

**Psychosocial Stress, Perceived Gendered Racism, and Preterm Birth by Gestational Age at
Birth: Associations Among Non-Hispanic Black Women During Pregnancy**

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Abstract

Stress is a complex and multifaceted construct that may arise during pregnancy from pregnancy-specific concerns or social and cultural interactions, referred to as psychosocial stress. It can affect both maternal and infant health. Persistent racial disparities in maternal and infant health outcomes, particularly the disproportionately high rates of preterm birth among non-Hispanic Black women, remain inadequately explained by known risk factors. The problem addressed in this study was the limited understanding of how psychosocial stress and perceived gendered racism are related during pregnancy and how these factors may be associated with preterm birth outcomes among non-Hispanic Black women. Grounded in Lazarus and Folkman's transactional model of stress and coping, this quantitative non-experimental correlation study examined the relationships between perceived gendered racism, psychosocial stress, and preterm birth by gestational age at birth. Two research questions guided the study: (a) What is the relationship between perceived gendered racism and psychosocial stress? (b) What is the relationship between perceived gendered racism, psychosocial stress, and preterm birth? Data were collected via self-report surveys from a nonprobability sample of 170 participants. Measures included the Gendered Racial Microaggressions Scale and the Psychosocial Hassles Scale. Pearson and partial correlation analyses were conducted. Results indicated statistically significant, moderate positive associations between perceived gendered racism and psychosocial stress. No statistically significant direct association was found with preterm birth when psychosocial stress was controlled. These findings suggest psychosocial stress represents an important correlate linking gendered racism to maternal health disparities. Findings may support culturally responsive prenatal care and indicate a need for future longitudinal and intervention research.

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Chapter 1: Introduction

Stress is a complex, intricate construct (Dorsey et al., 2022), experienced by all at various levels and frequencies across the lifespan (Taborsky et al., 2021). When stress occurs during pregnancy, it can impact both the mother and baby (Dhaliwal et al., 2022). Stress during pregnancy can occur from pregnancy-specific stress, which involves concerns about becoming a new parent and caring for the baby, or fears of labor and birth (Ibrahim & Lobel, 2020), or from the pregnant woman's environment through social or cultural interactions called psychosocial stress (Georgiades et al., 2023). Psychosocial stress is a sub-construct of stress (Lawrence et al., 2022). When pregnant women experience psychosocial stress and become overwhelmed and unable to manage life's demands, their response to stress manifests behaviorally and physiologically (Jayachandran et al., 2021).

Psychosocial stress during pregnancy compounds the stress the pregnant woman's body is already enduring because of the physiological changes to prepare for the birth and parenting of her baby (Vlisides-Henry et al., 2021). The pregnant woman's physiological response to psychosocial stress leads to an overproduction of cortisol, resulting in overactivity or dysregulation of the hypothalamic-pituitary-adrenal axis, which maintains homeostasis during stress (Cao-Lei et al., 2020). The stress hormone travels to the fetus through the placenta by DNA methylation, altering the physiological system and affecting the fetus's behavior and health (Cao-Lei et al., 2020). The in-utero environment influences fetal development, as stress hormones transfer from the mother to the fetus, altering gene expression through epigenetic mechanisms as the pregnant woman responds to environmental stress (DeSocio, 2018).

When stress is chronic with limited buffers, the risk for adverse maternal and infant health outcomes of preeclampsia, preterm birth (Traylor et al., 2020), low birth weight (Amiel

Castro et al., 2020), and morbidity and mortality increases (Lawrence et al., 2022). These poor maternal and infant health outcomes are costly and can create long-term health issues that can follow the infant into adulthood (Ibrahim & Lobel, 2020). Specifically, preterm births cost an estimated 26.2 billion dollars annually in healthcare expenses in the United States (Mayne et al., 2022). Disparities exist where non-Hispanic Black prenatal women have higher rates of adverse birth outcomes than non-Hispanic White prenatal women (Montoya-Williams et al., 2021). The reasons for these disparities are complex, with research showing racism and discrimination, the social determinants of health (Giurgescu et al., 2022), as contributing factors to the differences (Brown et al., 2023; Nam et al., 2022). Racism or perceived discrimination activates the stress response (Peterson et al., 2020), increasing the risks of adverse maternal health outcomes for pregnant women (Lawrence et al., 2022).

