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Maternal Discrimination Stress and Negative Birth Outcomes Among Black Women

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Walden University
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Abstract

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MPhil, Walden University, 2019

MPH, Morehouse School of Medicine, 2006

BS, Oakwood College, 2002

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Black women are more than twice as likely as White women to experience losing their infants in the first year of life. The purpose of this quantitative study was to examine relationships between maternal discriminatory stress and negative birth outcomes such as preterm delivery, low birth weight, very low birth weight, and infant death among Black women with varying levels of education. This study was grounded in critical race theory and Black feminist theory, positing that Black women are the sum of intersecting identities that shape their world view. A sample of 107 Black women were recruited by convenience and snowball sampling. Using an exploratory quantitative design, maternal racial and discriminatory stress data were collected using the Jackson, Hogue, and Phillips Contextualized Stress Measure survey; data were analyzed using chi-square and Pearson correlations. Data analyses based on 3 research questions found (a) the 5 maternal racial and discriminatory stress subscales (burden, race, work, support/coping, and stress) and education showed non-significant relationships; (b) significant positive relationships between the 5 subscales and negative birth outcomes (preterm delivery, low birth weight, very low birth weight, and infant death); and (c) a significant positive relationship between highest degree earned and very low birth weight. These results can be used to develop culturally competent professional development training for health care practitioners who interact with and serve this population. Presenting the results in forums for the general population of Black women may help provide awareness of the issues and empowerment.

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Dedication

This dissertation is dedicated to the memory of my mother Quantrilla Valenia Edwards Carter (May 25, 1958 – July 31, 2002), my namesake, cheerleader, confidant, and best friend. You instilled in me the importance of education and achievement, not just for myself, but to harness the capacity to help others. I love you and miss you. I wish you could see how far I've come. This one is for you, Mommy. Until then, rest well.

I also dedicate this epic milestone to my babies Quentin, Dylan, and Logan. I hope that you come to know that you are powerful and strong, and you can do anything you set your mind to. Mommy has been in school your entire lives to this point, and I look forward to having more time to play. We can do hard things, and with God, all things are possible. Never give up on your dreams. The world belongs to you.

Acknowledgments

First, I give all honor and glory to God Who made this opportunity possible. Without Divine inspiration and supplication, I would not be here today. Thank You, Jesus! I learned so much about the power of prayer and surrender. I would also like to thank my dissertation chair, Dr. Lee, and my committee member, Dr. Debra Wilson, without whom I would not have achieved this great feat.

I would be remiss not to honor my friends and family who made this journey possible. To my husband Donny, who also graduated with his PhD from Walden University, we did it, baby! It was a long and arduous road, but we made it. To my father, Daddy, thank you for raising me to believe that I could do anything, that no door was closed to me. I love you. To my friends who encouraged and prayed me through, no words can express the immense gratitude I have for you. To those who helped me take care of my babies so I could write, you are family and I thank you. To my church family who cheered and celebrated at each milestone, thank you for rooting for me!

There are a few special groups of people that I hold in my heart, my cohort angels! We did this together! My girls, my sisters both near and far you all have been my rock! To my aunts, uncles, cousins, in-laws and bonus family, thank you for your constant support! So many of you have driven and flown all over to bless us with your presence. I know the current state of affairs will make that difficult for this time, but I know your hearts are always with me.

I will never forget those I lost during this time. The sting of heartbreak lingers, but I know we will be reunited soon.

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Chapter 1: Introduction to the Study

Introduction

The gap in infant mortality rates (IMRs) between Black and White women has more than doubled in the past decade, according to the Centers for Disease Control and Prevention's (CDC) 2013 report on infant birth/death data (Mathews, MacDorman, & Thoma, 2015). No causal link has been established regarding the disparate gap that exists in IMRs between Black and White women; however, research shows that experiences of racism and discrimination play a significant role in this gap. IMR is the number of deaths per 1,000 births for infants under age 1 (CDC, 2018). For years, the Black IMR has consistently been 2 to 3 times the rate for non-Hispanic White women. In 2013, the IMR for Black women was 11.1 per 1,000 births compared to 5.1 for their White counterparts (Brown Speights et al., 2017).

Maternal stress has been linked to preterm delivery in Black women (Braveman et al., 2015). Black women, when compared to non-Hispanic White women, have a 2 to 3 times higher risk of preterm delivery (Braveman et al., 2015; Kramer & Hogue, 2009). Furthermore, these stressful experiences early in life are major contributors to birth outcomes related to infant mortality such as low birth weight and preterm delivery (Dominguez, Dunkel-Schetter, Glynn, Hobel, & Sandman, 2008; Geronimus, 2001).

Gestational age is an important indicator of an infant's health and well-being. In 2017, the preterm birth rate in the United States rose 1% from the previous year (9.93%, from 9.85% in 2016). For both 2016 and 2017, the lowest preterm rates were observed among women ages 25–29, and the highest preterm rates were observed among women

40 and older (Martin, Hamilton, & Osterman, 2018). These data support previous research stating that preterm delivery is a driving force in infant mortality (Kramer & Hogue, 2009; Mathews et al., 2015). The March of Dimes graded the United States' preterm birth rate as a C on its 2016 Premature Birth Card (March of Dimes, 2016). Furthermore, Black women in the United States have a preterm birth rate that is 48% higher than that of all other women (March of Dimes, 2016).

In this study, I examined the relationship between maternal stress, as a result of perceived and actual discrimination and racial experiences, and negative birth outcomes such as preterm delivery and low birth weight among Black women across various educational backgrounds. Research focusing on the reduction of IMRs from the perspectives of Black women and their multifaceted needs is scarce. Additionally, culturally sensitive and appropriate measurement tools are lacking. Black women encounter unique stressors because of the coexistence of multiple identities as women and minorities (Jackson, Phillips, Rowland, Hogue, & Curry-Owens, 2001; Rosenthal & Lobel, 2011). In this study, I examined the influence of discriminatory and racially mediated maternal stress on the reproductive health of Black women of differing educational levels as indicated by negative birth outcomes such as preterm delivery and low birth weight. To do so, I used a tool that was designed for and validated within this population: Jackson, Hogue, and Phillips' (2004) contextualized stress measure. This study's results add to the limited body of knowledge that exists on the influence of racial and discriminatory maternal stress on the birth outcomes of Black women, particularly those who are college educated.

In the following sections of this chapter, I discuss the background of infant mortality. In addition, I address the purpose of this study, its quantitative, exploratory approach, and intention to observe the influence (if any) of maternal stress in the form of racism on negative birth outcomes among Black women. Next, the research questions that drive the study will be listed as well as the theoretical frameworks on which the study was based. The nature of the study provides a rationale for the study design and describes the variables of interest and briefly touches on the methodology. I define variables and any other terms used throughout the study. Assumptions and the scope of the study are discussed next, followed by any limitations of the study. Lastly, I identify the significance of the study and discuss the potential contribution of this study to increase knowledge in the area of health disparities, specifically the infant mortality gap. Implications for social change close out the chapter, followed by a brief summary.

Background

IMR is the number of deaths per 1,000 births for infants under age one (CDC, 2018). A review of the current literature did not provide causal explanations for the disparate gap in IMRs between Black and White women. Research on infant mortality in Boston discussed the narrowing of the gap between these two groups, citing that their data was in line with state and national rates (Boston Public Health Commission, 2014). However, the narrowing of the gap that was observed in certain areas was attributed more to the reductions seen in IMRs among White infants more so than Black infants (Jacob, 2016).

O'Campo and Schempf (2005) proposed principles of addressing psychosocial determinants of preterm delivery (such as racism) to address misunderstandings of the racial gaps in IMRs. They posited that hindrances to the measurement of these psychosocial determinants are some of the factors that prevent the solid understanding of their role in the infant mortality gap. Murrell (1995) found that higher racism scores were associated with being married, older, and having a higher educational level. Racism, both institutional and interpersonal, may be the driving mechanism by which racially patterned differences are observed. To understand the multifactored and complex causal framework of racial influences on preterm delivery, researchers must integrate social determinants for effective intervention (Kramer & Hogue, 2009).

Current research has echoed these sentiments and highlighted the necessity for this study. Braveman et al. (2015) investigated the role of socioeconomic factors in Black–White disparities in preterm birth. Using the population-based California Maternal and Infant Health Assessment survey and birth certificate data from Black and White women who gave birth between 2003 and 2010, Braveman et al. concluded that lower preterm birth rates were associated with greater socioeconomic advantage for White women, but not Black women. Additionally, the disparities seen were only present in the subgroups of Black and White women with greater socioeconomic advantage. Braveman et al. suggested further research be conducted exploring social factors such as life-course socioeconomic experiences and racism-related stress as mediating contributors to disparities in preterm delivery among Black and White women with varying degrees of socioeconomic advantage. The present study was needed to provide and address the gap

in research on the relationship between actual and perceived maternal racial and discrimination stress and negative birth outcomes such as preterm delivery and low birth weight among African American women of varying levels of education. This will inform future research and support social change in the quality of life for this population.

Problem Statement

Black infants have been and remain more than twice as likely to die in their first year of life than White infants (Matthews & MacDorman, 2013; Rossen, Khan, & Schoendorf, 2016). This disparity in IMRs continues to be a source of confusion and debate. Despite Healthy People 2010 goals to decrease disparities in health, there still remains a significant and growing gap in IMRs between Black and White women (Brown Speights et al., 2017). Additionally, this disparity in rates persists among women with higher socioeconomic status, despite accounting for behavioral factors (Braveman et al., 2015). This is a significant health issue as infant mortality is an indicator of the health of a population or country (MacDorman, Mathews, Mohangoo, & Zeitlin, 2014).

IMRs among Black women are mainly attributed to preterm delivery, although low birth weight and very low birth weight also influence measures of infant mortality within this population (Frey, Farrell, Cotton, Lathen, & Marks, 2014). Along with the aforementioned factors, stress, particularly during pregnancy, has been shown to have a significant role in birth outcomes (Braveman et al., 2016; Dominguez et al., 2008; Hobel, Goldstein, & Barrett, 2008). For the purposes of this study, I explored racism and discrimination as causes of stress and factors that increase the impact of racial and discriminatory maternal stress experienced by Black women. The chronic stress of

continual and repeated racism and discrimination, whether actual or perceived, has created a cumulative vulnerability for Black women of reproductive age (Myers, 2009; Rosenthal & Lobel, 2011). In addition, Black women's exposure to interpersonal racism is repeatedly mentioned in literature as a factor in poor pregnancy outcomes (Collins et al., 2004; Dole et al., 2003, Dominguez et al., 2008; Dominguez et al., 2009; Mustillo et al., 2004).

There is no standardized method to operationalize, measure, or determine the factors that contribute to the widening disparity in IMRs (Lu & Halfon, 2003; Selmer, 2012). This lack of empirical data and associated literature can further exacerbate the negative birth outcomes experienced by Black women (Nuru-Jeter et al., 2009). Furthermore, the social construct of race is considered a determinant of health by the World Health Organization (WHO). The implication is that resources necessary for health quality are unevenly distributed according to race, and poorer health outcomes are associated with individuals who identify with racial groups that are marginalized, such as Black women (Commission on Social Determinants of Health, 2010, as cited in Rice, Goldfarb, Epstein, Burrows, & Wingate, 2017). Existing research has shown that being Black is associated with several social disadvantages that collectively influence negative birth outcomes (Rice, Goldfarb, Epstein, Burrows, & Wingate, 2017). An exploratory quantitative approach examining the actual and perceived racial and discrimination experiences of Black women of childbearing age across educational levels will help to identify key details such as observation of socioeconomic influences and relationships that may provide implications for future intervention and research.

Purpose of the Study

The purpose of this study was to conduct a quantitative analysis examining the relationship between actual and perceived maternal racial and discrimination stress and negative birth outcomes for Black women. Of special interest was the influence of this relationship on college-educated Black women. Additionally, in this study I sought to determine how negative birth outcomes are influenced by age in the population. There are two dependent variables in the current study: age and perceived and actual maternal racial and discrimination stress (demographic questions and JHP contextualized stress measure). There are also two independent variables: education and negative birth outcomes.

