women endure similar types of racism as the overall Black community (Crenshaw, 1989). However, often Black women's experience of racism is specific to them and is confounded with hypersexualization and objectification because of their womanhood (Crenshaw, 1989). Black women are more frequently objectified than white women (Anderson, Holland, Heldreth, & Johnson, 2018; Crenshaw, 1989). Objectification refers to seeing a person as an object or a thing, and not as a human being (Nussbaum, 1995; Papadaki, 2010). In Anderson, Holland, Heldreth, and Johnson's (2018) exploration of societal perceptions of Black women, they found

that Black women were implicitly associated with animals and objects more often than white women. Black women are also more hypersexualized than white women (Anderson et al., 2018). Sexualization works in tandem with objectification, in that people are looked at as objects of sexual attention and pleasure. People tend to watch Black women's body parts more frequently and for longer durations than they do white women's bodies (Anderson et al., 2018). A Black woman's experience exists at the intersection of racism and sexism (Essed, 1991; Lewis et al., 2017; Lewis & Neville, 2015).

Gendered Racial Microaggression Constructs

In her construction of the Gendered Racial Microaggressions Scale, Jioni A. Lewis identified four main types of gendered racial microaggressions: (a) assumptions about beauty and sexual objectification, (b) silenced and marginalized, (c) strong Black woman stereotype, and (d) angry Black woman stereotype (Lewis & Neville, 2015). These four constructs collectively make up gendered racial microaggressions, overall, but also exist and can be experienced singularly among Black women (Lewis & Neville, 2015). The *Assumption About Beauty and Sexual Objectification* construct explains Black women's experiences of being reduced down to their physical appearance, race, or gender. For example, there are societal expectations that Black women's bodies should be shaped a certain way, which is made clear in the number of comments that they receive about the size of their butt or hips (Lewis & Neville, 2015). The second factor is *Silenced and Marginalized* which describes Black women's commonplace experiences of being silenced in work, school, and other professional settings. This describes experiences of being invisible and result in a struggle for respect in these settings (Nuru-Jeter et al., 2009). Examples of this construct include having one's intellect questioned or being challenged more frequently than

peers of different races and genders (Lewis & Neville, 2015). *Strong Black Woman Stereotype* describes the stereotype that Black women are expected to be strong, independent, and assertive. This historical construct depicts Black women as singularly being dominant and self-sufficient (Harris-Perry, 2011). *Angry Black Woman Stereotype* identifies how Black women are referred to as angry, even while they are speaking and acting calmly.

Problem Statement

The current conversation about disparities in health often attributes differences in health outcomes solely to societal conditions, such as socioeconomic status (SES), housing, access to and utilization of health care, educational attainment, and employment (Bailey et al., 2017; Cunningham et al., 2017). However, the health burden experienced by Black people, especially Black women, is not simply explained by these factors alone (Williams, 2012). There is an urgent need to explore the impact that racism has on the health of the marginalized because of how pervasive and persistent racism is (Berger & Sarnyai, 2015). This study intentionally explores Black women's experiences of gendered racial microaggressions and how those are associated with one of the main cardiovascular disease risk factors – hypertension.

This also addresses a large gap in the literature. There have been several studies that explore how interpersonal racism is related to physiological and mental health. However, very few studies have explicitly looked at how interpersonal gendered racism impacts Black women's health. Findings from this study will contribute to the body of research aimed to improve Black female health and inform policies, community practices, and behavioral intervention techniques that affect the African American population.

Purpose Statement

This study is a subset of a larger study – Mechanisms Underlying Stress and Emotions in Heart Health (MUSE) Study. MUSE aims to explore how expectations of racism are risk factors for early cardiovascular disease (CVD) for Black women in Atlanta, GA. In particular, the MUSE study aims to determine if expectations of racism are a risk factor for increased physiological arousal via 48-hour ambulatory blood pressure (ABP) monitoring, and this is explored over a 2-year follow up. This subset of that research exclusively assesses the relationship between experiences of gendered racial microaggressions and hypertensive outcomes, assessed via ABP monitoring, from a community sample of 395 healthy African American women between the ages of 30 and 45. The study findings will broaden public health understanding of the biopsychosocial impact of gendered racial microaggressions, and interpersonal racism overall, informing societal decisions that not only affect the health of Black people, and Black women in particular.

Research Question

What is the association between experiences of gendered racial microaggressions and cardiovascular disease risk factors among African American women? To answer this, I propose the following hypothesis: women with higher scores on the gendered racial microaggression scale will have higher daytime and nighttime systolic and diastolic blood pressure. Moreover, women with higher scores on each of the subscales, assumption of beauty and sexual objectification, silenced and marginalized, strong Black woman stereotype, and angry Black woman stereotype, will have higher daytime and nighttime blood pressure.

Rationale

Traditional cardiovascular risk factors, such as obesity and physical inactivity, do not fully explain Black women's excess risk for cardiovascular disease. Many studies demonstrate that even when controlling for those factors, adverse CVD outcomes are still observed among Black women (Jha et al., 2003). Black women are living in dually disenfranchised identities – as woman and as Black – and they have been historically left out of each discourse (Allen & Britt, 1983; Bowleg, 2012; Viruell-Fuentes, Miranda, & Abdulrahim, 2012). Though they deal with the adversity of living in a highly racialized and sexualized society, Black women consistently exhibit strength, courage, and resilience, especially through self-generated community level interventions, such as *Black Girls Rock!* (Allen & Britt, 1983; Lewis et al., 2017). However, continued research should be done to promote wellbeing among this population and reduce their disproportionately high rates of cardiovascular disease.

Theoretical Framework

Weathering Hypothesis

This study will use the Weathering Hypothesis along with the Allostatic Load Theory to operationalize the relationship between interpersonal gendered racism exposure and cardiovascular disease risk factors for Black women. This hypothesis proposes that not only is health related to exposure to stressors, but these experiences over time result in "early health deterioration" (Lazarus & Folkman, 1984; Patchen, Rebok, & Astone, 2016; Selye, 1976). These stress responses yield adverse biological, psychological, and sociological health outcomes, especially if the stressors are chronic in nature, at an earlier age for those who are exposed to them

(Clark et al., 1999; Patchen, Rebok, & Astone, 2016). Often the difference in exposure is a result of societal constructs such as race and gender.

This hypothesis was originally developed to explore the disparities in health and understand why they exist. To do so, Geronimus compared the likelihood of having a baby at low-birth-weight by maternal age for Black and white women (1992). She found that Black women were more likely to have newborns of a healthy birth weight when they had their babies at a younger age (Geronimus, 1992). As maternal age increased, the risk of having a low-birth-weight baby also increased (Geronimus, 1992). That is, maternal age was a stronger protective factor for low birth weight for Black women than white women.

For the current study, the Weathering Hypothesis was adapted to fit the lived experiences of Black women in which the environmental stressor being examined is gendered racism (Geronimus, 1992) and the outcome of interest is blood pressure. These environmental stimuli start biopsychosocial sequelae that influence individuals' blood pressure. Moreover, individuals employ coping mechanisms, both knowingly and unknowingly, in response to these experiences (Berger & Sarnyai, 2015; Clark et al., 1999; Selye, 1976). All of these physiological responses impact cardiovascular risk and hypertensive outcomes.

Allostatic Load Theory

The Allostatic Load Theory, shown in Figure 1.2, is used in conjunction with Weathering Hypothesis to describe how chronic wear and tear on the body impacts physiological health. Scientists like McEwen (1998), Sterling and Eyer (1998), and McEwen and Wingfield (2003) proposed that a body's ability to maintain homeostasis, or balance, is challenged by environmental stress (Rice, 2012). This supports Selye's (1976) preceding model, the General Adaptation

Syndrome (GAS), which stated that stress was a disruption to the body's natural balance. Moreover, these scientists proposed that exposure to stressors take the body completely out of homeostasis, and instead put it into allostasis (Rice, 2012; Selye, 1976).

The body's conversion away from a state of homeostasis and into a state of allostasis changes the physiological regulation, often over-activating or suppressing certain functions (Rice, 2012). Much of these changes are protective in nature, in that they are stress responses that preserve the body. However, when the body is chronically suppressed or hyper-functional, there is an acceleration of diseases processes (Rice, 2012; Selye, 1976). The degree to which a body is in allostasis, known as the allostatic load, can be measured via chemical and hormonal imbalances of the central nervous system, endocrine system, and autonomic nervous system (Rice, 2012; McEwen, 2000). This allostatic load puts a strain on the brain and body and results in chronic overactivity or inactivity of the physiological systems (McEwen, 1998; Patchen, Rebok, & Astone, 2016). This includes blood pressure, cholesterol, and glucose metabolism (McEwen, 2000). All of these allostatic load indicators have direct correlations with cardiovascular diseases (McEwen, 2000). The Weathering Hypothesis and the Allostatic Load Theory hypothesize the psychosomatic effects of stress on heart health.

