USING THE RACIAL CONTEXT OF ORIGIN LENS TO UNDERSTAND HEALTH DIFFERENCES AMONG BLACK PEOPLE IN THE UNITED STATES

by

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A dissertation submitted to the faculty of
The University of North Carolina at Charlotte
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in
Health Psychology

Charlotte

2022

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ABSTRACT

BRITTANY PRICE. Using the Racial Context of Origin Lens to Understand Health Differences Among Black People in the United States
(Under the direction of DR. JEANETTE M. BENNETT and DR. ANDREW D. CASE)

Studies assessing health disparities in the United States primarily compare White and Black individuals without accounting for the heterogeneity within racial groups. The present study utilizes the racial context of origin framework to identify potential mechanisms that can explain differences in health between foreign-born Black (FBB) and US-born Black (USB) individuals. Using self-report questionnaires, this study examined the interactive effects of internalized racism, perceived discrimination, and racial context of origin on physical health and perceived discrimination reactivity. Further, motivation to succeed, belief in meritocracy, shared racial fate, and connection and sense of belonging to the Black racial group were assessed to discern factors contributing to differential interactions by racial context of origin. Results indicate that internalized racism is negatively associated with physical health for FBB, but not USB. The 3-way interactions of internalized racism, perceived discrimination, and racial context of origin on physical health and perceived discrimination reactivity were not significant. Motivation to succeed, belief in meritocracy, shared racial fate, and connection and sense of belonging to the Black racial group did not provide insight to how the association between internalized racism and physical health differs by racial context of origin. Exploratory analyses revealed that racial centrality is a promising factor in understanding health differences by racial context of origin. Notable preliminary analyses and group differences are discussed. These findings contribute to the understanding of racial context of origin and provide insight to race-related variables that may aid in understanding differences in health by racial context of origin.

ACKNOWLEDGEMENTS

I would like to thank the co-chairs of my dissertation committee, Dr. Jeanette M. Bennett and Dr. Andrew D. Case for their unwavering support and the research opportunities they provided me throughout my graduate school career. Dr. Bennett's passion for research is inspiring and contagious. I am grateful for the times she pushed me to go beyond my comfort level and for teaching me how to expand my thinking and ideas. I am incredibly grateful to have a research advisor that consistently goes above and beyond to support her students. I am also thankful for the support of Dr. Case and the training he provided in research on race-related issues. My understanding and conceptualizations of these issues has significantly expanded with his guidance. His training has allowed me to develop as a writer and an analytical thinker. Dr. Bennett and Dr. Case provided me a research environment that is welcoming and encouraging and allowed me to grow as a researcher and a professional and for this I am extremely grateful. I would also like to thank Dr. Jennifer Langhinrichsen-Rohling and Dr. Willie Mae Abel for agreeing to be members of my dissertation committee and their feedback on my dissertation. I am also extremely grateful for the support of Dr. Amy Peterman, director of clinical training at UNCC, for providing support throughout my graduate training.

I would also like to thank my parents, brother, and other members of my family for their support. They have always supported my scholastic goals and provided support in every aspect possible along the way. Thank you to my friends who provide emotional support, encouraging words, and positive distractions during stressful periods. Many thanks to my lab mates who played a huge role in continuing data collection while I was on internship. Their support made reaching my needed *n* possible. I am also grateful for my dogs for their emotional support and high energy levels which forced me to remain active and take breaks during long study periods.

Finally, I would like to acknowledge the support and funding for this dissertation from the Health Psychology PhD program; the Graduate Student Research in General Psychology Award, APA, Division 38; and the Diversity Grant of Psychological Science Research Grant, APA of Graduate Students.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Glossary

US-born Black individual (UBB): a person of African descent who was born and raised in the United States. This includes African Americans who were defined as Black individuals who were born and raised in the United States, in addition to their parents and grandparents.

Foreign-born Black individual (FBB): a person of African descent who was born in a country other than the United States. In this study, FBBs from English-speaking countries in the Caribbean and Africa were primarily recruited due to the racial context of origin hypothesis that was utilized in this study (Read & Emerson, 2005).

CHAPTER 1: INTRODUCTION

Health disparities are a prevalent and historical problem in the United States (US) with Black individuals having poorer ratings on multiple health indicators compared to White individuals. National data from 1990 and 2005 showed that compared to White individuals, Black individuals rated poorer on most of the assessed health measures (e.g., all-cause mortality, heart disease mortality, stroke mortality, cancer mortality, lung cancer mortality, female breast cancer mortality, diabetes mellitus mortality, infant mortality rate, and low-birth weight babies; Orsi et al., 2010). Of these measures, infant mortality rate is an indicator of physical health of a community. National data from 1999 to 2013 revealed that while Black infant mortality rates improved throughout the US, about "64, 876 infant lives could have been saved over this time period if the Black-White gap in infant mortality had been eliminated" (Brown Speights et al., 2017, p. 776). Further, based on recent trends it is predicted that the Black-White gap in infant mortality rates will be eliminated for only seven states by 2050 (Brown Speights et al., 2017).

National longitudinal data indicates that higher rates of mortality in Black individuals can be partially explained by Black individuals having higher allostatic load (Duru et al., 2012). Allostatic load is defined as negative physical and physiological effects of experiencing stressors long-term (McEwen, 1998; Stewart, 2006). Allostatic load was measured by 10 physiological markers consisting of metabolic markers, cardiovascular markers, inflammatory markers, and organ dysfunction markers (e.g., waist to hip ratio, glycated hemoglobin, systolic blood pressure, diastolic blood pressure, total cholesterol, triglycerides, homocysteine, albumin, C-reactive protein, estimated glomerular filtration rate) that indicate physiological dysregulation that can result from experiencing chronic stress (Duru et al., 2012; McEwen, 1998). These data indicate

that stress could be causing lasting damage on Black individuals' physiological systems, thereby negatively impacting their health.

Children are also impacted by health disparities in the US. Data from the National Health Interview Survey from 1998 to 2009 indicated that Black children had higher rates of fair/poor overall health status, disability (limitations in kind/amount of play and limitations in activities of daily living), skin allergies, vision problems, and anemia compared to White children (Mehta et al., 2013). Thus, the existence of health disparities between Black-White US children suggests that racial health disparities are a pervasive problem in the US from before the age of one. Compared to White individuals, Black individuals of all ages are more likely to suffer from a variety of health problems.

Further, cardiovascular disease (CVD), the primary noncommunicable cause of death in the world, disproportionately affects Black individuals in the US (Benjamin et al., 2019; see Figure 1 for display of rates of ideal cardiovascular health). African Americans suffer from poorer cardiovascular health compared to European Americans, Hispanics, and Asian/Pacific Islanders (Brown et al., 2018; Pearson-Stuttard et al., 2016; Singh et al., 2015). One study assessed optimal cardiovascular health using the Life's Simple 7 (LS7) score which is based on goals developed by the American Heart Association to monitor cardiovascular health (Lloyd-Jones et al., 2010). The LS7 measures control of the following: blood pressure, serum lipids, blood glucose, weight, physical activity, diet, and smoking (Brown et al., 2018). Brown and colleagues (2018) operationalized optimal cardiovascular health as an LS7 score of 10 or higher out of a range from 0 to 14. In a total sample of over 35,000, they found that African Americans have lower rates of optimal cardiovascular health (15%) compared to European Americans (40%) and Mexican Americans (25%).

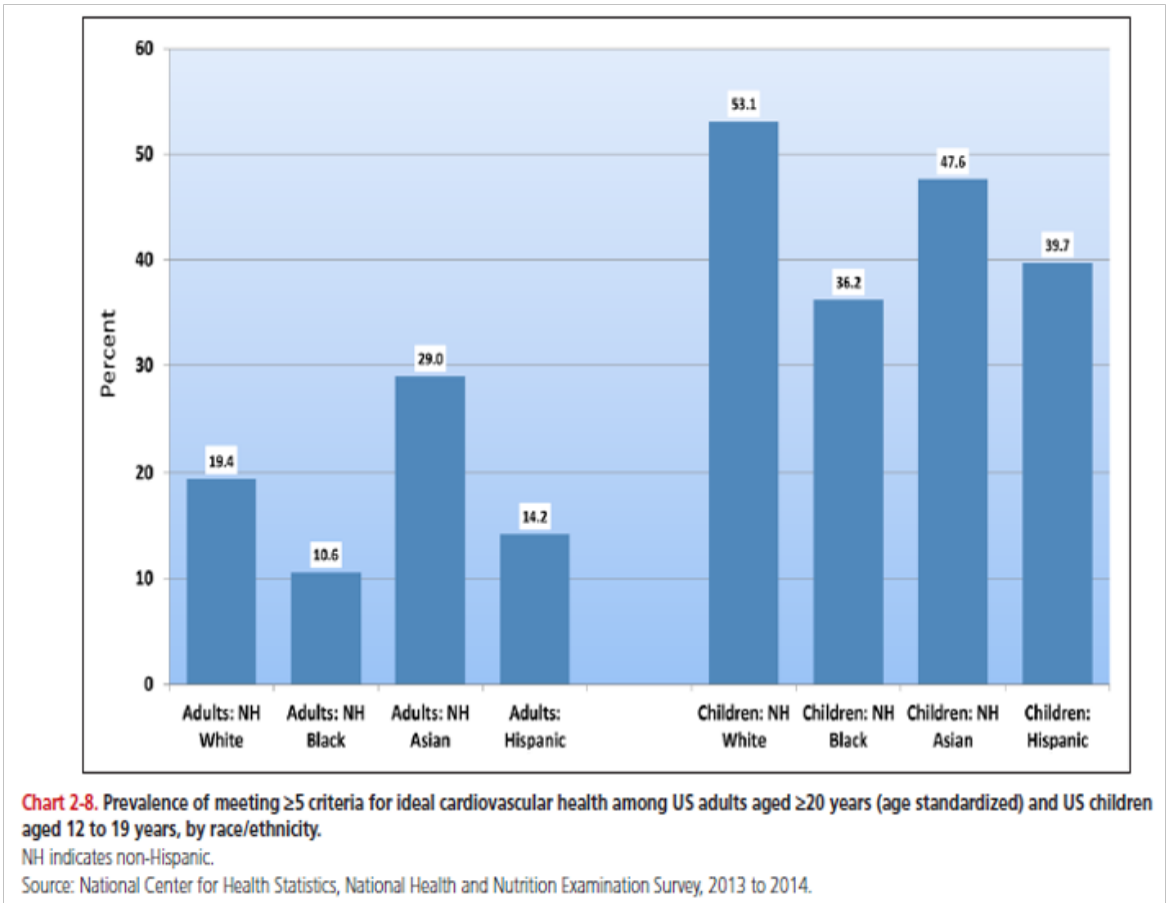

Chart 2-8. Prevalence of meeting ≥5 criteria for ideal cardiovascular health among US adults aged ≥20 years (age standardized) and US children aged 12 to 19 years, by race/ethnicity.

NH indicates non-Hispanic.

Source: National Center for Health Statistics, National Health and Nutrition Examination Survey, 2013 to 2014.

Figure 1. Data and figure originally published in Benjamin et al., 2019.

The discrepancy in cardiovascular health between Black individuals/African Americans and White individuals/European Americans is greater than the discrepancy between White individuals/European Americans and other ethnic/racial groups in the US (Brown et al., 2018; Pearson-Stuttard et al., 2016; Singh et al., 2015). Some argue that the cardiovascular health disparity between African Americans and European Americans has decreased over time, but this trend is likely explained by a decline in cardiovascular health amongst European Americans, not by an improvement among African Americans (Brown et al., 2018). Others report that racial disparities in CVDs have worsened in recent decades with Black individuals fairing worse, and it

is expected that cardiovascular health disparities between non-Hispanic Black individuals and White individuals will persist or increase (Pearson-Stuttard et al., 2016; Singh et al., 2015). Given that Black individuals are expected to continue to suffer from poorer cardiovascular health compared to other racial/ethnic groups in the US, it is imperative to explore factors that may be contributing to poorer health outcomes within the Black racial group. Racial discrimination may be one factor that contributes to health disparities. This factor is one focus of this dissertation.

Racial Discrimination as a Determinant of Cardiovascular Disease

Racism can be defined as "an organized system that categorizes population groups into 'races', and uses this ranking to differentially allocate societal goods and resources to groups regarded as superior" (Williams & Mohammed, 2009, p. 21). According to some scholars, racism is deeply embedded in the foundation of a society and leads to racial discrimination (Williams & Mohammed, 2009). Racial discrimination negatively influences the lives of Black individuals in the US and is theorized to be a strong contributor to racial health disparities in the US (Brondolo et al., 2009; Pascoe & Smart Richman, 2009; Pieterse et al., 2012; Williams & Mohammed, 2009). Racial discrimination is the "differential treatment of members of [racial outgroups] by both individuals and social institutions" (Williams & Mohammed, 2009, p. 21), occurring in the following contexts and settings: interpersonal, environmental, institutional, political, cultural, housing and labor markets, and criminal justice and education systems (Brondolo et al., 2009; Williams & Mohammed, 2009). Discriminatory behaviors include ignoring and rejecting individuals, social exclusion, stigmatization, demeaning behaviors, having lower expectations of the group that is perceived to be inferior, and allocating resources to the superior group (Brondolo et al., 2009; Williams & Mohammed, 2009).

Some scholars maintain that discrimination is a major source of stress for Black individuals in the US, and Black individuals report experiencing more discrimination than other racial groups (Clark et al., 1999; Salomon & Jagusztyn, 2008; Sellers et al., 2003; Wagner et al., 2016). According to the biopsychosocial model of perceived racism, perceptions of racism can activate psychological and physiological stress responses that negatively affect health (Clark et al., 1999). Experiencing significant amounts and prolonged experiences of discrimination is associated with heightened stress responses and negative health behaviors (Clark et al., 1999; Pascoe & Smart Richman, 2009). Consequently, perceived discrimination is associated with poor health outcomes (Pascoe & Smart Richman, 2009; Pieterse et al., 2012). Specifically, perceived discrimination is associated with poor physical health and health behaviors such as hypertension, substance use, poor physical functioning, greater stomachaches, headaches, sore throats, pain, and heart disease (Flores et al., 2008; Gee et al., 2007; Williams & Mohammed, 2009).

Numerous studies have assessed the association between racial discrimination and cardiovascular health. Based on a recent systematic review by Panza and colleagues (2019), while some studies have found no association between racial discrimination and markers of cardiovascular health (blood pressure, heart rate variability, and stress biomarkers), the vast majority have found a negative association. Studies utilizing cross-sectional (Beatty Moody et al., 2016) and experimental designs (Guyll et al., 2001), as well as randomized control trials (Blascovich et al., 2001) have found that perceived acts of racial discrimination are associated with higher blood pressure responses (Panza et al., 2019). Subtle displays of racial discrimination have also been found to elevate blood pressure (Merritt et al., 2006). Racial discrimination, assessed via a self-report questionnaire, is also negatively associated with heart rate variability, and more reports of racial discrimination are associated with higher levels of blood/saliva stress

biomarkers (Panza et al., 2019). There are also indications that long-term exposure to racial discrimination has a negative impact on cardiac health (Panza et al., 2019). Although multiple studies have found racial discrimination to be associated with poor cardiac health, there is still inconsistency in the data regarding the association between racial discrimination and cardiovascular health indicators.

Previous meta-analyses and reviews have concluded that the evidence supporting the association between racial discrimination and cardiovascular indicators is weak, mixed, or complex (Brondolo et al., 2011; Cuffee et al., 2012; Dolezsar et al., 2014; Lewis et al., 2014). Some studies found no significant association between racism and resting blood pressure, but a significant relationship between racism and ambulatory blood pressure (Brondolo et al., 2011; Dolezsar et al., 2014). Others have found different associations between discrimination and blood pressure depending on the type of discrimination being assessed. For example, interpersonal racism has been linked to ambulatory blood pressure, while forms of institutional racism have been inconsistently linked to hypertension prevalence and blood pressure levels (Brondolo et al., 2011). In addition, the association between racism and systolic and diastolic blood pressure were only significant for discrimination in institutional settings, with the stronger relationship being with ambulatory blood pressure (Dolezsar et al., 2014).

The relationship between racial discrimination and blood pressure is believed to be complicated because of the variety of factors that can influence the association such as coping, resources, sex, genetics, age, and education (Brondolo et al., 2011; Dolezsar et al., 2014; Lewis et al., 2014). As previously noted, type of racism and discrimination could also have an effect on the association between perceived discrimination and cardiovascular reactivity. Therefore, type of discrimination should be further dissected when assessing the association between perceived

discrimination and health to provide clarity. Some have suggested that internalization of racism and denial of discrimination are important factors to consider in the association between discrimination and cardiovascular health and could therefore provide some clarity to inconsistencies within the data (Chae et al., 2010; Chae et al., 2012). In a review of the literature until August 2010 no direct relationship between internalized racism and blood pressure existed, but data on this association was very limited at this time (Brondolo et al., 2011). However, in a 2020 review, internalized racism appears to negatively impact various mental and physical health outcomes (James, 2020). Therefore, a more thorough understanding of the association between internalized racism, perceived discrimination, and health is warranted. This is the purpose of the current study.

Definition and Development of Internal Racism

Racism can occur at the internal level (i.e., internalized racism; David et al., 2019). Furthermore, the conceptualization of internalized racism can entail the following levels: intrapersonal (e.g., "use of skin-whitening products"), interpersonal (e.g., "when Native Americans belittle other Native people for being 'too Native'"), and institutional (e.g., "when Peoples of Color equate 'looking professional' and 'respectable' to wearing suits and having short hair, and these become unquestioned practices in their families and businesses") (David et al., 2018 as cited in David et al., 2019, p. 1065).

Different terms have been used for the construct "internalized racism". For example, some utilize the terms colonial mentality, appropriated racial oppression, or internalized racial oppression (Campón & Carter, 2015; David & Okazaki, 2006; David et al., 2019; Fanon, 1963 as cited in James, 2020; Pyke, 2010). Colonial mentality refers to the various societal systems that were developed when colonists forcefully entered the Americas and created a superior/inferior

dichotomy based on race/ethnicity that allowed the colonizers to maintain power (Fanon, 1963 as cited in James, 2020). Consequently, the colonized often viewed themselves through the lens of the colonizer resulting in the development of a poor self-concept in the colonized (Fanon, 1963 as cited in James, 2020).

Regarding "appropriated racial oppression", it is argued that this term acknowledges that oppression is systemic and places less blame on the recipient of oppression than the term "internalized" (Campón & Carter, 2015; David et al., 2019; Tappan, 2006). Appropriation acknowledges learning from one's environment and "captures the multidimensional and complex nature of the process of the internalization of negative racial stereotypes in people of Color, as well as the sociocultural, psychological, and historical components of that process" (Campón & Carter, 2015, p. 498; Tappan, 2006). However, others propose that "appropriation" may not be the most suitable term as "appropriate is usually defined as taking something without permission from the owner" (David et al., 2019, p. 1071). Further, appropriate may not be a suitable term because appropriate is unidirectional in that the oppressor takes from the oppressed (David et al., 2019). In their systematic review, David and colleagues (2019) proposed that it is acceptable to use the term "internalized racism", if the conceptualization of this term includes the inherent role of racism and includes the components of "appropriated racial oppression" (David et al., 2019). Therefore, internalized racism is defined for the purposes of this study as a "form of racism that leads people to internalize (consciously, unconsciously) beliefs, values, and stereotypes (negative, positive) about their racial/ethnic group or about themselves because of their racial/ethnic group membership" (James, 2020, p. 18).

Early definitions of internalized racism emphasize that extended periods, even generations, of exposure to racism can lead members of oppressed and perceptually inferior

racial/ethnic groups to internalize negative perceptions about their own group and other oppressed and perceptually inferior racial/ethnic groups (David et al., 2019). Some members of racially/ethnically oppressed groups have been known to rationalize their inferior status in society (system justification theory), deny experiences of oppression, and accept their inferior status in a society, seeing the majority racial group as superior and desirable (David & Okazaki, 2006; David et al., 2019; Jost & Banaji, 1994). Therefore, internalized racism contributes to the maintenance of racism in a society (Pyke, 2010).

Importantly, some scholars argue that internalized racism is largely a result of living in a society wherein oppression and racism are embedded (David et al., 2019). Therefore, the oppressed does not merely accept negative beliefs about their race, but rather the development of internalized racism is a consequence of oppression. Some engage in internalized racism involuntarily or because it "may appear adaptive or positive at face value (e.g., assimilation 'looking professional' or 'respectable')" (David et al., 2019, p. 1067). Therefore, when conceptualizing internalized racism, one must consider the broader racial climate of society. Further, internalized racism is measured on a spectrum; therefore, there are individual differences in internalization of racism. This is likely because some are able to resist and cope to a greater degree than others. Some resist/cope with racism via social support, confrontation/suppression, identity-related coping, spirituality, and avoiding situations that could likely result in discrimination (Brondolo et al., 2009; Shorter-Gooden, 2004). Therefore, not all who experience a significant amount of discrimination have high levels of internalized racism because of their ability to resist and adequately cope.

Individual Differences in Internalized Racism

Higher levels of internalized racism have been associated with a variety of outcomes such as denial of racism, experiencing higher levels of racism, and negative ideologies and actions towards members of one's ethnic group (David & Okazaki, 2006; Graham et al., 2016; Neville et al., 2005). For example, color blindness (e.g., unawareness of institutional racism) has been positively associated with internalized oppression and justification of social roles while internalized racism has been positively associated with experiences of racist events (Graham et al., 2016; Neville et al., 2005). Further, individuals who adhere to a "colonial mentality" have reported engaging in discrimination against those of their ethnic group who are less Americanized (David & Okazaki, 2006).

Internalization of racism and perceptions of racial discrimination can affect the degree to which racial discrimination impacts cardiovascular health in Black men (Chae et al., 2010; Chae et al., 2012). Specifically, the number of experiences of discrimination impacts the degree to which internalized racism is associated with cardiovascular health (Chae et al., 2010). For example, for Black men who reported low negative racial group attitudes, experiencing two discriminatory events was associated with worse health than those reporting three or more discriminatory events, followed by those who reported experiencing no discriminatory events (Chae et al., 2010). However, the opposite was found for Black men with higher levels of internalized racism (Chae et al., 2010). Specifically, for Black men with higher levels of internalized racism, two discriminatory events were associated with better cardiovascular health than those reporting three or more discriminatory events, followed by those who reported experiencing no discriminatory events (Chae et al., 2010). Further, reporting higher levels of internalized racism and denying experiencing discrimination have been associated with poorer

cardiovascular health (Chae et al., 2010). However, another study found that African American men with an anti-Black bias who reported higher levels of discrimination had poorer cardiovascular health than African American men with a pro-Black bias who also reported higher levels of discrimination (Chae et al., 2012). These data warrant further exploration of internalization of racism in understanding health disparities within the Black racial group and unpacking the association between discrimination and health. Specifically, the degree to which one reports internalized racism seems to influence whether and to what degree experiences of racial discrimination are associated with unfavorable health.

This assertion is corroborated by recent reviews that have emphasized that internalized racism is an important construct to assess when attempting to understand the experience of racism in the US and the association between race and health (David et al., 2019; James, 2020). James (2020) provided a review of articles from 1990 to 2018 that assessed the association between internalized racism and health in racial/ethnic minority populations. This review found that the majority of the literature indicates that internalized racism has a negative impact on various mental and physical health outcomes (James, 2020). However, some evidence suggests that internalized racism can be protective against the development of negative health outcomes, but the mechanisms through which internalized racism is protective are unclear (James, 2020). It was also found that internalized racism mediates the relationship between discrimination and health, but further exploration of the mechanisms impacting this association is needed (James, 2020). Overall, it was concluded that despite internalized racism being an important construct to assess, internalized racism remains understudied, especially regarding its impact on physical health (James, 2020). Given that further understanding of internalized racism is needed, assessing the effect of discrimination and internalized racism on health is imperative.

Autonomic Nervous System: The Physiological Internalization of Racism

As previously mentioned, experiences of racism and discrimination can result in increases in stress perception and allostatic load causing physiological dysregulation (Allen et al., 2019; Clark et al., 1999). These activated physiological systems in turn increase blood pressure and heart rate, which has a negative impact on cardiovascular health (Pascoe & Smart Richman, 2009). The major physiological system linking racial discrimination and chronic stress to cardiovascular health is through the autonomic nervous system (ANS).

The ANS has a significant impact on heart rate and functioning, and imbalance or loss of flexibility in the ANS is associated with the development of a variety of physical illnesses (Acharya et al., 2006; Thayer et al., 2012; Thayer et al., 2009; Thayer & Sternberg, 2006). The ANS consists of the parasympathetic and sympathetic nervous system branches and these branches play a balancing act in the regulation of heart rate (Acharya et al., 2006; Thayer et al., 2009). This flexibility in heart function is critical to an individual's health and ability to interact with the world.