Research Questions and Hypotheses

A quantitative, exploratory analysis was used to examine the relationship between perceived and actual maternal discrimination stress and the negative birth outcomes of Black women with varying levels of education. For the purpose of this study, these experiences were considered chronic stressors pervasive in the reality of the experience of Black women. I hypothesized that these experiences have deleterious influence on infant morbidity and mortality within this population. The research questions and hypotheses were:

RQ1: Is there a difference in the actual and perceived racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by the five subscales of the JHP contextualized stress measure?

$H_0$1: There is no difference in the actual and perceived racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by the five subscales of the JHP contextualized stress measure.

H_A1: There is a difference in the actual and perceived racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by the five subscales of the JHP contextualized stress measure.

RQ2: Is there a relationship between the participants' scores on the five subscales of the JHP contextualized stress measure and negative birth outcomes as measured by the demographic questions?

$H_0$2: There no relationship between the participants' scores on the five subscales of the JHP Contextualized Stress Measure and negative birth outcomes as measured by the demographic questions.

H_A2: There is a relationship between the participants' scores on the five subscales of the JHP contextualized stress measure and negative birth outcomes as measured by the demographic questions.

RQ3: Is there a relationship between education and negative birth outcomes as measured by the demographic questions?

$H_0$3: There is no difference between education and negative birth outcomes as measured by the demographic questions.

H_A3: There is a relationship between education and negative birth outcomes as measured by the demographic questions.

Theoretical and Conceptual Framework for the Study

The framework for this study used key elements from the stress-age model (Hogue & Bremner, 2005) based on the epidemiological agent/host/environment model and Black feminist theory (Crenshaw, 1989; Collins, 2002). Stress-age is the construct of the agent/host/environment model resulting from encountering traumatic events at an early age coupled with chronic exposure to psychosocial difficulties causing premature aging (McEwen, 2007). Stress age is a parallel concept to weathering and allostatic load (Geronimus, 1992). Weathering was found to be associated with negative birth outcomes in Black women and is thought to influence health risk similar to the influence of chronological age on maternal health (Geronimus, 2001; Hogue & Bremner, 2005).

Agent/host/environment theory is represented by the triangle of interaction between the three and can be used to represent any community or personal-level stress as an agent (Hogue & Bremner, 2005). The host in this study was Black women, who may or may not be susceptible to the pathology influenced by the stressor (the agent). The environment was defined as the interaction of Black women's social and cultural experiences that could have been chronic stressors in and of themselves as well as their associated modifiers, which could also have been cultural and social. These modifiers could also have influenced how stressors may be responded to or experienced (Hogue & Bremner, 2005).

For the purposes of this study, the stressor or agent was actual and perceived experiences of racism and discrimination. The strength of this model is in the premise that the determining factors of whether the host is overwhelmed relied on both the strength of the agent and host susceptibility. Also influential was the interconnectedness of the intensity of the various stressors and moderating influence of coping mechanisms (Hogue, Hoffman, & Hatch, 2001). This model was useful to predict the interrelatedness of the racial experience, modifying coping mechanisms and psychosocial influences both directly and indirectly on the stress response of Black women.

Black feminist theory is rooted in critical scientific inquiry that states that individuals are "active agents in the construction of their social world and personal lives" (Few, Stephens, & Rouse-Arnett, 2003, p. 206). As Black feminist theory has tenets of both feminist and critical race theories, it gives credence to Black women's experiences in the creation of knowledge. This train of thought posits that among Black women, there is a shared historical reality that shapes their worldview of historical resistance (Few et al., 2003). This theory assisted in the understanding that for Black women, the actual phenomenon being studied is not experienced as a separate reality to be analyzed.

Nature of the Study

The nature of the study was a quantitative exploration of the experiences of actual and perceived racist and discrimination maternal stress as it relates to negative birth outcomes such as preterm delivery and low birth weight among Black women. The research design was a descriptive, correlation approach as no variables were manipulated and the data allowed me to observe the presence or absence of a relationship between the

study variables. The study variables were age (dependent variable), maternal racial and discrimination stress (dependent variable), education (independent variable), and negative birth outcomes (independent variable).

The experiences of 107 Black women were assessed via the JHP contextualized stress measure. Participants responded to the survey using a clickable PDF that was sent to an encrypted e-mail in a designated inbox. Interested participants who met basic demographic and inclusion criteria were recruited conveniently but purposefully through social media, with an allowance for snowball sampling and/or referral. Specifically, participants were recruited through a social media group for mothers, where a flyer with the study information was posted as an announcement.

Chi-square and correlational analyses were conducted via a quantitative statistical software package (SPSS) to explore the impact of socioeconomic advantage, specifically higher education, on maternal racial and discrimination stress and negative birth outcomes. This was ensured through criterion sampling of Black women with varying levels of education. Participants were stratified by demographic information such as age, geographic location, and educational level.

Definitions

Maternal discrimination stress (dependent variable): Daily and/or lifetime stress associated with discriminatory experiences (American Psychological Association [APA], 2016). These experiences may be actual or perceived (Pascoe & Smart Richman, 2009).

Negative birth outcomes (independent variable): Include, but are not limited to, low birth weight, preterm delivery, and infant mortality (Graham, Zhang, & Schwalberg,

2007). In this study, stillbirth, miscarriage, and infant loss prior to the first year of life are included.

Age (dependent variable): Current length of time a person has existed. The participants were asked to provide their age as of the date they completed the survey.

Education level (independent variable): Highest level of schooling or training at the time of participation in the study.

Assumptions

Several assumptions were held regarding the population of interest. First, there was the assumption that all participants were computer literate and had access to the Internet, had e-mail addresses, and were able to respond to the survey tool without difficulty. The second assumption was that the Black women who participated in the study had experienced some form of racism or discrimination, actual or perceived, and participants would answer truthfully about these experiences. Third, there was the assumption that Black women participating in the study had experienced negative birth outcomes. Additionally, there was also the assumption that the survey tool and demographic questions would appropriately measure the independent and dependent variables.

Scope and Delimitations

Black women ages 18 and over were included as the population for this study for several reasons. First, they have higher rates of infant mortality than their White counterparts after taking into consideration socioeconomic factors such as education (Fuller-Rowell, Curtis, Doan, & Coe, 2015). Also, discrimination stress (racism) was a

significant predictor of low birth weight in Black women, but not White women (Dominguez et al., 2008). Those who were excluded as participants in this study were men, Black women under 18, nulliparous Black women, Black women without at least a high school diploma or GED, women who do not self-identify as Black or African American, Black women without Internet access or an e-mail address, and Black women who were not born in the United States.

Because this was a quantitative study, the aspect of counter-stories and storytelling as the critical race theory tenet of Black feminist theory was not used and the participants' individual stories were not investigated. Generalization beyond women who have characteristics similar to the sample was not possible based on the size of the sample. Additionally, based on the convenience and purposeful sampling techniques, women who participated in this study differed from the general population.

Limitations

The participants in this study are similar to the larger population of Black women in that they all self-identified as Black women who were born in the United States. The targeted age group was similar to the general population of Black women as many were computer literate, avid to moderate social media users (which was important for recruiting procedures), and had an opinion on the lives and well-being of Black women overall. One limitation related to the methodology of the study is that it was quantitative rather than qualitative or mixed methods in nature, and the rich, personal experiences of the participants were not included in data analysis, which may not represent the totality of their experiences. Future qualitative research exploring the stories of the participants can

provide another layer of understanding regarding their experiences. Another limitation was the descriptive, correlational study design, which precluded the ability to establish causality. The only way to address this limitation is to conduct an experimental study within this population.

Other limitations include the premise that Black women who were interested in participating in a research study may differ from those who would not be interested in participating; furthermore, those who were not highly engaged in social media or Facebook groups and unfamiliar with research studies might be excluded because they would not be made aware of the study based on the recruitment strategies used. Also, Black women unwilling to discuss or respond to questions about their personal lives, pregnancy/delivery history, or experiences with discrimination were less likely to participate in and complete the study.

Significance

Maternal stress has been implicated as one of the largest contributors to infant mortality (Hickson et al., 2012). Studies have shown that the stress of the minority American experience and acculturation process has a deleterious impact on IMRs among Black women. For example, David and Collins (2007) observed birth patterns in immigrant women from African and Caribbean countries after migration to the United States and compared them to Black women born in the United States. Their observations were then compared to birth patterns of United States-born and immigrant women of European descent and their daughters. Foreign-born women of European descent birthed daughters who had similar birth weights to daughters of United States-born women of

European descent. These daughters birthed daughters with birth weights greater than their own. Daughters born to recent African and Caribbean immigrants had birth weights higher than their United States-born comparison group. However, these first-generation daughters of Caribbean and African descent birthed children, on average, with lower birth weights than their own. This seemed to imply that the status of minority women in the United States negatively accumulates across their life span including the childbearing experience.

This topic presents great opportunities for positive social change. Application of the results can be effective in various ways. Health care providers and educators can use the information for training purposes and to inform quality of care among this population. The results of this study can provide insight into the racist and discriminatory experiences of Black women during their reproductive years, which can inform both health care professionals and health care delivery, encouraging the necessary changes in current practice that reinforce racist or discriminatory treatment.

Summary

Several factors disproportionately affect the reproductive health and wellness of Black women. I examined the relationship between maternal stress as a result of racism and/or discrimination and negative birth outcomes and its influence on Black women with varying levels of education. There is a dearth of existing literature tailored to measure the unique intersections of disadvantage that Black women face (Few et al., 2004; Jackson, Hogue, & Phillips, 2004).

In Chapter 2, I explore the lives of Black women in terms of population and disparity related to infant mortality. A review of the literature on Black women across their lifespan shows the immense health risk they possess, which is influenced by their minority status. Additionally, the review highlights key factors of negative birth outcomes, specifically LBW and preterm delivery, among Black women. This review illustrates the social justice perspective of this topic by including the reproductive injustice and disadvantage Black women experience. In Chapter 3, I outline how the present study was conducted, the rationale and research design for the study, as well as sampling procedures and methodology. The path of data collection will be plotted from beginning to end in detail, including the instruments used to gather data.

Chapter 2: Literature Review

Introduction

When comparing adverse birth outcomes and infant mortality in the United States for any racial group, Black women have the highest rates (Mays, Cochran, & Barnes, 2007). Infant mortality is one of the most important indicators of a population's health, and the distribution of risk associated with infant mortality across racial groups is not equitably distributed (Dominguez, 2011). The purpose of this quantitative study was to conduct a descriptive correlational study of the presence or absence of a relationship between maternal racial and discrimination stress and negative birth outcomes for Black women with varying levels of education.

In this chapter, I discuss the impact of infant mortality as a reproductive health disparity. I also discuss Black women's relationship to reproductive health disparities, especially the factors associated with infant mortality: preterm birth and low birth weight. Last, I review the literature on racism and perceived racial experiences as chronic stressors that significantly impact Black women and their reproductive health.

Literature Search Strategy

Literature review searches were conducted using electronic methods. Strategies included online queries of Walden University's multidisciplinary databases, such as Academic Search Premier, ERIC, PubMed, and Thoreau, in addition to online searches in Google Scholar. Several combinations of the following keywords were used: *African American women, discrimination, infant mortality, stress, maternal stress, weathering, racial experiences, reproductive health, reproductive health disparities, allostatic load,*

qualitative studies, higher education, pregnant African American women, pregnancy, perceived discrimination, racism, and *racism and reproductive health*. Because of the limited literature on the scope of this study, about one third of the articles used had been published within the past 6 to 7 years.