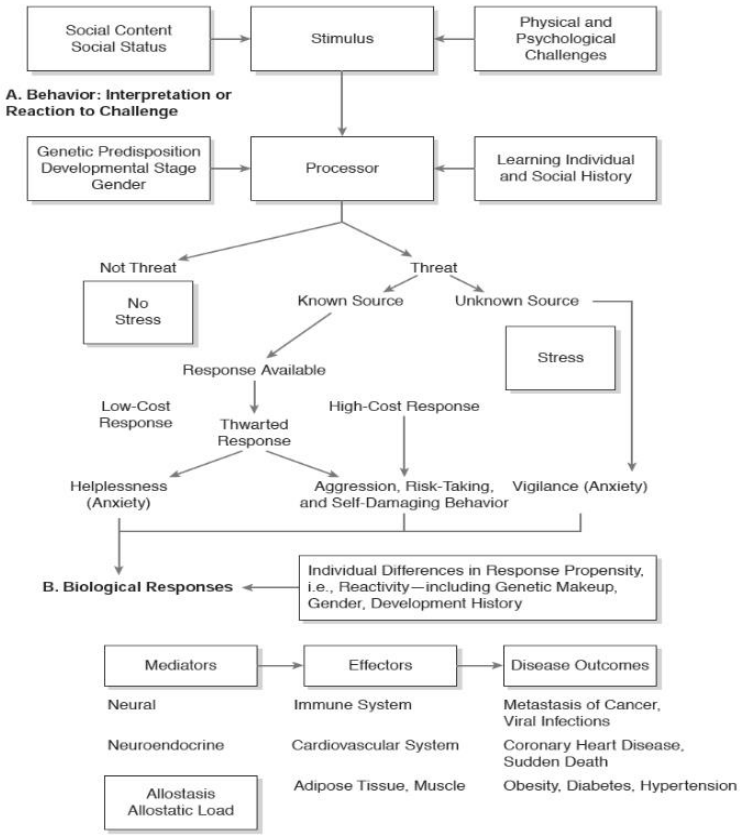

Figure 1.2 Allostatic Load Theory (Rice, 2012)

Intersectionality

To address the health disparities that exist for people from multiple historically oppressed groups, it is critical to understand the complexities of their intersecting identities (Bowleg, 2012). Because this research is geared towards Black women, an additional paradigm will be used as a backdrop to support Weathering Hypothesis and Allostatic Load Theory – the Intersectionality Framework. The Intersectionality Framework, which was conceived in Black feminist scholarship, postulates that the experience of Black women fits clearly in neither the conventional feminist doctrine of white women nor the conventional anti-racist doctrine of Black men (Cole, 2009; Lewis

et al., 2017). It argues that there is a distinctly different experience that Black women have due to their race and gender (Cole, 2009; Collins, 2000; Crenshaw, 1989; Viruell-Fuentes et al., 2012).

The concept of intersectionality started in 1851 when Sojourner Truth gave her "Ain't I a Woman?" speech (Bowleg, 2012). However, the term *intersectionality* was coined by critical race theorist Kimberlé Crenshaw when she described "the exclusion of Black women from White feminist discourse (which equated women with White) and antiracist discourse (which equated Black with men)" (Bowleg, 2012; Cole, 2009; Crenshaw, 1989). Crenshaw criticized these two famous discourses by saying, "Black women sometimes experience discrimination in ways similar to white women's experiences; sometimes they share very similar experiences with Black men. Yet often they experience double discrimination – the combined effects of practices [that] discriminate on the basis of race, and on the basis of sex. And sometimes, they experience discrimination as Black women – not the sum of race and sex discrimination, but as Black women" (1989 – p. 149).

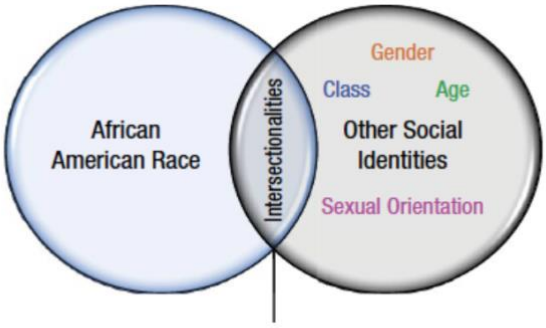

Figure 1.3 Intersectionality Framework (Lewis & Van Dyke, 2018).

This paradigm is essential to answering the research question of this study. It posits that the identities that we are explicitly examining – race and gender – are not mutually exclusive but exist at an intersection, alongside other social categories, including socioeconomic factors such as age and class. The Intersectionality theoretical framework was designed to describe the

experiences of Black women but can also frame research and understanding of other communities who belong to more than one marginalized group (Bowleg, 2012; Lewis, Cogburn, & Williams, 2015).

Chapter 2: Review of Literature

Literature Review

Black General Health and Disparities

Converging evidence from epidemiological studies highlight disparities in physical and mental health outcomes among the African American community (CDC, 2017a; Cunningham et al., 2017). Black people are more likely to experience chronic illnesses, namely high blood pressure, diabetes, and cerebrovascular disease than their white peers (Brown, O'Rand & Adkins, 2012; CDC, 2017a; CDC, 2018). Non-Hispanic Black mothers have the highest rate of infant mortality in the United States (Prather, Fuller, Marshall, & Jeffries, 2016). 59% of all new HIV diagnoses were Black women (CDC, 2018; Dale & Safren, 2019). Between 2011 and 2014, more than half of non-Hispanic Black women were considered obese, while only 35% of non-Hispanic white women were considered obese (Ogden, Carroll, Fryar, & Flegal, 2015). Black people also have higher rates of disability (Brown et al., 2012). Everyday discrimination was studied by Bacon et al. (2017) and they found that Black women who perceived their experiences as racist had higher risk of type 2 diabetes. In fact, they found that women with high exposure to everyday racism, including microaggressions and a high exposure to lifetime racism, had a 31% and 16% heightened risk, respectively, of getting diabetes (Bacon et al., 2017). Though the death rates in the Black community have improved – declining 25% since 1999 – data has shown that the disparities in the causes of death are still gaping and younger Black people are suffering from chronic illnesses that were typically seen in aging populations (CDC,2017a; Cunningham, 2017).

While Americans across the board are suffering from cardiovascular disease (CVD), the risk is even higher for Black people (AHA, 2015; CDC, 2017a). Black people between the age of 18 and 49 are twice as likely to die from cardiovascular disease (CDC, 2017a). Black women in

particular experience a disproportionate burden of cardiovascular disease morbidity and mortality (Go et al., 2014). Persisting across the lifespan, Black people are also more likely to experience high blood pressure and stroke than whites (CDC, 2017a). Fifty-four percent of non-Hispanic Black adults experience high blood pressure, compared to 46% of non-Hispanic white adults, 39% of non-Hispanic Asian adults, and 36% of Hispanic adults (CDC, 2020). In fact, the Black community has the highest prevalence of high blood pressure in the world (AHA, 2015).

It is clear that adverse physical health outcomes are pervasive across the Black community. Neither age nor education level act as a moderator for the impact that racism has on health (Paradies et al., 2015). For example, the Centers for Disease Control and Prevention reports that African Americans have higher rates of obesity, poverty, physical inactivity, unemployment, and no homeownership, which singularly and collectively present health risks for the community (2017). However, empirical findings recognize racism exposure as a mechanism that can explain the deleterious health outcomes for African Americans, existing concurrently and often leading to the lifestyle and behavioral factors previously mentioned (Brondolo et al., 2008; Greer & Spalding, 2017).

Racism in the United States

Racism, a system of power and privilege based on racial-group designation, has been woven into the fabric of the United States dating back to pre-colonial America (Bailey et al., 2017; Clark et al., 1999; Harrell, 2000; Paradies, 2016). Though it is often framed as being an ideology of a small subset of the overall American society, racism and its manifestations actually adjust and align with the general normative ethos of the time period (Bhopal, 1998; Griffith, Yonas, Mason, & Havens, 2010; Wetherell & Potter, 1993). This is why racism has gone through several iterations

and assumed many different faces throughout history (Alexander, 2010; Cooper, 2015). We presently live in a time that many declare to be "post-racial" and "colorblind;" however, the current political arena has shined a glaring light on racism in society today (Alexander, 2010; Alvarez et al., 2016; Bobo, 2017; Lewis T. et al., 2015).

Shortly after Barack Obama's historic 2008 election as the first Black president of the United States, CBS News conducted a poll in which 66% of Americans described race relations as "generally good" in the U.S. (Fingerhut, 2019). By January of 2019, three years into the presidential term of Donald Trump, Obama's successor, 57% of Americans described U.S. race relations as "generally bad" (Salvanto, De Pinto, Backus, & Khanna, 2019). Seventy-three percent of Black people surveyed and 54% of white people surveyed shared this opinion (Salvanto et al., 2019). Fifty-six percent of Americans blame Donald Trump for the deleterious state of race relations, according to a poll conducted by the PEW Research Center (2019). While racism's footprint is clearly seen in today's political climate, the intergenerational, present-day expressions and experiences of racism in America are ever-present in other parts of life (Alexander, 2010; Alvarez et al., 2016; Berger & Sarnyai, 2015). It has been so intertwined into U.S. social structures that racism has become nearly hegemonic (Collins, 2000, pg. 5).