Specifically, the activity of the two branches responds to perceived changes in the environment (Thayer et al., 2009). For example, when one encounters a scenario in their environment that requires an energetic response, like a stressful event, the sympathetic nervous system's activity increases while the parasympathetic system withdraws (Thayer et al., 2009). If an environmental scenario permits an individual to resume a state of rest, the parasympathetic system resumes dominance, resulting in decreased sympathetic system activity (Thayer et al., 2009). Consequently, when the sympathetic nervous system is activated heart rate increases, while heart rate decreases when the parasympathetic system is activated (Acharya et al., 2006; Thayer et al., 2012). Autonomic imbalance is indicated by a hyperactive sympathetic nervous

system for an extended period, while the parasympathetic is simultaneously hypoactive, resulting in poorer health outcomes (Thayer & Sternburg, 2006).

Heart rate variability (HRV) is an indicator of the functioning and balance of the branches of the ANS and is a popular indicator of cardiac health (Acharya et al., 2006; Thayer et al., 2012) and is defined as "the variation over time of the period between consecutive heartbeats" (Acharya et al., 2006, p. 1031). Higher variability indicates that an organism's bodily systems are able to adequately adapt to changes in the environment and is an indicator of good health (Sturmberg et al., 2015). Lower physiological flexibility, i.e., HRV, is associated with poor health outcomes and indicates dysfunction in the organism's ability to adapt to a changing environment (Sturmberg et al., 2015). Loss of variability or rigid physiological functioning has been linked to certain diseases, health risks for developing chronic diseases, and aging in healthy individuals (Antelmi et al., 2004; Sturmberg et al., 2015).

Negative associations have been found between resting HRV and racial discrimination (Hill et al., 2015; Hill et al., 2017; Williams et al., 2019). Further, previous studies have found that African Americans experience an increase in heart rate and a decrease in HRV when exposed to both a general stressor and a racially discriminatory stressor (Dorr et al., 2007; Neblett & Roberts, 2013; Wagner et al., 2015). One study found that when exposed to a racial stressor, African American women had increased HRV when the perpetrator was African American compared to when the perpetrator was a European American (Hoggard et al., 2015). Interestingly, this study also found that African American women experienced an increase in HRV when the perpetrator of a racist scenario was African American (Hoggard et al., 2015). There is no concrete explanation to this interesting finding. Notably, in a sample of African American and European American women, racial discrimination was associated with

parasympathetic reactivity (high-frequency HRV) and not sympathetic reactivity (norepinephrine and cortisol; Wagner et al., 2015).

Other studies also using measures of HRV indicative of parasympathetic activity (high frequency and root mean square of successive differences [RMSSD]) found that exposure to a racial scenario was indicative of parasympathetic withdrawal which is a risk factor for developing illness (Dorr et al., 2007; Hoggard et al., 2015). Further, in a sample of women with diabetes there was no racial difference between African American women and European American women in HRV reactivity to a non-race based stressor (Wagner et al., 2015). However, in a sample of college men, African Americans had lower HRV reactivity to a race based and non-race based stressor compared to European American men (Dorr et al., 2007). This association was particularly noteworthy in males who expressed their anger as opposed to inhibiting their anger (Dorr et al., 2007).

In summation, exposure to non-race based stress and discrimination can be associated with lower/decreased HRV, especially HRV measures associated with parasympathetic activity (Dorr et al., 2007; Hill et al., 2017; Neblett & Roberts, 2013; Wagner et al., 2015; Williams et al., 2019). However, most of the aforementioned studies were conducted in primarily or exclusively African American samples. When comparing Black and White individuals, there are racial differences in HRV reactivity to a stressor that is discriminatory with Black individuals experiencing poorer physiological reactivity (Dorr et al., 2007). Given that Black individuals report experiencing more racial discrimination than White individuals, their poorer physiological response to discrimination could be a strong contributing factor to their poorer health outcomes. While previous studies primarily consist of African Americans and European Americans, there are currently no studies assessing differences in perceived discrimination reactivity among Black

individuals. Assessing differences in perceived discrimination reactivity to discrimination among Black persons could provide insight as to how sociocultural factors contribute to poorer health outcomes.

Theoretical Framework: Racial Context of Origin

Studying the heterogeneity of internalized racism, perceived discrimination, and psychological responses to discriminatory stressors among Black individuals via the racial context of origin theoretical framework could provide insight into racial health disparities in the US. The racial context of origin theory posits that Black individuals from countries wherein they are the majority race (e.g., sub-Saharan African and Caribbean countries) exhibit better health outcomes than Black individuals from countries wherein they are the minority race (e.g., the US, European countries; Read & Emerson, 2005). It is proposed that this difference in health outcomes is largely due to differences in exposure to discrimination as exposure to discrimination is associated with poorer health outcomes (Read & Emerson, 2005). Specifically, Black individuals from countries wherein they are the minority race, experience more discrimination than Black individuals from countries wherein they are the majority race (Read & Emerson, 2005). Therefore, racial context of origin is proposed to be an important factor to consider when studying differences in health among Black individuals.

Black individuals from societies wherein they are part of the majority racial group and racially mixed societies have better self-reported health status, less activity limitations, and fewer limitations due to hypertension than Black individuals from countries wherein they are the minority race (Read & Emerson, 2005). These differences persist even when considering factors such as “duration of US residency, marital status, gender, and age” (Read & Emerson, 2005, p. 191). Black individuals born in Canada or Europe also have more physical care and personal care

limitations than Black immigrants from Africa and the Caribbean after adjusting for sociodemographic characteristics and similar personal care limitations to US-born Black individuals (Elo et al., 2011). US-born Black individuals are also more likely to have higher allostatic load than foreign-born Black individuals (Doamekpor & Dinwiddie, 2015). Given that foreign-born black individuals living in the US report better health than US-born Black individuals, sociocultural factors may impact the health of Black individuals in the US (Elo et al., 2011; Ford et al., 2016; Read & Emerson, 2005).

There are other factors that could also be impacting health risk within the Black racial group (e.g., culture, acculturation, socioeconomic differences for immigrants pre and post migration, the immigrant selectivity theory, and country of origin characteristics such as, proportion of educated children in home country, income equality of home country, and life expectancy at birth; Cho et al., 2004; Hamilton, 2014; Landale et al., 1999). The immigrant selectivity theory posits that those who are physically and mentally healthy, with strong motivation, resourcefulness, and social capital are most likely to undertake and succeed during the migration process (Cho et al., 2004; Landale et al., 1999). Also, recent immigrants are still heavily influenced by the cultural practices of their country of origin which likely favor more positive health behaviors than US culture (cultural buffering hypothesis; Cho et al. 2004; Landale et al., 1999). Therefore, recent immigrants typically have better health than those who are born in the US. Of note, the health of recent immigrants decreases over time as they assimilate into American culture (negative acculturation theory; Cho et al., 2004; Landale et al., 1999; Read & Emerson, 2005).

Although the selectivity theory provides some explanation for health differences between US-born and foreign-born Black individuals, the addition of the racial context of origin may

provide a more complete explanation for some findings (Read & Emerson, 2005). Specifically, foreign-born Black individuals from minority White countries (e.g., African countries) have better self-reported health and fewer physical limitations than US-born Black individuals which supports the selectivity theory (Read & Emerson, 2005). However, foreign-born Black individuals from majority White countries have similar health to US-born Black individuals which does not support the selectivity theory, but rather supports the racial context of origin theory (Read & Emerson, 2005). Further, while country of origin characteristics provide some explanation for nativity differences in health, racial context of origin is still an important factor to consider when examining health differences (Hamilton, 2014). After controlling for country of origin characteristics in Black immigrants, immigrants from countries in Africa had the best health, then immigrants from South America and the Caribbean, then immigrants from Central America, and immigrants from Europe had the worst health (Hamilton, 2014). Therefore, racial context of origin seems to be a promising avenue for understanding health disparities among Black individuals broadly.

Studies have looked specifically at how the prevalence in indicators of cardiovascular risk vary depending on country of origin. For example, a recent study using a large sample of African Americans and immigrants from countries in Africa living in the US from the National Health Interviews Survey found that immigrants from countries in Africa have lower rates of hypertension, diabetes, obesity, high cholesterol, and current tobacco smoking compared to African Americans (Turkson-Ocran et al., 2020). Another study examined vascular reactivity and carotid intima media thickness as measures of cardiovascular health (Kalra et al., 2006); compared to White individuals in the United Kingdom, Black Caribbeans in the United Kingdom had worse cardiovascular health, while Black individuals living in Jamaica had better

cardiovascular health than White individuals (Kalra et al., 2006). These data indicate that Black individuals from or living in countries wherein they are the majority race have better cardiovascular health than Black individuals from or living in countries wherein they are the minority race.

Other studies looked specifically at how blood pressure and hypertension rates vary depending on country of origin. Specifically, rates of hypertension were higher in US-born Black individuals, followed by people from countries in West Africa (Nigeria and Cameroon), and then individuals living in the Caribbean (Jamaica, St. Lucia, and Barbados; Cooper et al., 1997). Furthermore, foreign-born Black individuals (origin not specified) had significantly lower systolic blood pressure, yet similar diastolic blood pressure, compared to US-born Black individuals, but only in those less than 65 years old (Brown et al., 2017). Similar results were observed in Black immigrants in larger European cities; Ghanaian men who migrated to European cities (Amsterdam, Berlin, and London) had higher rates of hypertension than Ghanaian men living in rural and urban Ghana (Agyemang et al., 2018). These studies further highlight that Black persons from or living in countries where they are the majority race have better health than Black persons from or living in countries where they are the minority race.

The longer Black individuals from foreign countries have lived in the US, the worse their health outcomes (Borrell et al., 2008; Doamekpor & Dinwiddie, 2015; Elo et al., 2011; Fryar et al., 2020; Read & Emerson, 2005). One explanation for this finding is the longer that Black individuals have lived in the US, the more stress they experience due to their racial minority status and exposure to racial discrimination, which then leads to negative health outcomes (Read & Emerson, 2005). Per the racial context of origin theory, Black individuals from minority

White countries have similar health to US-born Black individuals because they likely had similar discriminatory experiences in their country of origin (Read & Emerson, 2005).

Psychological Mechanisms Driving Racial Context of Origin Differences

There is evidence that racial context of origin may alter perceptions and subsequent psychological responses to racial discrimination. For example, although foreign-born Black individuals endorse experiencing a significant amount of discrimination due to their race, foreign-born Black individuals often report experiencing less discrimination than US-born Black individuals (Dominguez et al., 2009; Taylor et al., 2019; Hunter, 2008; Waters, 1994). Qualitative data revealed that despite recent Black immigrant students reporting that they do not pay attention to race and do not become distracted by racial issues in the US, they do internalize the potential effect of race in some scenarios (Fries-Britt et al., 2014). Therefore, although recent Black immigrants appear to be affected by race and racial discrimination, their perception of racial discrimination and its significance differs from Black individuals born in the US. This study will also explore factors that may be contributing to differences in internalized racism on physical health by racial context of origin as the underlying causes are currently unknown.

Interestingly, some foreign-born Black individuals report they use their racial minority status in the US as motivation to excel academically (Fries-Britt et al., 2014). Perhaps for this reason, stereotype threat has a differential impact on performance on tests examining intellectual ability based on ethnicity within the Black racial group. When exposed to stereotype threat, first-generation students identified as West Indian performed better whereas African American students performed worse than in neutral conditions (Deaux et al., 2007; Johnson-Ahorlu, 2013; Taylor & Walton, 2011). These data indicate that exposure to stereotypes or other forms of discrimination impacts scholastic performance differently depending on ethnicity. As noted in

the findings by Fries-Britt and colleagues (2014) perhaps discriminatory experiences are utilized as motivation to succeed which could explain these differential effects. For the present study, motivation to succeed is conceptualized as awareness of racial identity and racial discrimination providing motivation to perform well.

In addition to foreign-born Black individuals being more likely to use experiences of discrimination and exposure to stereotypes as motivation to succeed than US-born Black individuals, some earlier literature indicates that Black Americans are likely to perceive less opportunity for Black individuals, while "ethnic West Indians" are more likely to see opportunity in the US (Waters, 1994). Therefore, it is worth exploring whether belief in meritocracy may also explain differences in internalized racism on physical health. Attributing inequalities to structural systems rather than individual capabilities has been associated with higher perceptions of discrimination and belief in meritocracy is proposed to have a negative impact on the health of disadvantaged groups (Kwate & Meyer, 2010; Versey & Curtin, 2016). These data warrant exploring whether belief in meritocracy can explain a differential impact of internalized racism on physical health. In the context of the present study, belief in meritocracy is conceptualized as the belief that racial minority status does not serve as a hindrance to success as a racial minority can be successful if they put in work and effort.

Foreign-born Black individuals have reported feeling "disconnected to the US context of racial issues" despite experiencing racism and discrimination (Constantine et al., 2005; Fries-Britt et al., 2014, p.4). Plausible explanations for the feeling of being "disconnected" from the US racial climate are foreign-born Black individuals having lower shared racial fate and connection and belonging to African Americans or the Black racial group broadly. Although connection and belonging to African Americans can have positive psychological effects for

foreign-born and US-born Black individuals (Hunter et al., 2017). Further, shared racial fate may lead to lower perceptions of discrimination (Benson, 2006). One study found that shared racial fate was not associated with depression or race-related stress (Hunter et al., 2017). The impact of shared racial fate as a moderator for physical health outcomes is novel and should be further studied. Connection and belonging to the Black racial group can be defined as feelings of closeness with African Americans (Hunter et al., 2017). Shared racial fate is defined as perceptions of commonality in the way racial group members are treated in society and highlights the perception that individuals hold regarding their treatment in the US as a member of a racial group (Hunter et al., 2017).

As previously noted, foreign-born Black individuals tend to perceive less discrimination than US-born Black individuals, therefore foreign-born Black individuals likely will self-report that they are less reactive (psychologically, physiologically, emotionally, and cognitively) to racial discrimination. However, although the data are mixed, there is indication that exposure to discrimination results in physiological activation amongst stigmatized groups (Panza et al., 2019). Further, the biopsychosocial model of racism posits that discrimination is perceived as a stressor and therefore activates stress responses (Clark et al., 1999). Members of racial minority groups who experience general stress and stress due to racial or ethnic discrimination are more likely to develop poor physical and mental health (Flores et al., 2008). Therefore, although foreign-born Black individuals self-report experiencing less discrimination than US-born Black individuals, it is plausible to assume they are responding to discriminatory stressors although not as strongly as African Americans because they are less likely to perceive a race-based stressor as discriminatory. This hypothesis is being tested in the current study.

Similar to perceptions of racial discrimination, the significance of internalized racism differs depending on country of origin. Specifically, high levels of internalized racism in foreign-born Black individuals may be a protective strategy against the development of poor mental health (Molina & James, 2016). Interestingly, higher levels of internalized racism were associated with decreased risk for depression in Afro-Caribbean, but not African American participants (Molina & James, 2016). The authors posit that for Afro-Caribbean participants, endorsement of group biases may result in protection of self-concept rather than internalization, which is then protective against the risk of developing poor mental health (Molina & James, 2016). Further, for US-born African Americans and Caribbean Americans, internalized racism had a stronger positive association with poorer mental health than foreign-born Black individuals from the Caribbean (Mouzon & McLean, 2017). Therefore, internalized racism seems to have a differential effect on mental health depending on nativity status. Given that there are differences in how foreign- and native-born Black individuals perceive their experience of race and racism in the US, internalized racism appears to differentially alter mental health depending on country of origin. Thus, racial context of origin is an important factor to consider when exploring determinants of racial health disparities and the heterogeneity of their manifestation across Black sub-populations. Furthermore, internalized racism has a negative impact on physical and mental health outcomes, therefore exploration of the intersection of country of origin and internalized racism on physical health outcomes is needed (Gale et al., 2020).

Proposed Study

There are inconsistencies regarding whether internalized racism is detrimental or self-protective against the development of poor health (James, 2020). Further, there is a lack of data assessing the association between internalized racism and physical health (James, 2020).

Differences in racial context of origin may alter the effect of internalized racism on mental health and perceptions of race and discrimination (Fries-Britt et al., 2014; Mouzon & McLean, 2017). Therefore, this study assesses the effect of discrimination and internalized racism on general health outcomes and perceived discrimination reactivity as well as whether these associations differ by countries of origin. If there are differences in racial context of origin between the association of internalized racism and physical health, then several factors (motivation to succeed, belief in meritocracy, connection and belonging to the Black racial group, and shared racial fate) will be assessed to determine potential explanations for the difference in association.

Aims of the Proposed Study

The aim of the study is to use self-report data to determine whether internalized racism and discrimination differentially impact self-reported physical health and discrimination reactivity by racial context of origin. The second aim of the study is to determine if motivation to succeed, belief in meritocracy, connection and belonging to the Black racial group, and shared racial fate can explain a differential impact of racial context of origin on internalized racism and self-reported physical health.

Hypotheses

Hypothesis 1

The association between internalized racism and physical health outcomes will differ depending on racial context of origin. Specifically, higher internalized racism will have a stronger association with poorer physical health outcomes for US-born Black individuals than foreign-born Black individuals. See Figure 2 for hypothesized results.

Rationale: Internalized racism has a stronger association with poorer mental health in US-born Black individuals than foreign-born Black individuals and internalized racism is

potentially self-protective for foreign-born Black individuals against the development of poor mental health (Molina & James, 2016; Mouzon & McLean, 2017). Therefore, it is predicted that the association between internalized racism and physical health will be stronger for US-born Black individuals.

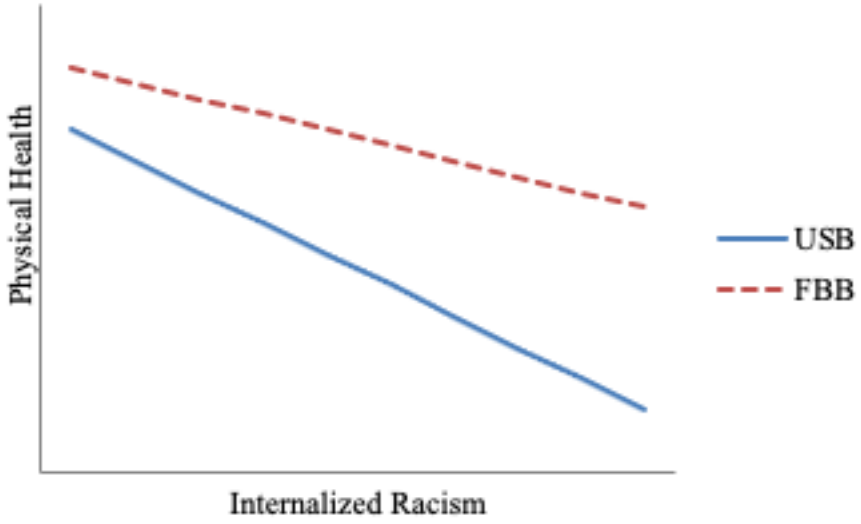

Figure 2. Proposed results for hypothesis 1. USB = US-born Black individuals. FBB = Foreign-born Black individuals. The hypothesized interaction between country of origin and internalized racism on physical health.

Hypothesis 2

There will be a significant interaction between perceived discrimination and internalized racism on self-reported physical health. Specifically, lower levels of discrimination and higher levels of internalized racism will be associated with poorer physical health outcomes than higher levels of discrimination and lower levels of internalized racism. The interaction will be stronger in US-born Black individuals than foreign-born Black individuals. See Figure 3 for hypothesized results.

Rationale: Denial of perceived discrimination and high levels of internalized racism are associated with poorer cardiovascular health in Black individuals and a pro-Black bias may have

a buffering effect on the development of poor physical health outcomes (Chae et al., 2010; Chae et al., 2012). Foreign-born Black individuals report feeling disconnected from race issues in the US and use their racial minority status as motivation to perform well academically (Fries-Brit et al., 2014). Further, internalized racism has a stronger negative effect on the mental health of US-born Black individuals than foreign-born Black individuals (Molina & James, 2016; Mouzon & McLean, 2017). Therefore, the interaction is expected to be stronger for US-born Black individuals than foreign-born Black individuals.

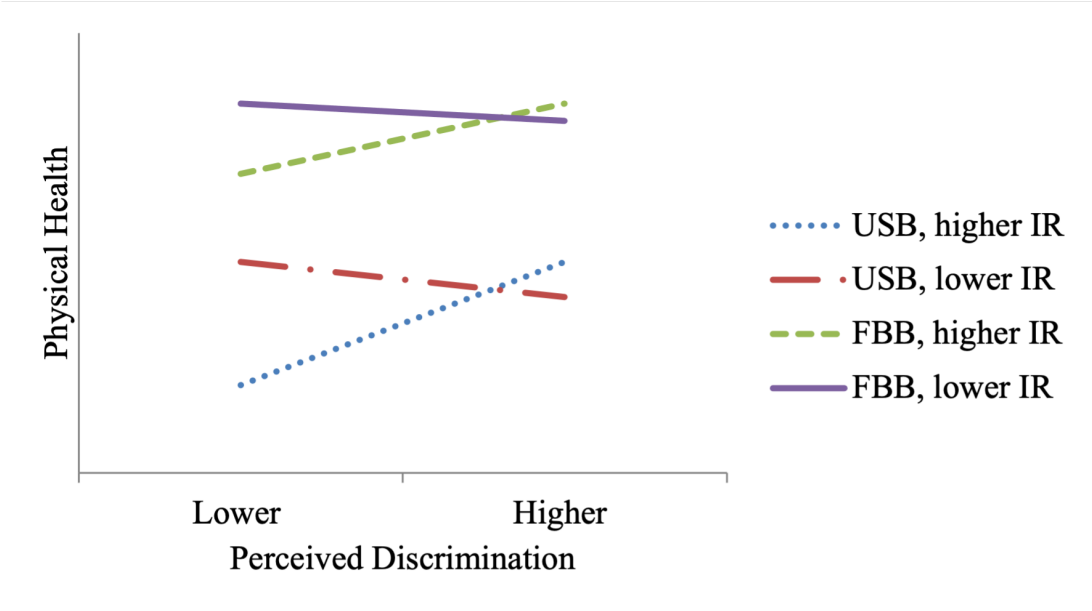

Figure 3. Proposed results for hypothesis 2. USB = US-born Black individuals. FBB = Foreign-born Black individuals. IR = Internalized racism. A hypothesized three-way interaction among country of origin, perceived discrimination and internalized racism on physical health.

Hypothesis 3

Lower levels of discrimination and higher levels of internalized racism will be associated with higher discrimination reactivity than higher levels of discrimination and lower levels of internalized racism. This interaction will be stronger in US-born Black individuals than foreign-born Black individuals. See Figure 4 for hypothesized results.

Rationale: Denial of perceived discrimination and high levels of internalized racism are associated with poorer cardiovascular health (Chae et al., 2010). African Americans have poorer health than recent African immigrants (Elo et al., 2011; Ford et al., 2016; Mehta et al., 2015; Read & Emerson, 2005). Discrimination is a strong contributor to poor health outcomes and one theory as to why African Americans have poorer health than recent Black immigrants is due to more lifetime exposure to discrimination and therefore more reactivity to discrimination. The biopsychosocial model of racism posits that discrimination is perceived as a stressor and therefore, elicits psychological and physiological reactions that activate stress responses thus explaining why exposure to discrimination contributes to poor health outcomes (Clark et al., 1999). If African Americans are perceiving higher rates of discrimination, then it is plausible to assume that they are also reacting to these experiences of discrimination, thereby resulting in poor health outcomes. Recent Black immigrants perceive less discrimination and have a more optimistic response to racial discrimination than African Americans. Therefore, it is predicted that US-born Black individuals will report more discrimination reactivity and the reaction will be stronger for US-born Black individuals than foreign-born Black individuals.

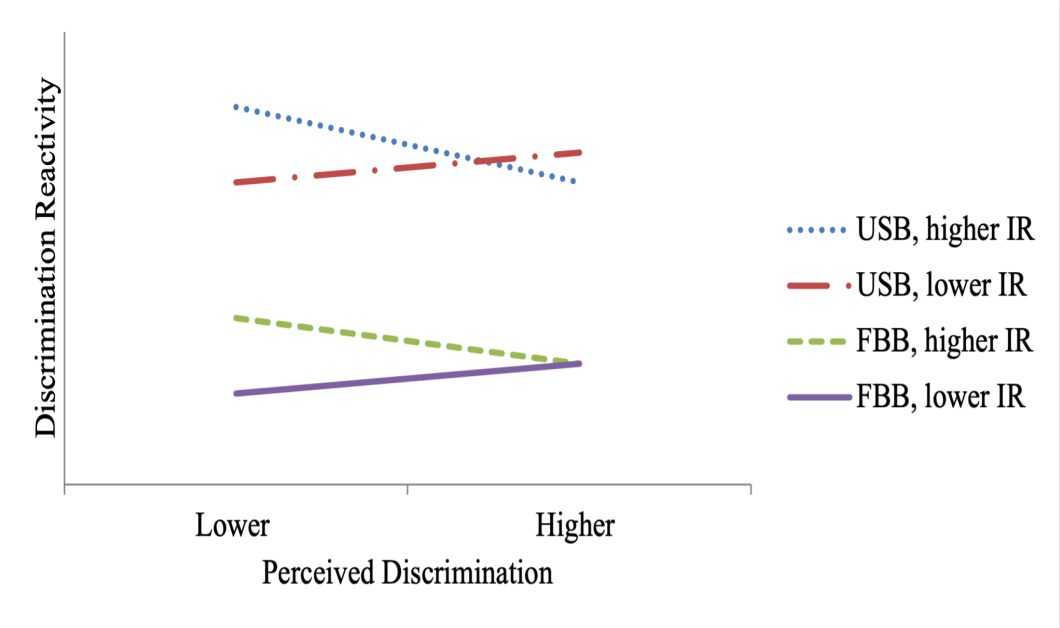

Figure 4. Proposed results for hypothesis 3. USB = US-born Black individuals. FBB = Foreign-born Black individuals. IR = Internalized racism. A hypothesized three-way interaction among country of origin, perceived discrimination, and internalized racism on discrimination reactivity.