Theoretical Foundation

Black feminist theory is rooted in critical scientific inquiry that states that individuals are "active agents in the construction of their social world and personal lives" (Few, Stephens, & Rouse-Arnett, 2003, p. 206). Black feminist theory has tenets of both feminist and critical race theories and gives credence to Black women's experiences in the creation of knowledge. Black women have a shared historical reality that shapes their worldview of historical resistance. In particular, this theory assists in understanding that for Black women, the actual phenomenon being studied is not experienced as a separate reality to be analyzed. Essentially, the Black woman is her experience; the two are not different parts of a whole. The necessity of capturing the experience is critical in supporting the shift from the individual and their behavior to the macro level of social influences that dictate the environment in which the individual functions (Hogan et al., 2001). Black feminist theory fits as the theoretical foundation for this study; the collective changed consciousness and transformed political and economic institutions are the ingredients that drive social change among Black women (Collins, 2009).

Black feminist theory is comprised of three key themes. The first theme is based on the premise that Black women's experiences and encounters are what have shaped and produced the theory, yet their experiences and stories have been documented by others

(Collins, 2002). Second, recognizing that each woman's stories and experiences are unique, there is an intersection of shared experiences between and among them. Third, respecting the similarities that exist among them, the experiences of Black women can be understood and revealed through the various contexts of class, religion, age, and sexual orientation. Black women may not be cognizant of these themes at first glance; therefore, the role of Black feminist theory is to provide opportunities for the facts and theories of the Black female experience to be a tool of clarity and identification for other Black women (Collins, 2002).

Deeper examination of the themes of Black feminist theory reveals the formation of the concepts within the theory. Based on the first theme, people other than Black women have shaped the identities of Black women. Black women's identities have been steeped in stereotypical and erroneous images that have defined "typical" Black female behavior and served as a method of controlling assertive Black female behavior (Collins, 2002). Creating strategies to compete with these oppressive images through valuation, self-definition, and the validation of knowledge can help replace them in the minds of these women. This can be a difficult task when these images have been reinforced over the lifespan (Howard-Hamilton, 2003).

The second theme is the multifaceted, intersectional nature of Black women's identities (race, class, gender) and how these concurrent identities are entrenched in oppression can be examined. Black women's status has been demoted as a result of their continuous selection between a myriad of "either/or dualities" (Collins, 2002, p. 472). Placing Black women on the inferior side of the spectrum of these dualities has been

critical in the ongoing domination this group of women has experienced (Howard-Hamilton, 2003).

Critical race theory (CRT) is one theory on which Black feminist thought is based. CRT was established by scholarly people of color involved in the study of law and legal practices pertaining to racial subjugation in society. Powerful individuals elected for their racial neutrality were still creating laws and enacting policies that promoted oppression among racial and ethnic groups (Delgado & Stefancic, 2001; Smith, Altbach, & Lomotey, 2002; Villalpando & Bernal, 2002). Villalpando and Bernal (2002) described CRT as emphasizing the importance of viewing policies and policy creation in the proper historical and cultural context to analyze their racialized content. Critical race theorists have posited that the concepts of color-blindness and meritocracy create a system of disadvantage for people of color while upholding advantage for White people. The problem with avoiding the issue of race is that it allows individuals to focus only on the obvious, heinous racial practices or situations, while those that are more covert are disregarded, ignored, or excused (Delgado & Stefancic, 2001). CRT recognizes the endemic nature of racism in U.S. life, that it persistently identifies the knowledge of people of color and their communities of origin through experience in how they view and access society, and that it "works toward eliminating racial oppression as part of an overarching goal to end all forms of oppression" (Villalpando & Bernal, 2002, p. 245).

Microaggressions are conscious or unconscious, verbal or nonverbal (including visual representations) of insults and threats directed toward people of color (Delgado & Stefancic, 2001; Solorzano, Ceja, & Yosso, 2000). Microaggressions are insidious; they

are difficult to prove and investigate as they are often covert, mild, and vague. Anxiety is common among those who experience this type of racist psychological damage (Howard-Hamilton, 2003).

A major strength in using aspects of CRT in Black feminist thought when evaluating Black women's experiences is the use of *counterstories*. Counterstories are gathered through archives, personal testimonies, and discussions. Collecting experiences through these methods illuminates that some members of marginalized groups, because of their marginalized status, tell previously untold or different stories based on experiences that challenge the conversation and viewpoint of the majority group (Delgado & Stefancic, 2001; Villalpando & Bernal, 2002). *Counterstorytelling* also calls into question existing ideas or myths held by these same group members. A safe place and space, known as a *counterspace*, should be provided for marginalized groups to share their experiences.

The primary importance of providing counterspace is as an escape from pervasive and persistent microaggressions and to provide a space for validation and support (Howard-Hamilton, 2003). The validation of Black women's experiences of racial discrimination (perceived or actual) is critical to the ongoing research necessary to close, if not narrow, the disparate gap in IMRs between well-educated Black and White women. These aspects of CRT threaded through Black feminist thought are used in this study, predicting that collecting the racial and discriminatory experiences within this population, along with the correlating birth outcomes will provide important and necessary clues into ascertaining the relationship that exists between them. Additionally, the findings can play

a role in understanding the infant mortality gap in general and assist in influencing reproductive justice for Black women.

Literature on the stress-age model in Black women is extremely scarce. White men are the main subjects of stress health research in the United States (Norris & Mitchell, 2014). To provide an additional research tool to examine preterm delivery among Black women, Hogue and Bremner (2005) developed the stress-age model, which is the only literature using this model with this population.

Literature Review

Black Women

As one of the United States' most disadvantaged and vulnerable populations, Black women bear a disproportionate burden of illness and disease (Ford et al., 2013), especially in reproductive health. When identifying the leading causes of death for Black women, sexual and reproductive health complications remain in the top 10 for women ages 20–54 and 15–34 years, respectively (CDC, 2013, as cited in Prather, Fuller, Marshall, & Jeffries, 2016). Despite the physical, psychological, and social challenges that influence the quality of life for these women, there remains a resilience that fosters solidarity among them. From their relationships with others to their self-worth, each detail of their lived experiences has a rhythm of its own, intricately woven to create a system that supports and provides definition to the individual who identifies as a Black woman.

According to the U.S. Census Bureau (2013), the population of Black women in the United States was 23.5 million. This is 52% of the total Black population compared to

Black men, who make up 48% of the Black population. The last census conducted in 2010 reported that the southern states and urban areas have the highest percentages of Black people, with more than half of the population (60%) residing in 10 states (U.S. Census Bureau, 2016).

Black women are a well-educated group. Out of 52% of Black women aged 25 and older who attended college, 33.1% have completed at least an associate's degree. When considering higher education, 13.1% have completed bachelor's degrees and 7.8% have completed a graduate or professional degree (U.S. Census Bureau, 2016). Although a gap exists between Black women and other racial groups in completing at least a 2-year college degree, they have been more successful compared to Black men. When comparing completion of bachelor's degrees, about 23.1% of Black women have achieved this goal compared to 18.2% of Black men (U.S. Census Bureau, 2016).

Educational status may have some implications in adverse birth outcomes of Black women. Not only is the educational status of the parents important, but there are also generational influences on birth outcomes related to the educational attainment of the grandparents (McFarland, McLanahan, Goosby, & Reichman, 2016). A recent study revealed that a 93-gram weight reduction, a 59% increase in the odds of low birth weight, and a 136% increase in the odds of a health condition for a neonate, were all associated with having a grandfather who had less than a high school education (McFarland et al., 2016).

In 2015, Black women represented about 10.2 million of the civilian workforce. This factors out to be about 1 in 7 women of which 9.3 million were employed

(Department of Labor, 2016). Women who are either working or looking for work make up the labor force. Those women not counted in the labor force include full time students, disabled persons, and others who may not be actively seeking employment (Department of Labor, 2014). Despite their higher participation rates in the workforce historically, Black women continue to have higher rates of unemployment than other women (59.7% versus 56.4% respectively), and in 2015, were considered to be more active in seeking employment as well as more likely to be employed (Department of Labor, 2016).

Although Black women represent a large percentage of the workforce, they have and continue to have lower amounts of weekly earnings and median wealth not only compared to White women, but also to their male counterparts (Black Women's Roundtable, 2015; Department of Labor, 2016). Poverty and its implications are the result of these wage disparities. An already vulnerable population, many Black women become more so without the proper resources. Median annual earnings in 2014 show the vast discrepancy in earnings and the wage gap. Black women earn 82% of what Black men earn annually, 80.2% of what White women earn annually, and 60.5% of what White men earn annually (Department of Labor, 2016). Across every level of education, the inequities in earnings persist. Educational advancement is promoted as an important and equitable pathway to opportunity in America, however, as the data attests, it is also critical to understand and admit that inequalities exist. Education does not provide guarantees to fair pay (Black Women's Roundtable, 2015).

Even as a high school graduate, a Black woman earns much less compared to a White man who is an early high school dropout ($30,450 vs. $32,675). There is a $10,000

deficit between college-educated Black women, and White men who completed a two-year degree ($49,882 vs. $59,014). To match what the typical White male with a bachelor's degree would earn alone, two Black women with the same education would be needed ($55,804 vs. $100,620; Black Women's Roundtable, 2015). According to the Women's Bureau in the Department of Labor (2016), in 2015, more than 9 in 10 Black women held high school diplomas, and 3 in 10 graduated from college. These women that held college degrees earned over 2 times more and their unemployment rate was 4 times lower than their peers who did not complete high school (Department of Labor, 2016).

Not only do Black women also fall behind White men's earnings, but they also lag Black men's earnings across educational attainment lines. Black men, who do not complete high school, still earn nearly twice as much as Black women ($43,407 vs. $23,120). This disparity in trailing the earnings of all men at every level of education increases as educational attainment increases. When compared to their counterparts, Black women's earnings plummet, even in higher education. Black women who have college degrees earn the least (Black Women's Roundtable, 2015).

Many groups have enjoyed the benefits of economic improvement, yet these benefits have eluded Black women (National Women's Law Center, 2011). As of February 2015, the nation's unemployment descended to a point that had not been witnessed within recent years (5.5%). Additionally, unemployment for women lowered to a point that had not been witnessed in the previous six years (4.9%), for White women specifically, this was the lowest unemployment in seven years (4.2%). Unfortunately,

Black women's unemployment countered opposite to the previous trend and increased, albeit slowly, to 8.9%. Overall, unemployment for Black women is less than it was in 2015. However, when compared to other America women, unemployment for Black women is still notably higher (U.S. Department of Labor, 2016).

From a national vantage point, Black women's wages are not equally distributed. There are a few states that lead the way on wage equality associated with Black women's work and some who have many strides to make. Of the states being among those with the most needed improvements, the southern states, specifically Mississippi, are the worst states for Black women to earn income. Mississippi leads the southern states, but Louisiana is on its heels. South Carolina and Alabama follow Louisiana as the third and fourth worst (Bureau of Labor Statistics, 2013). The best states for Black women's earnings range and vary by geographic location. Maryland is first; California, New Jersey, and New York are close behind (Bureau of labor Statistics, 2013).

Since 2009, management, professional, and occupations related to these categories have increased the employment of Black women. Though employment of Black women has increased in these occupations, the percentages are lower when compared to White women (Department of Labor, 2016). Other areas where Blacks are represented (30%) are education, health care, and social assistance. Blacks are also highly represented in the federal government, one of the first allowing integration for their employment. In 2011, federal, state, and local governments employed nearly 20% of the Black workforce (U.S. Department of Labor, 2016).

In 2013, Black women were the head of 29% of all Black households, which is more than twice the rate for "all women" at 13%. These are households defined by the United States Census Bureau as having a female head and no spouse present (United States Bureau of Labor Statistics, 2013). Only 33% of Black women who gave birth were married which is almost the opposite for "all women" at 64%. These additional responsibilities may also explain why Black women are slightly over-represented in the workforce compared to all women and even higher than Black men (67%). Even though Black women are over-represented in the workforce they still have a higher unemployment rate than "all women," 10% to 6% respectively. These factors help explain the higher poverty rate for Black women (29%) than "all women" at 17% (U.S. Bureau of Labor Statistics, 2013).