Racial Microaggressions

When Pierce, Carew, Pierce-Gonzalez, and Wills first defined the term microaggression, they specified it as being indignities towards people of color (1978). These behavioral or verbal 'put-downs' communicate derogatory and hostile ideologies of and towards Black and brown people. People who perpetrate microaggressions, often do so unconsciously or unintentionally because of how commonplace they are in interracial interactions (Sue et al., 2007). Simply put,

microaggressions are brief, subtle, and nuanced exchanges that send negative messages towards people of color, resulting in them being overlooked or under-respected, because they belong to a specific racial group.

Because of the ambiguity of microaggressions, they are understudied as an element of racism. Experts have shown, however, that there is a relationship between experiences of racial microaggressions and physical and mental health. Hollingsworth et al. (2017) explored the relationship between experiences of racial aggressions and suicide ideation for African Americans. They found that microaggressions, which were illustrated by perceived burdensomeness and thwarted belonging, had a correlation with suicide ideation for young Black people (Hollingsworth et al., 2017). In another sample of Black people, racial microaggressions were associated with higher levels of anxiety (Liao, Weng, & West, 2016). Zeiders, Landor, Flores, and Brown (2018) found that in Black and Latino youth, there was increased cortisol activity in the days after experiencing microaggressions. Cortisol is directly linked to controlling of blood pressure and regulating metabolism; therefore, a cortisol imbalance has serious health implications (Zeiders et al., 2018).

Microaggressions are not indignities suffered only by people of color but can also communicate negative slights of other identity belongings, including gender, religion and sexual orientation.

Gendered Racial Microaggressions

Black women simultaneously experience sexism in a society that is racist and racism in a society that is sexist (Collins, 2000; Crenshaw, 1989; Essed, 1991). Gendered racism is the hybrid phenomenon of these concurrent experiences of racism and sexism (Essed, 1991). Essed (1991)

formulated this construct from the qualitative research that she conducted in the United States and the Netherlands, which explored the everyday experiences of Black women there. From that research she found that Black women experienced elements of racism that were unique to stereotypical ideas of Black womanhood (Essed, 1991).

This study will focus on a specific type of interpersonal, intergroup racism – gendered, racial microaggressions. The constructs being explored in gendered racism are assumption of beauty, silenced and marginalized, strong Black woman stereotype, and angry Black woman stereotype. There are several types of gendered racial microaggressions that are experienced by Black women. One very common type of gendered racial microaggression is being silenced in the workplace (Lewis & Neville, 2015). Black women often experience struggles with "power" at the workplace being questioned about their perceived authority, intellectually doubted or challenged, and outright ignored (Lewis & Neville, 2015).

Impact of Gendered Racial Microaggressions on Health

Just as racial microaggressions impact physical wellbeing, there is empirical evidence that suggest that the intersection of these two oppressed identities can have detrimental implications for the health of Black women (Lewis & Neville, 2015; Lewis et al., 2017). In the construction of the Gendered Racial Microaggressions Scale (GRMS), Lewis and Neville (2015) found that in a sample of 210 Black women, there was a significant positive correlation between experiences of gendered racial microaggressions and psychological distress. Longmire-Avital and McQueen (2019) studied race-related microaggressions and maladaptive coping, specifically emotional eating, among a sample of collegiate Black women. They found that there was a moderate correlation between these microaggressions and emotional eating, which could lead to other health

issues (Longmire-Avital & McQueen, 2019). In another sample of collegiate Black women, Szymanski and Lewis found that disengagement coping strategies such as alcohol, drug use and self-blame, which are direct correlates to physiological and psychological health, were utilized in response to gendered racial microaggressions (2016).

Racism as Stress in Theoretical Framework

Stress as an Environmental Stimulus

Stress being recognized as an element of life with health implications dates back to 1956 when Hans Selye first introduced his General Adaptation Syndrome (GAS), later General Adaptation to Stress, model (Figure 2.1). In this model, Selye identified that there are three stages that the body undergoes when exposed to change or a stressful event: alarm, resistance, and exhaustion (1976). Each of these three stages has unique bodily responses. During the alarm stage when an individual is first met with the initial shock of stress, the sympathetic nervous system responds in a way to evade the stressor (Rice, 2012; Selye, 1976). This could include increased heart rate or glucose levels (Selye, 1976; Tache & Selye, 1985). The body then moves into a resistance stage, attempting to recover from the stressor and returning back to some form of homeostasis (Selye, 1976). However, if the stressor persists the body will stop resisting and simply learn to operate with the presence of the stressor (Rice, 2012). This can cause adaptive illnesses, like hypertension and sleep deprivation. This theory has been adapted and utilized in other frameworks to explain how external, environmental stimuli influence an individual's mental, physical, and behavioral processes and health outcomes. Black people in the United States have a higher exposure than other racial groups to environmental stimuli that are known to have detrimental health effects (Clark et al., 1999).

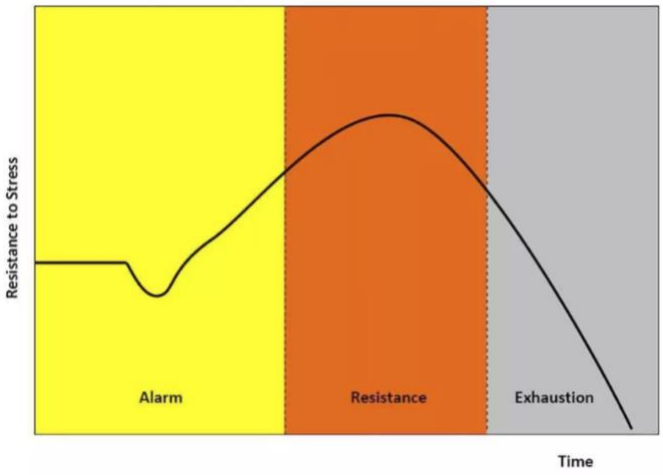

Figure 2.1 General Adaptation to Stress Model

Racism as Stress

For the purposes of this study, stress is operationalized as racism. Experiencing racism or a race-related stressor has the same deleterious health impacts that any other chronic stressor may have (Clark et al., 1999; Lewis et al., 2017). It is necessary to adapt this model to be specific to this population because of the omnipresent, all-encompassing nature of racism. This is especially so due to the chronic, multigenerational presence of racism against Black people in the United States (Clark et al., 1999). In fact, there are several studies in which Black people have directly credited their stress, experiences, and misfortunes to discrimination because of their race. (Clark et al., 1999, Nuru-Jeter et al., 2009).

Weathering Hypothesis

In her 1992 hypothesis, Geronimus postulated that the health of Black individuals begins to deteriorate prior to the health of whites because of Black people's excess exposure to certain social and economic environmental risk factors. Geronimus found that women with advancing

maternal age had increased odds of low birth weight and hypothesized that this was due to their socioeconomic exposures (1996).

Because there was no direct measure of weathering, researchers then explored several health indicators, such as excess mortality, pregnancy outcomes, and disability and found the patterns to be consistent with Geronimus' weathering hypothesis. Thorpe et al. (2016) tested this hypothesis with physiological outcome measures such as hypertension, diabetes, stroke, and cardiovascular disease. They found that there were higher rates of diabetes, hypertension, and stroke among the Black people than the whites in their sample (Thorpe et al., 2016). Moreover, the prevalence rates of these conditions were expressed 10 years earlier for Blacks than for whites (Thorpe et al., 2016).

Love, David, Rankin, and Collins (2010) found that Black women of a low socioeconomic status more frequently gave birth to children with low birth weight and small gestational age than poor white women. This study, consistent with Geronimus' work, suggests that socioeconomic status may moderate this relationship because in this study Black women of higher status had a decline in low birth rate and small gestational age with maternal age (Love, David, Rankin, & Collins, 2010). In her 1996 research, Geronimus found that between the maternal age of 15 and 34, low-income Black women had 3 times the odds of low birth weight and 4 times the odds of very low birth weight (Geronimus, 1996).

Weathering and Allostatic Load

Geronimus, Hicken, Keene, and Bound (2006) used McEwen's Allostatic Load Theory in conjunction with her Weathering Hypothesis to explore the physiological burden and stress response experienced across various populations. Geronimus et al. (2006) examined adult

allostatic load scores by race and gender on the National Health and Nutrition Examination Survey IV. They found that Black men and women had higher allostatic load scores than white people, overall; and these disparities were not able to be explained by socioeconomic status (Geronimus, Hicken, Keene, & Bound, 2006). Both poor Black people and poor white people had higher scores than their nonpoor counterparts (Geronimus et al., 2006). However, Black women especially, both poor and nonpoor, had the highest allostatic load scores, compared with either Black men or white women (Geronimus et al., 2006). This suggests that they experience a unique type of chronic stress that impacts their physiological health (Geronimus et al., 2006).

Summary

Came and Griffith referred to racism as a "fundamental determinant of health" because it simultaneously impacts different pathways that influence health and has the ability to morph over time, situations, and circumstances (2018). Public health research is beginning to recognize the different mechanisms by which structural and interpersonal racism impacts Black cardiovascular morbidity and mortality.