Hypothesis 4

Internalized racism will predict change in self-reported physical health through motivation to succeed and the effect will be significant for foreign-born Black individuals, but not US-born Black individuals. For foreign-born Black individuals, internalized racism will be negatively associated with motivation to succeed which will in turn be positively associated with self-reported physical health. Therefore, motivation to succeed will explain why the association between internalized racism and self-reported physical health is lower for foreign-born Black individuals. See Figure 5 for hypothesized results.

Rationale: Foreign-born Black individuals report that experiences of racism and discrimination provide them with motivation to succeed academically (Fries-Britt et al., 2014). Whereas literature on stereotype threat indicates that US-born Black individuals are negatively

impacted by experiences of racism and discrimination (Johnson-Ahorlu, 2013; Taylor & Walton, 2011). Furthermore, when exposed to stereotype threat the intellectual performance of first-generation Black individuals identified as West Indian improved (Deaux et al., 2007). Therefore, it is expected that motivation to succeed will be influential on the health outcomes associated with internalized racism for foreign-born Black individuals, but not US-born Black individuals. Motivation to succeed will help explain why internalized racism is not as detrimental to the health of foreign-born Black individuals as US-born Black individuals.

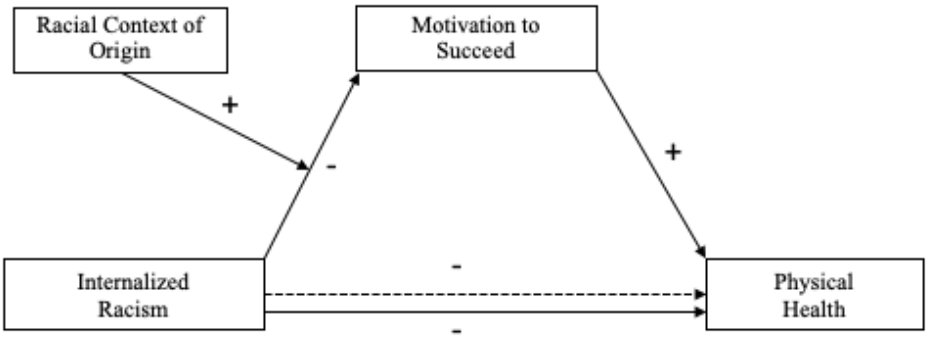

Figure 5. The figure depicts the proposed hypothesis. 0 = US-Born. 1 = Foreign-born. Dashed line indicates the indirect effect.

Hypothesis 5

Internalized racism will predict change in self-reported physical health through belief in meritocracy and the effect will be opposite for foreign-born Black individuals and US-born Black individuals. For both groups, internalized racism will be negatively associated with belief in meritocracy which will in turn be negatively associated with higher self-reported physical health for US-born Black individuals and positively associated with self-reported physical health for foreign-born Black individuals. See Figure 6 for hypothesized results.

Rationale. Black Americans are less likely to perceive opportunity in the US than Black individuals that identify as ethnic groups from countries wherein Black individuals are the majority race (Waters, 1994). Further, others have proposed that belief in meritocracy may be damaging to those from disadvantaged groups (Kwate & Meyer, 2010). Since African American individuals are less likely to perceive that they have opportunities and are potentially negatively impacted by believing in meritocracy, it is expected that belief in meritocracy will be more influential on negative health outcomes associated with internalized racism for US-born Black individuals than foreign-born Black individuals who are more likely to see opportunity.

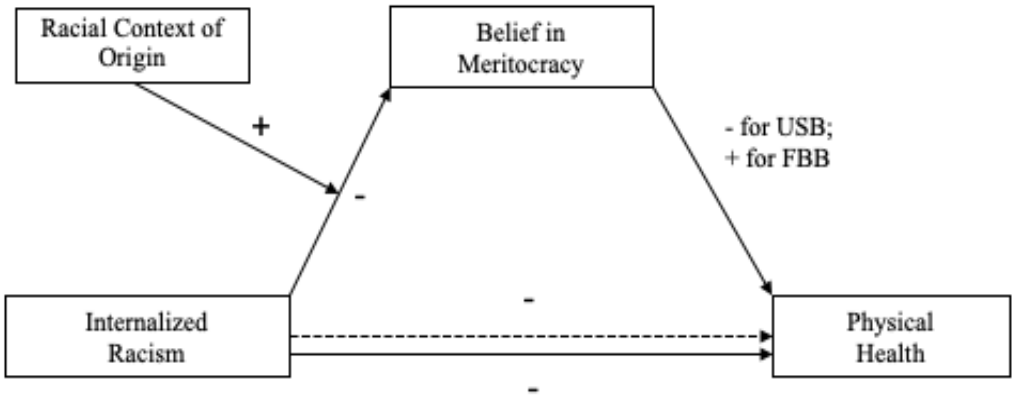

Figure 6. The figure depicts the proposed hypothesis. 0 = US Born. 1 = Foreign born. Dashed line indicates the indirect effect.

Hypothesis 6

Internalized racism will predict change in self-reported physical health through connection and belonging to the Black racial group and the effect will be stronger for US-born Black individuals than foreign-born Black individuals. For both groups internalized racism will be negatively associated with higher connection and belonging to the Black racial group which

will in turn be positively associated with self-reported physical health. See Figure 7 for hypothesized results.

Rationale: Connection and belonging to the Black racial group in the US is beneficial psychologically for foreign-born Black individuals and African Americans (Hunter et al., 2017). Given that African Americans are more likely to be socialized to associate with the Black racial group than Black individuals from countries wherein Black individuals are part of the majority racial group, it is predicted that the indirect effect of connection and belonging will be stronger for US-born Black individuals.

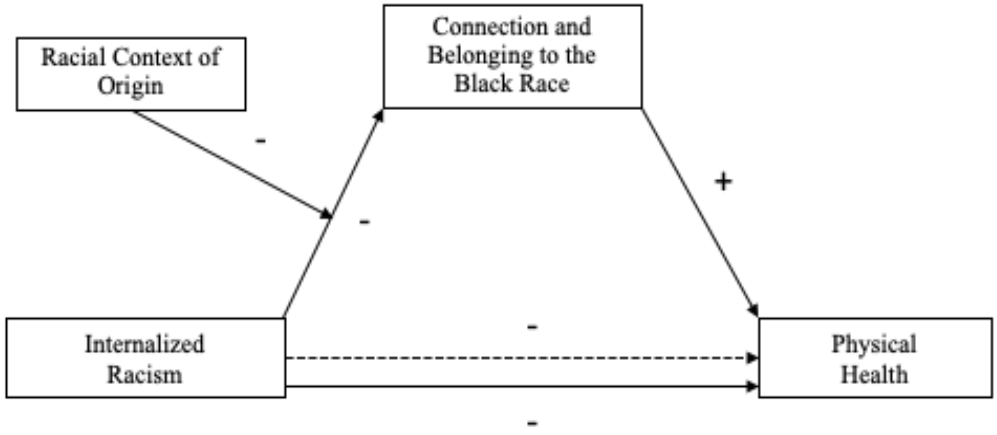

Figure 7. The figure depicts the proposed hypothesis. 0 = US Born. 1 = Foreign born. Dashed line indicates the indirect effect.

Hypothesis 7

Internalized racism will predict change in self-reported physical health through shared racial fate and the effect will be stronger for US-born Black individuals than foreign-born Black individuals. For both groups internalized racism will be negatively associated with higher shared racial fate which will in turn be negatively associated with higher self-reported physical health. See Figure 8 for hypothesized results.

Rationale: Shared racial fate has been associated with lower reports of discrimination, but has also been found to not be associated with race-related stress or depression symptoms (Benson, 2006; Hunter et al., 2017). This construct has not been studied in the context of physical health. Given that African Americans report experiencing more racial discrimination than foreign-born Black individuals, it is predicted that the indirect effect of shared racial fate will be stronger for US-born Black individuals.

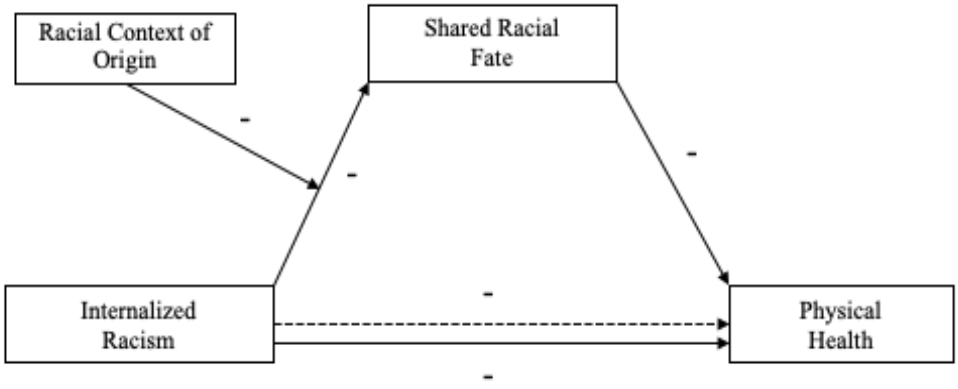

Figure 8. The figure depicts the proposed hypothesis. 0 = US Born. 1 = Foreign born. Dashed line indicates the indirect effect.

CHAPTER 2: METHOD

Participants

Participants (N = 160) included 80 US-born Black individuals and 80 foreign-born Black individuals. African Americans (US-born Black individuals) were classified as individuals who 1) were born and spent more than half of their lives in the US and 2) whose parents and grandparents were born and raised in the US. Foreign-born Black individuals were defined as individuals who lived less than half of their lives in the US. Foreign-born Black individuals from countries in Africa (e.g., Ghana and Nigeria) and English-speaking Caribbean countries (e.g., Barbados, The Bahamas) must have been born and raised in these respective countries and their parents and grandparents must have been born and raised in the same racial context. Inclusion criteria entailed being 18 years of age or older and individuals who self-identified as Black and/or African American or as someone who recently moved to the US from sub-Saharan African countries (e.g., Ghana, Nigeria) or English-speaking Caribbean countries (e.g., Barbados, The Bahamas).

Ages for the entire sample ranged from 18 to 36 (M = 23.61, SD = 4.51): US-born Black individuals (M = 21.49, SD = 4.02) and foreign-born Black individuals (M = 25.74, SD = 3.95). Majority of the sample identified as male (n = 89; 55.6%): US-born Black individuals (n = 32; 40.0%) and foreign-born Black individuals (n = 57; 71.3%). The majority of the sample were current college students (n = 106; 66.3%): US-born Black individuals (n = 72; 90%) and foreign-born Black individuals (n = 34; 42.5%), while a minority were current HBCU students (n = 19; 11.9%): US-born Black individuals (n = 2; 2.5%) and foreign-born Black individuals (n = 17; 21.3%).

Procedures

The study was completed online. Participants were recruited via the Department of Psychological Science's Sona Systems at the University of North Carolina, Charlotte (UNCC); university-wide email recruitment at UNCC through the AURA group in Research & Economic Development for those who reported being Black or African American; fliers posted and distributed at restaurants and businesses in the community that are heavily frequented by Black immigrants; a social media profile was created and shared on Instagram; the recruitment email was sent to college and university organizations that cater to African and Caribbean students primarily in the South and Southeast US; the international studies department at various universities on the East Coast were contacted to request they distribute the recruitment information to their students from the countries of interest; and snowball sampling.

Potential participants were provided a brief description of the study, the researcher's contact information, and a link or QR code to access the study. The link led to an electronic informed consent and the online survey administered via Qualtrics.com. The survey included demographic information, and questionnaires including key constructs of interest, perceptions of discrimination, discrimination reactivity, internalized racism, and physical health. The survey for participants recruited outside of Sona also contained screening questions to ensure eligibility. Sona participants received one research credit and participants that were not recruited via Sona initially received a $10 Amazon gift card. However, to increase recruitment, a $15 Amazon gift card was later offered as incentive for completing the study. Finally, they were debriefed, provided information on mental health support resources, thanked, and compensated for their time. The survey took about one hour.

Self-Report Measures

Perceived Discrimination

Perceived discrimination was measured using the Brief Perceived Ethnic Discrimination Questionnaire – Community Version (PEDQ-CV; Brondolo et al., 2005). The Brief PEDQ-CV is the 17-item version of the 34-item Lifetime Exposure scale of the full PEDQ-CV. The full PEDQ-CV was adapted from the Perceived Ethnic Discrimination Scale (Contrada et al., 2001) and is applicable to different racial/ethnic minority groups. The Brief PEDQ-CV is a self-report measure that uses a 5-point Likert-type scale from 1 (*never happened*) to 5 (*happened very often*). The prompt for this measure is "Because of your ethnicity/race how often…" and is followed by items that assess mistreatment such as "have others ignored you or not paid attention to you" and "have others threatened to damage your property". The Brief PEDQ-CV has the following subscales: exclusion/rejection, stigmatization/disvaluation, discrimination at work/school, and threat/aggression. Higher scores are related to higher frequencies of discrimination. The Brief PEDQ-CV has good construct validity and the subscales have acceptable to good internal consistency in community and student samples (α = .65 to .88; Brondolo et al., 2005). This scale had excellent reliability in this sample (whole sample: α = .94; USB: α = .93; FBB: α = .93). See Appendix A for the items that comprise this measure.

Internalized Racism

Internalized racism was measured using the Appropriated Racial Oppression Scale (AROS; Campón & Carter, 2015). This scale "assesses beliefs, attitudes, and emotional reactions of appropriated racial oppression" and is applicable to people of Color (Campón & Carter, 2015, p. 502). The AROS is a 24-item self-report measure that utilizes a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The items are summed to calculate a

score for the subscales and a total score. Higher scores indicate higher levels of appropriated racial oppression. The AROS has the following subscales: Emotional Reactions (7 items; α = .83), American Standards of Beauty (6 items; α = .85), Devaluation of Own Group (8 items; α = .86), and Patterns of Thinking (3 items; α = .70). Example items from the subscales are as follows: Emotional Responses (e.g., "I wish I could have more respect for my racial group"), American Standard of Beauty (e.g., "I prefer my children not to have broad noses"), Devaluation of Own Group (e.g., "Because of my race, I feel useless at times"), and Patterns of Thinking (e.g., "People take racial jokes too seriously"). The scale has good predictive (anxiety α = .88; depression α = .92) and criterion validity (subscales of the Color-Blind Racial Attitude Scale α = .73 to .79; subscales of Collective Self-Esteem Scale α = .74 to .86). This scale had excellent reliability in this sample (whole sample: α = .96; USB: α = .93; FBB: α = .96). See Appendix B for the items that comprise this measure.

Physical Health

Physical health was measured using the global physical health domain of the Patient-Reported Outcomes Measurement Information System (PROMIS; Hays et al., 2009). The physical health domain (α = .81) consists of four items which assess physical health, physical function, pain, and fatigue. Each item can be scored on a range of 1 to 5 (e.g., *Poor* to *Excellent*) and the average is calculated to get a total score. The physical health domain has a strong correlation with the EQ-5D (a popular instrument that measures health related quality of life; r = 0.76). This scale was validated in community and clinical samples. This scale had questionable to good reliability in this sample (whole sample: α = .78; USB: α = .64; FBB: α = .82). See Appendix C for the items that comprise this measure.

Discrimination Reactivity

Discrimination Reactivity was measured using the Discrimination Reactivity Questionnaire (Blevins et al., *in prep*). This is a 28-item self-report questionnaire that utilizes a Likert-type scale ranging from 1 to 3 (e.g., *Not characteristic of me* to *Very characteristic of me*). The prompt "The following questionnaire asks about your experiences of being treated unfairly due to your race, ethnicity, culture, skin color, sex/gender, sexual orientation, age, religion, disability, income/social class, and/or any other group characteristic" was modified to "The following questionnaire asks about your experiences of racial discrimination due to your race/ethnicity". Sample items include: "I get annoyed when I think that someone may be judging me unfairly", "I have a hard time forgetting about when I was treated unfairly", and "When I am treated with less respect than other people, I feel angry". This questionnaire has good reliability ($\alpha = .89$) and has been used in Latino and Asian samples. This scale had excellent reliability in this sample (whole sample: $\alpha = .90$; USB: $\alpha = .94$; FBB: $\alpha = .85$). Although the scale was designed to allow the participant to indicate the source of their discrimination, in this study, the participant was asked to frame the statements as discrimination due their race/ethnicity. See Appendix D for the items that comprise this measure.

Motivation to Succeed

To the author's knowledge there is no questionnaire that measures motivation to succeed in the context of racial identity and experiences of racial discrimination. Therefore, four items assessing motivation to succeed were developed for this study. The following items were developed for this construct: 1) When I experience racial discrimination, I am motivated even more to succeed, 2) When I observe or experience racial discrimination, I become discouraged, 3) When thinking of my race, I become optimistic about my future, and 4) Being Black inspires me to perform my very best. Item 2 was reverse scored. A 5-point Likert-type scale ranging from

1 (*strongly disagree*) to 5 (*strongly agree*) was utilized. The average is calculated to get a total score with a higher scoring indicating higher motivation to succeed. This scale had questionable reliability in this sample (whole sample: α = .63; USB: α = .60; FBB: α = .68). See Appendix E for the items that comprise this measure.

Belief in Meritocracy

To the author's knowledge, there is no questionnaire that measures belief in meritocracy in relation to racial minority status. Therefore, four items assessing belief in meritocracy were developed for this study. The following items were developed for this construct: 1) Being Black hinders my chances of success, 2) As a Black person, if I work hard enough, I can achieve whatever I want, 3) Racism gets in the way of Black people's success, and 4) It is just as easy for Blacks to be successful as it is for Whites. Items 1 and 3 were reverse scored. A 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) was utilized. The average was calculated to get a total score with a higher scoring indicating higher belief in meritocracy. This scale had poor reliability in this sample (whole sample: α = .38; USB: α = .43; FBB: α = .50). See Appendix F for the items that comprise this measure.

Connection and Belonging

Connection and Belonging was measured using four of the five items from the Belonging and Connection subscale of the Scale of Attachment and Interdependence with Black Americans (SAIBA-2; Hunter et al., 2012). The SAIBA-2 is a 22-item self-report measure that was designed to "capture the multidimensional nature of Black immigrants' intergroup relations with African Americans" and the Belonging and Connection subscale captures Black immigrants' sense of belonging and connection with US-born Black Americans (Hunter et al., 2017, p. 142). A 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) was utilized. All items

from the Connection and Belonging subscale are reverse scored. The average was calculated to get a total score with a higher scoring indicating a higher sense of belonging and connection to Black Americans. A sample item is "I do not feel a sense of belonging and closeness with Black Americans". This subscale has good reliability (α=.85) in a sample that self-identified as Black and primarily consisted of individuals born in the US and second-generation immigrants primarily from countries wherein Black individuals are the majority race (Hunter et al., 2017). This scale had good reliability in this sample (whole sample: α = .86; USB: α = .81; FBB: α = .85). See Appendix G for the items that comprise this measure.

Shared Racial Fate

Shared Racial Fate was measured using four of the six items from the SAIBA-2 (Hunter et al., 2012). The Shared Racial Fate subscale captures Black immigrants' sense of shared racial fate with US-born Black Americans (Hunter et al., 2017, p. 142). A 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) was utilized. The average was calculated to get a total score with a higher scoring indicating a higher sense of shared racial fate with Black Americans. A sample item is "My destiny in the United States is very connected to that of Black Americans". This subscale had acceptable reliability (α = .77) in a sample that self-identified as Black and primarily consisted of individuals born in the US and second-generation immigrants primarily from countries wherein Black individuals are the majority race (Hunter et al., 2017). This scale also had acceptable reliability in this sample (whole sample: α = .73; USB: α = .73; FBB: α = .70). See Appendix H for the items that comprise this measure.

Covariates

Factors such as sex, age, BMI, socioeconomic status, exercise, current student status, and current HBCU student status were considered as covariates in the analysis. Relationship status

was a covariate as marital status is associated with health outcomes in immigrants (Elo et al., 2011; Hamilton & Hummer, 2011). Data were collected during a pandemic and during a time of political unrest. Therefore, the impact of the COVID-19 pandemic and political climate stress were included as covariates. Given the prevalence of racial issues being portrayed in the media, racial climate stress was also included as a covariate. See Appendix I for the items used to collect demographic information.

Body Mass Index

Participants reported height and weight to enable the calculation of their body mass index (BMI).

Socioeconomic Status

The MacArthur Scale of Subjective Social Status was used to measure subjective social status (Adler & Stewart, 2007). Participants were given a picture of a ladder to mark an "X" on the rung they believe applies to their social status. See Appendix J for the items that comprise this measure.

Coronavirus Impact

The impact of the coronavirus was measured using the Coronavirus Impact Scale (Stoddard et al., 2021). The following prompt was provided: "Rate how much the Coronavirus pandemic has changed your life in each of the following ways". Example stem items are, "Your routines", "Your income/employment", and "Your access to food". Items range on a scale of 0 (*no change*) to 3 (*severe*). A not applicable option was added to some items (e.g., "Your access to medical health care") and this option was scored as 0. See Appendix K for the items that comprise this measure.

Political Climate and Racial Climate Stress

Current political climate and racial climate stress was measured on a scale of 0 to 10. The following questions were displayed to participants: “How stressful is the current political climate for you?” and “How stressful is the current racial climate for you?” See Appendix L for the items that comprise this measure.

Exercise

Physical activity was measured using the International Physical Activity Questionnaire (IPAQ; Craig et al., 2003) short version which measures physical activity in the past seven days. This IPAQ short version is a 7-item self-report measure that assesses vigorous activity, moderate activity, walking, and time sitting. Time spent sitting is not included in the summed calculation of physical activity. The questionnaire consists of questions such as “During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?”. Questions similar to this have follow-up questions, such as “How much time did you usually spend doing vigorous physical activities on one of those days”. Test-retest reliability on a sample drawn from different countries had a Spearman correlation of about 0.8 indicating good repeatability (Craig et al., 2003). Criterion validity is fair to moderate (Craig et al., 2003). See Appendix M for the items that comprise this measure.

Racial and Ethnic Socialization

Racial and ethnic socialization was included as a covariate as this construct affects one’s perception of their race, social inequalities, and experiences of discrimination (Hughes et al., 2006). Racial and ethnic socialization is associated with discrimination and has different moderating effects in the association between discrimination and perceived stress depending on ethnicity within the Black racial group (Saleem et al., 2022). Further, ethnic and racial

socialization can buffer the development of poor mental health from exposure to racism (Bynum et al., 2007). Therefore, the present study assessed if internalized racism and perceived discrimination impact health outcomes differentially by racial context of origin above and beyond ethnic and racial socialization. Ethnic and racial socialization is conceptualized as "the transmission and acquisition of intellectual, affective, and behavioral skills toward the protection and affirmation of racial self-efficacy" (Bentley-Edwards & Stevenson, 2016, p. 96). The Cultural and Racial Experiences of Socialization (CARES) scale was used to measure racial/ethnic socialization (Bentley-Edwards & Stevenson, 2016). The CARES is a 35 item self-report measure with strong reliability (α = .89). The CARES consists of the following 5 factors: Racial Protection (10 items, α = .82), Cultural Insights (4 items; α = .64), Racial Stereotyping (10 items; α = .79), Bicultural Coping (5 items; α = .66), and Old School Cultural Thinking (6 items; α = .68). The prompt for the scale is "Has someone said to you any of the following statements throughout your lifetime". The CARES utilizes a 3-point Likert-type scale ranging from 1 (*Never*) to 3 (*All of the Time*). Sample items include "You have to work twice as hard as Whites in order to get ahead in the world" and "Poor Black people are always looking for a handout". This scale had acceptable reliability in this sample (whole sample: α = .78; USB: α = .80; FBB: α = .76). See Appendix N for the items that comprise this measure.