Recent data updates in employment percentages do not emphasize much of a change. In fact, when Black, single mothers are the heads of the household, almost half of these families are poor (46.7%), right below the percentage of households where Latina woman head the family (48.6%), but much higher than White (33.1%) and Asian single mothers (26.3%). Of those groups most likely to be poor in America, Black women are included, regardless of holding the most jobs among all women. Black women have a poverty rate (25.1%) double that of White (10.3%) and Asian women (11.5%), and only slightly surpasses the poverty rate of Latina women (24.8%) (U.S. Census Bureau, 2013).

The issue of poverty is a critical link in the observation of birth outcomes in Black women. Poverty has such a deleterious impact within this population that the even the most widely accepted and promoted health intervention to prevent negative birth

outcomes (early initiation of prenatal care) is unlikely to drastically assuage its effects on the health of Black women. There is a reproductive disadvantage for Black women living in poverty (Collins, Simon, Jackson, & Drolet, 2006).

Black women, who per the U.S. Census (2013) make up 13% of the female population in the United States, are making considerable strides in education, participation, health, and other areas, but there is a long way to go to fully close the racial and ethnic disparities they face. For instance, 1 in 4 Black women are uninsured (U.S. Census Bureau, 2013, Small Area Health Insurance Estimates). Although there are several states whose Black population exceeds their total population by 20%, only two states (Maryland and Delaware, along with the District of Columbia), are highly ranked for having health insurance coverage for Black women. Many of the aforementioned states with large Black populations are in the South, and many have chosen against Medicaid expansion (U.S. Census Bureau, 2013, Small Area Health Insurance Estimates). Also troubling regarding these Southern states is that they rank the poorest for health insurance coverage of Black women (NC, SC, GA, AL, MS, LA; U.S. Census Bureau, 2013). The lack of health insurance, coupled with other socioeconomic factors, continues to contribute to the disparate health issues Black women face. These negative outcomes are transparent not only in the overall health of Black women, but also in their reproductive health.

Maternal mortality. The United States is engaged in a critical maternal health mortality crisis and Black women are at the forefront. Instead of decreasing like most nations worldwide, America's maternal mortality rate is increasing. The maternal

mortality rate among Black women is 10 times greater compared to women living in other industrialized countries. For a Black woman wanting to double her chances of survival after delivery, she would need to live in Lebanon, Serbia or similar nation (Black Women's Roundtable, 2015).

Maternal death rates have grown from 14.5 to 17.8 per 100,000 between 2007 and 2011 (Singh, 2010). In 2013, they rose to 28 per 100,000 (CDC PRAMS, HHS, & HRSA MCHB, 2014). When discerning causal relationships explaining the rise in America's maternal mortality rate, the increases in maternal mortality among Black women is a major determining factor. Recent data between 2009 and 2011 shows an increase in maternal mortality among Black women from a rate of 36 deaths to 42.8 deaths per 100,000 live births. Conversely, among their counterparts, maternal mortality neither increased nor decreased significantly within the same timeframe (12 to 12.5 per 100,000; Callahan, Creanga, Kuklina, 2012). The value in decreasing maternal mortality for Black women is that it could influence a similar decline in infant mortality.

Maternal Age. Maternal age is also a key informant in adverse perinatal outcomes for Black women. The prime reproductive period (when LBW is the lowest) for White women ranges between the maternal ages of 25 and 29 years (Love, David, Rankin, & Collins, 2010). For Black women, prime maternal age (lowest IMRs) is in the teenage years. Beyond the teenage years, the IMR for Black women reflects a direct relationship to maternal age; there is a steady increase as maternal age increases (Geronimus, 1992). One study found that for Black women, IMRs begin to increase specifically during their

late twenties and early thirties, while decreasing for White women during the same age range (Geronimus, 1996).

Previous studies have shown that for White women, young and advanced maternal age are known to be risk factors for LBW (Collins & David, 1990; McGrady, Sung, Rowley, & Hogue, 1992; Schoendorf, Hogue, Kleinman, & Rowley, 1992). When observing the risk for Black women, the maternal age pattern differs from the U-shaped curve previously described. The risk of having an LBW infant instead rises constantly as maternal age increases (Geronimus, 1996). A study on the Black/White differences in the relationship of maternal age to birth weight for mothers in Michigan found that among Black mothers with lower socioeconomic status, the odds of LBW increases more than for those with high socioeconomic status. Specifically, by age 20 Black mothers experienced 1.33 times the odds of LBW than Black mothers at 15 years old. By age 30, the odds increased to 2.33 times that of a 15-year-old mother. Subsequently, by age 34, the odds of LBW are nearly 3 times that of a 15-year-old mother (Geronimus, 1996). Geronimus (1996) found that for Black mothers in Michigan, maternal age has a positive, statistically significant relationship to the odds of having a LBW of VLBW infant.

Reproductive Justice

> Black Women started the reproductive justice movement over 20 years ago because they recognized the intersection of reproductive justice, economic justice, and social justice. Black Women do not live monolithic, single-issue lives and we needed to frame reproductive health and reproductive rights with reproductive justice. (Jackson, 2015, p. 29)

There are four main tenets of the reproductive justice movement. The first is the priority to diversity within the leadership and movement structure. The second is that the movement's focus must be on multiple issues, not just on one agenda. Third, the reproductive justice movement cannot happen within one arena or playing field, there must be various sectors that are involved. There must be an intersection of other issues equally as important such as environmental justice, social justice, and economic justice that work in tandem with reproductive justice movement. Last, the reproductive justice movement allows emphasis to be placed on grassroots organizing. Systematic and policy changes must be made to counter the attack on women's rights. Solidarity in addressing the multifaceted quality of life issues that influence and impact women economically and socially, will bring the needed change that is so desperately needed. The main goal of the reproductive justice movement involves the uniting of women of color, and specifically Black women, empowering them to collectively prevail against those who contest their ability to enjoy quality lives (Black Women's Roundtable, 2015).

Black Women and Reproductive Health

As previously mentioned, Black infants are more than twice as likely as White infants to die in their first year of life, and existing literature provides ample evidence of this sobering reality (Rossen, Khan, & Schoendorf, 2016). When examining links to causal explanations, several socioeconomic and physiological factors may account for this disparity in infant mortality—LBW, preterm delivery, maternal age, maternal stress, maternal educational level, household income, etc. According to MacDorman, Minino, Strobino, and Guyer (2002), infant birth weight is a primary determinant of infant

mortality risk. However, Hogue and Bremner (2005) stated that preterm delivery accounted for a large portion of the excess mortality rates among Black infants. They go on to communicate that over 20 years ago, Black infants who were born preterm or of LBW were more likely to survive than White infants of the same gestational age or birth weight. Observing this same phenomenon in 2001, Black infants were less likely to survive, regardless of gestational age or birth weight category.

Reproductive Health Disparities

Infant mortality. Black infants are more than twice as likely to die in their first year of life compared to White infants (Giscombe & Lobel, 2005). This disparity in IMRs continues to be a source of confusion and debate. Despite Healthy People 2010's (Sondik, Huang, Klein, & Satcher, 2010) goals to decrease disparities in health, there still remains a significant and growing gap in IMRs between Blacks and Whites (Lu & Halfon, 2003).

IMRs among Black women are most often attributed to LBW (defined as less than 2,500 grams or 5 lbs., 8 oz.), although preterm delivery (defined as less than 37 completed weeks of 40 gestational weeks) and VLBW also influence measures of infant mortality within this population (Hogue & Bremner, 2005). Along with the factors mentioned above, stress, particularly during pregnancy, has been shown to have a significant role in birth outcomes (Dominguez et al., 2008; Hobel, Goldstein, & Barrett, 2008). For the purposes of this study, racism acts as both a cause of stress and a factor that increases the impact of the stress experienced by pregnant Black women (Giscombe & Lobel, 2005). The chronic stress of continual and repeated discrimination, whether

actual or perceived, has created a cumulative vulnerability for Black women of reproductive age (Myers, 2009; Rosenthal & Lobel, 2011).

For this study, it is pertinent to examine the gap in IMRs in terms of reproductive disadvantage—specifically using the lens of race relations in the United States. Race relations and racism in particular, when discussed in context of social determinants of adverse birth outcomes for Black women, have dual importance. First, to be discussed is the multidimensional nature of racism, meaning it is a pervasive and invasive factor of Black women's everyday lives and across their life span. Second, racism will be discussed as a physiological phenomenon, chronic stress, which has research has repeatedly shown to have deleterious effects on pregnancy (Dominguez, 2011).

According to Hogan, Njoroge, Durant, and Ferre (2001), the identification of specific patterns, unique risks, and interactions that can better integrate the social, behavioral, and physiologic factors and improve interventions can be ascertained through intragroup studies. There are valuable research implications in soliciting the stories, experiences, and realities of Black women as it relates to the disparate gap in IMRs. Intragroup study is additionally helpful in developing strategies for that group in trying to understand why some within the cultural group have healthy outcomes. Exploring these narratives will lend specific and personal insight into the racial experiences of Black pregnant women to identify strategies that will shape appropriate interventions to close the disparate gap in IMRs, providing a bridge to address current gaps in research on this topic.

Preterm Delivery. Black women are not only affected by disparity in LBW, but they are also at a major disadvantage in another factor that heavily influences IMRs, preterm delivery. They have a twofold risk of preterm delivery when compared to White women that has persisted over five decades (Orr, James, & Prince, 2002).

Low Birthweight. Low birth weight (LBW) is a major influential factor shaping IMRs in the United States. LBW is defined as infants weighing less than 2500 grams at birth. These LBWs account for 7.6% of all live births, but approximately 2/3 of all infant deaths. Very low birth weight (VLBW) infants are defined as weighing less than 1500 grams at birth and account for only 1.5% of live births. Pathological in all populations, they account for more than half of all infant deaths and 63% of the Black–White gap in infant mortality in the United States (Iyasu, Becerra, Rowley, & Hogue, 1992; Lu, Tache, Alexander, Kotelchuck, & Halfon, 2003). Low birth weight can be a result of any individual or simultaneous birth process. Two examples include but are not limited to, preterm delivery (prior to 37 weeks' gestation), and small for gestational age (Love, David, Rankin, & Collins, 2010).

In addition to the aforementioned facts, LBW is responsible for most deaths in the first year of life, and these rates remain consistently elevated alongside the disparity in birth outcomes between Black and White women (Love et al., 2010). In 2006, Black women were two times as likely to have a low birth weight infant than non-Hispanic White women (14.0% compared to 7.3% respectively; Martin et al., 2008). In 2005, the risk of Black infant death within the first year of life was 2.4 times higher than their counterparts (Martin et al., 2008).

The main intervention that has been heralded for the prevention of LBW and VLBW is prenatal care. It has been established as the primary, population-wide public health mediation for LBW. Lu and colleagues (2003) cited sentinel studies that showed a significant association between adequate prenatal care and the reduction in the incidence of LBW. These studies provided a platform for and prompted the Institute of Medicine (IOM) to conclude in its 1985 report that the "overwhelming weight of evidence is that prenatal care reduces low birth weight" (IOM, 1985, p.18). Also, in its 1985 report, the IOM also recommended the enrollment of all pregnant women in prenatal care as a national policy to reduce the risk of LBW.

The national policy initiated by the 1985 IOM, along with the United States Congress' enactment of legislative initiatives that expanded Medicaid eligibility to low-income pregnant women and children, resulted in state and local expansion of Medicaid and subsequent enrollment into prenatal care. The combination of national, state, and local policies on the early initiation and utilization of adequate prenatal care has increased the rates of prenatal care (Lu et al., 2003).

Life Course Perspective

The life-course perspective focuses on understanding early-life experiences, how they shape health across an entire lifetime, as well as, their potential influence on following generations. As an approach, it systematically illuminates the role of context, including social and physical context coupled with biological factors, over time (Braveman & Barclay, 2009). Based on the previous definition, the life-course perspective is of great value to this study. This value is demonstrated in its pertinence in

understanding and addressing health disparities. Socioeconomic and racial/ethnic disparities observed over the course of the life span are buttressed by social and physical contextual factors.