Because Black women have higher rates of cardiovascular disease and do not fit into the traditional white woman discourse nor the traditional Black man discourse, the risk factors that impact their health should be studied separately. This novel study builds on the dearth of public health research that explores how gendered racism impacts the health of Black women.

Chapter 3: Methods

Research Design

This research utilizes baseline data from a two-year cohort study, entitled the Mechanisms Underlying Stress and Emotions in Heart Health (MUSE) study. In MUSE, quantitative methodology is used to understand the relationship between race-related exposures and cardiovascular disease risk among African American women. This thesis in particular focuses on gendered racial microaggressions and hypertensive outcomes in African American women at baseline.

Target Population and Sample

The target population for this study is African American/Black women in Atlanta, GA. The initial sample included 426 participants. Participants who didn't respond to every question in the gendered racial microaggressions scale, and therefore couldn't be completely assessed for the exposure, were excluded from the study (N=31). The final sample included 395 healthy Black women from the age of 30-46 who lived in Atlanta, GA. The majority of the sample self-identified as Black (99%, N=391) while the remaining 1% (N=4) were identified as phenotypically Black by the study coordinators. The mean age of the women was about 37 years old (Standard deviation: 4.28 years).

Sampling and Recruitment

Black women between the ages of 30 and 46 were recruited for this study. The team utilized the National Opinion Research Center (NORC), a survey research firm at the University of Chicago to identify potential participants. The National Opinion Research Center utilized

consumer purchasing and voter registration lists to identify Black women aged 30-45 from 658 representative residential tracts in the Atlanta metropolitan area. The residential lists included the name, likely race, address, age, and telephone number of women in each geographic area. Potential participants likely to meet age, race and gender requirements for the study were sent an informational brochure introducing the study, followed by a phone call from NORC. Women who self-identified as African American or Black and expressed interest in the study participated in a telephone pre-screening with NORC to determine their eligibility. NORC then provided the study team with a list of eligible women, including their name and contact information, on a secure file transfer site. Emory study staff contacted the eligible women to schedule a clinic visit.

At the time of enrollment, all of the study procedures, risks and benefits were outlined and reviewed with each study participant. Written informed consent was obtained from each participant.

Following the baseline clinical exam, participants were compensated $100 for their participation. Upon completion of the baseline clinical exam, participants were administered an ambulatory blood pressure (ABP) monitor. Participants were compensated an additional $100 after they returned their ABP monitor.

Eligibility Requirements

A telephone pre-screening was used to determine eligibility of the women who expressed interest in the study. Women who self-identified as African American and aged 30-45 were deemed eligible. Additionally, women had to be without clinical cardiovascular disease (CVD) and congenital heart disease (CHD) to be eligible for the study. Women who had a history of clinical cardiovascular disease, including but not limited to myocardial infarction and

revascularization, were ineligible. Furthermore, because reproductive status is a known correlate of cardiovascular risk, only premenopausal women with at least one ovary intact and who were not pregnant or lactating were eligible for the study. Women who used illicit drugs, abused alcohol, were in treatment for psychiatric disorders, or had HIV/AIDS or autoimmune inflammatory diseases, such as Lupus or rheumatoid arthritis, were ineligible to participate. Shift workers were also ineligible to participate because their ambulatory blood pressure measurements may be altered due to the difference in their circadian rhythm.

Data Collection and Management

Written, informed consent was obtained prior to data being collected. All participants partook in a standard protocol of interviews; height, weight, and blood pressure measurements; and a fasting blood collection. The interviews included the Gendered Racial Microaggressions Scale. All interviews were conducted by trained, coordinators via face to face interview at Emory University Hospital. They included demographic, psychosocial, and behavioral information about the participants. Research coordinators had paper versions as well. Data were managed in Survey Gizmo and REDCap.

Measuring Gendered Racism

To measure participant experiences of gendered racial microaggressions, the study team used a 23-item modified version of the Gendered Racial Microaggressions Scale (Lewis & Neville, 2015). This scale explores four sub-categories of gendered racism, as defined by Lewis and Neville (2015): assumption of beauty and sexual objectification, silenced and marginalized, strong Black woman stereotype, and angry Black woman stereotype. The questions asked participants to think

of their experiences as a Black woman and respond with how often each event happened to them. The response scale followed a Likert format: 1 is "never", 2 is "less than once a year", 3 is "a few times a year", 4 is "a few times a month", and 5 is "once a week or more."

A participant having a higher total score means more experiences of gendered racism. The total score for gendered racial microaggressions was calculated by summing all of the items, excluding *"Someone made me feel exotic as a Black woman,"* "*Someone has assumed that I should have a certain body type because I am a Black woman,"* and *"I have been told that I am sassy and straightforward*", and dividing by 23. These three appraisal items were part of the original 26 item measure of chronic exposure to gendered racial microaggressions per the instructions from Jioni Lewis' scale (Lewis & Neville, 2015). The current study focused solely on the reported frequency and exposure to gendered racial microaggressions and not the participants' appraisal of these experiences. Had the study been interested in the stress appraisal of their experiences, these three items would have been included. These conclusions were made based on the exploratory factor analyses that Lewis and Neville conducted (2015).

Similarly, the score for the *Assumption of Beauty and Sexual Objectification* subscale was derived by calculating the average of the 10 relevant items; the *Silenced and Objectified* score was derived by calculating the average of the 7 relevant items; the *Strong Black Woman Stereotype* score was the average of 3 relevant questionnaire items; and the score for *Angry Black Woman Stereotype* was an average of 3 relevant questionnaire items. Each of the questionnaire items fit into one of the four subscales.

Sample questionnaire items include "*Based on my experiences as a Black woman, someone has made a sexually inappropriate comment about my butt, hips, or thighs"* and "*Based on my experiences as a Black woman, someone assumed I speak a certain way because I am a Black*

woman." Among this sample, lifetime experiences of gendered racial microaggressions were skewed to the right (0.869), as seen in Figure 3.1 below. As reflected in Table 2.0, the Cronbach's alpha coefficients for gendered racial microaggressions scale and subscales were acceptable (>0.8).

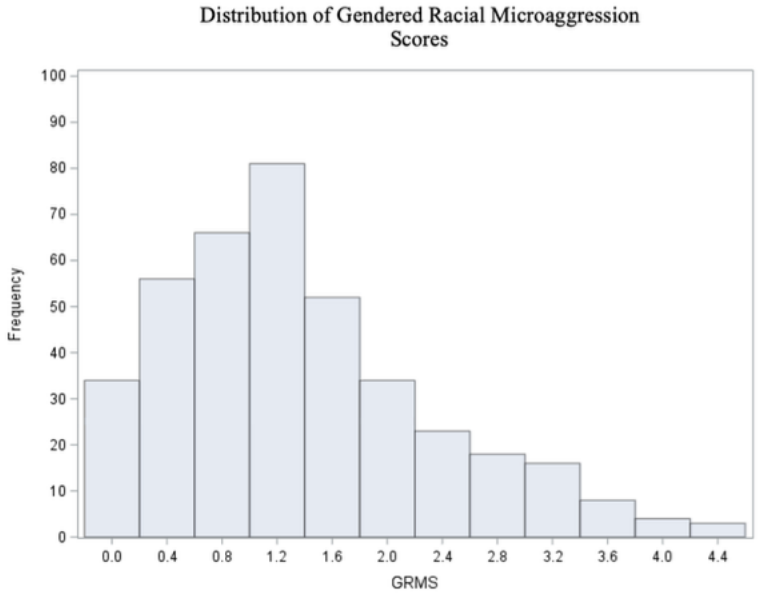

Figure 3.1 Distribution of Gendered Racial Microaggression Scores

Measuring Ambulatory Blood Pressure

To collect blood pressure data, participants wore ambulatory blood pressure (ABP) monitors for 2-day blood pressure readings. The devices used were Spacelabs OnTrak Ambulatory Blood Pressure monitors model 90217 which have been tested and validated to yield consistent and accurate blood pressure results. Women were fit for and trained on application and removal techniques of this small, noninvasive ABP monitor. They wore the monitors for 48 consecutive hours, removing it only to bathe. Prior to being fit for the cuff, study staff asked the women about their typical sleep and wake times. The monitors were programmed to record systolic blood pressure (SBP) and diastolic blood pressure (DBP) every 30 minutes during their reported waking

hours and every hour during their reported nighttime/sleep hours. Women were also provided with a bedside diary to record their actual sleep and wake times, and any medications that they took. Upon participant return of ABP monitor after the 48 hours of readings, the study team removed values that were ± 3 standard deviations from the participant's individual mean. The remaining values were used to compute the average daytime and average nighttime systolic blood pressure and diastolic blood pressure.

Measuring Hypertension

Clinic hypertension refers to hypertensive status based on the blood pressure readings taken at the baseline study visit. To be classified as having clinic and daytime hypertension, participants had to have had a systolic blood pressure reading greater than 130 and a diastolic blood pressure reading greater than 80. To be classified as having nighttime hypertension, the participant had a systolic blood pressure reading greater than 110 and a diastolic blood pressure reading greater than 65. This is because blood pressure has a tendency to be lower at night.