Racial Centrality

Racial centrality, one component of racial identity, was included as a covariate because it can alter perception of discrimination and the salience of racial identity is different between African Americans and recent Black immigrants (Brondolo et al., 2009; Fries-Britt et al., 2014). Further, racial centrality has been positively associated with discrimination with lower centrality moderating the association between racial discrimination and physiological reactivity (Volpe et

al., 2018). Therefore, the present study assessed if internalized racism and perceived discrimination impact health outcomes differentially by racial context of origin above and beyond racial centrality. Racial centrality was measured using the Centrality subscale of the Multidimensional Inventory of Black Identity (MIBI; Sellers et al., 1997; Sellers et al., 1998). Racial identity is conceptualized "in African Americans as the significance and qualitative meaning that individuals attribute to their membership within the Black racial group within their self-concept" (Sellers et al., 1998, p. 23). The MIBI is a 56-item self-report measure that consists of the following three factors and subscales: centrality, ideology, and regard (Sellers et al., 1998). The Centrality subscale has 8 items and acceptable internal consistency ($\alpha = .77$). The MIBI uses a 7-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items from the Centrality subscale include "Overall, being Black has very little to do with how I feel about myself" and "I have a strong attachment to other Black people". The MIBI was validated at a predominately White and predominately Black university. This scale had good reliability in this sample (whole sample: $\alpha = .81$; USB: $\alpha = .79$; FBB: $\alpha = .82$). See Appendix O for the items that comprise this measure.

Analytic Plan

Data was analyzed using SPSS version 26. To examine relationships among racial context of origin, predictor and outcome variables of interest, and listed potential continuous covariates (i.e., sex, age, BMI, socioeconomic status, exercise, current student status, and current HBCU student status, relationship status, impact of COVID-19 pandemic, racial climate stress, political climate stress), Pearson correlations were used. Dependency among racial context of origin and continuous variables were tested via *t*-tests and dependency among racial context of origin and categorical covariates (i.e., sex, relationship status, current student status, current

HBCU status) were tested via χ^2 analyses. Potential covariates that had a significant association with the outcome variables were included as covariates in the analysis. All analyses were examined utilizing PROCESS macro for SPSS (Hayes, 2013) using the following models: for hypothesis 1, model 1 was used to investigate the 1-way interaction; for hypotheses 2 and 3, model 3 was conducted to test the proposed 3-way interactions; and for hypotheses 4 through 7, model 8 was used to test the moderated mediation. Tables with beta coefficients for hypotheses 1 through 3 are provided in Appendix P in Tables P1 though P5. Tables indicate the zero group for categorical variables.

Power Analysis

A power analysis using G*Power 3.1 (Faul et al., 2009) for hypotheses 2 and 3 suggests that to examine a 3-way interaction with multiple linear regression when assuming a medium effect size (f^2 =.15) with 7 main predictors (3 main effects; 3, 2-way interactions; and 1, 3-way interaction) and 8 covariates, an alpha of .05 at 95% power, will require a sample size of 154. Thus, a minimum of 80 US-born Black individuals and 80 foreign-born Black individuals were recruited. Due to the racial context of origin groups being significantly different by sex (see Table 1 for group differences), all significant hypothesis analyses were replicated to explore whether the relationship was similar by sex or being carried by males or females independently.

Data Cleaning

A total of 291 individuals completed the entire survey. Of those participants, 93 reported that they, both parents, and four grandparents were born and spent majority of their lives in a country wherein Black individuals are the majority race, while 146 reported that they, both parents, and four grandparents were born and spent majority of their lives in the US. Therefore, 52 participants were removed for not meeting racial context of origin eligibility criteria, leaving

239 eligible participants. Those with incomplete data for the variables of interest were removed: US-born (n = 16) and foreign-born (n = 13), leaving 130 US-born individuals and 80 foreign-born individuals. Finally, to balance the group sizes, the age range of the foreign-born group was used to reduce the US-born Black group; thus, individuals under 19 years old (n=34) and over 34 years old (n=16) were removed from the US-born group, resulting in 80 US-born Black individuals and 80 foreign-born Black individuals.

CHAPTER 3: RESULTS

Preliminary Analyses

Descriptive statistics for the entire sample and by racial context of origin (US-born Black individuals and foreign-born Black individuals) are displayed in Table 1. Zero-order correlations for the entire sample are presented in Table 2. Zero-order correlations for US-born Black individuals and foreign-born Black individuals are presented in Table 3 and Table 4, respectively.

Covariates

Covariates that were significantly different between the two groups were included in the models testing the hypotheses. FBB individuals were significantly older than USB individuals (US-born individuals: $M = 21.49$, $SD = 4.02$; foreign-born individuals: $M = 25.74$, $SD = 3.95$; $p < .001$). There were significant sex differences between the two groups wherein there were predominately females in the US-born group, but predominately males in the foreign-born group (US-born individuals: 40% Males; foreign-born individuals: 71.3% Males, $p < .001$). Due to the significant sex differences between the two groups, significant analyses in the entire group were replicated in males and females to determine if the significant effects are driven by sex.

FBB individuals reported having significantly higher subjective social status than UBB individuals (US-born individuals: $M = 6.14$, $SD = 1.34$; foreign-born individuals: $M = 6.99$, $SD = 1.67$; $p < .001$). USB individuals reported more stress from the current political climate than FBB individuals (US-born individuals: $M = 5.00$, $SD = 2.58$; foreign-born individuals: $M = 4.20$, $SD = 2.24$; $p < .05$). More USB individuals were college students than FBB individuals (US-born individuals: 90%; foreign-born individuals: 42.5%; $p < .001$) and more FBB individuals were currently HBCU students compared to USB individuals (US-born individuals: 2.5%; foreign-

Table 1

Descriptive Statistics of Entire Sample and by Group Differences

Variable	Mean or Sum (SD) or N (%)		
	Overall (*n*=160)	US-born (*n*=80)	Foreign-born (*n*=80)
Age (years)	23.61 (4.51)	21.49 (4.02)	25.74 (3.95)**
Sex (male)	89 (55.6%)	32 (40%)	57 (71.3%)**
Body Mass Index (kg/m^2)	26.24 (5.61)	26.03 (7.46)	26.45 (2.76)
Subjective Social Status	6.56 (1.57)	6.14 (1.34)	6.99 (1.67)**
Political Climate Stress	4.60 (2.44)	5.00 (2.58)*	4.20 (2.24)
Racial Climate Stress	6.49 (2.38)	6.69 (2.47)	6.28 (2.27)
Relationship Status (Single/Divorced)	98 (61.3%)	50 (62.5%)	48 (60%)
College Student (yes)	106 (66.3%)	72 (90%)	34 (42.5%)**
HBCU Student (yes)	19 (11.9%)	2 (2.5%)	17 (21.3%)**
Racial Centrality	41.09 (7.85)	42.61 (7.69)*	39.56 (7.75)
Coronavirus Impact	1.14 (0.52)	0.95 (0.46)	1.33 (0.50)**
Physical Activity	6,102.56 (6,518.17)	6,212.54 (8,387.81)	6,018.98 (4,685.54)
CARES	2.17 (0.23)	2.14 (0.23)	2.20 (0.22)
Internalized Racism	68.60 (28.70)	55.14 (22.35)	82.06 (28.13)**
Discrimination	2.69 (0.81)	2.30 (0.70)	3.07 (0.72)**
Discrimination Reactivity	2.16 (0.39)	2.07 (0.46)	2.24 (0.28)**
Physical Health	14.71 (2.92)	16.14 (2.31)**	13.28 (2.76)
Motivation	3.88 (0.72)	3.88 (0.74)	3.87 (0.70)
Shared Racial Fate	4.03 (0.71)	4.21 (0.65)**	3.86 (0.73)
Meritocracy	3.00 (0.69)	2.79 (0.64)	3.21 (0.67)**
Connection & Belonging	3.89 (1.04)	4.35 (0.83)**	3.43 (1.02)

Note. N = 160 for all variables except Physical Activity (N = 132; US-born= 57 & Foreign-born = 75). *p < .05, **p < .01. CARES = Cultural and Racial Experiences of Socialization. HBCU = Historically Black College University. Possible ranges for single-item variables include 1-10 for subjective social status, and 0-10 for political climate stress and racial climate stress. Possible ranges for averaged values include 1-5 for motivation, shared racial fate, meritocracy, connection and belonging; 0-3 for coronavirus impact; 1-3 for discrimination reactivity; and 1-5 for discrimination. Possible ranges for summed scores include 24-168 for internalized racism and 7-56 for racial centrality; 4-20 for physical health. Relationship status was measured on the following scale: 1 (single or divorced), 2 (committed relationship or married), and 3 (other).

born individuals: 21.3%; p <.001). USB individuals reported higher racial centrality than foreign-born individuals (US-born individuals: M = 42.61, SD = 7.69; foreign-born individuals: M = 39.56, SD = 7.75; p <.05). Also, FBB individuals reported being more impacted by the

coronavirus than USB individuals (US-born individuals: $M = 0.95$, $SD = 0.46$; foreign-born individuals: $M = 1.33$, $SD = 0.50$; $p < .001$).

There were no significant group differences on the following variables: BMI ($p = .64$), racial climate stress ($p = .28$), relationship status ($p = .18$), exercise ($p = .87$), and racial and ethnic socialization ($p = .06$). Therefore, sex, subjective social status, political climate stress, current college student status, current HBCU student status, racial centrality, exercise status, and the impact of the coronavirus were included as covariates in the final analyses.

Notable Group Differences Among Key Study Variables

There were significant group differences on several key variables. US-born individuals endorsed greater physical health ($p < .001$), shared racial fate ($p < .01$), and connection and belonging ($p < .001$) compared to foreign-born individuals, while foreign-born Black individuals reported higher internalized racism ($p < .001$), discrimination ($p < .001$), discrimination reactivity ($p < .01$), and meritocracy ($p < .001$).

Notable Zero-order Correlations Among Key Study Variables

Whole Sample

In regard to primary predictors, discrimination was positively associated with internalized racism ($r = .23$, $p < .01$), discrimination reactivity ($r = .57$, $p < .001$), motivation to succeed ($r = .16$, $p < .05$), and shared racial fate ($r = .24$, $p < .01$), while negatively associated with physical health ($r = -.36$, $p < .001$), and connection and belonging ($r = -.22$, $p < .01$). Internalized racism was negatively associated with physical health ($r = -.60$, $p < .001$), motivation to succeed ($r = -.37$, $p < .001$), shared racial fate ($r = -.47$, $p < .001$), and connection and belonging ($r = -.78$, $p < .001$). See Table 2 for more details.

In regard to outcomes of interest, physical health was positively associated with motivation to succeed ($r = .27$, $p < .001$), shared racial fate ($r = .25$, $p < .01$), and connection and belonging ($r = .49$, $p < .001$) and negatively associated with discrimination reactivity ($r = -.32$, $p < .001$). Discrimination reactivity was positively associated with shared racial fate ($r = .42$, $p < .001$).

Interestingly, racial centrality was positively associated with several variables such as cultural and racial experiences of socialization ($r = .22$, $p < .01$), discrimination ($r = .27$, $p < .001$), discrimination reactivity ($r = .30$, $p < .001$), physical health ($r = .30$, $p < .001$), motivation to succeed ($r = .44$, $p < .001$), shared racial fate ($r = .59$, $p < .001$), and connection and belonging ($r = .50$, $p < .001$), but negatively associated with internalized racism ($r = -.54$, $p < .001$).

Group Comparison

For FBBs, there was no significant association between discrimination and physical health, but there was a positive association between discrimination and motivation to succeed ($r = .34$, $p < .01$) and meritocracy ($r = .23$, $p < .05$). While for USBs, there was a negative association between discrimination and physical health ($r = -.25$, $p < .05$) and meritocracy ($r = -.25$, $p < .05$), and no significant association between discrimination and motivation to succeed. However, for FBBs, internalized racism was negatively associated with physical health ($r = -.79$, $p < .001$) and meritocracy ($r = -.54$, $p < .001$), whereas there was no significant association between these variables for USBs. Please see Table 3 and 4 for more details on the USB and FBB groups, respectively.

For USBs there was a negative association between discrimination reactivity and physical health ($r = -.42$, $p < .001$) and meritocracy ($r = -.30$, $p < .01$), but no significant association between these variables for FBBs. For FBBs, physical health was positively associated with

motivation ($r = .47$, $p < .001$), shared racial fate ($r = .36$, $p < .001$), meritocracy ($r = .47$, $p < .001$), and connection and belonging ($r = .63$, $p < .001$), but there was no significant association between these variables for USBs.

For FBBs, racial centrality was positively associated with culturally and racial experiences of socialization ($r = .33$, $p < .01$), physical health ($r = .48$, $p < .001$), and meritocracy ($r = .46$, $p < .001$), where there was no significant association between these variables for USBs. The following relationships existed for FBBs, but not USBs: motivation to succeed was positively associated with shared racial fate ($r = .49$, $p < .001$), shared racial fate was positively associated with meritocracy ($r = .33$, $p < .01$), and meritocracy was positively associated with connection and belonging ($r = .51$, $p < .001$).

For FBBs, there was a negative association between time in the US and internalized racism ($r = -.38$, $p < .001$). For FBBs, there was a positive association between time in the US and perceived discrimination ($r = .28$, $p < .05$), racial centrality ($r = .35$, $p < .01$), and physical health ($r = .37$, $p < .001$).

Table 2

Zero-Order Correlations Among Study Variables for Entire Sample

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. RCOUB	--																			
2. Age (years)	.47**	--																		
3. Sex (male)	-.31**	-.24**	--																	
4. BMI (kg/m^2)	.04	.16*	.00	--																
5. Subjective Social Status	.27**	.25**	-.00	0.07	--															
6. Political Climate Stress	-.16*	-.16*	-0.03	0.14	-.11	--														
7. Racial Climate Stress	-.09	.12	.08	0.11	.21**	.37**	--													
8. College Student (yes)	.50**	.62**	-.32**	.02	.24**	-.16*	.07	--												
9. HBCU Student (yes)	-.29**	-.02	.02	.01	-.05	.12	.11	.26**	--											
10. Racial Centrality	-.19*	.11	.14	.14	.12	-.05	.39**	-.04	.04	--										
11. Coronavirus Impact	.38**	.49**	-.09	.06	.34**	-.10	.27**	.48**	-.15	.13	--									
12. Physical Activity[a]	-.01	.03	-.18*	-.11	.15	-.12	-.01	.04	.11	.16	.06	--								
13. CARES	.15	.18*	-.23**	.16*	.15	.02	.23**	.10	-.09	.22**	.26**	.07	--							
14. Internalized Racism	.47**	.12	-.23**	.01	.06	.07	-.21**	.33**	-.19*	-.54**	.25**	-.23**	.17*	--						
15. Discrimination	.48**	.38**	-.17*	.07	.37**	.00	.35**	.43**	-.11	.27**	.54**	.20*	.39**	.23**	--					
16. Discrimination Reactivity	.22**	.09	.09	.27**	.22**	.16*	.38**	.11	.01	.30**	.26**	-.03	.24**	.04	.57**	--				
17. Physical Health	-.49**	-.21**	.13	-.32**	-.14	-.18*	.03	-.23**	.16*	.30**	-.27**	.11	-.09	-.60**	-.36**	-.32**	--			
18. Motivation	-.01	.08	.06	.04	.15	-.17*	.16*	-.02	.00	.44**	.05	.23**	.24**	-.37**	.16*	.02	.27**	--		
19. Shared Racial Fate	-.25**	.04	.18*	.06	.21**	.14	.41**	-.05	.12	.59**	.06	.12	.20*	-.47**	.24**	.42**	.25**	.34**	--	
20. Meritocracy	.30**	.19*	-.13	-.05	.22**	-.28**	-.13	.16*	-.14	.12	.15	.21*	-.02	-.12	.14	-.07	.12	.44**	.04	--
21. Connection & Belonging	-.45**	-.14	.19*	-.01	.01	-.11	.10	-.35**	.08	.50**	-.20*	.26**	-.07	-.78**	-.22**	-.11	.49**	.33**	.37**	.12

Note. N=160, unless otherwise noted. [a]N=132. *$p < .05$; **$p < .01$. RCOFB = Racial Context of Origin US-Born. BMI= Body Mass Index. kg/m^2 = kilograms per meter squared. CARES = Cultural and Racial Experiences of Socialization. HBCU = Historically Black College University.

Table 3

Zero-Order Correlations Among Study Variables for US-born Participants

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Age (years)	--																		
2. Sex (male)	-.05	--																	
3. BMI (kg/m2)	.19	.08	--																
4. Subjective Social Status	.04	.02	.18	--															
5. Political Climate Stress	.02	.02	.19	.03	--														
6. Racial Climate Stress	.19	0.2	.14	.04	.59**	--													
7. College Student (yes)	.51**	-0.1	-.13	-.14	-.19	-.03	--												
8. HBCU Student (yes)	.04	.20	.02	.02	.25*	.13	.05	--											
9. Racial Centrality	.14	.03	.21	-.18	.26*	.37**	-.05	-.07	--										
10. Coronavirus Impact	.46**	0.1	.01	.10	.03	.32**	.51**	-.06	.07	--									
11. Physical Activity[a]	-.13	-.17	-.13	.02	-.11	-.08	-.16	.05	.03	-.17	--								
12. CARES	.17	-.17	.18	-.08	.03	.17	.07	-.03	.19	.22	.01	--							
13. Internalized Racism	-.02	-.15	-.10	.13	-.22*	-.27*	.37**	-.09	-.40**	.34**	-.09	.12	--						
14. Discrimination	.13	.03	.06	.06	.29**	.46**	.04	.20	.37**	.38**	.25	.26*	.02	--					
15. Discrimination Reactivity	-.16	.30**	.27*	.09	.35**	.48**	-.22	.26*	.36**	.10	-.07	.08	-.15	.46**	--				
16. Physical Health	-.10	-.23*	-.46**	-.25*	-.15	-.12	.22	-.23*	-.05	-.03	.00	.01	-.01	-.25*	-.42**	--			
17. Motivation	.03	.00	.09	-.11	.09	.08	-.06	.03	.31**	-.05	.25	.21	-.36**	.04	-.05	.11	--		
18. Shared Racial Fate	.07	.20	.11	.01	.39**	.45**	-.19	.11	.53**	.01	.03	.15	-.54**	.32**	.50**	-.14	.20	--	
19. Meritocracy	-.10	-.15	-.03	-.05	-.06	-.28*	-.02	.01	-.09	-.22	.12	-.16	-.01	-.25*	-.30**	.14	.40**	-.13	--
20. Connection & Belonging	-.01	-.01	.14	-.01	.05	.03	-.37**	.02	.31**	-.25*	.23	.02	-.68**	-.05	-.03	-.07	.33**	.34**	.03

Note. N=80, unless otherwise noted. [a]N=57. $^{*}p < .05$; $^{**}p < .01$. BMI= Body Mass Index. kg/m^2 = kilograms per meter squared. CARES = Cultural and Racial Experiences of Socialization. HBCU = Historically Black College University.

Table 4

Zero-Order Correlations Among Study Variables for Foreign-born Participants

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Age (years)	--																		
2. Sex (male)	-.18	--																	
3. BMI (kg/m2)	.12	-.15	--																
4. Subjective Social Status	.22*	.16	-.16	--															
5. Political Climate Stress	-.22	-.23*	.08	-.16	--														
6. Racial Climate Stress	.18	-.12	.05	.43**	.09	--													
7. College Student (yes)	.52**	-.29**	.20	.25*	-.02	.24*	--												
8. HBCU Student (yes)	.20	-.21	.03	.03	.01	.09	.60**	--											
9. Racial Centrality	.34**	.14	.04	.48**	-.47**	.40**	.15	-.01	--										
10. Coronavirus Impact	.30**	-.03	.14	.40**	-.13	.34**	.30**	-.05	.37**	--									
11. Physical Activity[a]	.32**	-.25*	-.04	.35**	-.14	.07	.24*	.19	.34**	.39**	--								
12. CARES	.08	-.22	.15	.27*	.07	.33**	.00	-.07	.33**	.22*	.17	--							
13. Internalized Racism	-.23*	-.07	.20	-.23*	.53**	-.13	.02	-.07	-.61**	-.11	-.48**	.12	--						
14. Discrimination	.28*	-.08	.11	.46**	-.14	.43**	.39**	-.02	.47**	.50**	.22	.47**	-.01	--					
15. Discrimination Reactivity	.23*	-.04	.31**	.31**	-.06	.29**	.23*	.01	.39**	.36**	.07	.46**	.03	.72**	--				
16. Physical Health	.15	.15	-.28*	.16	-.45**	.08	-.08	.10	.48**	-.16	.29*	-.04	-.79**	-.09	-.06	--			
17. Motivation	.18	.13	-.10	.39**	-.49**	.26*	.02	-.01	.60**	.17	.21	.28*	-.46**	.34**	.15	.47**	--		
18. Shared Racial Fate	.29**	.03	.00	.50**	-.19	.36**	.23*	.03	.61**	.31**	.26*	.35**	-.32**	.51**	.55**	.36**	.49**	--	
19. Meritocracy	.20	.08	-.17	.30**	-.44**	.08	.03	-.09	.46**	.27*	.40**	.01	-.54**	.23*	.08	.47**	.53**	.33**	--
20. Connection & Belonging	.17	.13	-.28*	.26*	-.45**	0.1	-.06	-.08	.62**	.11	.42**	-.02	-.75**	.02	.01	.63**	.40**	.27*	.51**

Note. N=80, unless otherwise noted. [a]N=75. *$p < .05$; **$p < .01$. BMI= Body Mass Index. kg/m^2 = kilograms per meter squared. CARES = Cultural and Racial Experiences of Socialization. HBCU = Historically Black College University.

Hypothesis One

It was proposed that the association between internalized racism and physical health outcomes differs depending on racial context of origin. As displayed in Figure 9, an interaction between internalized racism and racial context of origin was significant in predicting physical health (ΔR^2 = .09, F(1,148) = 29.41, p = <.001). For foreign-born Black individuals, higher reported levels of internalized racism were associated with lower self-reported physical health (b = -.08, SE = .01, p < .001) while the effect was not significant for US-born Black individuals (b = -.00, SE = .01, p = .90).

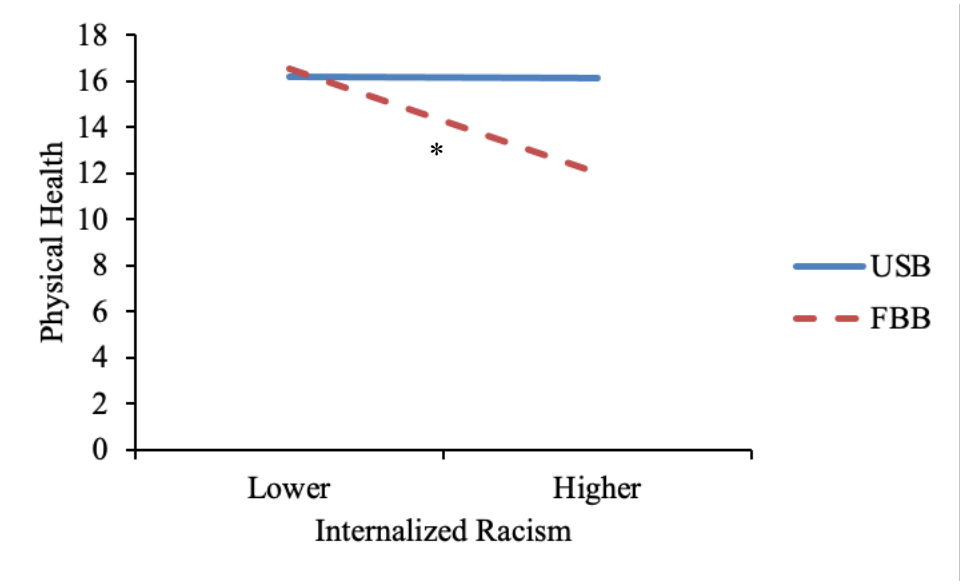

Figure 9. Simple slopes of two-way interaction between internalized racism and racial context of origin on physical health with males and females. Analysis controlled for age, sex, current student status, current HBCU student status, socioeconomic status, political stress, coronavirus impact, and racial centrality. Higher scores indicate higher physical health. For foreign-born Black individuals the interaction was significant. For US-born Black individuals the interaction was not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *p < .001.

Due to significant differences between the number of males and females by racial context of origin the analyses were run separately by sex. The interaction between internalized racism

and racial context of origin was significant in predicting physical health for males (ΔR^2 = .04, $F(1,78) = 10.52$, p = <.01) and females (ΔR^2 = .13, $F(1,60) = 14.41$, p = <.001). Internalized racism was associated with lower self-reported physical health for foreign-born Black individuals (b = -.08, SE = .01, p < .001; b = -.10, SE = .02, p < .001) while the effect was not significant for US-born Black individuals (b = -.01, SE = .02, p = .57; b = -.02, SE = .02, p = .38), for males and females respectively. See results displayed in Figure 10 and Figure 11 for males only and females only, respectively. For detailed summaries of the model statistics, please see Appendix P in Tables P1 through P3.