Much of the research that exists on the cause of the persisting racial–ethnic disparities in birth outcomes focuses on the degree of difference in exposure to protective and risk factors during pregnancy (Lu & Halfon, 2003). A few examples of these factors are maternal risky behaviors, demographics such as current socioeconomic status, psychosocial stress, prenatal care, and perinatal infections. Although important, these snapshots during pregnancy give little understanding of the lived experiences of the women being examined. Utilizing the life course perspective in the present study allows for an integrative and longitudinal approach of understanding ethnic and racial disparities in birth outcomes that account for women's health over the course of their lives.

Key concepts in life-course research include the philosophies of intergenerational models, cumulative effects over time, trajectories or pathways, and critical or sensitive periods. A window of time during the life course when a given exposure has a critical or even permanent influence on later health is generally refers to as a "critical period" (Braveman & Barclay, 2009). The critical period of interest in this present study is the reproductive years; specifically, how the racial experiences of Black women have shaped their birth outcomes.

Socioeconomic Determinants and Influences of Racism on Reproductive Health

The evidence is indisputable that Black women, from all socioeconomic backgrounds, experience higher rates of preterm birth, small-for-gestational-age babies,

and infant mortality than women from other racial and ethnic groups (Collins, David, Handler, Wall, & Andes, 2004; Giscombe & Lobel, 2005; Hogue & Bremner, 2005). For more than two decades, findings have demonstrated that well-educated Black women not only have worse birth outcomes than White women with comparable education, but also that they experience higher rates of adverse birth outcomes than women from other racial and ethnic groups who are less educated, unemployed, and uninsured (Colen, Geronimus, Bound, & James, 2006; Schoendorf, Hogue, Kleinman, & Rowley, 1992). Several studies have indicated the negative consequences of the stressors of racial discrimination for birth outcomes (Collins, David, Handler, Wall, & Andes, 2004; Mustillo et al., 2004). These findings indicate the need to elucidate the specific psychosocial factors that pose significant risk for the higher rates of poor birth outcomes seen among Black women.

Psychosocial stress has been conceptualized as a stimulus, a response, and the interaction between stimuli and responses, including coping (Lobel & Dunkel-Schetter, 1990). For this study, "stressors" are environmental demands, events, threats, or stimuli to which an individual is exposed; "distress" is an outcome of exposure to stressors where resources are appraised as being inadequate to manage and cope with those stressors. This imbalance between the stressors and coping resources can be manifested in aversive reactions that produce feelings of isolation, restlessness, tension, weakness, and loss of control. Furthermore, Lobel and Dunkel-Schetter (1990) also note that the stress process is influenced by the structural and situational context of a person's life.

Race, as the basis for historical and continuing discrimination matters, and the properties of racism as a distinctive stressor contribute to high levels of psychosocial

health risk among Black women. In the absence of sufficient coping resources, cumulative, unabated stress as a consequence of racism triggers physiological responses, which can weather the body and lead to poor chronic mental health and physical health outcomes and poor birth outcomes (Geronimus, 1992). For example, high levels of racial discrimination have been associated with preterm birth and LBW, which previously mentioned are factors connected to infant mortality (Collins et al., 2004; Dole et al., 2003, 2004; Dominguez, Dunkel-Schetter, Glynn, & Sandman, 2008; Mustillo et al., 2004; Rosenberg et al., 2002).

Collins et al. (2004) discovered that for Black women, the cumulative experiences of interpersonal racial discrimination posed a significant risk for the birth of VLBW babies. Along those same lines, Dominguez et al. (2008) found that perceived discrimination and global stress were correlated with LBWs. The results demonstrated that lifetime and childhood indicators of perceived racial discrimination were greater predictors of birth weight for Black women than for women from other racial and ethnic groups. Other studies have reported an increased risk of preterm birth among Black women with high levels of racial and gender discrimination (Mustillo et al., 2004; Rosenberg et al., 2002). A North Carolina study found that Black women who reported high levels of racial or gender discrimination were more likely to deliver preterm, but the same association was not present for White women (Dole et al., 2004).

Three conceptual approaches inform the existing literature on race, gender, and stressors among Black women: double jeopardy, interaction, and intersectionality (Thomas, Witherspoon, & Speight, 2008). Research on double jeopardy measures racism

and sexism separately. Interaction expands this approach by examining the additive way racism and sexism interacts to produce psychological distress (Moradi & Subich, 2003; Thomas et al., 2008). The concept of intersectionality takes into account that the identification of one's gender and race and the resulting discrimination from identifying as such are correlating methods used to organize and inform how individuals engage with each other, influence, and experiences of power that guide their exposure to and assessment of stress (Giscombe & Lobel, 2005). All these concepts - race- and gender-specific role tension, racism, and sexism are related to and linked to each other, like pieces of a puzzle, and form groups of interacting parts working together with stress as the result (Collins, 2000; Jackson et al., 2001; Moradi & Subich, 2003; Mullings & Wali, 2001).

The reason Black feminist thought is a fitting lens through which to view this study is because scholars of Black feminism and critical race theorists advocate for the utilization of intersectionality as a theoretical construct as means to explain discrimination in all its forms, systems, and multiple identities (Collins, 2000; Crenshaw, Golanda, Peller, & Thomas, 1996; Ford & Airhihenbuwa, 2010). According to the conceptual framework of intersectionality, race and gender experiences cannot be studied individually because they have equal value and occur simultaneously and should be examined as coexisting factors. Specifically, the intersection of multiple characteristics and systems of discrimination cannot simply be added to determine their significance, but rather they should be assessed as multiplicative, meaning they are experienced and

interpreted at various intensities within the social context of Black women's lives (Collins, 2000).

Out of the construct of intersectionality gendered racism surfaced as a unique stressor that above and beyond the reports of perceived episodic racism. The gender roles already imposed upon Black women (i.e., nurturer and caregiver) are compounded by racial oppression. This creates a distinct challenge for Black women. Gendered racism becomes a constant threat against which they must always be on guard, not just for themselves, but also for their children (Jackson et al., 2001, Vines et al., 2006; Nuru-Jeter et al., 2009).

Black Women and Reproductive Disadvantage

Black women consistently exhibit the highest rates of preterm birth, and their infants exhibit the lowest birth weights of any group of American women, regardless of socioeconomic status (Mays, Cochran, & Barnes, 2007). Lifelong minority status, coupled with intergenerational factors such as birth and immigration status, contributes to the reproductive disadvantage of Black women (Collins, Wu, & David, 2002).

Racial discrimination has been found to pose a significant threat to the birth outcomes of Black women (Alhusen, Bower, Epstein, & Sharps, 2016) Chronic experiences with racial discrimination are thought to be a causal link between racial and ethnic minority status and health disadvantage, regardless of whether the experiences are actual or perceived (Mays, Cochran, & Barnes, 2007). For instance, Black mothers who scored high on measures of perceived racial discrimination were twice as likely to deliver LBW infants (Ellen, 2000).

The effects of racial discrimination have also been shown physiologically. A longitudinal study of pregnant Black women, whose blood samples had been collected in their first and second trimesters, reported a correlation between high placental levels of corticotrophin-releasing hormone (a stress hormone) and preterm delivery (Rich-Edwards et al., 2001). Another study found a correlation between abnormally high levels of this same stress hormone to chronic stress (Pike, 2005). The interconnectedness of a pathway resulting in reproductive disadvantage for Black women links race-based discrimination, stress, and negative birth outcomes (Mays, Cochran, & Barnes, 2007).

Also, of unique significance is the high risk of preterm delivery among college-educated Black women. When compared to their White counterparts, they are more likely to experience infant loss regardless of early initiation of prenatal care. The reproductive statuses of second-generation, high socioeconomic status, Black college graduates and their mothers were observed, and they were found to exhibit higher rates of LBW and preterm delivery when compared to a similar cohort at Yale. Despite two generations of increased socioeconomic status among the Black college graduates, they still exhibited higher rates of LBW and preterm delivery (Foster, et al., 2000). The psychosocial determinants of preterm delivery among well-educated Black women are especially worth discussing as their exposure to racial stressors places them at higher risk both within their ethnic group and when compared to White women with similar education (Hogue & Bremner, 2005; Lu & Chen, 2004).

Not only is the risk of preterm delivery among college-educated Black women high, but the risk of LBW is also increased within this population. Collins and colleagues

(2004) found that even among college-educated mothers who received adequate prenatal care and participated in a prepaid health plan, the racial disparity in the rates of VLBW persisted. They also found that the group with the strongest association with infant VLBW was college-educated Black women who reported lifetime exposure to interpersonal racism. Well-educated Black women are not protected from the risks of depression and poor pregnancy outcomes; utilizing the lens of socioeconomic position (SEP) and its life-course examination potentially offers further insights into the risks impacting pregnant Black women's mental health and birth outcomes (Curry-Owens & Jackson, 2015). It is now well established that education is not as protective for the birth outcomes of Black women as expected. Findings consistently reveal that well-educated Black women experience worse birth outcomes than women from other racial and ethnic groups with less education, fewer economic and material resources, and limited access to health care (Colen et al., 2006; McGrady et al., 1992).

Weathering. Geronimus (1996) hypothesized that Black women's health status reflected the environment in which they were reared. She posited that the deterioration of their health could be observed in as early as young adulthood, due to persistent coping with chronic stress as well as social and circumstantial offence. These influences may negatively impact the health and health behaviors of Black women and their infant's health, when and if she decided that she would like to become a mother (Geronimus, 1996).

Also described as the result of cumulative socioeconomic disadvantage, weathering has been a useful tool in reporting low birth weight and IMRs (Love et al.,

2010). Evidence suggests that weathering is linked to maternal socioeconomic status, and that early maternal experiences significantly impact her birth outcomes. The mechanism of weathering, or accelerated aging, is marked by a trend of poorer health as Black women age, this includes negative birth outcomes for infants as maternal age increases (Love et al., 2010). Interestingly, despite economic attainment and environment, the stressors associated directly to actual or perceived racial discrimination persist. For Blacks who have moved up in socioeconomic status and relocated to neighborhoods that do not resemble those from their upbringing, perceived racism still has a large impact (Colen et al., 2006; Geronimus, 1996).

Summary

In Chapter 2, I provided a snapshot of the economic, social, and physical aspects of life as a Black woman. Though it is far from exhaustive and statistics can only reflect parts of their experience, it is important to outline the challenges Black women face collectively and as individuals as discussed in the literature to get an understanding of the risk to which they and their children are exposed. The myriad of factors that affect their physical and mental health cannot be overlooked. In chapter 3, I describe the tool that was used to collect these experiences in detail. The instrument I used queried the Black woman's experience with racial and discriminatory stress and assessed negative birth outcomes. Each survey question was developed out of Black women's experiences and allowed for participants to answer from her perspective. Data collected from demographic questions and this tool answered the research questions set out at the beginning of this study.

Chapter 3: Research Method

Introduction

The cumulative impact of coping with racial and gender discrimination over a long period of time is termed *weathering*. This concept, developed by Geronimus (2001), provided a useful lens through which to view the disparities in birth outcomes among Black women. In addition to weathering, college-educated Black women accumulate stressors related to challenges in fulfilling roles related to aspiration and achievement, on top of those related to their ethnicity and gender (Jackson, Phillips, Hogue, & Curry-Owens, 2001). For years, higher socioeconomic status among Black women was thought to be a protective factor against poor health outcomes, particularly poor or negative birth outcomes. However, empirical data suggest that the converse is true for college-educated Black women (Jackson et al., 2001). For example, college-educated Black women with college-educated Black spouses experience close to a three times higher risk of a very preterm birth and VLBW (<1,500 g) compared to White women. These Black women, in their twenties or thirties, delivered either their first- or second-born child after they initiated and received prenatal care in their first trimesters (Schoendorf et al., 1992).