Post-Hoc Analysis of Depression

A post-hoc analysis was conducted with depression as an outcome variable. The Beck Depression Inventory (BDI) was used to measure depression and depressive symptoms. The BDI is a 21-item self-report scale that measures attitudes and symptoms of depression (Beck, Steer, & Brown, 1996). Some symptoms of depression that are evaluated on this scale are pessimism, fatigability, irritability, and general mood. The response scale followed a Likert format from 0 to 3, with 0 being no depressive symptom and 3 confirming a depressive symptom. The scores of the 21 items were totaled for each participant. Individuals with higher scores have higher depressive

symptoms. Participants who scored between 1-10 are considered normal, 11-16 are considered to have mild mood disturbance, 17-20 have borderline clinical depression, 21-30 have moderate depression, 31-40 have severe depression, and over 40 have severe depression (Beck et al., 1996).

Measuring Covariates

Throughout these analyses, educational attainment, income, smoking, alcohol use, anti-hypertension medication, and body mass index were controlled for. Educational attainment was assessed on a Likert scale that ranged from less than or some high school to terminal degrees for highest level earned. Similarly, income was assessed on a Likert scale that included annual income intervals from less than $35,000 to more than $75,000. Current smoking was assessed on a dichotomous response scale, with yes or no as the answer. Blood pressure medication was also assessed on a dichotomous response scale, with 0 being no and 1 being yes to taking anti-hypertensive medications. Alcohol use was assessed on a dichotomous response scale, with yes or no as the answer. Body mass index (BMI) was created as a derived variable from the height and the weight of the participant, using the formula $BMI=weight/(height^2)$.

Data Analysis Methods

Statistical analyses were completed using SAS. Descriptive statistics were run to understand the characteristic makeup of the participants at baseline, including frequencies, means, and standard deviations of the sample demographics and cardiovascular risk factors. Additionally, the degree of exposure to gendered racial microaggressions, including frequencies, means, and standard deviations of the scale and subscales were analyzed as descriptive statistics.

Logistic regression analyses were run to test the relationship between cardiovascular outcomes, namely the presence of clinic hypertension, daytime hypertension, and nighttime hypertension and various covariates and exposure to gendered racism. Relationships that were significant ($p<0.15$) were used in a multivariate regression models and controlled for. Additionally, covariates that were found to be significant in the literature were controlled for in the final models. Therefore, blood pressure medication, educational attainment, income, smoking status, alcohol use, and BMI were all controlled for in the analyses. In the multivariate models, linear regression analyses were run to test the relationship between ambulatory blood pressure and gendered racial microaggressions exposure. Unstandardized regression coefficients were produced by these analyses. In these multivariate models, significance was accepted at an alpha level of 0.05.

Chapter 4: Results

Breakdown of Sample

The entire sample (N=395) was phenotypically identified as Black by the study coordinators. However, 1% of them (N=4) didn't primarily identify themselves as Black. There were several heritage backgrounds of the women, 95% of whom were African American (N=375). The additional women identified themselves as Afro-Caribbean (N=9), African (N=1), Afro-Latina (N=2), and multiethnic or other (N=7). The mean age of the women was 37.43 years old with the youngest woman being 30 and the oldest being 46. There was a spread of their income, where the highest number of women made $75,000 or more (N=119), the second highest number of women made $34,999 or less (N=98), and there were equal numbers of women who made between $35,000 and $49,999 (N=86) and between $50,000 and $74,999 (N=86). Six women didn't report their income. Forty-six percent of the sample had a college degree, 16% attended college but didn't complete their degree, and 32% obtained a high school diploma or less.

Table 1.0. Demographic Characteristics of Sample

Demographic Variables	N (%) Mean (SD), Range
Total Sample	395 (100 %)
Race Self-Identity	
Black	391 (98.99%)
Non-Black	4 (1.01%)
Heritage	
African American	375 (95.18%)
Afro-Caribbean	9 (2.28%)
African	1 (0.25%)
Afro-Latina	2 (0.51%)
Mixed Race/Multiethnic	4 (1.02%)
Other	3 (0.76%)
Age	37.43 (4.28), 30 – 46
Income	
Less than $34,999	98 (24.81%)
$35,000 – $49,999	86 (21.77%)
$50,000 – $74,999	86 (21.77%)
$75,000 or more	119 (30.13%)
Not Reported	6 (1.52 %)

Educational Attainment	
High School of Less	126 (31.90%)
Some College	62 (15.70%)
College	182 (46.08%)
Other	25 (6.33%)
Years of Education	15.17 (2.49), 8 – 20

*Dichotomous variables reported as n(%)
*Continuous variables reported as mean (standard deviation)

Several cardiovascular risk factors were analyzed as descriptive statistics of the sample. The average body mass index (BMI) of the sample was 32.80 (SD= 8.23), which is classified as obese according to the Centers for Disease Control and Prevention (2017b). Ninety percent (N=355) of the sample reported that they were non-smokers while 10% (N=39) reported smoking at the time of the sampling. The current state of physical activity was almost evenly split with 51% of the sample (N=201) reporting that they do not regularly engage in physical activities or sports. Most of the women (83%, N=311) reported drinking alcoholic beverages. Seventeen percent of the women were taking anti-hypertension medication at the time of sampling.

Table 1.1. Health Characteristics of Sample

Health Variables	N (%) Mean (SD), Range
Total Sample	395 (100 %)
Body Mass Index (BMI)	32.80 (8.23), 17.16 – 58.07
Smoking Status	
No	355 (90.10%)
Yes	39 (9.90%)
Current Alcohol Consumption	
No	64 (17.07%)
Yes	311 (82.93%)
Hypertension Medication	
No	325 (82.70%)
Yes	68 (17.30%)
Clinic SBP	119.20 (14.54), 80 – 166
Clinic DBP	81.13 (11.83), 55 – 119.5
Clinic Hypertension	
No	186 (48.06%)
Yes	201 (51.94%)
Daytime SBP	121.13 (12.04), 94.12 – 155.38
Daytime DBP	77.40 (8.55), 51.16 – 101.98
Daytime Hypertension	
No	251 (64.86%)

Yes	136 (35.14%)
Nighttime SBP	110.34 (11.98), 81.94 – 154.36
Nighttime DBP	66.93 (8.94), 45.73 – 104.78
Nighttime Hypertension	
No	161 (42.04%)
Yes	222 (57.96%)

*Dichotomous variables reported as n (%)
*Continuous variables reported as mean (standard deviation)

Fifty-two percent (N=201) were identified as having hypertension in the study clinic, while 48% (N=186) did not have hypertension in the clinic. The average systolic and diastolic blood pressures in clinic were 119.20 (SD=14.54) and 81.13 (SD=11.83), respectively. The ambulatory blood pressure monitoring showed that the daytime average systolic and diastolic blood pressure were 121.13 (SD=12.04) and 77.40 (SD=8.55), respectively and the nocturnal average readings were 110.34 (SD=11.98) and 66.93 (8.94), respectively. While only 35% of the women (N=136) had daytime hypertension – that is, an average ambulatory systolic reading greater than 130 Hg and an average ambulatory diastolic reading greater than 80 Hg – 58% of the women (N=222) had nighttime hypertension.

Gendered Racial Microaggressions

Sample Exposure to Gendered Racial Microaggressions

As shown in Table 2.0, the average score for chronic exposure to gendered racial microaggressions was 1.36 (SD=0.95) on a scale from 1 to 5. which means the sample reported experiencing gendered racial microaggressions between once a year to a few times per year. The subscale with the largest reported frequency of exposure among this sample was the *strong Black woman stereotype*. The average frequency of this subscale was 2.19 (SD=1.38), meaning that they experienced facets of the strong Black woman stereotype, on average, a few times per year. The

angry Black woman stereotype, *silenced and marginalized*, and *assumption of beauty* subscales had means of 1.78 (SD=1.28), 1.21 (SD=1.12), and 1.09 (SD=0.93), respectively.

Table 2.0. Gendered Racial Microaggressions Exposure Means, Range, Skewness, and Scale Consistency

Gendered Racial Microaggressions	Mean (SD), Range	Skewness	Cronbach's α
Gendered Racial Microaggressions Total Frequency (23 Items)	1.36 (0.95), 0 – 4.52	0.869	0.879
Assumption of Beauty and Sexual Objectification (10 items)	1.09 (0.93), 0 – 4.90	1.229	0.914
Silenced and Marginalized (7 items)	1.21 (1.12), 0 – 5.00	1.115	0.918
Strong Black Woman Stereotype (3 items)	2.19 (1.38), 0 – 5.00	0.186	0.932
Angry Black Woman Stereotype (3 items)	1.78 (1.28), 0 – 5.00	0.648	0.922

*Cronbach's alpha coefficients were considered excellent if α>0.9, and good if α>0.8

Scale and Subscale Consistency

Internal consistency of the items in the Gendered Racial Microaggressions Scale, as well as the four subscales, were assessed via a Cronbach's alpha coefficient. Cronbach's alpha was calculated as $\alpha=rk/[1+(k-1)r]$ where k is the number of items in the survey and r is mean of the inter-item correlations. For the four subscales, the Cronbach's alpha coefficients were all greater than 0.90 and therefore the subscales have excellent internal consistency, as shown in Table 2.0. Moreover, the Cronbach's alpha coefficient for the Gendered Racial Microaggressions Scale was 0.879, and therefore shows a good internal consistency of the summated items and subscales.