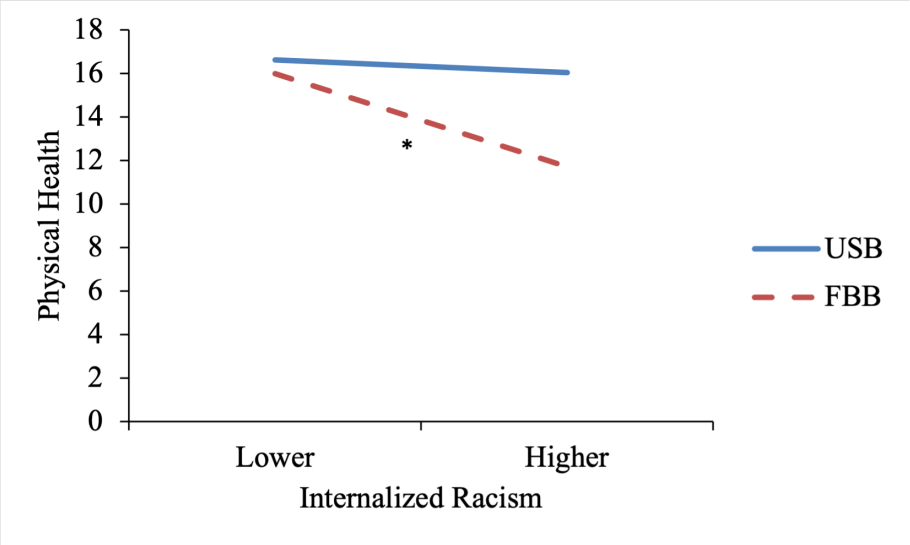

Figure 10. Simple slopes of two-way interaction between internalized racism and racial context of origin on physical health for males only. Analysis controlled for age, current student status, current HBCU student status, socioeconomic status, political stress, coronavirus impact, and racial centrality. Higher scores indicate better physical health. For foreign-born Black individuals the interaction was significant. For US-born Black individuals the interaction was not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *p < .001.

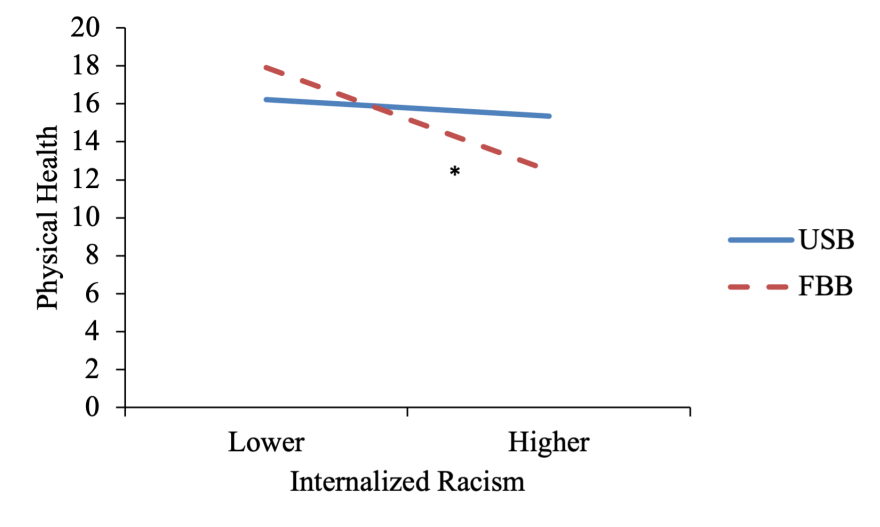

Figure 11. Simple slopes of two-way interaction between internalized racism and racial context of origin on physical health for females only. Analysis controlled for age, current student status, current HBCU student status, socioeconomic status, political stress, coronavirus impact, and racial centrality. Higher scores indicate better physical health. For foreign-born Black individuals the interaction was significant. For US-born Black individuals the interaction was not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *$p <$ .001.

Hypothesis Two

It was proposed that there will be a significant interaction between internalized racism and perceived discrimination on self-reported physical health and the interaction will differ by racial context of origin. The proposed three-way interaction between perceived discrimination, internalized racism, and racial context of origin on self-reported physical health was not significant (ΔR^2 = .00, $F(1,144)$ = .00, p = .97). Further analyses showed that there was no significant interaction between perceived discrimination and internalized racism (b = .01, SE = .02, p = .44), perceived discrimination and racial context of origin (b = -.02, SE = 1.43, p = .99), nor internalized racism and racial context of origin (b = -.09, SE = .06, p = .12) on self-reported physical health. For a detailed summary of the model statistics, please see Appendix P in Table P4.

Hypothesis Three

It was proposed that there will be a significant interaction between internalized racism and perceived discrimination on perceived discrimination reactivity and the interaction will differ by racial context of origin. The proposed three-way interaction between perceived discrimination, internalized racism, and racial context of origin predicting perceived discrimination reactivity was not significant (ΔR^2 = .00, F(1,144) = .37, p = .54). Further analyses showed that there was no significant interaction between perceived discrimination and internalized racism (b = -.00, SE = .00, p = .45), perceived discrimination and racial context of origin (b = .22, SE = .22, p = .31), nor internalized racism and racial context of origin (b = .01, SE = .01, p = .29) on perceived discrimination reactivity. For a detailed summary of the model statistics, please see Appendix P in Table P5.

Hypothesis Four

It was proposed that the interaction between racial context of origin and internalized racism on physical health can be explained by motivation to succeed. Racial context of origin did not significantly moderate the association between internalized racism and motivation to succeed (ΔR^2 = .01, F(1,148) = 1.25, p = .26). The moderated mediation showed that the indirect effect of internalized racism on self-reported physical health through motivation to succeed was not significant for US-born (b = -.01, SE = .00, 95% CI [-.01, .00]) or foreign-born (b = -.00, SE = .00, 95% CI [-.01, .00]) Black individuals. The moderated mediation was not significant (b = .00, SE = .00, 95% CI [-.00, .01]).

Hypothesis Five

It was proposed that the interaction between racial context of origin and internalized racism on physical health can be explained by belief in meritocracy. As displayed in Figure 12,

racial context of origin significantly moderated the association between internalized racism and belief in meritocracy, (ΔR^2 = .02, $F(1,148) = 4.48$, $p < .04$). For foreign-born Black individuals, higher internalized racism was associated with lower belief in meritocracy (b = -.01, SE = .00, p <.001), but for US-born Black individuals there was no significant association between internalized racism and belief in meritocracy (b = -.00, SE = .00, p = .52). The moderated mediation showed that the indirect effect of internalized racism on self-reported physical health through belief in meritocracy was not significant for US-born (b = -.00, SE = .00, 95 % CI [-.06, .00]) or foreign-born (b = -.04, SE =.04, 95% CI [-.01, .00]) Black individuals. The moderated mediation was not significant (b = -.00, SE = .00, 95% CI [-.01, .00]).

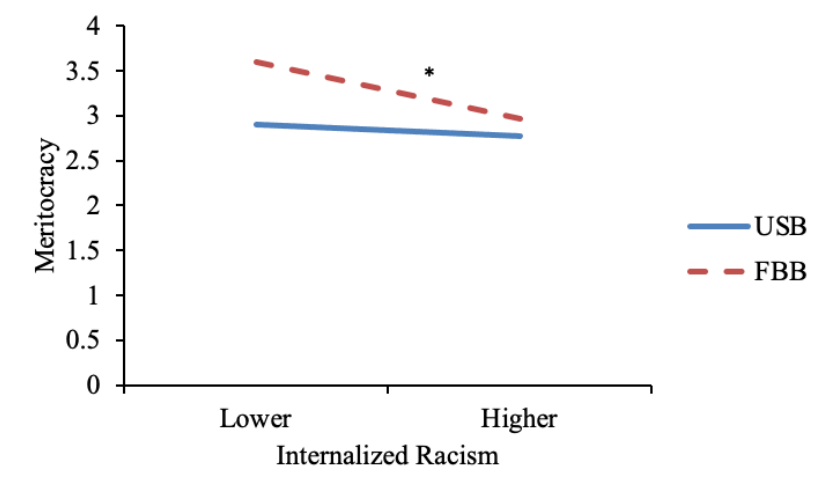

Figure 12. Simple slopes of two-way interaction between internalized racism and racial context of origin on belief in meritocracy. Analysis controlled for age, sex, current student status, current HBCU student status, socioeconomic status, political stress, coronavirus impact, and racial centrality. Higher scores indicate stronger belief in meritocracy. For foreign-born Black individuals the interaction was significant. For US-born Black individuals the interaction was not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *p < .001.

Hypothesis Six

It was proposed that the interaction between racial context of origin and internalized racism on physical health can be explained by sense of connection and belonging to the Black racial group. Racial context of origin did not significantly moderate the association between internalized racism and connection and belonging to the Black racial group (ΔR^2 = .00, F(1,148) = .11, p = .74). The moderated mediation showed that the indirect effect of internalized racism on self-reported physical health through connection and belonging to the Black racial group was not significant for US-born (b = .00, SE = .01, 95% CI [-.01, .02]) or foreign-born (b = .00, SE =.01, 95% CI [-.01, .01]) Black individuals. The moderated mediation was not significant (b = -.00, SE =.00, 95 % CI [-.00, .00]).

Hypothesis Seven

It was proposed that the interaction between racial context of origin and internalized racism on physical health can be explained by shared racial fate. As displayed in Figure 13, racial context of origin significantly moderated the association between internalized racism and shared racial fate (ΔR^2 = .02, F(1,148) = 5.56, p < .05). For US-born Black individuals higher internalized racism was associated with lower shared racial fate (b = -.01, SE = .00, p < .001), but for foreign-born Black individuals there was no significant association between internalized racism and shared racial fate (b = -.00, SE = .00, p = .45). The moderated mediation showed that the indirect effect of internalized racism on self-reported physical health through shared racial fate was not significant for US-born (b = -.00, SE =.00, 95% CI [-.01, .00]) or foreign-born (b = -.00, SE = .00, 95 % CI [-.00, .00]) Black individuals. The moderated mediation was not significant (b = .00, SE =.00, 95% CI [-.00, .01]).

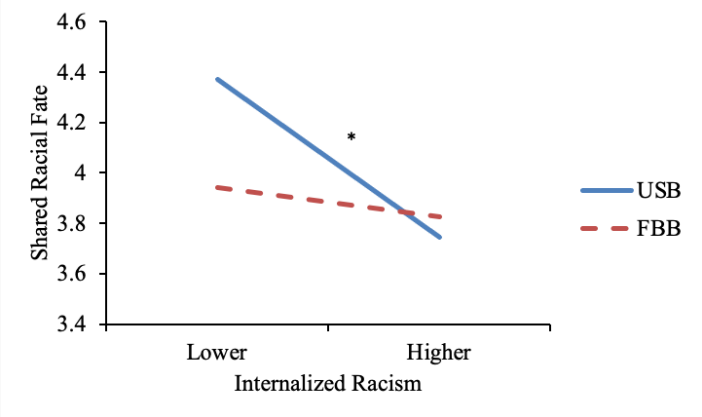

Figure 13. Simple slopes of two-way interaction between internalized racism and racial context of origin on shared racial fate. Analysis controlled for age, sex, current student status, current HBCU student status, socioeconomic status, political stress, coronavirus impact, and racial centrality. Higher scores indicate a stronger sense of shared racial fate. For US-born Black individuals the interaction was significant. For foreign-born Black individuals the interaction was not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *$p < .001$.

Exploratory Analyses

Racial identity can be protective against the negative effects of racism and discrimination. Specifically, high levels of racial centrality have been found to be associated with less psychological distress while other studies have found moderate levels of centrality to be more beneficial (Seaton, 2009; Sellers et al., 2003; Willis et al., 2021). Given the findings of prior research and the relationships observed among centrality of race among many key variables (see tables 2-4), exploratory analyses were conducted to understand how it may be influencing the associations among discrimination, racial context of origin, and physical health. Thus, Hypotheses 1 through 3 were replicated but internalize racism was replaced with racial centrality. Significant relationships were repeated to examine sex differences as was done for the main hypotheses testing. Tables with beta coefficients for the exploratory analyses are displayed in Appendix P in Tables P6 through P12.

Exploring Hypothesis #1

Whether the association between racial centrality and physical health outcomes differs depending on racial context of origin was tested. As displayed in Figure 14, an interaction between racial centrality and racial context of origin was significant in predicting physical health ($\Delta R^2 = .05$, $F(1,149) = 11.78$, $p < .001$). For foreign-born Black individuals, higher racial centrality was associated with higher self-reported physical health ($b = .19$, $SE = .04$, $p < .001$) while the effect was not significant for US-born Black individuals ($b = .00$, $SE = .04$, $p = .92$).

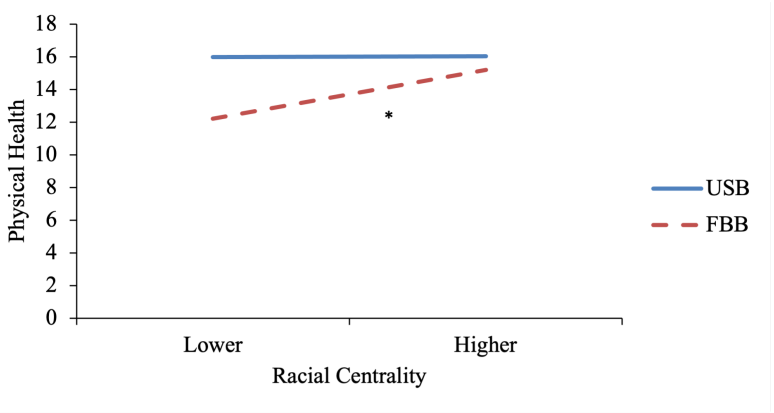

Figure 14. Simple slopes of two-way interaction between racial context of origin and racial centrality on physical health. Analysis controlled for age, sex, current student status, current HBCU student status, socioeconomic status, political stress, and coronavirus impact. Higher scores indicate better physical health. For foreign-born Black individuals the interaction was significant. For US-born Black individuals the interaction was not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *$p < .001$.

The interaction between racial centrality and racial context of origin was not significant in predicting physical health for males ($\Delta R^2 = .01$, $F(1,79) = 2.22$, $p = .14$), but was significant for females ($\Delta R^2 = .06$, $F(1,61) = 5.52$, $p = <.05$). As displayed in Figure 15, for females, racial centrality was associated with better self-reported physical health for foreign-born Black individuals ($b = .15$, $SE = .07$, $p < .05$) while the effect was not significant for US-born Black individuals ($b = -.04$, $SE = .05$, $p = .34$).

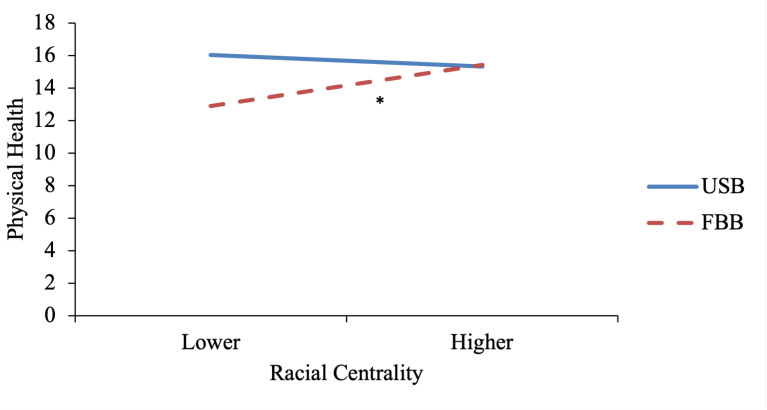

Figure 15. Simple slopes of two-way interaction between racial context of origin and racial centrality on physical health for females only. Analysis controlled for age, current student status, current HBCU student status, socioeconomic status, political stress, and coronavirus impact. Higher scores indicate better physical health. For foreign-born Black individuals the interaction was significant. For US-born Black individuals the interaction was not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *$p < .05$.

Exploring Hypothesis #2

A 3-way interaction between perceived discrimination, racial centrality, and racial context of origin on physical health was tested. As displayed in Figure 16, the three-way interaction was significant ($\Delta R^2 = .02$, $F(1,145) = 4.58$, $p < .05$). For foreign-born Black individuals with lower levels of centrality, higher perceived discrimination was associated with lower physical health ($p < .001$), but the effect was not significant for higher levels of centrality ($p = .94$). For US-born Black individuals the interactive effects of racial centrality and perceived discrimination on physical health was not significant at lower ($p = .43$) or higher ($p = .26$) levels of centrality.

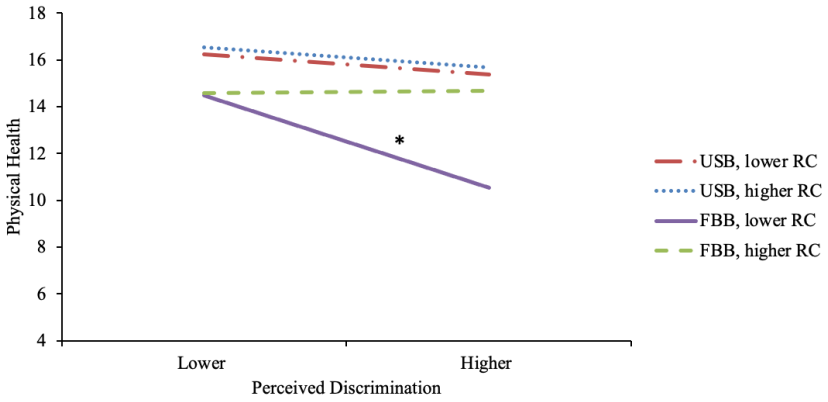

Figure 16. Simple slopes of a three-way interaction between racial context of origin, racial centrality, and perceived discrimination on physical health. Analysis controlled for age, sex, current student status, current HBCU student status, socioeconomic status, political stress, and coronavirus impact. Higher scores indicate better physical health. For foreign-born Black individuals with lower levels of racial centrality the interaction was significant. For foreign-born Black individuals with higher racial centrality and US-born Black individuals the interactions were not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *$p < .001$.

The three-way interaction was significant for males ($\Delta R^2 = .05$, $F(1,75) = 9.07$, $p < .01$), but not females as it was trending ($\Delta R^2 = .03$, $F(1,57) = 3.67$, $p = .06$). As displayed in Figure 17, for males, foreign-born Black individuals with lower levels of centrality, higher perceived discrimination was associated with lower physical health ($p < .01$), but the effect was not significant for higher levels of centrality ($p = .28$). For US-born Black individuals the interactive effects of racial centrality and perceived discrimination on physical health was not significant at lower ($p = .53$) or higher ($p = .23$) levels of centrality. As displayed in Figure 18, for females, foreign-born Black individuals with lower levels of centrality, higher perceived discrimination was associated with lower physical health ($p < .001$), but the effect was not significant for higher levels of centrality ($p = .69$). For US-born Black individuals the interactive effects of racial centrality and perceived discrimination on physical health was not significant at lower ($p = .24$) or higher ($p = .25$) levels of centrality.

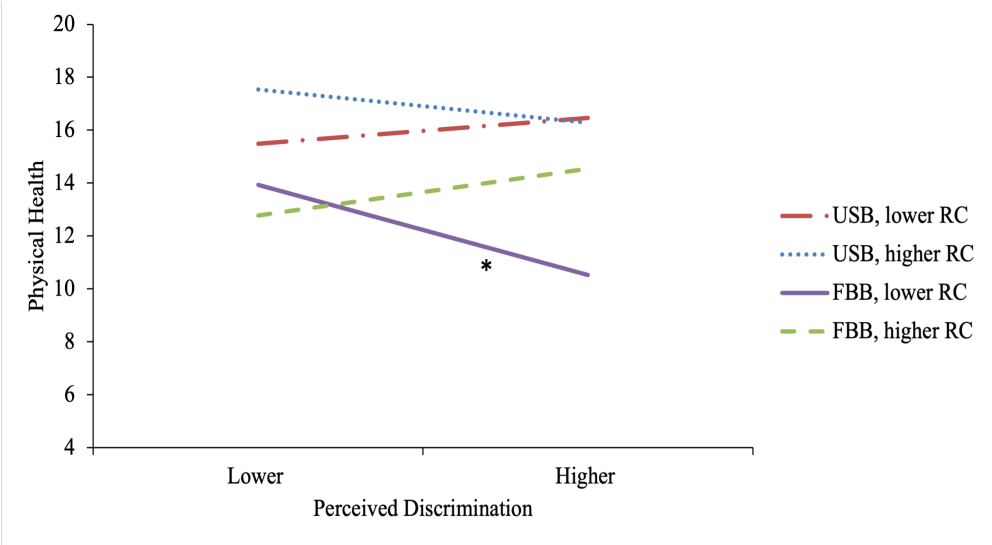

Figure 17. Simple slopes of a three-way interaction between racial context of origin, racial centrality, and perceived discrimination on physical health for males only. Analysis controlled for age, current student status, current HBCU student status, socioeconomic status, political stress, and coronavirus impact. Higher scores indicate better physical health. For foreign-born Black individuals with lower levels of racial centrality the interaction was significant. For foreign-born Black individuals with higher racial centrality and US-born Black individuals the interactions were not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *$p < .01$.

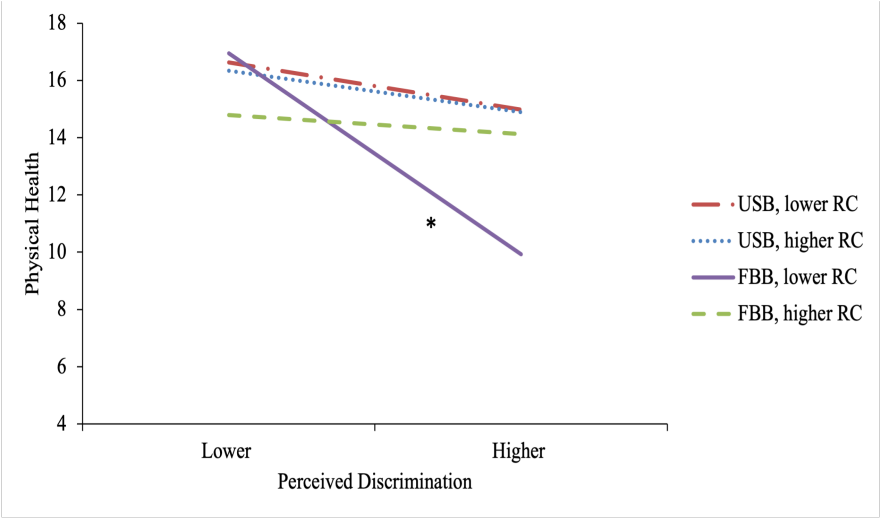

Figure 18. Simple slopes of a three-way interaction between racial context of origin, racial centrality, and perceived discrimination on physical health for females only. Analysis controlled for age, current student status, current HBCU student status, socioeconomic status, political stress, and coronavirus impact. Higher scores indicate better physical health. For foreign-born Black individuals with lower levels of racial centrality the interaction was significant. For foreign-born Black individuals with higher racial centrality and US-born Black individuals the interactions were not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *$p < .001$.

Exploring Hypothesis #3

A 3-way interaction between perceived discrimination, racial centrality, and racial context of origin on discrimination reactivity was tested. As displayed in Figure 19, the three-way interaction was significant ($\Delta R^2 = .01$, $F(1,145) = 3.91$, $p < .05$). For foreign-born Black individuals with both lower and higher levels of centrality, higher perceived discrimination was associated with higher perceived discrimination reactivity ($p < .001$). For US-born Black individuals with higher levels of centrality, higher perceived discrimination was associated with higher perceived discrimination reactivity ($p < .01$), but the effect was not significant at lower levels of centrality ($p = .65$).

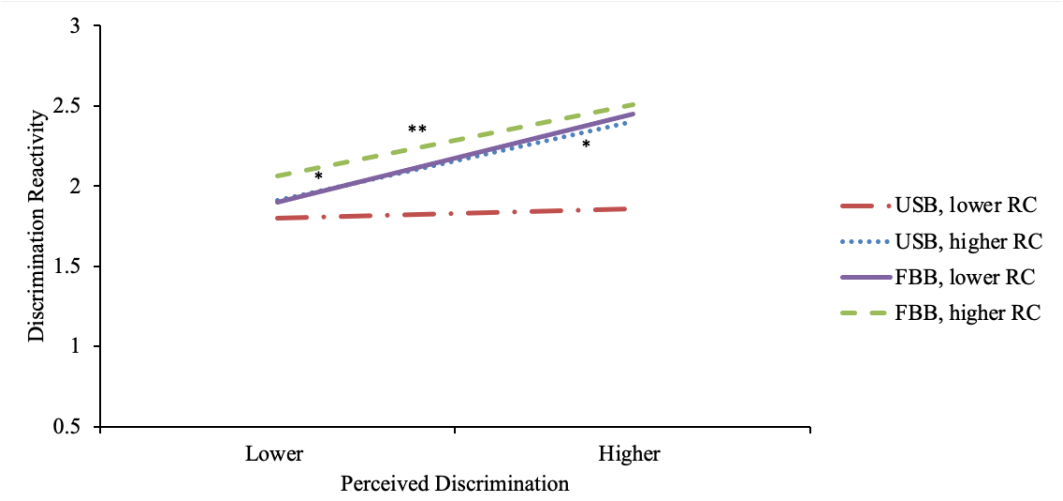

Figure 19. Simple slopes of a three-way interaction between racial context of origin, racial centrality, and perceived discrimination on discrimination reactivity. Analysis controlled for age, sex, current student status, current HBCU student status, socioeconomic status, political stress, and coronavirus impact. Higher scores indicate higher discrimination reactivity. For foreign-born Black individuals with lower and higher levels of racial centrality and US-born Black individuals with higher racial centrality the interaction was significant. For US-born Black individuals with lower racial centrality the interaction was not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *$p < .01$, ** $p < .001$.