Gendered racism is a form of psychosocial stress explained as the convergence of sexism and racism, which creates increased levels of distress and unfavorable health outcomes for those experiencing this type of oppression (Nelson et al., 2023). Evidence has suggested that the lived experiences of being a non-Hispanic Black woman in America present risks for health (Christian, 2020) and are further explained by Geronimus' (2023) hypothesis of weathering, where chronic stress leads to accelerated aging and physiological changes because of structural racism (Dawson et al., 2023). The intersectionality of sexism and racism creates weathering in non-Hispanic Black women, increasing their risk of health adversities (Patterson et al., 2022; Peterson et al., 2020). Understanding the relationship between psychosocial stress and perceived gendered racism for non-Hispanic Black women during pregnancy and preterm birth is crucial to improving maternal and infant health outcomes (Rosenthal & Lobel, 2020).

Statement of the Problem

The problem addressed by this study was that higher rates of preterm births occur for non-Hispanic Black women with no clear understanding of the relationship between psychosocial stress and perceived gendered racism during pregnancy (Clarke et al., 2022). Racial disparities exist in maternal health outcomes, with more significant psychosocial stress experienced by non-Hispanic Black women than non-Hispanic White women (Lawrence et al., 2022). The known risk factors for health behaviors, socioeconomic status, and genetics do not fully explain the reported racial disparities (Christian, 2020).

Psychosocial distress during pregnancy increases the risk of adverse maternal and infant health outcomes, including maternal depression, preterm birth, low birth weight, preeclampsia, infant and maternal morbidity, and mortality (Lawrence et al., 2022). The risk of preterm birth is 1.5 times higher for non-Hispanic Black women during pregnancy than for non-Hispanic White pregnant women (Kornfield et al., 2022). The estimated cost of maternal morbidity in America was 32.3 billion in 2019 (O'Neil et al., 2021). Black maternal health is a public health crisis, as Black women have a threefold chance of a pregnancy-related death (Centers for Disease Control and Prevention, 2024b).

Navigating the intersectionality of gender and race creates excessive stress for individuals (Williams et al., 2023). Clarke et al. (2022) and Riley et al. (2024) recommended further analysis to understand the specific connection between gendered racism and maternal health outcomes related to preterm births. Research has shown a correlation between gendered racism and depression (Jones et al., 2022). However, there is no clear relationship between psychosocial stress and gendered racism and their association with preterm birth (Clarke et al., 2022). Explaining the relationship between psychosocial stress and perceived gendered racism for non-

Hispanic Black women during pregnancy while controlling for preterm births by gestational age at birth and then psychosocial stress helps improve maternal health outcomes (Rosenthal & Lobel, 2020) and saves lives (Health Resources & Services Administration Maternal and Child Health, 2024).

Purpose of the Study

The purpose of this quantitative non-experimental correlation design study was to explain the relationship between psychosocial stress and perceived gendered racism by non-Hispanic Black women during pregnancy, controlling for whether their recent birth was a preterm birth by gestational age at birth. By strategically rotating preterm birth by gestational age at birth and psychosocial stress as control variables, this researcher aimed to show a correlational relationship between psychosocial stress, gendered racism, and preterm birth. A preterm birth is defined as a baby that is born < 37 weeks of gestational age (Brown et al., 2023), and giving birth to a preterm baby increases the risks of subsequent preterm births (New York State Department of Health, 2022). Psychosocial stress was measured by the Psychosocial Hassles Scale (Misra et al., 2001), adapted to be answered retrospectively, and perceived gendered racism was measured by the Gendered Racial Microaggression Scale (GRMS; Lewis & Neville, 2015). Data on birth outcomes and demographics, including age, marital status, education, income, parity, and geographical location, were examined.