For the current study, in which I examined negative birth outcomes among Black women with differing levels of education, the following research questions were addressed:

RQ1: Is there a difference in the perceived and actual racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black

women during their reproductive years as measured by the five subscales of the JHP contextualized stress measure?

RQ2: Is there a relationship between the participants' scores on the five subscales of the JHP contextualized stress measure and negative birth outcomes as measured by the demographic questions?

RQ3: Is there a relationship between education and negative birth outcomes as measured by the demographic questions?

Research has indicated that college-educated Black women are more likely to have poorer birth outcomes than college-educated White women (Owens & Jackson, 2015; Rowley, 2001). The factors or causal links that contribute to the ever-growing gap in IMRs between Black and White women remain unclear (Lu & Halfon, 2003; Selmer, 2012). Additionally, it is undetermined if a relationship exists between maternal racial and discrimination stress and the influence of education on negative birth outcomes. In this study, I observed the presence or absence of these influences on negative birth outcomes, such as LBW and preterm delivery. The population of interest was Black women born in the United States, 18 years or older, who had at least one pregnancy.

Occurrences of racial discrimination that are self-reported are associated with preterm and LBW deliveries among Black women (Mustillo et al., 2004). Mustillo et al. (2004) found that 50% of Black women with preterm deliveries and 61% with LBW infants reported experiencing racial discrimination in at least three situations, compared to 5% of White women with preterm delivery and 0% with LBW infants. Rankin et al. (2011) confirmed these findings in their study of racial discrimination, preterm birth, and

coping strategies among Black women. Black women who delivered LBW and preterm infants were more likely to report experiences of interpersonal racism and discrimination in a public environment within the past year than Black women who delivered infants who were considered term and were not of LBW (Rankin et al., 2011).

In this chapter, I provide an overall view of the selection of the study design, the study variables, and their connection to the research questions. Also included below is the study methodology, which defines the target population and size along with sampling and recruiting procedures. Next are procedures for recruitment, participation, and data collection as well as informed consent. Following these sections is a description of the published survey instrument, the JHP contextualized stress measure. Next, descriptions of each variable and how they are measured and scored through the data analysis plan are listed. Threats to validity will be discussed followed by ethical procedures such as treatment and protection of data and institutional review board permissions.

Research Design and Rationale

Stress during pregnancy has been linked to negative birth outcomes. Black women are susceptible to multilayered and multifaceted sources of stress, with chronic exposure to racial discrimination and prejudice being some of the most common (Giurgescu et al., 2013). A quantitative exploratory approach was used to identify perceived and actual racial and discriminatory maternal stress of Black women in relation to their birth outcomes and to examine if they are related to their education level. Specific demographic questions were asked to help identify what stressors may be present in one socioeconomic group that may be absent in the other.

The study variables are as follows: age (dependent variable), maternal racial and discrimination stress (dependent variable), education (independent variable), and negative birth outcomes (independent variable). Using a quantitative questionnaire, JHP contextualized stress measure, specifically designed to capture the actual and perceived discriminatory and racist experiences of Black women helped answer the research questions. The JHP contextualized stress measure is a validated instrument that measures the concurrent gender and racial stress of Black women (Jackson et al., 2004). There were no known time and resource constraints associated with this design choice. There was a need for descriptive correlational quantitative research observing the presence or absence of a relationship between actual and perceived racist and discriminatory experiences and negative birth outcomes for Black women with differing educational levels. Literature that observes the intersecting and potentially deleterious factors in socioeconomic determinants, such as race and education level, on birth outcomes within this population does not exist.

Methodology

Target Population

Black women, when compared to women of other racial groups in the United States, have the greatest levels of health risks (Mays, Cochran, & Barnes, 2007). Additionally, they are reported to die earlier and have more disability and disease than their counterparts (Office on Women's Health, n.d.). Many of the health issues Black women face are preventable and often treatable with proper health care, including screening and early detection (Office on Women's Health, n.d.).

Of specific interest to this study were the perceived and actual racial and discriminatory experiences of Black women and the influence of these experiences on LBW and preterm labor, both key indexes of IMRs. Black women are disproportionately impacted by inflated rates of infant mortality, with no definitive causal pathways that can be addressed to reduce this reproductive malady (Mayes et al., 2007). To further understand this phenomenon from the perspective of a Black woman, participants were asked to complete a demographic questionnaire along with the JHP contextualized stress measure. The target sample was approximately 110 Black women. I conducted a power analysis using G*Power software based on a chi square analysis, using an effect size, alpha level, and power level consistent with previous literature in this area (e.g., Jackson et al., 2004; effect size = .40; alpha = .05; Power = .95; five dependent variables [5 JHP subscales]).

Sampling and Sampling Procedures

Convenience and snowball sampling were used. Convenience sampling of Black women participating in an online social media group for mothers, targeted participants who met basic inclusion criteria. Snowball sampling from interested respondents provided an additional pool of participants that met basic inclusion criteria. In addition to convenience and snowball sampling, quota sampling was also employed to ensure that each demographic variable being examined was represented in the study (Blackstone, 2016). The demographic variables of interest were age, educational level, and parity as the inclusion criteria for participation in this study were both demographic and socioeconomic.

Participants of interest were women who self-identified as Black, who were 18 years of age or older, attended at least high school or had a GED, spoke English, and had been pregnant at least once (without termination of pregnancy through abortion). The individuals who responded in the affirmative were asked to answer a survey that consisted of demographic and Likert-scale questions that queried their experiences with racism and discrimination.

Participants recruited from a social media group were asked to complete both the JHP contextualized stress measure and demographic questions via email. The group administrators were contacted for permission to announce the study by posting the flyer and asking women if they were willing to participate. The administrator was also asked to post the recruitment announcement herself to keep the identity of the researcher anonymous at least until interest had been determined. I am a member of the group as well and did not want to influence responses nor coerce participation because of relationships with individuals in the social media group. In the event sample size was not met through convenience sampling or attrition was high, snowball sampling was employed to ensure that statistical power was reached.

Procedures for Recruitment, Participation, and Data Collection

Main study. Data collection occurred online via email. I created a separate, encrypted email account for the purposes of data collection. Participants received the survey tools from and submitted their responses back to this email account. In addition to the JHP contextualized stress measure, participants from the Facebook mothers' groups were asked various demographic questions, such as those pertaining to their pregnancy

history, insurance status, and occupational history for example. These items answered the questions of parity, necessary to determine the birth outcomes of the participants, prenatal care utilization, and socioeconomic status. Both the JHP contextualized stress measure and demographic questions answered the research questions for the present study. Interested respondents were also reminded that they were participating voluntarily, and that they were not mandated to remain in the study after interest was expressed. Participants were made aware of all study requirements and that informed consent was assumed upon participation.

I collected the data from the email responses of the participants and entered it directly into the statistical software package. Due to the sensitive nature of the study topic, participants were offered information about free counseling and support service centers and/or hotlines to further process any feelings or emotions that arose during the survey Additionally, they were made aware that participation was voluntary, and they could request to decline participation at any time. There was no required follow-up. Once the survey was complete, all requirements for participation were met. After submitting their responses, participants were invited to request a response via email if they wanted to be informed of the results from the study.

Instrumentation and Operationalization of Constructs

The JHP contextualized stress measure (Jackson et al., 2004) is a validated instrument that specifically addresses the gender and racial stress of Black women. The items represented the data collected through qualitative interviews and focus groups that queried Black women on who they believed themselves to be, the environments in which

they exist, and their experiences of stress because of their race and gender. The use of the JHP contextualized stress measure in this study was applicable because of the how tailored the survey items were to the racial and gendered stress experiences of Black women. There is an insufficient selection of tools to measure maternal stress among Black women specifically related to the intersection of education and negative birth outcomes.

The Cronbach alpha coefficients for the JHP contextualized stress measure, indicating internal consistency, range from 0.84 to 0.89. The JHP contextualized stress measure and its subscales have been validated with well-established psychosocial measures (Cohen Perceived Stress Scale, <.01; Stressful Life Events <.01; Speilberger Anger-Out <.01; Speilberger Trait Anxiety <.01) and with depression (Beck Depression Inventory, <.01) (Freeman, 2008; Jackson, Hogue, & Phillips, 2005; Jackson, Rowley, Owens, 2011). The JHP contextualized stress measure has been used in assessing and predicting the maternal health (specifically depression) and birth outcomes of college-educated, pregnant Black women when compared to other tools (Jackson, Rowley, Curry Owens, 2012). Pearson correlation coefficients were calculated for the JHP contextualized stress measure, Perceived Stress Scale (PSS, Cohen, 1994), and the Beck Depression Inventory II (BDI-II, Beck, Steer, & Brown, 1996). Further testing of the associations for the depression and stress measures was conducted using the chi-square test for trends. Chi-square analysis was also performed to determine the covariate associations for the stress and depression measures and the demographic characteristics (Jackson, Rowley, Curry Owens, 2012).

For the JHP contextualized stress measure (2004), scores for the measure are derived from the sum of the stressors, mediators, and stress state subscales that were divided into tertiles to indicate low, moderate, or high stress. All of the items are in a "Likert" format. The response categories are Strongly Agree, Agree, Unsure, Disagree, or Strongly Disagree. Not applicable" (N/A) is also an option. A "negative" (i.e., stressful) response receives a score of 5 and a "positive" response is given a score of 1. N/A is given a score of zero. Coping and support items are scored in reverse with negative responses receiving a score of "5" and the positive responses being scored as "1."

The items represent the diversity of experiences among African American women; the scale includes common (generalized) and situational items. Situational items assess the particular stressors confronted by women who are married or in partnership, have children, and are employed. Common items are those statements that any women should be able to respond to regardless of her marital or partnership status, motherhood, or employment status. In order for a score to be valid the respondent must answer 39 of the 41 common items (Jackson, Hogue, Phillips, 2004).

For this study, the dependent variables were age and maternal racial and discrimination stress; the independent variables were education and negative birth outcomes. *Age* is defined as the chronological number of years the participant has been living at the time of participation in the survey. This variable was measured by an item on the demographic questionnaire. *Maternal stress* is defined as the interconnected experiences of racial and gendered stress as measured by the JHP contextualized stress measure (2004). *Education* is defined as the amount of completed education obtained by

the participant at the time of the survey and was measured by an item on the demographic questionnaire. *Negative birth outcomes* are defined as any adverse events affecting the pregnancy of the participant or the birth/delivery experience of the participant including, but not limited to, stillbirth, miscarriage, preterm delivery, and LBW. An item on the demographic questionnaire also gathered data for this variable.

Data Analysis Plan

Data collected from the email responses from the JHP contextualized stress measure and open-ended questions were analyzed using IBM SPSS software Version 25. These data were manually entered directly from participant responses into an SPSS file. Data cleaning was conducted by ensuring appropriate cells were filled and if not, I decided whether to eliminate missing data or divide the data into groups. Additionally, a second step in the data cleaning process was to review the data for extreme scores based on the statistical assumptions of the aforementioned variables.

Cronbach's alphas were determined for the five subscales of the JHP contextualized stress measure based on data collected from participants' responses to the Likert scale in the JHP contextualized stress measure. Describing the data analysis further, the research questions are restated here.

RQ1: Is there a difference in the perceived and actual racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by the five subscales of the JHP contextualized stress measure?

This RQ was analyzed using chi-square with two independent variables (college-educated vs. non-college-educated) and five dependent variables (five subscales of JHP contextualized stress measure).

RQ2: Is there a relationship between participants' scores on the five subscales of the JHP contextualized stress measure and negative birth outcomes as measured by the demographic questions?

This RQ was analyzed through using correlations using the total subscale scores (not tertiles) to find significance in relationships.

RQ3: Is there a relationship between education and negative birth outcomes as measured by the demographic questions?

This RQ was analyzed through correlations.