The three-way interaction was not significant for males ($\Delta R^2 = .01$, $F(1,75) = 1.55$, $p = .22$), but was significant for females ($\Delta R^2 = .04$, $F(1,57) = 4.59$, $p < .05$). As displayed in Figure 20, for females, foreign-born Black individuals with lower levels of centrality, higher perceived discrimination was associated with higher perceived discrimination reactivity ($p < .05$), but the effect did reach not significance for higher levels of centrality, but the relationship was trending ($p = .08$). For US-born Black individuals with higher levels of centrality, higher perceived discrimination was associated with higher perceived discrimination reactivity ($p < .01$), but the effect was not significant for lower levels of centrality ($p = .34$).

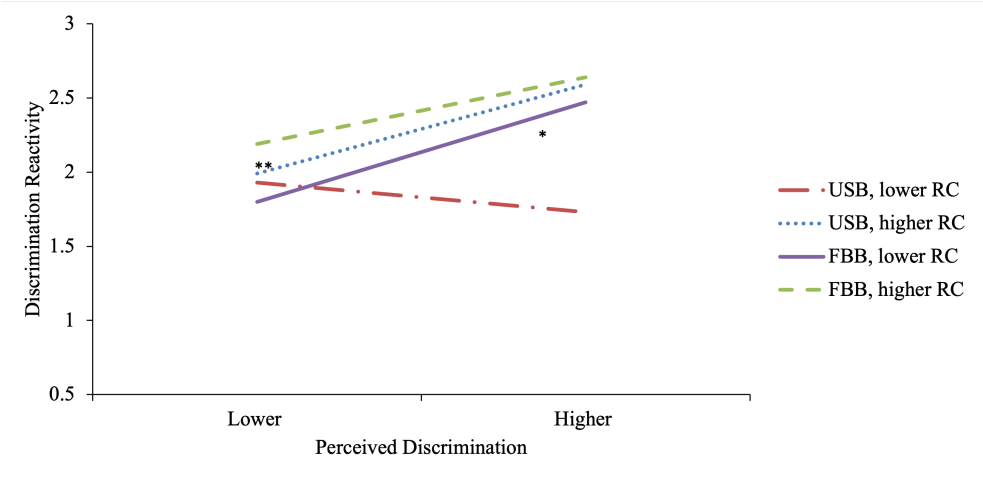

Figure 20. Simple slopes of a three-way interaction between racial context of origin, racial centrality, and perceived discrimination on discrimination reactivity for females only. Analysis controlled for age, current student status, current HBCU student status, socioeconomic status, political stress, and coronavirus impact. Higher scores indicate higher discrimination reactivity. For foreign-born Black individuals with lower levels of racial centrality and US-born Black individuals with higher racial centrality the interaction was significant. For foreign-born Black individuals with higher centrality and US-born Black individuals with lower racial centrality the interaction was not significant. USB = US-born Black individuals. FBB = Foreign-born Black individuals. *$p < .05$, ** $p < .01$.

CHAPTER 4: DISCUSSION

The racial context of origin theory posits that Black individuals from countries wherein they are part of the majority racial group have better health outcomes than Black individuals from countries wherein they are part of the minority racial group due, in part, to fewer experiences of racial discrimination (Read & Emerson, 2005). This theory highlights the importance of examining the heterogeneity of experiences within a racial group when trying to understand health disparities. Therefore, the current study sought to deepen our understanding of potential underlying mechanisms that contribute to health differences between Black racial groups in the US (i.e., using the racial context of origin framework). Specifically, the current study aimed to determine if internalized racism and racial discrimination were associated with physical health outcomes and perceived discrimination reactivity, and whether these associations varied by racial context of origin. If these associations did differ, then a second aim was to determine what factors (motivation to succeed, belief in meritocracy, shared racial fate, connection and belonging to the Black racial group) could help explain these differences.

The racial context of origin framework provides a possible explanation for why foreign-born Black individuals seem to exhibit better health than US-born Black individuals (Read & Emerson, 2005). However, in the present study, surprisingly, US-born Black individuals reported better health than foreign-born Black individuals. Further, contrary to expectations, findings seem to indicate that internalized racism is more detrimental to the health of foreign-born Black individuals than US-born Black individuals, suggesting that it is disadvantageous to the former group. This relationship was present in both males and females. Examining the simultaneous impact of racial discrimination and internalized racism on self-reported physical health and

perceived discrimination reactivity did not provide insight into how racial context of origin may be differentially impacting health outcomes.

Psychological factors (e.g., motivation to succeed, belief in meritocracy, shared racial fate, connection and belonging to the Black racial group) examined in this study that might explain the differential effect of internalized racism on physical health did not provide clues into potential mechanisms. However, ad-hoc exploratory analyses indicated that further exploration of how racial centrality may be contributing to differential health outcomes by racial context of origin may be warranted. Racial centrality had a stronger association with physical health for foreign-born Black individuals than US-born Black individuals. Racial centrality also provided insight as to how discrimination may be altering physical health outcomes and discrimination reactivity uniquely by racial context of origin.

Physical Health Differences

In this sample, US-born Black individuals had better health than foreign-born Black individuals. This finding was surprising given that studies have found that foreign-born Black individuals often have better health and exhibit better health behaviors than US-born Black individuals (Brown, 2018; Erving, 2022; Hamilton & Hagos, 2021; Miller et al., 2022; Read & Emerson, 2005). Foreign-born Black individuals in this study were socialized in a country wherein their Black identity was not as salient an issue (Hilaire, 2006); in their countries of origin, the Black racial group is the majority race and they were living in a society with a historical and societal context not stratified by race and developed based on racial ideologies, but more so based on socioeconomic status (Hilaire, 2006; Tormala & Deaux, 2006). They lived in a context wherein Black individuals held positions of power and likely had very high and positive expectations for moving to the US (Tormala & Deaux, 2006). Moving to the US entails

grappling with their new identity being seen as “problematic” and perhaps a shift in their high expectations of the US (Hilaire, 2006; Hunter 2008). Therefore, perhaps the stress of the transition of racial context should be considered when seeking to understand the effect of racism and discrimination on physical health outcomes.

Similar to other studies, internalized racism was positively associated with discrimination and negatively associated with physical health (Gale et al., 2020; James, 2020). For foreign-born Black individuals only, higher internalized racism was associated with lower physical health. Therefore, internalized racism may not be as detrimental to the health of US-born Black individuals as it is for foreign-born Black individuals. In support of numerous other studies, greater discrimination was associated with poorer health, however this was only found for US-born Black individuals (Brondolo et al., 2009; Lo & Cheng, 2018, Pascoe & Smart Richman, 2009; Pieterse et al., 2012; Williams & Mohammed, 2009). These data indicate that internalized racism and perceived discrimination appear to impact Black individuals differently depending on the racial context in which they were raised.

It could be that foreign-born Black individuals are primarily impacted by racism and discrimination when it becomes internalized, whereas for US-born Black individuals the experience of discrimination itself is impactful enough to negatively impact health even at lower reported levels than foreign-born Black individuals. It is also possible that perceived discrimination could be more detrimental to foreign-born Black individuals if they reported higher levels of discrimination. Higher levels of internalized racism have been associated with poorer health indicators (e.g., larger weight circumferences, higher abdominal obesity, cortisol dysregulation) in Black women residing in predominately Black countries in the Caribbean (Tull et al., 1999; Tull et al., 2005). The present study’s participants differed from the aforementioned

studies as they currently reside in the US. However, internalized racism was also detrimental to their health despite these study differences. Perhaps having to contend with changes in racial identity coupled with the levels of internalized racism was particularly detrimental to the health of foreign-born Black individuals in this sample.

Internalized Racism and Physical Health

Internalized racism was greater for foreign-born Black individuals than US-born Black individuals. In at least one study, Black individuals from countries wherein they are part of the majority racial group have previously reported lower levels of internalized racism compared to African Americans (Mouzon & McLean, 2017). However, the authors' assessment of internalized racism encompassed the participant's ethnicity (e.g., Caribbean Black) whereas the current study assessed for attitudes regarding Black persons in general. This is an important distinction as race and ethnicity have been found to not be mutually exclusive for people of the Caribbean and their racial and ethnic identities can vary depending on various factors (e.g., geographic location, socioeconomic status; Jones & Erving, 2015).

It was expected that Black individuals from countries wherein they are the majority race would report lower levels of internalized racism due to them using discrimination as motivation to excel academically (Fries-Britt et al., 2014). A qualitative study by Fries-Britt and colleagues (2014) was conducted in a university student sample, so these participants were likely very goal-oriented and focused on the educational opportunities in the US, potentially leading them to be less focused on the racial climate in the US than the present sample (Fries-Britt et al., 2014). Majority of the foreign-born sample in the present study were not college students, therefore, sample differences could explain these unexpected findings.

Further, Black immigrants are often exposed via the media to biases against Black Americans in their home country leading to internalization of racism against Black Americans (Hilaire, 2006). Consequently, Black immigrants may distance themselves and their children from African Americans (Hilaire, 2006). In other words, they emphasize their ethnic identity in an attempt to remain distinct from African Americans due to beliefs that African Americans are responsible for their own struggles in the US (Hilaire, 2006). Therefore, due to exposure to biases against African Americans, the participants in this sample may have internalized racism against Black individuals learned in their home country and it was amplified when they moved to the US.

The interaction between internalized racism and physical health differed by racial context of origin. However, contrary to hypothesis one, the association between internalized racism and physical health was stronger for foreign-born Black individuals rather than US-born Black individuals. Specifically, in the whole sample and the male and female sub-analyses, foreign-born Black individuals who were more likely to internalize racism had poorer physical health. Although internalized racism is an understudied construct, there is evidence indicating that internalized racism has a negative effect on mental and physical health outcomes (James, 2020). However, internalized racism may also be protective against developing negative health outcomes (James, 2020). Given that findings regarding the association between internalized racism and physical health are mixed, it is not too surprising that no significant association was found for US-born Black individuals, but was found for foreign-born Black individuals. These data indicate internalized racism may impact health differently depending on one's racial context of origin.

Perceived Discrimination and Physical Health

Foreign-born Black individuals reported higher levels of perceived discrimination than US-born Black individuals, which is contrary to previous research (Dominguez et al., 2009; Taylor et al., 2019; Hunter, 2008; Waters, 1994). Yet, similar to the current study, Molina and James (2016) found that people of Caribbean descent reported higher levels of racial discrimination than African Americans. It was expected that foreign-born Black individuals would report lower levels of discrimination due to them reporting they feel "disconnected" from racial concerns in the US (Fries-Britt et al., 2014). Notably, the samples from the aforementioned studies were primarily of Caribbean descent which could be contributing to the discrepant findings as the sample from the present study was primarily from countries in Africa (Dominguez et al., 2009; Taylor et al., 2019; Hunter, 2008; Waters, 1994).

Contrary to hypothesis two, there was no significant interaction of internalized racism and perceived discrimination on self-reported physical health that differed by racial context of origin. Previous studies have found that lower reports of discrimination and higher levels of internalized racism have a negative effect on cardiovascular health in mid-life African American men with an average age in the 40s (Chae et al., 2010). The present study utilized a younger sample (average age in 20s) consisting of males and females, therefore an age cohort difference could underlie these discrepant findings.

Although different measures for health were used across the studies, it is plausible to assume that the health status of participants in the study by Chae and colleagues (2010) was poorer than the sample in the present study for a couple of reasons. One, given the age difference in the samples, the participants in the study by Chae and colleagues (2010) could have had poorer health given age is negatively associated with health. Second, a portion of the sample in

the study by Chae and colleagues (2010) were classified as being hypertensive or having a cardiovascular history indicating that their samples consisted of individuals with poorer health. However, the present study assessed for general physical health and the average health was as 14.71 on a scale of 4 to 20. Further, the sample utilized in the study by Chae and colleagues (2010) could have been experiencing discrimination longer (due to them being older) which means the cumulative effect of lifetime discrimination on health is more apparent. The current sample may have been too young to see such an effect. Finally, the data for the current study was collected during a time when race-based social justice movements and a pandemic were unexpectedly co-occurring which could have impacted the responses of the current sample.

Perceived Discrimination Reactivity

Discrimination reactivity was also higher for foreign-born Black individuals than US-born Black individuals which was contrary to expectations. Per the biopsychosocial model of racism, discrimination is perceived as a stressor; thus, experiencing discrimination is expected to elicit psychological and physiological responses (Clark et al., 1999). Since US-born Black individuals report perceiving higher levels of discrimination than foreign-born Black individuals, it was predicted that US-born Black individuals would have higher levels of discrimination reactivity. Further, Black immigrants acknowledge the presence of racism in American society, but are also likely to believe they can surpass the barriers imposed by racism if they distinguish themselves from African Americans and utilize strong work ethic (Hilaire, 2006). This perspective towards racism could consequently result in them being less reactive.

These unexpected findings could be due to Black individuals born and raised in the US being more accustomed to experiencing discrimination and therefore less reactive to these experiences. In line with this theory, some have found that discrimination is more detrimental to

the physical health of majority groups (that are less accustomed to experiencing discrimination) compared to minority groups (Bey et al., 2019). Further, due to their racial context of origin, it can be challenging for foreign-born Black individuals to view themselves as a lower racial status because they were not socialized to cope with this stressor (Hilaire, 2006). In this sample, foreign-born Black individuals endorsed higher levels of discrimination than US-born Black individuals which could explain why foreign-born Black individuals were, in turn, more reactive to experiences of discrimination.

Discrimination reactivity was associated with poorer physical health for US-born Black individuals compared to foreign-born Black individuals, despite foreign-born Black individuals reporting higher discrimination reactivity. It could be that discrimination reactivity activates various coping mechanisms for foreign-born Black individuals whereas this is not the case for US-born Black individuals. For example, physical health is positively associated with motivation, meritocracy, and connection and belonging to Black individuals for foreign-born Black individuals, but these associations are not seen with US-born Black individuals. Further, contrary to hypothesis three, there was no significant interaction of internalized racism and perceived discrimination on perceived discrimination reactivity that differed by racial context of origin.

Motivation to Succeed

For foreign-born Black individuals, experiencing discrimination was positively associated with motivation to succeed, corroborating the findings that foreign-born Black individuals are likely to utilize discrimination as motivation to excel academically (Fries-Britt et al., 2014). Given that the foreign-born Black individuals in this sample were primarily non-college students perhaps discrimination fuels motivation to succeed beyond the academic setting.

Further, foreign-born Black individuals may envision the American ideals as more attainable than US-born Black individuals (Hilaire, 2006; Tormala & Deaux, 2006). When exposed to biases such as stereotypes, the performance of African American and second-generation Black immigrants decreases when compared to White individuals, while first-generation Black immigrants report having higher expectations for performance when exposed to stereotype threats compared to those in lower stereotype threat situations (Tormala & Deaux, 2006). This implies that foreign-born Black individuals may be more likely to feel motivated to succeed in the US and seek upward mobility.

Contrary to hypothesis four, motivation to succeed did not explain the interaction of racial context of origin and internalized racism on physical health. While foreign-born Black college students have shared that they use discrimination as motivation to succeed, in this study, this factor does not explain why the association between internalized racism and self-reported health differed by racial context of origin (Fries-Britt et al., 2014).

Belief in Meritocracy

US-born Black individuals with increased perception of discrimination reported lower levels of meritocracy. Similarly, structural awareness (attributing inequalities to social institutions and structures rather than the capabilities of an individual or group) has been associated with higher levels of discrimination in a sample of African American and White women (Versey & Curtin, 2016). Foreign-born individuals may be more likely to utilize discrimination as motivation to succeed whereas for US-born individuals, experiencing discrimination highlights the barriers this social stressor imposes on a group's ability to succeed.

As expected, belief in meritocracy was higher for foreign-born Black individuals than US-born Black individuals. Black Americans have reported seeing less opportunity in the US

than Black individuals from the Caribbean (Waters, 1994). A higher perception of opportunity could indicate a stronger belief that these opportunities are obtainable. Foreign-born Black individuals who acknowledge discrimination, can blame African Americans for their stifled success in the US and believe that if they try harder then they will be less impacted by racism (Hilaire, 2006).

Hypothesis five was also not supported as belief in meritocracy did not explain the interaction of racial context of origin and internalized racism on physical health. However, for foreign-born Black individuals higher internalized racism was associated with lower belief in meritocracy, but no association between internalized racism and belief in meritocracy was found for US-born Black individuals.

Connection and Belonging Within the Black Racial Group

US-born Black individuals reported higher levels of connection and belonging with the Black racial group compared to foreign-born Black individuals. This is not surprising given that US-born Black individuals were born and raised in a country wherein race is a salient construct during critical years for identity development, US-born Black individuals often incorporate racial identity into their general identity development (Arnett & Brody, 2008). Further, US-born people of African Caribbean descent have reported feeling close to Black individuals in the US whereas foreign-born people of Caribbean descent report feeling closer to Caribbean Black individuals (Jones & Erving, 2015).

Contrary to hypothesis six, connection and belonging to the Black racial group did not explain the interaction of racial context of origin and internalized racism on physical health. Greater shared sense of belonging with African Americans has been associated with lower levels of depression, but did not buffer the association between race-related stress and depression

(Hunter et al., 2017). Therefore, connection and belonging with the Black racial group may not be impactful enough to explain differences in racial context of origin in the association between internalized racism and physical health.

Shared Racial Fate

US-born Black individuals had higher levels of shared racial fate with the Black racial group compared to foreign-born Black individuals. US-born African Caribbean individuals have reported stronger common fate with the Black racial group than African Caribbean people who are foreign-born (Jones & Erving, 2015). Further, geographic location for people of Caribbean descent may influence sense of common fate with African Americans as one qualitative study concluded that residing in predominately White areas enhances common fate with African Americans (Jones & Erving, 2015). Therefore, it was expected that US-born Black individuals would have higher shared racial fate than foreign-born Black individuals.

Contrary to hypothesis seven, shared racial fate did not explain the interaction of racial context of origin and internalized racism on physical health. Others have found shared racial fate to not be associated with depression and did not buffer the negative association between race-related stress and depression (Hunter et al., 2017). Unfortunately, as yet shared racial fate does not appear to be a mechanism to help explain the negative effects of racism and discrimination on health outcomes.

Exploratory Analyses

For both US-born and foreign-born individuals, racial centrality was positively associated with several key study variables, such as discrimination, discrimination reactivity, motivation to succeed, shared racial fate, and connection and belonging to the Black racial group, while negatively associated with internalized racism. These findings could indicate that the salience of

race to a person's identity is very influential in how they navigate their environment as a Black individual in the US, particularly regarding how they perceive and react to discrimination and their sense of connection with the Black racial group.

Having higher centrality could also potentially be protective against internalizing racism and negative health outcomes, but particularly for foreign-born Black individuals. For foreign-born Black individuals only, racial centrality was positively associated with better physical health. Further analyses revealed that racial centrality was positively associated with better physical health in the sample of foreign-born Black individuals for females, but not males.

In the US, Black females navigate living in a society with two marginalized identities influencing the development of their gendered racial identity. Their gendered racial identity can be utilized as a protective mechanism against the adversity they experience due to the intersection of their marginalized identities (Williams & Lewis, 2021). While US-born people of African descent report identifying more with their race than ethnicity compared to their foreign-born counterparts, when facing everyday discrimination foreign-born people of African descent are more likely to identify by their race rather than ethnicity (Jones & Erving, 2015). Notably in the present study, foreign-born Black individuals reported experiencing more discrimination than US-born Black individuals. Therefore, perhaps the coupled experience of being Black and a woman in the US resulted in foreign-born Black women being more likely to utilize racial centrality as a protective mechanism.

Racial centrality has been found to increase awareness of discrimination and to buffer the effects of discrimination on mental illness symptoms (Sellers et al., 2003). The present data indicated that while centrality is associated with increased awareness of discrimination for US-born and foreign-born Black individuals it may only serve as a buffer for physical health for

foreign-born Black females. Racial centrality has been found to be positively and negatively associated with psychological well-being, but this association has primarily been assessed in samples of African Americans or Black samples wherein ethnicity was not identified (Mushonga & Henneberger, 2020; Sellers et al., 2003). This study extends upon these findings by assessing the association of racial centrality with physical health and by racial context of origin. Interestingly, in this study, higher racial centrality was associated with better physical health for foreign-born Black females, but not significant for US-born Black individuals.

Further analyses were conducted to determine whether racial centrality was protective against poorer physical health in the context of racial discrimination. Findings indicated that for foreign-born Black individuals with lower levels of centrality perceived discrimination was associated with lower physical health for males and females. However, for foreign-born Black individuals with higher levels of centrality, there was no significant relationship between perceived discrimination and physical health. A review by Brondolo and colleagues (2009) indicated that the moderating effect of racial identity on racial discrimination and psychological adjustment is mixed, although racial centrality has been found to buffer against negative psychological effects of discrimination (Sellers et al., 2003).

Unfortunately, there is a lack of studies assessing the association of racial centrality and perceived discrimination on physical health and to the author's knowledge no studies assessing this association by racial context of origin. Therefore, given the 3-way interaction and moderation analyses it could be concluded that while higher centrality may promote better physical health with foreign-born Black individuals, perhaps centrality is not influential enough in this population to buffer against the negative effects on physical health of racial discrimination. This finding could be due to foreign-born Black individuals being less likely to

be socialized in a manner that incorporates being Black as a central part of their identity because the Black racial group was the majority racial group and not perceived as different (Tormala & Deaux, 2006). This aspect of their identity likely becomes more prominent the longer they are in the US, a very racialized context. Indeed, the present data indicated a positive relationship between time spent in the US and racial centrality for foreign-born Black individuals. Regarding US-born Black individuals, regardless of level of racial centrality, there was no significant interaction between perceived discrimination and physical health.

Further analyses were conducted to determine if levels of racial centrality and racial context of origin differentially influenced the association between perceived discrimination and perceived discrimination reactivity. Regardless of level of centrality, for foreign-born Black individuals more discrimination was associated with greater perceived discrimination reactivity. However, for US-born Black individuals with higher levels of centrality, more perceptions of discrimination were associated with higher perceived discrimination reactivity, but not those who reported lower levels of centrality. For the majority of this sample, the greater exposure to racial discrimination, the more reactive to racism they reported to be, except those who were born in the US and have lower levels of racial centrality; they were just less reactive to perceived racism overall.

Prior research has examined the interactions of perceived discrimination, racial centrality, and reactivity and recovery of the parasympathetic nervous system to both non-race and race-related stressors. The assessment of perceived discrimination reactivity was a novel approach in this study. Per the Biopsychosocial Model of Racism, racial discrimination activates psychological and physiological responses (Clark et al., 1999). In a sample of Black college students (84.9% Black/African American), only lower racial centrality was protective regarding

parasympathetic activity and recovery (Volpe et al., 2018), further indicating that lower centrality could be more protective for US-born Black individuals than higher levels. For foreign-born individuals, perhaps centrality is not influential in the association between racial discrimination and its reactivity. Or, perhaps centrality functions differently for US-born Black individuals and foreign-born Black individuals as for US-born Black individuals who reported lower centrality, there was no association between perceived discrimination and perceived discrimination reactivity, but this association was found with foreign-born Black individuals.

Findings indicate that the association between perceived discrimination, racial context of origin, and racial centrality on perceived discrimination reactivity differs by sex for foreign born Black individuals. For foreign-born Black females with lower centrality higher perceived discrimination is associated with higher perceived discrimination reactivity while the opposite was found for US-born Black females. For US-born Black females with higher centrality, higher discrimination was associated with higher perceived discrimination reactivity. The association may not have been significant for foreign-born Black females at higher levels of racial centrality due to the small sample size. These data indicate that further exploration regarding racial centrality and racial context of origin in the association between discrimination and physical health is warranted.

General Discussion

While Black individuals in the US, and countries in the Caribbean and Africa have all experienced colonialization from European nations, the social structures, opportunities and rights afforded to Black individuals, and racial context post-colonialization influence the experiences and social mobility of Black individuals for generations afterwards (Tormala & Deaux, 2006). Consequently, racial socialization in countries where Black individuals are the majority differs in

some respects from racial socialization in minority Black countries (Tormala & Deaux, 2006). Therefore, perceptions and reactivity to experiences of discrimination and racism likely differ depending on the racial context in which one was born and raised, as reflected by the findings in this study.