Key Findings

Linear regressions and logistic regressions were conducted to explore the relationship between gendered racial microaggressions and hypertension risk, addressing the following research aim: what is the association between experiences of gendered racial microaggressions and cardiovascular disease risk factors among African American women? To answer this, I proposed

the following hypothesis: women with higher scores on the gendered racial microaggression scale will have higher daytime and nighttime systolic and diastolic blood pressure and will be more likely to have clinic hypertension. Additionally, women with higher scores on the gendered racial microaggressions subscales will have higher daytime, nighttime, and clinic blood pressure.

Bivariate Analysis of Clinic Hypertension, Daytime Hypertension, and Nighttime Hypertension

For the purposes of bivariate analyses, we explored the relationships between clinic, daytime, and nighttime hypertensive status and the exposure, as well as several covariates, as shown in Table 4. Results of the regression analyses show that there are no statistically significant relationships between the exposure variables – gendered racial microaggressions, assumption of beauty and sexual objectification, silenced and marginalized, strong Black woman stereotype, and angry Black woman stereotype – and clinic, daytime, and nighttime hypertensive status (all p-values >0.15).

Few covariates were found to have a statistically significant relationship with hypertensive status, as reflected in Table 3.0. Body mass index had a statistically significant relationship with clinic hypertension ($p < 0.0001$), daytime hypertension ($p = .03$), and nighttime hypertension ($p = 0.001$). The use of hypertension medication was also found to be statistically significant in relation to hypertensive status for clinic, daytime, and nighttime hypertension, with all p-values being less than 0.0001.

Table 3.0. Bivariate Analyses, Covariates with Dichotomous Hypertensive Outcomes

Covariate	Clinic Hypertension		Daytime Hypertension		Nighttime Hypertension	
	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value
GRMS Total	0.99 (0.80, 1.22)	0.91	0.95 (0.76, 1.19)	0.66	0.94 (0.76, 1.17)	0.59
Assumption of Beauty	1.03 (0.84, 1.28)	0.76	0.95 (0.76, 1.19)	0.66	0.94 (0.75, 1.16)	0.54
Silenced and Marginalized	0.96 (0.80, 1.15)	0.63	0.96 (0.79, 1.16)	0.64	0.95 (0.79, 1.14)	0.58
Strong Black Woman	0.96 (0.83, 1.11)	0.59	0.99 (0.85, 1.15)	0.86	0.99 (0.85, 1.14)	0.86
Angry Black Woman	1.01 (0.87, 1.18)	0.88	0.98 (0.83, 1.15)	0.79	0.98 (0.83, 1.14)	0.77
Race	1.08 (0.15, 7.76)	0.94	0.18 (0.02, 1.72)	0.14	0.46 (0.05, 4.43)	0.50
Heritage	1.11 (0.81, 1.52)	0.53	0.98 (0.71, 1.35)	0.88	0.90 (0.66, 1.23)	0.51
Age	1.03 (0.98, 1.08)	0.27	1.03 (0.98, 1.09)	0.18	1.00 (0.96, 1.05)	0.86
BMI	1.09 (1.06, 1.12)	<.00	1.03 (1.00, 1.06)	0.03	1.05 (1.02, 1.08)	.00
Education Years	0.95 (0.87, 1.03)	0.19	0.97 (0.89, 1.06)	0.51	1.02 (0.94, 1.11)	0.60
Educational Attainment	0.91 (0.74, 1.11)	0.32	0.92 (0.74, 1.14)	0.43	0.91 (0.74, 1.12)	0.38
Income	0.92 (0.78, 1.08)	0.30	0.93 (0.78, 1.10)	0.39	0.90 (0.76, 1.07)	0.24
Smoking Status	1.03 (0.52, 2.01)	0.94	1.22 (0.62, 2.43)	0.56	1.27 (0.64, 2.55)	0.50
Current Alcohol Consumption	1.01 (0.58, 1.74)	0.98	0.85 (0.48, 1.49)	0.56	0.88 (0.50, 1.54)	0.66
Hypertension Medication Use	7.99 (3.83, 16.68)	<0.00	4.07 (2.34, 7.05)	<0.00	4.49 (2.26, 8.89)	<0.00

*Using an alpha of $p<0.15$ to determine significance.

Multivariate Analysis of Daytime Ambulatory Blood Pressure

Linear regression analyses were conducted for daytime systolic and daytime diastolic blood pressures. The regression models controlled for covariates that significantly impacted blood pressure in the bivariate analyses as well as those that repeatedly appeared in the literature. After accounting for these variables, there was no statistically significant relationship between experiencing gendered racial microaggressions and daytime blood pressure ($p>0.05$), as seen in Tables 4.0 and 4.1.

Table 4.0. Models Exploring Daytime Systolic Blood Pressure GRM Exposures

Variable	Daytime Systolic Blood Pressure									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	P-value	B	P-value	B	P-value	B	P-value	B	P-value
GRMS Total	-0.02	0.98	-	-	-	-	-	-	-	-
Assumption of Beauty	-	-	-0.27	0.68	-	-	-	-	-	-
Silenced and Marginalized	-	-	-	-	0.21	0.69	-	-	-	-
Strong Black Woman	-	-	-	-	-	-	0.10	0.46	-	-
Angry Black Woman	-	-	-	-	-	-	-	-	-0.08	0.86
Age	0.29	0.06	0.28	0.07	0.28	0.06	0.28	0.07	0.29	0.06
BMI	0.11	0.18	0.11	0.18	0.11	0.17	0.11	0.18	0.11	0.18
Educational Attainment	-1.01	0.15	-1.01	0.15	-1.03	0.14	-1.01	0.15	-1.01	0.15
Income	-0.29	0.60	0.29	0.60	-0.28	0.61	-0.28	0.61	-0.29	0.60
Smoking Status	-0.003	0.10	0.17	0.93	0.08	0.97	0.05	0.98	0.16	0.94
Alcohol Use	-2.22	0.18	-2.20	0.18	-2.24	0.17	-2.22	0.18	-2.19	0.19
Hypertension Medication Use	8.85	<0.00	8.85	<0.00	8.88	<0.00	8.86	<0.00	8.86	<0.00

*Using an alpha of $p<0.05$ to determine significance.

*The parameter estimate B represents the unstandardized beta

Table 4.1. Models Exploring Daytime Diastolic Blood Pressure with GRM Exposures

Variable	Daytime Diastolic Blood Pressure									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	P-value	B	P-value	B	P-value	B	P-value	B	P-value
GRMS Total	-0.10	0.83	-	-	-	-	-	-	-	-
Assumption of Beauty	-	-	-0.12	0.80	-	-	-	-	-	-
Silenced and Marginalized	-	-	-	-	-0.04	0.91	-	-	-	-
Strong Black Woman	-	-	-	-	-	-	0.04	0.89	-	-
Angry Black Woman	-	-	-	-	-	-	-	-	-0.18	0.60
Age	0.13	0.27	0.12	0.27	0.13	0.27	0.12	0.27	0.13	0.26
BMI	-0.06	0.33	-0.06	0.33	-0.06	0.33	-0.06	0.33	-0.06	0.32
Educational Attainment	-0.48	0.35	-0.49	0.34	-0.48	0.35	-0.49	0.34	-0.48	0.34
Income	-0.03	0.95	-0.03	0.95	-0.03	0.95	-0.02	0.95	-0.03	0.94
Smoking Status	1.17	0.45	1.16	0.45	1.15	0.46	1.11	0.48	1.25	0.42
Alcohol Use	-0.97	0.42	-0.97	0.42	-0.98	0.41	-0.98	0.41	-0.91	0.45
Hypertension Medication Use	6.69	<0.00	6.69	<0.00	6.69	<0.00	6.69	<0.00	6.70	<0.00

*Using an alpha of $p<0.05$ to determine significance.

*The parameter estimate B represents the unstandardized beta

Multivariate Analysis of Nocturnal Ambulatory Blood Pressure

Linear regression analyses were also conducted to explore the relationship between gendered racial microaggressions and related subscales, and nighttime ambulatory blood pressure. The regression models controlled for covariates that significantly impacted blood pressure in the bivariate analyses as well as those that repeatedly appeared in the literature. After accounting for these variables, there was no statistically significant relationship between experiencing gendered racial microaggressions and nighttime ambulatory blood pressure in the sample ($p>0.05$), as seen in Tables 5.0 and 5.1.

The covariates that remained significant throughout these models were BMI ($p=0.002$, 0.002, 0.002, 0.001, and 0.002) and the use of antihypertension medication ($p<0.0001$).