Threats to Validity

Of interest to the threats to external validity in the current study were the effects of selection bias. The specified audience was Black women spanning a large range of ages and socioeconomic levels. The use of email to disseminate the survey as well as the receipt of the responses was a concern for individuals who may not own computers, have internet access, or have basic computer literacy. Additionally, though the Black female population may appear to be a homogenous group, it is actually a very diverse group with varying levels of assimilation. This diversity posed a concern when trying to generalize to the larger population, especially because of the inclusion parameters (e.g., at least one pregnancy). Testing reactivity was possible in the current study, as participants knew that the researcher was aware of their responses.

Ethical Procedures

The main method of recruitment of participants was from advertisement of the study in social media groups. Walden University Institutional Review Board approval was obtained (#01-16-19-0161689) to conduct this study. The population of interest included women who might have been pregnant at the time of participation (a protected population). Assessment of consent was the first step in the data collection process. The participants were informed that their submission of data served as their consent and that they were able to refuse to participate at any time and their data would not be used.

There was one main ethical concern with the data collection process. It was the concern that the topic was a sensitive one from various perspectives. By asking sensitive and potentially private questions, I did not want to cause any undue stress. Along with sending the survey tool, and consent form, I also included a list of free support agencies/hotlines for participants who needed to decompress or further process emotions that resurfaced from completing the survey. As data was collected via email, there was no debriefing after data collection. In addition, since email was used, I was aware of the participants' identities, so the data was not anonymous. All data was considered confidential and is being kept on a password-protected thumb drive for five years and then destroyed. Participation in this study was completely voluntary. Refusal to participate and/or early withdrawal was expected and accounted for in the sample size.

Summary

The purpose of this study was to explore the relationship between maternal racial and discrimination stress, educational level, and negative birth outcomes among Black

women by utilizing a survey tool that had been validation within the same population (JHP contextualized stress measure, 2004). This is not only relevant to future research implications; it is also a necessary and mandatory component in minority health research. Minorities are conspicuously absent as it relates to national representation in health care research. Research meant to investigate issues related to minority groups does not include their experiences and distrust of the health care system at large (Wendler et al., 2005). Examples of this include mainstream clinical trials that do not include or have negligible percentages of minority participants, rendering results that are unfit to be generalized. Of similar interest are interventions or research studies that are not specifically tailored to minority groups but are conducted in the same fashion as they are with the majority groups for whom they were developed. One of the expected results of this current study was to provide a springboard from which to launch other queries into research about and for the maternal and reproductive health of African American women. Next, in Chapters 4 and 5, I provide results of the analysis of the quantitative data collected as well as illuminate future implications of opportunities for additional research.

Chapter 4: Results

Introduction

The purpose of this study was to examine the relationship between actual and perceived maternal racial and discrimination stress and negative birth outcomes for Black women. Of special interest was the influence of this relationship on college-educated Black women. The research questions and hypotheses were:

RQ1: Is there a difference in the actual and perceived racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by five subscales of the JHP contextualized stress measure?

$H_0$1: There is no difference in the actual and perceived racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by five subscales of the JHP contextualized stress measure.

H_A1: There is a difference in the actual and perceived racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by five subscales of the JHP contextualized stress measure.

RQ2: Is there a relationship between the participants' scores on five subscales of the JHP contextualized stress measure and negative birth outcomes as measured by the demographic questions?

$H_0$2: There is no difference between the participants' scores on five subscales of the JHP contextualized stress measure and negative birth outcomes as measured by the demographic questions.

H_A2: There is a relationship between the participants' scores on five subscales of the JHP Contextualized Stress Measure and negative birth outcomes as measured by the demographic questions.

RQ3: Is there a relationship between education and negative birth outcomes as measured by the demographic questions?

$H_0$3: There is no relationship between education and negative birth outcomes as measured by the demographic questions.

H_A3: There is a relationship between education and negative birth outcomes as measured by the demographic questions.

Data Collection

Data collection was conducted from January 2019 through April 2019 after receiving institutional review board approval from Walden University (#01-16-19-0161689). After accounting for attrition and other factors, the sample consisted of 107 women, ages 18 or older, who self-identified as Black or African American and were U.S. residents. Convenience and snowball sampling were used. Convenience sampling was used to solicit Black women who participated in an online social media group for mothers, social media groups for professionals, and a general interest social media group for African Americans, targeting participants who met basic inclusion criteria. Snowball

sampling from interested respondents and other social media interaction provided an additional pool of participants who met basic inclusion criteria.

Recruitment began by creating a flyer to post in the social media groups and on my social media accounts. A secure, password-protected study email was created to communicate with and collect data from participants. Data collection procedures listed in Chapter 3 were not changed or revised. There were 164 requests to participate in the study. However, the total number of participants declined due to nonresponse, incomplete submissions, and lack of meeting inclusion criteria. The final number of participants with complete survey data was 107. The final sample was somewhat representative of the larger population of interest.

Results

The population of interest in this study was Black women from various age groups, geographical locations, and educational backgrounds. The sample population consisted of 107 women, 18 years or older, who self-identified as Black or African American and were born in the United States. Participants were made aware of the study via an informational flyer that was shared on social media or they were referred by a friend. To join the study, they sent an e-mail to a secure e-mail address created specifically for study communication and data collection to express their interest and receive the survey. They also returned the completed surveys to this e-mail address.

Although data collection was intended to close when the target number of 110 participants was reached to account for potential issues such as attrition, a few participants sent in surveys while I was completing data entry, so I added them to the

sample. Of 164 requests to join the study and surveys sent, 114 surveys were returned. Five surveys were excluded due to them being returned incomplete or not filled out correctly, leaving 109. During data cleaning, missing survey data was set to "unsure" (Option 3 on the survey) if there were three or less missing items. Two participants were removed from the data set as there were more than five missing data points, bringing the total number to 107. For missing demographic information, an additional option was created: All missing values were coded as "missing." All data were entered manually into the IBM SPSS software Version 25 for analysis.

As illustrated in Table 1, the majority of participants were older, 85% being between the ages 31 and 50 (n = 91). At 72%, they were mostly married (Table 1) and the majority had either a bachelor's degree or a master's degree (36% each, Table 1).

Table 1

Study Participant Demographics: Age, Marital Status, Education

Demographics	n	%
Age		
18–20	0	0
21–30	7	7
31–40	55	51
41–50	36	34
51+	9	8
Marital status		
Single (never married)	9	8
Married	78	73
Separated	3	3
Divorced	7	7
Widowed	2	2
In a relationship (not married)	8	7
Highest degree		
GED	1	1
High school diploma	8	7
Associate's degree	7	7
Bachelor's degree	39	36
Master's degree	38	36
Doctoral/professional degree	14	13

Statistical assumptions for this study were that the variables were independently observed, that all pieces of information from the completed surveys were related and from the subject that submitted it, and that the levels of measurement were appropriate. The data were checked for missing cases and those that fell outside the range of minimum and maximum values. I tested the assumptions of the variables by obtaining descriptive statistics on each one. Normality was assessed with the assumption that the distribution of the dependent scores was normal.

The survey tool used in the survey was made up of 56 questions and divided into six subscales. They were race/racism, burden, personal history (trauma; not used in the

present study), workplace experiences, coping and support, and stress states. The first four subscales assess stressors; the fifth is an assessment of stress mediators. The last subscale was designed to capture the affective responses to racialized and gendered stressors. The questions were in the form of a Likert scale with responses ranging from "Strongly Agree" to "Strongly Disagree". Questions 4, 11, 27, and 36 were excluded from the clickable form because they did not pertain to the study, and I also subsequently eliminated the personal history (trauma) subscale. I only reported on data analyzed by five of the six subscales. The five subscales I used in this study were race/racism, burden, workplace experiences, coping and support, and stress states. The personal history (trauma) subscale was not used due to the sensitive nature of the questions that were not pertinent to this study.

To create the subscales in SPSS, I used the transform function to compute new variables by adding each survey question to its corresponding subscale. I also recoded all the reverse questions in the survey tool which were denoted by an asterisk. As recommended by the scale developers, tertile scoring for the subscales was also set up in SPSS to allow for a high, medium, and low score to be assigned based on the sum of the stressors, mediators and stress states to assess the degree of stress for participants.

Table 2

Subscale Frequencies by Tertiles

Subscale	Low	Medium	High
Racism	20 and below,	21–36,	37 and above,

	n=14 (13.1%)	n=74 (69.2%)	n=19 (17.8%)
Burden	36 and below, n=19 (17.8%)	37–56, n=68 (63.6%)	57 and above, n=20 (18.7%)
Work	16 and below, n=20 (18.7%)	17–23, n=67 (62.6%)	24 and above, n=20 (18.7%)
Support	61 and below, n=17 (15.9%)	62–69, n=36 (33.6%)	70 and above, n=54, (50.5%)
Stress	8 and below, n=25 (23.4%)	9–12, n=31 (29.0%)	13 and above, n=51 (47.7%)

I conducted a data analysis to answer the three research questions. The first research question was, “Is there a difference in the actual and perceived racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by the five subscales of the JHP contextualized stress measure?” The first research question was analyzed using chi-square with two independent variables (college-educated vs. non-college-educated) and five dependent variables (five subscales of JHP contextualized stress measure), there were no significant differences between the subscales nor between the two groups (*ps* > .05). I also conducted this analysis using a corrected model for education combining GED, high school diploma, and associate’s degree to compensate for the small number in these groups. There were no significant differences observed.

The second research question was, “Is there a relationship between the participants’ scores on five subscales of the JHP contextualized stress measure and negative birth outcomes as measured by the demographic questions?” I analyzed this research question using Pearson’s correlations of the total subscale scores (not tertiles) to find significance in relationships. The JHP subscales were: race/racism, burden,

workplace experiences, coping and support, and stress states. There was a statistically significantly relationship between the burden subscale and preterm delivery (r = .314, p = 0.01). A statistically significant relationship was also observed between the burden subscale and miscarriage (r = .240, p = 0.05). In addition, there was a statistically significant relationship between the work subscale and preterm delivery (r = .227, p = 0.05). I also found that preterm delivery was significantly associated with LBW (r=.361, p=0.01), miscarriage (r=.372, p=0.01), and infant death within the first 12 months (r=.191, p=0.05).

The third research question was, "Is there a relationship between education and negative birth outcomes as measured by the demographic questions?" I also analyzed this question using Pearson's correlations. Significant associations were seen between highest degree earned and VLBW (r=.198, p=0.05). In addition, there were significant associations between highest degree earned with marital status and household income.

Summary

The three research questions in this study were designed to understand relationships between psychological concepts such as maternal stress and racism and physical observations of negative birth outcomes such as infant mortality, with LBW and preterm delivery being the primary markers, among college-educated, Black women. There were no differences in the actual and perceived racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by five subscales of the JHP

contextualized stress measure. Neither were there any differences observed in the subscale scores between the two educational groups.

The burden subscale was significantly related to two of the six negative birth outcomes in the study. The work subscale was significantly related to one of the six negative birth outcomes. When looking at education and negative birth outcomes solely by demographics, a significant relationship emerged - highest degree earned and VLBW.

In Chapter 5, I will discuss in detail what these findings mean in relation to the topic of study. I will also describe the limitations of the study and how they relate to generalizability. Finally, I will conclude with recommendations for and implications of the study and its potential impact for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to examine the relationship between racial maternal stress and negative birth outcomes among college-educated Black women. The rationale of conducting this study was to add to the current body of knowledge on indicators of infant mortality that affect this group disproportionately. The key findings in this study were as follows: no differences were observed in the perceived and actual racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by five subscales of the JHP contextualized stress measure. No differences were observed in the subscale scores between the two educational groups.

Interpretation of the Findings

In this section, I elaborate on how the findings for this study confirm, disconfirm, and/or extend knowledge in the area of Black infant mortality as it relates to negative birth outcomes. Many of the findings in this study are consistent with the literature presented in Chapter 2. I have restated the research questions and findings below.

RQ1: Is there a difference in the actual and perceived racist and discriminatory experiences of college-educated Black women compared to non-college-educated Black women during their reproductive years as measured by the five subscales of the JHP contextualized stress measure?