The racial context of origin framework posits that the health of Black individuals from countries wherein they are the majority race is typically better than the health of Black individuals from countries wherein they are the minority race because of the likelihood that the latter group is experiencing significantly higher lifetime levels of discrimination and racism (Read & Emerson, 2005). In support of this framework immigrants of minority racial groups report better health upon arrival to the US than their US-born counterparts, but these groups experience a more rapid decline in health than White immigrants (Brown, 2018; Hamilton & Hagos, 2021). Further, Black individuals living in countries that are majority Black or racially mixed report being less psychologically distressed than Black individuals in majority White countries, further supporting the racial context of origin framework (Marquez-Velarde et al., 2022). These findings are believed to be the consequences of racism and discrimination experienced by minority groups in the US (Brown, 2018; Hamilton & Hagos, 2021). The present study found differences in self-reported physical health and interactions of study variables that differed based on racial context of origin, but not always in the expected directions.

Interestingly, in this sample US-born Black individuals reported better health than foreign-born Black individuals. One contributing factor to foreign-born Black individuals having poorer physical health could be their higher reports of internalized racism, which in this sample is a stronger predictor of poorer physical health outcomes than perceived discrimination. Some foreign-born Black individuals internalize racism about Black people in the US while residing in

their country of origin where they may feel separate from US-born Black people (Tormala & Deaux, 2006). Perhaps moving to the US, being grouped with native Black individuals by White individuals due to similarities in skin tone, created an environment where they then began to assume a new Black identity that encompasses negative beliefs about Black individuals may be particularly detrimental to the health of foreign-born Black individuals. Incorporating a new identity that is now viewed as problematic in a country where they assumed high expectations for opportunity could be a unique stressor for foreign-born Black individuals who internalize racism (Hilaire, 2006; Tormala & Deaux, 2006). Further, a majority of US-born Black individuals in this study were college students currently attending a predominately White institution whereas majority of the foreign-born Black individuals were not currently college students. Although student status and HBCU status were controlled for in the analyses perhaps having a more balanced sample in regards to these two factors could have yielded different results.

Other unexpected findings were internalized racism and perceived discrimination were higher for foreign-born Black individuals which is contrary to prior findings (Dominguez et al., 2009; Taylor et al., 2019; Hunter, 2008; Waters, 1994). This could be due to differences in the samples of foreign-born Black individuals utilized in these studies compared to the present study. For example, the previously cited studies wherein internalized racism and perceived discrimination was higher for US-born Black than foreign-born Black individuals consisted of pregnant women, Black individuals from the Caribbean, and Black individuals specifically from the British Caribbean islands. Majority of the individuals from the current study were from countries in Africa (primarily Nigeria, Kenya, and Ghana) with 4% of the sample reporting being from the Caribbean. Further, the present study had strict inclusion criteria which required parents

and grandparents being born and raised in the same racial context of origin as the participant, so that ethnicity could be firmly and confidently established. Therefore, although several studies endorsed using foreign-Black individuals, the ethnic makeup of these studies varied. These findings demonstrate the importance of considering the heterogeneity and ethnicity of Black individuals living in the US when examining discrimination and racism.

These data also provide evidence that type of racism and discrimination is important to consider when examining racial context of origin. Internalized racism and perceived discrimination had differential effects on self-reported physical health depending on one's racial context of origin. Discrimination was associated with poor health in US-born Black individuals, but internalized racism was associated with poorer health in foreign-born Black individuals. The moderation analyses including covariates revealed that internalized racism was associated with self-reported physical health for foreign-born Black individuals, but there was no differential effect between perceived discrimination and self-reported physical health by racial context of origin. Although foreign-born Black individuals report acknowledging discrimination they also endorse perceiving discrimination as a barrier that can be overcome, so perhaps perceptions of discrimination at the levels perceived are not as detrimental to their health as for US-born Black individuals (Hilaire, 2006). However, at higher levels of perceptions discrimination could be detrimental to the health of foreign-born Black individuals. For foreign-born Black individuals, internalizing racism could indicate a shift in their perception of their identity in a context that is not readily accepting of this new identity (i.e. being Black in a highly racially stratified society). Grappling with this unique transition in identity could be detrimental to the health of foreign-born Black individuals.

Although some studies have found internalized racism and perceived discrimination impact cardiovascular health in a sample of African American men (Chae et al., 2010; Chae et al., 2012), looking at these variables simultaneously did not yield similar findings for the present study. This study was unique in that majority of the research looking at the effect of various forms of racial discrimination and racism do not examine the interaction of different forms of racism or discrimination by racial context of origin. This could indicate that there are other underlying mechanisms that are essential to understanding the health differences found between US-born and foreign-born Black individuals. Four factors tested in this study (motivation to succeed, belief in meritocracy, shared racial fate, and connection and belonging) did not help explain the differences in internalized racism on self-reported physical health by racial context of origin. However, exploratory analyses revealed that racial centrality functions differently for foreign-born Black individuals compared to US-born Black individuals in relation to self-reported physical health and discrimination reactivity, further highlighting the need to discern other factors that could aid in explaining these differences.

These data were also collected during a time when racial injustice was heavily publicized due to videos of police shootings or murders while in custody of unarmed Black individuals being widely available to the public. The police shootings led to multiple protests to promote racial justice in the US and broadcasted the prevalence of race-related issues in the US. Social media brought these issues to the forefront as people in the US could now view these events and form their own opinions regarding the justness of these situations rather than relying on the portrayal of these events by televised media which may or may not be biased. Typically, foreign-born Black individuals do not report experiencing as much discrimination and racism as US-born Black individuals (Dominguez et al., 2009; Taylor et al., 2019; Hunter, 2008; Waters, 1994).

Therefore, it is plausible that these events heightened awareness for foreign-born Black individuals of experiences of discrimination and racism leading them to endorse higher perceived discrimination and racism than US-born Black individuals. Whereas, US-born Black individuals' awareness of discrimination and racism may not have been as impacted as they were socialized to expect the occurrence of these types of events.

Another major current event that likely influenced data was the global SAR-CoV-2/COVID-19 pandemic. The pandemic also increased awareness of health disparities in the US as communities of color were disproportionately impacted by the pandemic (e.g., job loss, higher infection rates, higher death rates). Further, the government-imposed lockdowns and travel restrictions affected all participants; however, they may have been particularly difficult for foreign-born Black individuals whose family were not in the US, increasing their non-racial related psychological stress and altering their perceived physical health more than US-born Black individuals.

Clinical Implications

Discrimination and internalized racism have a negative impact on mental and physical health outcomes (Gale et al., 2020; Pieterse et al., 2012). Findings from this study indicate that type of racism and discrimination impact Black individuals differently depending on where they were born and raised. Regarding a clinical setting, these data emphasize the importance of considering not just the race of a client, but also their ethnicity and the unique experiences of individuals within an ethnic group when conceptualizing a case. Specifically, when a mental health provider is assessing various aspects of a client's identity, it is important to inquire how their culture and ethnicity influence their perception of their identity rather than making assumptions based on the client's race.

This study also highlights the importance of considering which factors, such as racial centrality, may serve as a buffer against poor health for some ethnicities within a racial group, but not others due to their sociocultural context. If factors such as racial centrality do serve as a buffer against negative health effects, then perhaps this concept should be emphasized more in a therapeutic setting wherein a client is presenting with concerns related to experiences of racism or discrimination. Therefore, assessing for levels of discrimination and internalized racism may also prove beneficial in a clinical setting. Cognitive Behavioral Therapy (CBT) has been proposed as an approach to treat the negative impacts of internalized racism on African Americans and other ethnicities within the Black racial group (Steele, 2020). Further exploration of this theory in treating the negative effects of internalized racism is warranted.

Limitations and Future Directions

One limitation to the present study is the number of college students that were present in the US-born sample compared to the foreign-born sample. Although this variable was controlled for in the analyses having samples that are more comparable and more representative of the populations of interest would be preferable. Further, it is possible that experiences of racism and discrimination for foreign-born individuals differs depending on the racial makeup of where they live within the US (Tormala & Deaux, 2006). The US-born sample was primarily from a college in the southeast US wherein the foreign-born sample was primarily community based and not primarily limited to one geographic region. Future studies should account for the location of the participants.

Ideally, in studying racial context of origin it would be preferable to examine Black individuals currently living in a context wherein they are the majority race. To best capture racial context of origin in this study, Black individuals currently living in the US, but spent majority of

their lives in countries wherein they were the majority race were sampled. A benefit to utilizing a sample currently in the US is that the findings can provide insight on how racial context of origin differentially alters the perceptions and effects of perceived discrimination and internalized racism of various ethnicities within the Black racial group residing in the US (a country where health disparities are very prevalent). If future studies were to assess the effect of racial context of origin utilizing a sample of Black individuals in a country wherein they are the majority race, it will be important to consider that racism and discrimination present differently across various regions. Further, other countries have their own forms of racism and discrimination and diversity regarding ethnicities, culture, and language. Future studies that utilize samples of foreign-born Black individuals should discern between discrimination associated with racism and discrimination associated with being an immigrant as they may be confronted with discrimination associated with both identities. Therefore, these differences should be captured and examined in future studies.

The present study focused on perceptions of race and therefore captured constructs such as internalized racism and racial centrality. Several other studies utilize samples wherein participants have ancestry from the Caribbean and African countries or utilized mixed samples wherein a portion of the sample identified with Caribbean or African Ancestry, but were born and raised in the US. The present study utilized a sample that was born and raised in a country where Black individuals are the majority race in addition to their parents and grandparents. Consequently, it is likely that the participants in the present study have a strong connection to their ethnicity. Therefore, a limitation is that an ethnic identity measure was not included in the study. As assessment of ethnic identity would allow understanding of how racial and ethnic

identity function within the two groups. Another limitation is the small sample size and not being powered to detect small effects.

Several of the study measures were normalized in African American samples and not in samples of foreign-born Black individuals. Therefore, it is possible that the foreign-born individuals interpreted the items in the measures differently than the US-born sample given their unique experiences of discrimination and racism. However, other studies have utilized measures that were normalized in African American samples with foreign-born Black individuals (Molina & James, 2016; Mouzon & McLean, 2017). Also, the study was cross-sectional, so causation and directionality cannot be inferred. Future studies could include a longitudinal design to determine the long-term effect of key study variables on physical health and how these interactions differ by racial context of origin.

Physical health was a self-reported perception, not a list of conditions, physician confirmed diagnoses or an objective marker of physical health such as blood pressure or heart rate variability. As highlighted in the introduction, many of the studies suggesting that US-born Black individuals have poorer health than foreign-born Black individuals utilize physiological markers. Thus, future studies could utilize confirmed medical diagnoses or collect physiological health markers to increase the reliability of health status.

Discrimination reactivity was also self-reported. Future studies should assess for differences in physiological reactivity to discriminatory events. Physiological data could provide more ecologically valid data than a self-report of reactivity and provide insight to how discriminatory experiences may be causing wear and tear on the body's physiological systems which could lead to later illness development. Physiological data could identify people at-risk for disease onset.

Several of the study measures are novel and not validated; some of these novel measures also had low reliability estimates. Further, pilot testing of the Belief in Meritocracy scale and the Connection and Belonging Scale was not conducted to confirm reliability and construct validity. Therefore, several of the outcomes involving these measures may be different if validated measures are utilized in future studies. Even with validated measures US-born Black individuals and foreign-born Black individuals may interpret items differently due to differences in socialization. Qualitative work could help discern differences in racial experiences due to racial context of origin, including various sources of discrimination like intra racial (within Black Americans), intra group (with other minorities), and intergroup (with White individuals).

In the present study as time in the US increased for foreign-born Black individuals, internalized racism decreased, but perceived discrimination and racial centrality increased. This could indicate that they are dealing with the new perceived meaning of their race in a different racial context. Therefore, future studies should use a longitudinal design in exploring how the process of transitioning into a society with a different racial context influences stress and health outcomes.

Conclusion

Racial context of origin seems to be a promising avenue in further understanding health disparities and highlights the need for examining various aspects of diversity within racial groups. There is research examining the association between discrimination and physical health in Black individuals, but a lack of research examining the association by racial context of origin. This dissertation provides a novel examination of the differences in the associations amongst racial discrimination, racial centrality, and internalized racism on physical health and discrimination reactivity by racial context of origin. Findings indicate that interactions amongst

key study variables differ by racial context of origin. Some of these findings are in corroboration with prior literature while other findings were novel and unexpected. Therefore, future studies should continue to explore how the context in which one is raised should be captured when examining the relationships among racism, discrimination, and physical health.

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Exposure to racial discrimination and ambulatory blood pressure in women with Type 2 diabetes. *Stress & Health: Journal of the International Society for the Investigation of Stress*, *32*(4), 337–345. https://doi.org/10.1002/smi.2622

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Williams, D. P., Pandya, K. D., Hill, L. K., Kemp, A. H., Way, B. M., Thayer, J. F., & Koenig, J. (2019). Rumination moderates the association between resting high-frequency heart rate variability and perceived ethnic discrimination. *Journal of Psychophysiology, 33*(1), 13–21. https://doi.org/10.1027/0269-8803/a000201.

Williams, M. G., & Lewis, J. A. (2021). Developing a conceptual framework of Black women's gendered racial identity development. *Psychology of Women Quarterly*, *45*(2), 212–228. https://doi.org/10.1177/0361684320988602

Willis, H. A., Sosoo, E. E., Bernard, D. L., Neal, A., & Neblett, E. W. (2021). The associations between internalized racism, racial identity, and psychological distress. *Emerging Adulthood (Thousand Oaks, CA), 9*(4), 384–400. https://doi.org/10.1177/21676968211005598

APPENDIX A: BRIEF PERCEIVED ETHNIC DISCRIMINATION QUESTIONNAIRE – COMMUNITY VERSION

Brondolo, E., Kelly, K., Coakley, V., Gordon, T., Thompson, S., Levy, E., … Contrada, R. (2005). The Perceived Ethnic Discrimination Questionnaire: Development and preliminary validation of a community version 1. *Journal of Applied Social Psychology*, *35*(2), 335–365. https://doi.org/10.1111/j.1559-1816.2005.tb02124.x

Brief PEDQ- Community Version

Think about your **ethnicity/race**. What **group** do you belong to? **Do you think of yourself as**:

Asian? Black? Latino? White? Native American? American? Caribbean? Irish? Italian? Korean?

Another group?

How often have any of the things listed below happened to you**, because of your ethnicity/race**?

BECAUSE OF YOUR ETHNICITY/RACE …

How often…	Never		Sometimes		Very Often
1. Have you been treated unfairly by teachers, principals, or other staff at school?					
2. Have others thoughts you couldn't do things or handle a job?					
3. Have others **threatened** to hurt you (ex: said they would hit you)?					
4. Have others **actually** hurt you or tried to hurt you (ex: kicked or hit you)?					
5. Have policemen or security officers been unfair to you?					
6. Have others **threatened** to damage your property?					
7. Have others **actually** damaged your property?					
8. Have others made you feel like an outsider who doesn't fit in because of your dress, speech, or other characteristics related to your ethnicity?					
9. Have you been treated unfairly by co-workers or classmates?					

10. Have others hinted that you are dishonest or can't be trusted?					
11. Have people been nice to you to your face, but said bad things about you behind your back?					
12. Have people who spoke a different language made you feel like an outsider?					
13. Have others ignored you or not paid attention to you?					
14. Has your boss or supervisor been unfair to you?					
15. Have others hinted that you must not be clean?					
16. Have people not trusted you?					
17. Has it been hinted that you must be lazy?					

APPENDIX B: APPROPRIATED RACIAL OPPRESSION SCALE

Campón, R., & Carter, R. (2015). The Appropriated Racial Oppression Scale: Development and preliminary validation. *Cultural Diversity & Ethnic Minority Psychology*, *21*(4), 497–506. https://doi.org/10.1037/cdp0000037

Rate the following items on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*)

1. There have been times when I have been embarrassed to be a member of my race
2. I wish I could have more respect for my racial group
3. I feel critical about my racial group
4. Sometimes I have a negative feeling about being a member of my race
5. In general, I am ashamed of members of my racial group because of the way they act
6. When interacting with other members of my race, I often feel like I don't fit in
7. I don't really identify with my racial group's values and beliefs
8. I find persons with lighter skin-tones to be more attractive
9. I would like for my children to have light skin
10. I find people who have straight and narrow noses to be more attractive
11. I prefer my children not to have broad noses
12. I wish my nose were narrower
13. Good hair (i.e. straight) is better
14. Because of my race, I feel useless at times
15. I wish I were not a member of my race
16. Whenever I think a lot about being a member of my racial group, I feel
17. Whites are better at a lot of things than people of my race
18. People of my race don't have much to be proud of

19. It is a compliment to be told “You don’t act like a member of your race”
20. When I look in the mirror, sometimes I do not feel good about what I see because of my race
21. I feel that being a member of my racial group is a shortcoming
22. People of my race shouldn’t be so sensitive about race/racial matters
23. People take racial jokes too seriously
24. Although discrimination in America is real, it is definitely overplayed by some members of my race

APPENDIX C: PATIENT-REPORTED OUTCOMES MEASUREMENT INFORMATION SYSTEM (PHYSICAL HEALTH)

Hays, R. D., Bjorner, J. B., Revicki, D. A., Spritzer, K. L., & Cella, D. (2009). Development of physical and mental health summary scores from the patient-reported outcomes measurement information system (PROMIS) global items. *Quality of Life Research*, *18*(7), 873–880. https://doi.org/10.1007/s11136-009-9496-9

		Excellent	Very good	Good	Fair	Poor
Global03	In general, how would you rate your physical health?	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

		Completely	Mostly	Moderately	A little	Not at all
Global06	To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

		None	Mild	Moderate	Severe	Very severe
Global08	How would you rate your fatigue on average?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Global07	How would you rate your pain on average?	☐ 0 No pain	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10 Worst imaginable pain

APPENDIX D: DISCRIMINATION REACTIVITY SAMPLE ITEMS

Blevins, K., Majeno, A., Price, B., Bennett, J. M., & Yim, I. (in prep) Reliability and validation of the discrimination reactivity scale across 4 racial samples in the US.

The following questionnaire asks about your experiences of racial discrimination due to your race/ethnicity. This will be referred to as your GROUP STATUS. Please indicate the answer that most closely describes your own reaction in general.

1. When I am treated with less respect than other people, I feel angry.
   - Not characteristic of me (1)
   - Somewhat characteristic of me (2)
   - Very characteristic of me (3)

2. I have a hard time forgetting about when I was treated unfairly.
   - Not characteristic of me (1)
   - Somewhat characteristic of me (2)
   - Very characteristic of me (3)

3. I get annoyed when I think that someone may be judging me unfairly.
   - Not characteristic of me (1)
   - Somewhat characteristic of me (2)
   - Very characteristic of me (3)

APPENDIX E: MOTIVATION TO SUCCEED ITEMS

Indicate the degree to which you agree or disagree with each statement

1. When I experience racial discrimination, I am motivated even more to succeed
2. When I observe or experience racial discrimination, I become discouraged (R)
3. When thinking of my race, I become optimistic about my future
4. Being Black inspires me to perform my very best

*(R) indicates a reverse scored item

APPENDIX F: BELIEF IN MERITOCRACY

Indicate the degree to which you agree or disagree with each statement

1. Being black hinders my chances of success (R)
2. As a Black person, if I work hard enough I can achieve whatever I want.
3. Racism gets in the way of Black people's success (R)
4. It is just as easy for Blacks to be successful as it is for Whites

*(R) indicates a reverse scored item

APPENDIX G: CONNECTION AND BELONGING SAMPLE ITEM

Hunter, C. D., Joseph, N., Case, A. D., & Bokhari, E. (2012). Interdependence and attachment in Black Caribbean Americans' identities. Unpublished manuscript, Department of Psychology, University of Illinois, Urbana-Champaign, Urbana, IL.

Indicate the degree to which you agree or disagree with each statement

1. I do not feel a sense of belonging with Black Americans.

APPENDIX H: SHARED RACIAL FATE SAMPLE ITEM

Hunter, C. D., Joseph, N., Case, A. D., & Bokhari, E. (2012). Interdependence and attachment in Black Caribbean Americans' identities. Unpublished manuscript, Department of Psychology, University of Illinois, Urbana-Champaign, Urbana, IL.

Indicate the degree to which you agree or disagree with each statement

1. My destiny in the U.S. is very connected to that of Black Americans.

APPENDIX I: DEMOGRAPHIC INFORMATION

Demographic Data Collection

1. How much do you weigh? _____ lbs
2. How tall are you? _____ (ft and inches)
3. What was your sex assigned at birth? Male Female Other (specify)
4. What is your birthday? _____/_____/_____ MM/DD/YY
5. How old are you?
6. What is your relationship status? Single, Committed single relationship, Dating multiple interests, Married/Common Law, Divorced, Other (specify)
7. Are you currently a college student? Yes No
8. If Yes, do you attend a historically black college and university (HBCU) or a predominately white institution (PWI). If other or unsure please list your university here_
9. What is your race? White, Black, Asian, Native American, Alaskan Native, Native Hawaiian/other Pacific Islander, Multiracial (specify) or Other (specify)
10. Do you identify as Hispanic or Latinx?
11. "The U.S. is made up of people of various ethnicities. Ethnicity refers to cultural tradition, beliefs, and behavior that are passed down through generations. Some examples of the ethnicities that people may identify with are Mexican, Cuban, Nicaraguan, Chinese, Taiwanese, Filipino, Jamaican, African American, Haitian, Italian, Irish, and German. In addition, some people may identity with more than one ethnicity. We'd like you to think about what YOU consider your ethnicity to be. Please write what you consider your ethnicity to be here___"

(Umaña-Taylor, Yazedjian, & Bámaca-Gómez, 2004, p. 16)

12. What country were you born in? US or other (specify)
13. If not born in the US, how long have you lived in the United States?
14. If not born in the US, have you spent more than half of your life living in your country of birth or a country where Black individuals are the majority race (examples would be Jamaica or Nigeria, but NOT the United States or England since White individuals are the majority race in the latter two countries)?
15. Are Black individuals the majority race in the country you were born in?
16. What country have you lived in the majority of your life?
17. Were both of your parents and all four of your grandparents born and raised in a country where Black people were the majority race?
18. If not born in the US, what language is primarily spoken in the country you were born in?
19. Have you lived in other countries besides the United States for longer than 6 months? IF yes, please list the others countries in which you have resided, the calendar month/years you resided in that country (ex. 10/2002 to 12/2004).
20. If born in the US, have you spent more than half of your life living in the United States?
21. If born in the US, were both of your parents and all four of your grandparents born and raised in the United States?
22. What is Parent #1's ethnicity?
23. What is Parent #2's ethnicity?
24. Was Parent #1 born and raised in the US? (If no, what country)
25. Was your GRANDMOTHER (parent #1's mother) born and raised in the US? (If no, what country)

26. Was your GRANDFATHER (parent #1's father) born and raised in the US? (If no, what country)
27. Was Parent #2 born and raised in the US? (If no, what country)
28. Was your GRANDMOTHER (parent #2's mother) born and raised in the US? (If no, what country)
29. Was your GRANDFATHER (parent #2's father) born and raised in the US? (If no, what country)

APPENDIX J: SUBJECTIVE SOCIAL STATUS

Adler, N. E. & Stewart, J. (2007). The MacArthur Scale of subjective social status. *In Psychosocial Research Notebook.* Retrieved from http://www.macses.ucsf.edu/research/psychosocial/subjective.php

At the **top** of the ladder are the people who are best off—those who have the most money, the most education and the most respected jobs. At the **bottom** are the people who are the worst off—who have the least money, least education, and the least respected jobs or no job. The higher up on the ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

Where would you place yourself on this ladder?

Please place a large **"X"** on the rung where you think you stand at this time in your life, relative to other people in the United States

APPENDIX K: CORONAVIRUS IMPACT SCALE

Stoddard, J., Reynolds, E. K., Paris, R., Haller, S., Johnson, S., Zik, J., ... & Kaufman, J. (2021). The Coronavirus Impact Scale: construction, validation, and comparisons in diverse clinical samples.

Rate how much the Coronavirus pandemic has changed your life in each of the following ways.

1. Your routines:
    0. No change.
    1. Mild. Change in only one area (e.g. work, education, home responsibilities, social life, hobbies, religious activities).
    2. Moderate. Change in two areas (e.g. work, education, home responsibilities, social life, hobbies, religious activities).
    3. Severe. Change in three or more areas (e.g. work, education, home responsibilities, social life, hobbies, religious activities).
2. Your income/employment:
    0. No change.
    1. Mild. Small change; able to meet all needs and pay bills.
    2. Moderate. Having to make cuts but able to meet basic needs and pay bills.
    3. Severe. Unable to meet basic needs and/or pay bills.
    4. Not applicable (I neither was nor currently employed.)
3. Your access to food:
    0. No change.
    1. Mild. Enough food but difficulty getting to stores and/or finding needed items.
    2. Moderate. Occasionally without enough food and/or good quality (e.g., healthy) foods.
    3. Severe. Frequently without enough food and/or good quality (e.g., healthy) foods.
4. Your access to medical health care:
    0. No change.
    1. Mild. Appointments moved to telehealth.
    2. Moderate. Delays or cancellations in appointments and/or delays in getting prescriptions; changes have minimal impact on health.
    3. Severe. Unable to access needed care resulting in moderate to severe impact on health.
    4. Not applicable (I have not sought medical care since March 2020.)
5. Your access to mental health treatment:
    0. No change.
    1. Mild. Appointments moved to telehealth.
    2. Moderate. Delays or cancellations in appointments and/or delays in getting prescriptions; changes have minimal impact.
    3. Severe. Unable to access needed care resulting in severe risk and/or significant impact
    4. Not applicable (I have not sought mental health care since March 2020.)
6. Your access to extended family and non-family social supports:
    0. No change.
    1. Mild. Continued visits with social distancing and/or regular phone calls and/or video chat or social media contacts.
    2. Moderate. Loss of in person and remote contact with a few people, but not all supports.