Table 5.0. Models Exploring Nocturnal Systolic Blood Pressure with GRM Exposures

Variable	Nocturnal Systolic Blood Pressure									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	Estimate	P	Estimate	P	Estimate	P	Estimate	P	Estimate	P
GRMS Total	0.41	0.52	-	-	-	-	-	-	-	-
Assumption of Beauty	-	-	0.27	0.67	-	-	-	-	-	-
Silenced and Marginalized	-	-	-	-	0.33	0.54	-	-	-	-
Strong Black Woman	-	-	-	-	-	-	0.47	0.30	-	-
Angry Black Woman	-	-	-	-	-	-	-	-	0.16	0.74
Age	0.11	0.48	0.11	0.47	0.11	0.49	0.10	0.52	0.11	0.48
BMI	0.26	0.002	0.26	0.002	0.26	0.002	0.26	0.001	0.26	0.002
Educational Attainment	-0.85	0.22	-0.84	0.23	-0.86	0.22	-0.85	0.23	-0.84	0.23
Income	-0.11	0.84	-0.12	0.83	-0.12	0.84	-0.10	0.85	-0.11	0.83
Smoking Status	-0.61	0.77	-0.54	0.80	-0.53	0.80	-0.79	0.71	-0.57	0.79
Alcohol Use	-2.49	0.13	-2.47	0.13	-2.47	0.13	-2.42	0.14	-2.50	0.13
Hypertension Medication Use	7.16	<0.00	7.15	<0.00	7.18	<0.00	7.14	<0.00	7.13	<0.00

*Using an alpha of $p<0.05$ to determine significance.

*The parameter estimate B represents the unstandardized beta

Table 5.1. Models of Nocturnal Diastolic Blood Pressure with GRM Exposures

Variable	Nocturnal Diastolic Blood Pressure									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	Estimate	P	Estimate	P	Estimate	P	Estimate	P	Estimate	P
GRMS Total	0.40	0.42	-	-	-	-	-	-	-	-
Assumption of Beauty	-	-	0.45	0.37	-	-	-	-	-	-
Silenced and Marginalized	-	-	-	-	0.15	0.71	-	-	-	-
Strong Black Woman	-	-	-	-	-	-	0.40	0.25	-	-
Angry Black Woman	-	-	-	-	-	-	-	-	0.16	0.67
Age	0.05	0.70	0.05	0.66	0.05	0.70	0.04	0.75	0.05	0.70
BMI	0.04	0.50	0.04	0.51	0.04	0.50	0.04	0.52	0.04	0.50
Educational Attainment	-0.13	0.82	-0.12	0.83	-0.12	0.82	-0.12	0.82	-0.12	0.83
Income	-0.26	0.55	-0.26	0.55	-0.27	0.54	-0.25	0.56	-0.26	0.54
Smoking Status	0.25	0.88	0.28	0.87	0.35	0.83	0.10	0.95	0.28	0.86
Alcohol Use	-1.41	0.26	-1.41	0.26	-1.38	0.28	-1.35	0.28	-1.43	0.26
Hypertension Medication Use	5.37	<0.00	5.37	<0.00	5.37	<0.00	5.35	<0.00	5.35	<0.00

*Using an alpha of $p<0.05$ to determine significance.

*The parameter estimate B represents the unstandardized beta

Post-Hoc Analysis Findings

Gendered Racial Microaggressions with Depression Outcomes

Because gendered racial microaggressions (GRM) were not found to be significantly associated with elevated ambulatory blood pressure, post-hoc regression analyses were run to explore how this exposure was associated with psychological distress, specifically depression. Additionally, this pathway was identified in the Paradies et al. (2013) theoretical model, seen in Figure 1.1, and supported in several other studies. The aim of this analysis is as follows: What is the relationship between exposure to gendered racial microaggression and depression?

As shown in Table 6.0, with every level of increase on the gendered racial microaggressions scale, there was a 2.18 point increase on the depression scale. Moreover, with every point increase in *Assumption of Beauty*, participants demonstrated a 2.25 point increase on

the depression scale. Every level of increase in *Silenced and Marginalized* was associated with a 1.73 point increase in depression. For every point increase in *Angry Black Woman* experiences, participants scored 1.11 points higher in depression. And finally, for every point increase in *Strong Black Woman,* there was a 0.83 point increase in depression.

Table 6.0 Multivariate Models Exploring Depression and Gendered Racial Microaggressions

Variable	Depression									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	Estimate	P	Estimate	P	Estimate	P	Estimate	P	Estimate	P
GRMS Total	2.18	<0.00	-	-	-	-	-	-	-	-
Assumption of Beauty	-	-	2.25	<0.00	-	-	-	-	-	-
Silenced and Marginalized	-	-	-	-	1.73	<0.00	-	-	-	-
Strong Black Woman	-	-	-	-	-	-	0.83	0.00	-	-
Angry Black Woman	-	-	-	-	-	-	-	-	1.11	<0.00
Age	-0.06	0.50	-0.03	0.69	-0.07	0.42	-0.07	0.41	-0.06	0.49
BMI	0.07	0.10	0.07	0.12	0.08	0.09	0.07	0.14	0.08	0.12
Educational Attainment	-0.41	0.29	-0.38	0.33	-0.46	0.24	-0.35	0.39	-0.36	0.37
Income	-0.01	0.97	-0.01	0.96	-0.02	0.94	-0.03	0.93	-0.02	0.95
Physical Activity	-2.47	0.00	-2.47	0.00	-2.31	0.00	-2.54	0.00	-2.35	0.00
Smoking Status	2.14	0.07	2.34	0.05	2.51	0.03	2.25	0.07	2.13	0.08
Alcohol Use	0.50	0.58	0.55	0.55	0.56	0.54	0.75	0.43	0.31	0.74
Hypertension Medication Use	0.54	0.58	0.52	0.59	0.66	0.51	0.44	0.66	0.45	0.66

*Using an alpha of $p<0.05$ to determine significance.

Summary of Results

In summary, experiencing gendered racial microaggressions was not significantly associated with elevated daytime ambulatory blood pressure, elevated nighttime ambulatory blood pressure, or clinic hypertensive status. However, this exposure to these forms of microaggressions were significantly associated with higher scores on the BDI, except in the case of Strong Black Woman, where it was associated with lower scores on the BDI.

Chapter 5: Discussion

Summary of Study and Findings

Black women experience the highest burden of cardiovascular disease morbidity and mortality, as it takes nearly 50,000 of their lives annually. According to the National Center for Health Statistics, Black people, both men and women, are 40% more likely to have hypertension than their white peers (2019). In fact, Black people are the group most frequently diagnosed with hypertension in the world. Black women in particular are 60% more likely to have hypertension than white women and have a higher prevalence of hypertension than Black men (National Center for Health Statistics, 2019). Roughly 49% of Black women have cardiovascular disease. That is nearly 1 in 2 Black women.

Research has found that several risk factors are associated with increased burden of cardiovascular disease, such as smoking, a sedentary lifestyle, and obesity. However, these risk factors do not completely explain the excess cardiovascular disease burden that is experienced by Black women. Racism and discrimination have been linked to negative mental and physical health outcomes for Black people. While these pathways to adverse health outcomes have been understood in structural and institutional forms of discrimination, interpersonal racism is increasingly being recognized as a stressor that triggers biopsychosocial sequelae and ultimately present bodily responses.

The Weathering Hypothesis and Allostatic Load Theory were operationalized to understand a specific type of psychosocial stressor – gendered racial microaggressions – and how it impacts Black women's wellness. This research captures just one aspect of the intersectional identities of being Black and being woman. It captures how their unique marginalization in society may be related to their cardiovascular health.

The aim of this research was to understand how gendered racial microaggressions relate to elevated ambulatory blood pressure and hypertension. Three hundred and ninety-five Black women in Atlanta, GA completed a 23-item Gendered Racial Microaggressions Scale, which assesses lifetime exposure to gendered racial microaggressions and four subconstructs: (1) assumptions of beauty and sexual objectification, (2) silenced and marginalized, (3) strong Black woman stereotype, and (4) angry Black woman stereotype. Participants wore ambulatory blood pressure monitors over a 48-hour period that recorded daytime and nocturnal blood pressure readings in 30 minute and 1-hour intervals, respectively. Linear and logistic regression modeling were conducted to assess the relationship between the gendered racism exposure and ambulatory blood pressure after adjusting for other variables related to blood pressure, such as body mass index and hypertension medication.

Though several previous studies and theories have described chronic, interpersonal racism as a psychosocial stressor that is related to cardiovascular disease risk, the current study findings do not show a statistically significant relationship between experiences of gendered racial microaggressions and clinic hypertension and ambulatory daytime or nighttime blood pressure. A post-hoc analysis, however, of depression as an outcome variable showed a statistically significant relationship between frequency of gendered racial microaggressions and having depression. Finally, the study findings show that there was low reporting of gendered racial microaggressions among this sample.

Positioning Key Findings into Theoretical and Societal Context

Racism has been so ingrained into United States culture that it is now nearly undistinguishable. From the signing of the *Three-Fifths Compromise* declaring sub-humanization

of Black enslaved people, to restrictive covenants and redlining keeping Black people physically separated from whites, to President Bush's 1971 "War on Drugs", to New York City's 1990s implementation of stop-and-frisk laws, racism has increasingly become less overt over time (Alexander, 2010; Anderson et al., 2018; Gelman, Fagan, & Kiss, 2007; Lopez, 2010). And after all of its transformations and adaptations, "post-racial racism" is more likely to be covert and disguised, such as with microaggressions (Sue et al., 2007).