There were no significant differences between the subscales nor between the two groups.

RQ2: Is there a relationship between the participants' scores on five subscales of the JHP contextualized stress measure and negative birth outcomes as measured by the demographic questions?

There was a statistically significantly relationship between the burden subscale and preterm delivery as well as miscarriage. Additionally, there was a statistically significant relationship between the work subscale and preterm delivery.

RQ3: Is there a relationship between education and negative birth outcomes as measured by the demographic questions?

Significant associations were seen between highest degree earned and VLBW. There were also significant associations between highest degree earned with marital status and household income.

As mentioned, the burden subscale was found to have a statistically significant relationship to preterm delivery and miscarriage. The burden subscale is comprised of issues related to weathering, a concept developed by Geronimus (1996), which considers the wearing down of Black women's health over time. This result supported the premise that the consistent and pervasive accumulation of the burden experienced by Black women may be a key area to addressing negative birth outcomes within this population.

The work subscale (a measure of workplace interaction with both Black and White coworkers) was also found to have a statistically significant relationship to preterm delivery. This coincides with the data presented in Chapter 2 that Black women were grossly underpaid and undervalued in the workplace regardless of work ethic and education (Department of Labor, 2016). Love et al. (2010) stated that LBW was a major

factor influencing infant death within the first year of life, and this was echoed by Hogue and Bremner (2005) who added that both preterm delivery and VLBW were additional influential factors. Over a third of participants (35%) experienced either delivery of a LBW infant, VLBW infant, or preterm delivery. The most up to date national data reports a decline in LBW for White women, but an increase in LBW for non-Hispanic Black women for two years in a row from 2016 to 2018. Final 2018 final birth data shows a two-fold disparity between White and Black women for both LBW and VLBW (Martin, Hamilton, Osterman, & Driscoll, 2019). These negative birth outcomes are persistent in the lives of Black women and must be addressed.

One finding that differed from what was observed in the literature was that there were no significant differences observed in the actual and perceived racist and discriminatory experiences between the two educational groups (college-educated versus non-college-educated) during their reproductive years. Collins et al. (2004) stated that the group with the highest association of VLBW were Black college-educated women who experienced persistent, lifetime interpersonal racism. A significant association was observed between highest degree earned and VLBW. The higher the educational attainment, the greater percentage of VLBW outcomes. In fact, 60% of the participants who had VLBW infants reported having a college education or beyond. Williams (2002) stated that the infant mortality gap grows larger as socioeconomic level increases. In addition, he stated that for Blacks, socioeconomic attainment is relatively recent, meaning they are likely to have experienced socioeconomic disadvantage while growing up. This is critical considering that even Black mothers whose parents were in a higher

socioeconomic group were reported to have experienced rates of LBW and preterm delivery two and three times higher (respectively) than their White counterparts (Foster et al., 2000). It is possible that the increase in socioeconomic status (which included education) is not enough to counteract potential negative health outcomes for this population.

One finding I believe extends the knowledge of negative birth outcomes in this population was the observation of miscarriage among the participants. For instance, a little over a third of the participants (34%) had experienced a miscarriage. This outcome did not previously come up in the literature while gathering research on this population. Due to the high occurrence of this negative birth outcome in comparison to the others, future research specific to miscarriage in Black women is warranted.

The theoretical foundation for this study were concepts from the stress age model (Hogue & Bremner, 2005) and Black feminist theory (Crenshaw, 1989; Collins, 2002). The stress-age model predicted that based on the chronic and traumatic experiences (maternal stress due to racism) of the host (Black women of reproductive age) they would age prematurely, thus influencing negative birth outcomes. Both the burden and work subscales were associated with negative birth outcomes (LBW, VLBW, and preterm delivery) and both subscales assessed maternal stress due to chronic and traumatic experiences both within the workplace and at home. This framework is an appropriate lens through which research can be conducted on the relationship of stress and negative birth outcomes for Black women. While the predictability of this framework was not fully observed in this study, the findings are in line with the predictions of this model. A

larger study would allow for more comparison between and among groups and would allow for greater generalizability.

Black feminist theory (Collins, 2002; Crenshaw, 1989) was particularly helpful in understanding the present study, as it provided a way to analyze Black birth outcomes as a result of connected and shared lived experiences, not just as separate occurrences. This theory, relying heavily on intersectionality, predicted that the sum of the realities of being a Black woman of reproductive age (race, gender, racism, socioeconomic inequity; all measured by the five JHP subscales) would influence their birth outcomes. The findings somewhat relate to this prediction as two of the five subscales were significantly associated with negative birth outcomes. The expectation was that each of the analyzed subscales would have been significantly associated with the negative birth outcomes analyzed to buttress the fact that Black women's lived experiences are truly interconnected, which makes the effects of racial stress so insidious and deleterious to their reproductive health. Though the sample size was adequate according to calculations, a larger sample would have afforded more variability in the participant pool resulting in stronger data analysis. In addition, the snowball recruitment of the participants played a role in the lack of educational diversity of the sample. This phenomenon is due to the fact that individuals shared the study information with their peers, who were more than likely similar in socioeconomic status, including education level. would suggest future researchers cast a wider net to ensure comparability in the recruitment process.

Limitations of the Study

There were several limitations in the study. The research design and recruitment procedures were put in place to gather quality participation and data. The first limitation was recruitment of participants. A few of the social media groups that allowed me to share the recruitment flyer did not actually post the flyer in the group. I was able to post on my own social media pages and the flyer was seen and subsequently shared in other groups and other social media outlets. This made it difficult to control the distribution of the educational backgrounds of the participants.

As mentioned, the educational backgrounds of the participants were heavily influenced by the participants who shared the study with their peers. While acquiring additional participants was critical to the achievement of the sample size, I noticed that the participants shared similar socioeconomic backgrounds such as education, income, religious preference and marital status. Participants who had college degrees shared with their social networks, who also had college degrees. There were not enough participants on the other end of the spectrum to allow for comparison. Even after combining the non-college-educated groups together and recoding the variable to try to make a comparison, there still were not enough participants to allow for thorough analysis.

Another limitation to the study was the administration of the survey tool. Due to permission restrictions preventing the tool being administered as an online survey, it was administered as a clickable PDF that was emailed to participants. The PDF, while useful, was not practical for every participant. The PDF was formatted differently depending on the electronic device being used. Although the directions in the email stated that the tool

was in a clickable PDF format, some participants found it difficult to use and the data was returned in various forms that were hard to salvage for data collection purposes and were not included in the data set.

Another limitation to the study was that the personal history questions were not included. Because of their sensitive nature (i.e., history of mental, physical, sexual abuse queries) and the fact that these questions were not essential to the study, they were not part of the survey sent to the participants for this study. This resulted in the absence of an additional subscale for analysis, as well as a missing aspect of the lived experience of the participants.

The sample in this study was quite a bit different from the general population and may not provide an adequate means for generalizability. As mentioned, there were various similarities in the sample because of recruitment procedures; also, those who chose to volunteer for this study probably differ from those who did not choose to do so for various reasons including the following. While the survey tool was not an online survey, participants would have had to have access to both a computer and Internet to express interest in participating in the study, as well as completing the survey and returning it via e-mail. Also, the participants would differ from women who did not have access to or lacked the technological savvy to fill out a clickable PDF; it may also be related to less experience with computers due to lower educational level.

Recommendations

Recommendations for future research include utilizing the results of this study to take a deeper look into the findings; for example, mining the demographics that showed

statistically significant associations between marital status and LBW, household income and preterm delivery, and health insurance and miscarriage. It would be extremely valuable to follow up with qualitative studies that describe and discuss what could be key contributors to these relationships. Also, birth outcomes research should be conducted that is specifically geared toward the subpopulation of well-educated Black women (college and beyond) and comparing groups as level of education increases.

With the study being skewed in relation to educational attainment, a similar study with a larger sample, with specific inclusions to control for adequate comparisons would be another recommendation. Further analysis of the varying educational groups would provide a solid framework for research aimed at the unique challenges faced by Black women who find themselves on polar ends of the spectrum to ascertain if the groups are different or alike in actual and perceived experiences with racism and negative birth outcomes. Another recommendation for future research is to include the significant partners of the women in some way to examine the influence of other family members as a part of the intersectionality of Black womanhood and motherhood.

The greatest recommendation is for tools and research that is not only tailored to and geared toward Black women, but also includes them in the design and evaluation of that research. Participatory research honors the power of the Black woman to share in the work that is being done for and within her community or network wherever it may be. There is a dearth of representation in research for Black women by Black women researchers using tools that have been thoroughly and systematically designed with evidence-based practice.

Implications

This study has several implications for social change in health care and health disparities research. This study was an examination of the maternal stressors that were hypothesized to influence the birth outcomes of college-educated and non-college-educated Black women, who engaged in prenatal care yet experienced negative birth outcomes. The devastating impact of both maternal and infant mortality in this community is far reaching and there is a breakdown in the link to the health system. IMRs have decreased overall, but the gap between Black women and other groups gets larger over time. Clinicians are the main source of health care education for these women and bear the weight of their care, which for Black women does not end after the doctor's appointment.

If the key contributors to this disparity are primarily social determinants, then practical applications can be made at structural and interpersonal levels to influence change that can be observed and measured for efficacy. This is not only limited just to change on paper, but it also includes the revamping of various value/merit systems of institutions and providers. An example of such change is mandatory cultural competency training for clinicians and ancillary staff on implicit bias to reduce the further traumatization and victimization of Black women when they visit their obstetricians and gynecologists for well-woman checks, pre- and postnatal care, as well as when in delivery, operating, or recovery rooms.

Positive Social Change

Research such as this can be used for the foundation of case studies and curriculum development for researchers and practitioners during matriculation as well as renewing certifications and licensing. For the Black community, the keys are awareness and empowerment. Access to pertinent health information regarding the protection of their reproductive health should be made available at health fairs, and clinics, and discussed directly with their providers during visits. Posters and panels at conferences that discuss risk and research strategies are effective for academia, but the skills necessary for self-advocacy are also critical to promote in non-academic arenas such as women's conferences and other large gathering venues where this population can easily access, consume, and dialogue about research in their interest.

Studies like this can also be used as a springboard and rationale for funding programs that address the disparate negative birth outcomes within this population. For example, programs geared toward the decrease of racism-related stress for Black women are needed. The impact of frequent perceived racist events was highlighted as a predictor of negative health outcomes for Black women, specifically noting that there was a negative relationship observed between lifetime experiences with racism and negative health outcomes (Kwate, Valdimarsdottir, Guevarra, & Bovbjerg, 2003, as cited in Pieterse, Carter, & Ray, 2013). Programs that offer Black women the opportunity to express their frustration with and discuss problems about actual and perceived racist experiences may provide key opportunities to help them process this phenomenon and decrease racism-related stress.

Conclusion

Black women and their children are a vital part of American society and provide valuable contributions in a myriad of ways. If infant mortality is one of the indicators of a country's health and well-being, how can this one population be at such high risk? A step toward reducing Black women's IMRs is a step toward the overall growth and stability of whatever country in which they reside. For the United States, this is an immediate and pressing need.

Eliminating the mortality gap will not only drive down rates within this population, but it will also work in concert with national and global guidelines meant to protect them and ensure the preservation of the next generation. This cannot be achieved without the proper instruments and research standards that make room for better design, data collection, and analysis for Black women. It is a reproductive and social justice issue.

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Appendix A: Flyer for Dissemination

Is there a relationship between discrimination and negative birth outcomes for black women?

You are invited to participate in a survey that is designed to find some answers to this question. The inclusion criteria are: self-identify as Black/African American, were born in the United States, understand English, are:
18 years of age or older, have been pregnant at least once, and are able to spend approximately 30 minutes to complete and email your answers to the researcher within 2 weeks. Your interest and participation in this study are appreciated.
All information provided in the survey will be kept confidential. If you wish to participate, please call or email with your interest to the researcher at the contact information provided to complete the survey.

Researcher: Quantrilla Ard