3. Severe. Loss of in person and remote contact with all supports.
4. Not applicable (I do not rely on extended family or non-family social support.)

7. Your experiences of stress related to coronavirus pandemic:
0. None.
1. Mild. Occasional worries and/or minor stress-related symptoms (e.g., feel a little anxious, sad, and/or angry; mild/rare trouble sleeping).
2. Moderate. Frequent worries and/or moderate stress-related symptoms (e.g., feel moderately anxious, sad, and/or angry; moderate/occasional trouble sleeping).
3. Severe. Persistent worries and/or severe stress-related symptoms (e.g., feel extremely anxious, sad, and/or angry; severe/frequent trouble sleeping).

8. Your stress and discord within household (e.g., family or friends that you current live with) members:
0. None.
1. Mild. Household members occasionally short-tempered with one another; no physical violence.
2. Moderate. Household members frequently short-tempered with one another; and/or children in the home getting in physical fights with one another.
3. Severe. Household members frequently short-tempered with one another and adults in the home throwing things at one another, and/or knocking over furniture, and/or hitting and/or harming one another.
4. Not applicable (I live alone)

9. Your personal diagnosis of coronavirus.
0. None.
1. Mild. Symptoms effectively managed at home.
2. Moderate. Symptoms severe and required brief hospitalization.
3. Severe. Symptoms severe and required ventilation.

APPENDIX L: POLITICAL CLIMATE AND RACIAL CLIMATE STRESS ITEMS

The current questions help us understand how the current environment is effecting stress levels

- On a scale of 1 to 10 how stressful is the current political environment for you?
- On a scale of 1 to 10 how stressful is the current racial climate for you?

APPENDIX M: INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

Craig, C., Marshall, A., Sjostrom, M., Bauman, A., Booth, M., Ainsworth, B., … Oja, P. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine and Science in Sports and Exercise*, *35*(8), 1381–1395. https://doi.org/10.1249/01.MSS.0000078924.61453.FB

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

1. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

   _____ **days per week**

   ☐ No vigorous physical activities → ***Skip to question 3***

2. How much time did you usually spend doing **vigorous** physical activities on one of those days?

   _____ **hours per day**

   _____ **minutes per day**

   ☐ Don't know/Not sure

Think about all the **moderate** activities that you did in the **last 7 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

3. During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ **days per week**

☐ No moderate physical activities → ***Skip to question 5***

4. How much time did you usually spend doing **moderate** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

☐ Don't know/Not sure

Think about the time you spent **walking** in the **last 7 days**. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

5. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time?

_____ **days per week**

☐ No walking → ***Skip to question 7***

6. How much time did you usually spend **walking** on one of those days?

_____ **hours per day**

_____ **minutes per day**

☐ Don't know/Not sure

The last question is about the time you spent **sitting** on weekdays during the **last 7 days**. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the **last 7 days**, how much time did you spend **sitting** on a **week day**?

_____ **hours per day**

_____ **minutes per day**

☐ Don’t know/Not sure

APPENDIX N: CULTURAL AND RACIAL EXPERIENCES OF SOCIALIZATION SCALE

Bentley-Edwards, K., & Stevenson, H. (2016). The multidimensionality of racial/ethnic socialization: Scale construction for the cultural and racial experiences of socialization (CARES). *Journal of Child and Family Studies*, *25*(1), 96–108. https://doi.org/10.1007/s10826-015-0214-7

Prompt: Has someone said to you any of the following statements throughout your lifetime?''

Respond 1(Never), 2(Sometimes), or 3(All of the time) to the following statements:

1. You have to work twice as hard as Whites in order to get ahead in the world
2. It's important to remember the experience of Black slavery
3. Whites make it hard for people to get ahead in this world
4. Schools should be required to teach all children about Black history
5. ''Don't forget who your people are because you may need them someday''
6. Sometimes you have to correct White people when they make racist statements about Black people
7. Racism is real, and you have to understand it or it will hurt you
8. You should be proud to be Black
9. You can learn a lot from being around important White people
10. Black people have to work together in order to get ahead
11. Black men just want sex
12. Poor Black people are always looking for a handout
13. Sports are the only way for Black kids to get out of the hood
14. Light-skinned Blacks think they are better than dark-skinned Black people
15. Life is easier for light-skinned Blacks than it is for dark-skinned Black people
16. African and Caribbean people think they are better than Black Americans

17. Black women just want money
18. Sometimes you have to make yourself less threatening to make White people around you comfortable
19. You really can't trust most White people
20. When Black people make money, they try to forget they are Black
21. Knowing your African heritage is important for the survival of Black people
22. Black women keep the family strong
23. Train up a child in the way he should go, & he will not turn away from it
24. More jobs would be open to African Americans if employers were not racist
25. Africans and Caribbean people get along with Black Americans
26. Racism is not as bad today as it used to be
27. Since the world has become so multicultural, it's wrong to only focus on Black issues
28. Living in an all Black neighborhood is no way to show your success
29. You can't trust Black people who act too friendly with White people
30. Black children will learn more if they go to a mostly White school
31. Fitting into school or work means swallowing your anger when you see racism
32. Spiritual battles that people fight are more important than physical battles
33. You should learn more about Black history so that you can prevent people from treating you unfairly
34. Good Black men are the backbone of a strong family
35. Black children should be taught early that God can protect them from racial hatre

APPENDIX O: MULTIDIMENSIONAL INVENTORY OF BLACK IDENTITY

(CENTRALITY SUBSCALE)

Sellers, R., Rowley, S., Chavous, T., Shelton, N., & Smith, M. (1997). Multidimensional inventory of black identity: A preliminary investigation of reliability and construct validity. *Journal of Personality and Social Psychology*, *73*(4), 805–815. https://doi.org/10.1037/0022-3514.73.4.805

Sellers, R., Smith, M., Shelton, J., Rowley, S., & Chavous, T. (1998). Multidimensional model of racial identity: A reconceptualization of African American racial identity. *Personality and Social Psychology Review : An Official Journal of the Society for Personality and Social Psychology, Inc*, *2*(1), 18–39. https://doi.org/10.1207/s15327957pspr0201_2

Please indicate to what degree you agree with the following statements

	Strongly Disagree			Neutral			Strongly Agree
1. Overall, being Black has very little to do with how I feel about myself. (R)	1	2	3	4	5	6	7
2. In general, being Black is an important part of my self-image.	1	2	3	4	5	6	7
3. My destiny is tied to the destiny of other Black people.	1	2	3	4	5	6	7
4. Being Black is unimportant to my sense of what kind of person I am. (R)	1	2	3	4	5	6	7
5. I have a strong sense of belonging to Black people.	1	2	3	4	5	6	7
6. I have a strong attachment to other Black people.	1	2	3	4	5	6	7
7. Being Black is an important reflection of who I am.	1	2	3	4	5	6	7
8. Being Black is not a major factor in my social relationships. (R)	1	2	3	4	5	6	7

APPENDIX P: SUPPLEMENTAL TABLES OF HYPOTHESES INTERACTION MODELS

Table P1

Model Results for Two-way Interaction between Internalized Racism and Racial Context of Origin on Physical Health (Hypothesis 1)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	19.94	2.03	9.81	<.001	[15.92, 23.95]
Sex (male)	-0.21	0.35	-0.59	0.55	[-0.90, 0.49]
Age	-0.05	0.05	-1.00	0.32	[-0.15, 0.05]
HBCU Student (yes)	-0.84	0.64	-1.31	0.19	[-2.10, 0.42]
Subjective Social Status	-0.13	0.11	-1.17	0.24	[-0.35, .09]
Political Climate Stress	-0.09	0.07	-1.20	0.23	[-0.23, 0.06]
Racial Centrality	0.01	0.03	0.29	0.77	[-0.04, 0.06]
Coronavirus Impact	-0.94	0.41	-2.30	<.05	[-1.75, -0.13]
Current Student (yes)	1.10	0.58	1.89	0.06	[-0.05, 2.24]
Internalized Racism (IR)	-0.00	0.01	-0.13	0.90	[-0.02, 0.02]
Racial Context of Origin (RCO)	3.44	1.11	3.11	<.01	[1.26, 5.62]
IR x RCO	-0.08	0.01	-5.42	<.001	[-0.11, -0.05]
ΔR^2	0.09				
F	29.41				

Note. N= 160. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; IR= internalized racism; RCO = racial context of origin.

Table P2

Model Results for Two-way Interaction between Internalized Racism and Racial Context of Origin on Physical Health (Hypothesis 1 Males Only)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	18.20	2.79	6.53	<.001	[12.65, 23.75]
Age	-0.02	0.06	-0.33	0.74	[-0.15, 0.10]
HBCU Student (yes)	-0.62	0.73	-0.85	0.40	[-2.06, 0.83]
Subjective Social Status	-0.16	0.14	-1.12	0.27	[-0.45, 0.13]
Political Climate Stress	0.04	0.1	0.41	0.68	[-0.16, 0.24]
Racial Centrality	0.05	0.03	1.53	0.13	[-0.02, 0.12]
Coronavirus Impact	-1.49	0.48	-3.10	<.01	[-2.45, -0.53]
Current Student (yes)	1.04	0.69	1.50	0.14	[-0.34, 2.41]
Internalized Racism (IR)	-0.01	0.02	-0.57	0.57	[-0.05, 0.03]
Racial Context of Origin (RCO)	2.52	1.52	1.66	0.10	[-0.50, 5.55]
IR x RCO	-0.07	0.02	-3.24	<.01	[-0.11, -0.03]
ΔR^2	0.04				
F	10.52				

Note. N= 89. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; IR= internalized racism; RCO = racial context of origin.

Table P3

Model Results for Two-way Interaction between Internalized Racism and Racial Context of Origin on Physical Health (Hypothesis 1 Females Only)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	23.87	3.30	7.24	<.001	[17.27, 30.47]
Age	-0.12	0.08	-1.50	0.14	[-0.28, 0.04]
HBCU Student (yes)	-0.82	1.12	-0.74	0.47	[-3.06, 1.42]
Subjective Social Status	-0.21	0.17	-1.25	0.22	[-0.55, 0.13]
Political Climate Stress	-0.18	0.11	-1.58	0.12	[-0.40, 0.05]
Racial Centrality	-0.06	0.04	-1.49	0.14	[-0.14, 0.02]
Coronavirus Impact	0.60	0.73	0.82	0.42	[-0.87, 2.07]
Current Student (yes)	1.65	0.99	1.67	0.10	[-0.33, 3.63]
Internalized Racism (IR)	-0.02	0.02	-0.88	0.38	[-0.05, 0.02]
Racial Context of Origin (RCO)	4.32	1.71	2.52	<.05	[0.89, 7.75]
IR x RCO	-0.08	0.02	-3.80	<.001	[-0.12, -0.04]
ΔR^2	0.13				
F	14.41				

Note. N= 71. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; IR= internalized racism; RCO = racial context of origin.

Table P4

Model Results for Three-way Interaction for Physical Health (Hypothesis 2)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	21.62	2.93	7.39	<.001	[15.83, 27.40]
Sex (male)	-0.29	0.35	-0.81	0.42	[-0.99, 0.41]
Age	-0.05	0.05	-0.93	0.35	[-0.15, 0.05]
HBCU Student (yes)	-0.89	0.66	-1.34	0.18	[-2.20, 0.42]
Subjective Social Status	-0.10	0.12	-0.84	0.40	[-0.33, 0.13]
Political Climate Stress	-0.09	0.08	-1.15	0.25	[-0.24, 0.06]
Racial Centrality	0.03	0.03	0.96	0.34	[-0.03, 0.08]
Coronavirus Impact	-0.72	0.43	-1.69	0.09	[-1.57, 0.12]
Current Student (yes)	1.14	0.61	1.87	0.06	[-0.07, 2.34]
Discrimination	-1.31	1.00	-1.31	0.19	[-3.28, 0.66]
Internalized Racism (IR)	-0.03	0.04	-0.76	0.45	[-0.10, 0.05]
Racial Context of Origin (RCO)	4.32	3.92	1.10	0.27	[-3.43, 12.07]
Discrimination x IR	0.01	0.02	0.78	0.44	[-0.02, 0.04]
Discrimination x RCO	-0.02	1.43	-0.01	0.99	[-2.84, 2.80]
IR x RCO	-0.09	0.06	-1.55	0.12	[-0.20, 0.02]
Discrimination x IR x RCO	0.00	0.02	0.04	0.97	[-0.04, 0.04]
ΔR^2	0.00				
F	0.00				

Note. N= 160. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; IR= internalized racism; RCO = racial context of origin.

Table P5

Model Results for Three-way Interaction for Discrimination Reactivity (Hypothesis 3)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	0.58	0.45	1.29	0.20	[-0.30, 1.46]
Sex (male)	0.14	0.05	2.57	<.05	[0.03, 0.25]
Age	-0.01	0.01	-1.17	0.25	[-0.02, 0.01]
HBCU Student (yes)	0.24	0.10	2.41	<.05	[0.04, 0.44]
Subjective Social Status	0.00	0.02	0.08	0.94	[-0.03, 0.04]
Political Climate Stress	0.03	0.01	2.44	<.05	[0.01, 0.05]
Racial Centrality	0.01	0.00	2.46	<.05	[0.00, 0.02]
Coronavirus Impact	0.03	0.07	0.44	0.66	[-0.10, 0.16]
Current Student (yes)	-0.15	0.09	-1.66	0.10	[-0.34, 0.03]
Discrimination	0.33	0.15	2.16	<.05	[0.03, 0.63]
Internalized Racism (IR)	0.00	0.01	0.72	0.47	[-0.01, 0.02]
Racial Context of Origin (RCO)	-0.67	0.60	-1.12	0.27	[-1.85, 0.51]
Discrimination x IR	-0.00	0.00	-0.76	0.45	[-0.01, 0.00]
Discrimination x RCO	0.22	0.22	1.02	0.31	[-0.21, 0.65]
IR x RCO	0.01	0.01	1.06	0.29	[-0.01, 0.03]
Discrimination x IR x RCO	-0.00	0.00	-0.61	0.54	[-0.01, 0.00]
ΔR^2	0.00				
F	0.37				

Note. N= 160. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; IR= internalized racism; RCO = racial context of origin.

Table P6

Model Results for Two-way Interaction between Racial Centrality and Racial Context of Origin on Physical Health (Exploratory Hypothesis 1)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	19.43	2.14	9.06	0.00	[15.19, 23.67]
Sex (male)	-0.36	0.40	-0.89	0.38	[-1.15, 0.44]
Age	-0.01	0.06	-0.14	0.89	[-0.12, 0.10]
HBCU Student (yes)	0.09	0.71	0.13	0.90	[-1.32, 1.50]
Subjective Social Status	-0.19	0.13	-1.38	0.17	[-0.45, 0.08]
Political Climate Stress	-0.21	0.08	-2.50	0.01	[-0.37, -0.04]
Coronavirus Impact	-1.03	0.46	-2.25	0.03	[-1.94, -0.13]
Current Student (yes)	0.13	0.64	0.21	0.84	[-1.14, 1.40]
Racial Centrality (RC)	0.00	0.04	0.10	0.92	[-0.07, 0.07]
Racial Context of Origin (RCO)	-9.97	2.21	-4.50	0.00	[-14.34, -5.59]
RC x RCO	0.19	0.05	3.43	0.00	[0.08, 0.29]
ΔR^2	0.05				
F	11.78				

Note. N= 160. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; RC = racial centrality; RCO = racial context of origin.

Table P7

Model Results for Two-way Interaction between Racial Centrality and Racial Context of Origin on Physical Health (Exploratory Hypothesis 1 Females Only)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	21.06	3.10	6.80	0.00	[14.86, 27.25]
Age	-0.00	0.08	-0.02	0.99	[-0.17, 0.16]
HBCU Student (yes)	0.32	1.27	0.25	0.80	[-2.23, 2.86]
Subjective Social Status	-0.27	0.20	-1.36	0.18	[-0.67, 0.13]
Political Climate Stress	-0.32	0.12	-2.66	0.01	[-0.56, -0.08]
Coronavirus Impact	-0.49	0.75	-0.66	0.51	[-1.99, 1.01]
Current Student (yes)	-0.18	1.02	-0.18	0.86	[-2.21, 1.86]
Racial Centrality (RC)	-0.04	0.05	-0.96	0.34	[-0.13, 0.05]
Racial Context of Origin (RCO)	-9.88	3.35	-2.95	0.00	[-16.58, -3.17]
RC x RCO	0.20	0.08	2.35	0.02	[0.03, 0.37]
ΔR^2	0.06				
F	5.52				

Note. N= 71. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; RC = racial centrality; RCO = racial context of origin.

Table P8

Model Results for Three-way Interaction for Physical Health (Exploratory Hypothesis 2)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	19.47	5.11	3.81	<.001	[9.38, 29.56]
Sex (male)	-0.41	0.38	-1.08	0.28	[-1.17, 0.34]
Age	-0.03	0.05	-0.53	0.60	[-0.13, 0.08]
HBCU Student (yes)	-0.06	0.70	-0.09	0.93	[-1.45, 1.32]
Subjective Social Status	-0.12	0.13	-0.93	0.35	[-0.38, 0.14]
Political Climate Stress	-0.15	0.08	-1.82	0.07	[-0.31, 0.01]
Coronavirus Impact	-0.67	0.46	-1.44	0.15	[-1.58, 0.25]
Current Student (yes)	0.68	0.64	1.06	0.29	[-0.59, 1.96]
Discrimination	-0.51	2.18	-0.23	0.82	[-4.81, 3.80]
Racial Centrality (RC)	0.02	0.11	0.17	0.86	[-0.20, 0.24]
Racial Context of Origin (RCO)	12.27	8.90	1.38	0.17	[-5.33, 29.87]
Discrimination x RC	-0.00	0.05	-0.01	0.99	[-0.10, 0.10]
Discrimination x RCO	-7.24	3.13	-2.31	<.05	[-13.43, -1.05]
RC x RCO	-0.31	0.22	-1.40	0.16	[-0.75, 0.13]
Discrimination x RC x RCO	0.16	0.07	2.14	<.05	[0.01, 0.31]
ΔR^2	0.02				
F	4.58				

Note. N= 160. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; RC = racial centrality; RCO = racial context of origin.

Table P9

Model Results for Three-way Interaction for Physical Health (Exploratory Hypothesis 2 Males Only)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	4.92	8.10	0.61	0.55	[-11.21, 21.05]
Age	-0.03	0.07	-0.47	0.64	[-0.18, 0.11]
HBCU Student (yes)	0.34	0.86	0.39	0.69	[-1.37, 2.05]
Subjective Social Status	-0.02	0.19	-0.08	0.93	[-0.40, 0.37]
Political Climate Stress	0.02	0.12	0.19	0.85	[-0.21, 0.26]
Coronavirus Impact	-1.11	0.58	-1.91	0.06	[-2.26, 0.05]
Current Student (yes)	0.71	0.81	0.87	0.39	[-0.91, 2.33]
Discrimination	3.75	3.09	1.21	0.23	[-2.40, 9.91]
Racial Centrality (RC)	0.33	0.18	1.89	0.06	[-0.02, 0.68]
Racial Context of Origin (RCO)	32.31	12.85	2.51	<.05	[6.71, 57.92]
Discrimination x RC	-0.10	0.07	-1.39	0.17	[-0.23, 0.04]
Discrimination x RCO	-13.24	4.30	-3.08	<.05	[-21.80, -4.67]
RC x RCO	-0.86	0.34	-2.57	<.05	[-1.53, -0.19]
Discrimination x RC x RCO	0.32	0.11	3.01	<.01	[0.11, 0.53]
ΔR^2	0.05				
F	9.07				

Note. N= 89. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; RC = racial centrality; RCO = racial context of origin.

Table P10

Model Results for Three-way Interaction for Physical Health (Exploratory Hypothesis 2 Females Only)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	23.73	6.86	3.46	<.01	[9.99, 37.47]
Age	-0.04	0.08	-0.48	0.63	[-0.19, 0.12]
HBCU Student (yes)	-1.11	1.32	-0.84	0.40	[-3.77, 1.54]
Subjective Social Status	-0.32	0.19	-1.73	0.09	[-0.69, 0.05]
Political Climate Stress	-0.24	0.11	-2.19	<.05	[-0.47, -0.02]
Coronavirus Impact	0.57	0.77	0.74	0.46	[-0.97, 2.12]
Current Student (yes)	0.78	1.03	0.76	0.45	[-1.27, 2.83]
Discrimination	-1.28	3.18	-0.40	0.69	[-7.66, 5.09]
Racial Centrality (RC)	-0.03	0.16	-0.20	0.84	[-0.35, 0.29]
Racial Context of Origin (RCO)	23.12	14.28	1.62	0.11	[-5.47, 51.72]
Discrimination x RC	0.01	0.07	0.11	0.91	[-0.14, 0.15]
Discrimination x RCO	-11.03	5.20	-2.12	<.05	[-21.44, -0.63]
RC x RCO	-0.50	0.34	-1.48	0.14	[-1.19, 0.18]
Discrimination x RC x RCO	0.23	0.12	1.92	0.06	[-0.01, 0.47]
ΔR^2	0.03				
F	3.67				

Note. N= 71. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; RC = racial centrality; RCO = racial context of origin.

Table P11

Model Results for Three-way Interaction for Discrimination Reactivity (Exploratory Hypothesis 3)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	2.33	0.70	3.32	<.01	[0.94, 3.72]
Sex (male)	0.13	0.05	2.42	<.05	[0.02, 0.23]
Age	-0.01	0.01	-1.11	0.27	[-0.02, 0.01]
HBCU Student (yes)	0.19	0.10	2.00	<.05	[0.00, 0.38]
Subjective Social Status	0.00	0.02	0.26	0.79	[-0.03, 0.04]
Political Climate Stress	0.02	0.01	2.06	<.05	[0.00, 0.04]
Coronavirus Impact	0.04	0.06	0.59	0.56	[-0.09, 0.16]
Current Student (yes)	-0.14	0.09	-1.60	0.11	[-0.32, 0.03]
Discrimination	-0.51	0.30	-1.69	0.09	[-1.10, 0.09]
Racial Centrality (RC)	-0.02	0.02	-1.49	0.14	[-0.05, 0.01]
Racial Context of Origin (RCO)	-1.79	1.22	-1.46	0.15	[-4.21, 0.63]
Discrimination x RC	0.02	0.01	2.45	<.05	[0.00, 0.03]
Discrimination x RCO	0.98	0.43	2.27	<.05	[0.12, 1.83]
RC x RCO	0.04	0.03	1.31	0.19	[-0.02, 0.10]
Discrimination x RC x RCO	-0.02	0.01	-1.98	<.05	[-0.04, 0.00]
ΔR^2	0.01				
F	3.91				

Note. N= 160. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; RC = racial centrality; RCO = racial context of origin.

Table P12

Model Results for Three-way Interaction for Discrimination Reactivity (Exploratory Hypothesis 3 Females Only)

Variable	*b*	*SE*	*t*	*p*	95% CI [LL, UL]
Constant	3.81	1.03	3.71	<.001	[1.76, 5.87]
Age	-0.01	0.01	-1.17	0.25	[-0.04, 0.01]
HBCU Student (yes)	0.13	0.20	0.65	0.52	[-0.27, 0.52]
Subjective Social Status	0.00	0.03	0.08	0.94	[-0.05, 0.06]
Political Climate Stress	0.05	0.02	2.84	<.01	[0.01, 0.08]
Coronavirus Impact	-0.03	0.12	-0.29	0.77	[-0.27, 0.20]
Current Student (yes)	-0.25	0.15	-1.61	0.11	[-0.55, 0.06]
Discrimination	-1.14	0.48	-2.39	<.05	[-2.09, -0.19]
Racial Centrality (RC)	-0.05	0.02	-1.99	0.05	[-0.10, 0.00]
Racial Context of Origin (RCO)	-3.96	2.14	-1.85	0.07	[-8.24, 0.32]
Discrimination x RC	0.03	0.01	2.75	<.01	[0.01, 0.05]
Discrimination x RCO	1.83	0.78	2.35	<.05	[0.27, 3.38]
RC x RCO	0.09	0.05	1.68	0.10	[-0.02, 0.19]
Discrimination x RC x RCO	-0.04	0.02	-2.14	<.05	[-0.07, -0.00]
ΔR^2	0.04				
F	4.59				

Note. N= 71. *b* = coefficient; *SE* = standard error; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; RC = racial centrality; RCO = racial context of origin.