Because structural and interpersonal racism is so intertwined in normative beliefs, there is a tendency of underreporting experiences of racism in public health research. In the current study, the average exposure to gendered racial microaggressions was 1.36 and highly skewed to the right with many people reporting having low exposure to these microaggressions. The subconstruct that had the highest average (mean=2.19) was the *strong Black woman stereotype*, with the *angry Black woman stereotype* construct closely behind (mean=1.78). Even though this sample experienced these constructs most often, these means are in the lower quartiles showing that there were low experiences of gendered racial microaggressions or low reporting of these experiences. These subscales were highly skewed to the right, just as the gendered racial microaggressions total frequency score.

Previous studies of gendered racial microaggressions are not consistent with these findings. In the original construction of the scale, the mean GRMS total score was 2.13 among 259 Black women (Lewis & Neville, 2015). Unlike this study, the subscale with the most frequent reporting was *Silenced and Marginalized* (Mean=2.76) (Lewis & Neville, 2015). In a sample of 177 Black women between the ages of 18 and 24, the mean reported frequency of gendered racial microaggressions was 2.07 (Dunn, Hood, & Owens, 2019).

While the results from this study could be demonstrative of low exposure to gendered racism, they could also be indicating that these experiences are not being reported because structural and interpersonal racism is so intertwined into normative beliefs. This potential underreporting could be due to the pervasiveness of racism, especially gendered racism, in a society that makes it normalized and difficult to recognize for those who experience it. At the same time, these reported GRM exposures could be indicating a response bias that is a result of repeated "based on your experiences as a Black woman" prompts. Prompts repeatedly asking about race and other identity-based discriminatory experiences may lead to overreporting or underreporting of the experience. Gomez and Trierweiler (2001) found in a study of college students that questions that utilized words and terminology about discrimination had higher-self reports than those that did not.

There are also other factors that could be contributing to the overall exposure of gendered racism in the sample. For example, the women in the sample may or may not regularly interact in interethnic or intergender groups; that is, groups with people of other racial and gender backgrounds. This is where gendered racism is likely experienced, as they interact among individuals that do not hold two of the same identities as they do. There are many reasons for this that can potentially be explored. One element that contributes to interethnic or intergender experiences is socioeconomic status. Women of higher socioeconomic status likely have more experiences in heterogeneous groups. Approximately one-third of the women made above $75,000. In alignment with the literature, people with higher SES report experiences of racism more frequently. Additionally, this study was conducted in Atlanta, GA, which is often called the "Black Mecca," because of the high proportion of Black people who live there. Given the large Black population, the sample may not be as exposed to heterogeneous populations as frequently,

and therefore may experience or notice fewer microaggressions rooted in gendered racism. All in all, these study results may not fully capture what other factors could be contributing to the hypertensive outcomes for the women in the sample.

Positioning Secondary Findings into Theoretical and Societal Context

Though the key findings of this study did not show a significant relationship between gendered racial microaggression frequency and ambulatory blood pressure or hypertension, there was a significant relationship between gendered racial microaggressions, and each of the subscales, with depressive symptoms. This relationship is consistent with several other models and studies indicating that depression may interfere with maintaining healthy blood pressure. From a pathophysiological perspective, a lack of dopamine and other neurotransmitters in the brain triggers depression and also may increase blood pressure (Murphey, Murray, & Shorten, 2001). From a theoretical perspective, this also aligns. Individuals who experience heightened acute stress or depressive symptoms may also see brief increases in their blood pressure. This is why we utilize ABP monitoring – to decrease the impact of the variability inherent to any one blood pressure reading, but instead to get many readings that can provide a more accurate picture of the person's blood pressure.

These study results also support empirical research that shows a relationship between gendered racial microaggressions amd depression. In 2017, Lewis et al., explored gendered racial microaggressions and mental health outcomes among a sample similar to this one – mostly middle-class Black women. She found that women who experienced increased frequency of gendered racial microaggressions were more likely to have poor mental health. These findings were supported by other research that demonstrate that everyday experiences of gendered racism and

psychological distress had positive correlations (Lewis & Neville, 2015; Thomas, Witherspoon, & Speight, 2008). Depression is inversely correlated with blood pressure, as shown in Licht et al. (2009).

Depression among Strong Black Women

The post-hoc analysis revealed a positive relationship between gendered racial microaggressions and depression. With increases in gendered racial microaggressions, there were increases in depression and depressive symptoms. The direction of the relationship was the same for three of the four subscales, except Strong Black Woman stereotype. While there was a positive relationship between Strong Black Women stereotype experiences and depression, the parameter estimate was less than one, suggesting that being a strong Black woman may be a protective factor against depression.

There is empirical research that supports this, such as Allen et al. 2019. Allen et al. (2019) found that being a strong Black woman may have the opposite impact on health than what research would typically think. Being a strong Black woman can include suppressing emotions and presenting a hard exterior. Though suppressing emotions, for example, is typically seen as being related to unfavorable health outcomes, Allen et al. (2019) found that Black women who suppressed their emotions had better heart health outcomes. That is, being a strong Black woman acted as a protective factor for blood pressure.

Similar results were found among the subscales in this study. The women who reported more frequent experiences of the Strong Black Woman Stereotype had lower points on the Back Depression Inventory. Ultimately, being a woman who is “independent” and “strong” can impact one’s blood pressure.

Limitations

Though this study makes important contributions to understanding racism, gendered racism, and cardiovascular health of Black women, there are some limitations that should be considered while interpreting these findings. First, our sample was overrepresented by middle- to upper-class, college educated Black women, likely due to our data collection methodologies. While focusing on this population fills a large gap in the literature and though Black women are the highest educated demographic in the country, this overrepresentation of college graduates in the sample likely limited what our sample physiologically looked like. Future studies should be intentional about recruiting community samples in a way that is representative of all educational backgrounds. Also, while not analyzed in this thesis, future research should include sexual minorities.

An additional limitation is that analyses could have been run to understand how individuals' perceptions of their experiences mediate or moderate the relationship with ambulatory blood pressure. Inquiries about the individual's appraisal of the experience were intentionally left out of this study because we were interested in understanding how experiences, and not the perceptions of them, impact health, whether consciously or subconsciously. However, understanding their appraisal of their experiences of gendered racial microaggressions would have given better context in interpreting the results.

A final limitation is that depression was analyzed in a post-hoc analysis. After analyzing the non-significant results from the original research question, depression was explored as an outcome to see if this sample's experiences of gendered racism aligned with the other parts of the model. Understanding depressive symptoms as an integrated form of this analysis would have been

helpful from the beginning because it could have been tested as a mediating variable or a moderating variable.

Implications for Public Health and Future Research

The excess cardiovascular burden experienced by Black women can be understood with the Weathering Hypothesis and Allostatic Load Theory, however, it is not shown here with gendered racism. Because gendered racial microaggressions happen so covertly and often go unnoticed, there are likely other factors that contributed to why the women reported the way that they did. A study exploring gendered racial microaggressions and blood pressure should be conducted in other geographic settings, specifically the West or the North of the United States. This would account for the way in which the historic normative beliefs of the Atlanta, and the South overall, play out in the sample,.

Obesity, alcohol use, and smoking have been identified as risk factors for cardiovascular disease. However, solely identifying them as risk factors completely isolates them from the other mechanisms that exist simultaneously. For example, identifying smoking as a risk factor for cardiovascular disease presents a linear understanding of the topic. Identifying smoking as a coping mechanism takes it a step further; however, it still demonstrates a linear view of how this is impacting Black women. Exploring how racism is associated with the availability, utilization, and perceptions of cigarette smoking separately and compounded would give the picture more depth and understanding as it relates to health outcomes. A similar understanding is needed to fully conceptualize the relationship between gendered racism and blood pressure. Public health research in the future should begin to understand how all of these mechanisms are compounded and continuously relate to one another. For minority communities, especially Black communities, the

many manifestations of racism should be at the forefront of understanding how it impacts the different levels of health.

Based on this study and other models, future research should also analyze depression as a mediating variable, consistent with the Paradies et al. (2013) paper, between gendered racial microaggressions and elevated ambulatory blood pressure.

Conclusion

Given the way that racism operates on so many different levels and arenas in society, it is critical that public health practitioners are aware of the many mechanisms which racism shows up and how it impacts health. While the data from this study do not show a significant relationship between gendered racism and blood pressure, they give insight on experiences of gendered racism of Black women and what measures should be used to understand them. Furthermore, the data demonstrate that it is important to understand individual perceptions of their experiences and how that impacts their health outcomes. In conclusion, future studies should be conducted with Black women to understand how their exposure to gendered racism, including microaggressions and other forms, relates to their risk for cardiovascular disease. Designing scales and conceptual frameworks grounded in intersectionality and identity is necessary to more fully understand how racism becomes embodied in their health outcomes and what can be employed to improve their overall health.

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