The study took place in New York State, where participants received prenatal care from hospital-operated prenatal clinics, Federally Qualified Health Centers, or private practices. A nonprobability sample of 170 non-Hispanic Black women, at least six months postpartum, was selected for the study. This researcher conducted Pearson and partial correlation analyses in SPSS.

Introduction to Framework

The theoretical framework for this study on psychosocial stress and perceived gendered racism during pregnancy was Lazarus and Folkman's transactional model of stress and coping, which posits that stress arises from two-way interactions between individuals and their environments (Biggs et al., 2017). Lazarus and Folkman (1984) described this bidirectional interaction as a dynamic state, emphasizing the interplay between the individual and their environment. As individuals interact with their surroundings, they continuously examine the environment through what Lazarus and Folkman (1984) call the appraisal process (Biggs et al., 2017), which occurs at three levels: primary, secondary, and reappraisal. The initial evaluation of the potential threat occurs at the primary stage, followed by the secondary appraisal, which assesses coping strategies, and then the reappraisal period, which is a reassessment of the situation based on new information introduced (Abu Shosha & Al-Kalalkeh, 2020).

When individuals evaluate stimuli in their surroundings, the process creates emotions (Biggs et al., 2017). The cognitive appraisal process incorporates the individual's values, perceptions, experiences, and environment and generates emotional and behavioral responses (Lazarus & Folkman, 1984). If the stimuli are perceived as threatening, the individual shifts to a coping process to manage the emotions (Biggs et al., 2017). Undergoing the coping process changes how the person views the environment, perceiving it as favorable and creating positive emotions, or as unfavorable or unresolved, creating distress (Biggs et al., 2017). If an individual cannot appropriately respond to a threat or stimulus, the situation remains unresolved, leading to chronic stress (Mete & Ozberk, 2020). Stress is expressed physiologically and behaviorally (Jayachandran et al., 2021), resulting from an individual's internal coping mechanisms becoming

overwhelmed by external factors, leading to a sense of pressure and an inability to manage demands (González-Ochoa et al., 2018).

A study by Loewenstein (2019), using the transactional model of stress and coping to assess the stress of parents with children in the neonatal intensive care unit, emphasized stress as a social determinant of health and considered the person-environment interaction in the stress response. During a physiological stress response, the individual's body constantly works to maintain homeostasis by triggering chemical reactions that increase blood pressure and heart rate through allostasis, resulting in an allostatic load (Lueth et al., 2022). Psychosocial stress during pregnancy arises from pregnant women's ongoing appraisal of stimuli in their environment (Biggs et al., 2017), encompassing multifaceted psychological and social factors that influence the appraisal process (Gondwe & Chapman, 2022).

The psychosocial stress experienced, combined with the physiological stress of the developing fetus, which already puts the pregnant woman's body into allostasis, compounds the overall stress pregnant women's bodies undergo as they work to cope with the stress (González-Ochoa et al., 2018). Based on the coping component of the theoretical framework, the woman is "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141).

Introduction to Research Methodology and Design

The purpose of this quantitative non-experimental correlation design was to explain the relationship between psychosocial stress and perceived gendered racism experienced by non-Hispanic Black women during pregnancy, controlling for whether their recent birth was a preterm birth by gestational age at birth. Three variables were examined: psychosocial stress

(Gondwe & Chapman, 2022), perceived gendered racism (Lewis & Neville, 2015), and preterm birth by gestational age at birth (Shulman et al., 2018). Preterm birth by gestational age at birth and psychosocial stress were strategically rotated as control variables. Perceived gendered racism and psychosocial stress variables were measured using pre-existing, validated instruments, and preterm birth by gestational age at birth was self-reported.

Methodology

A quantitative method was selected to explain the relationship between the three variables of psychosocial stress, perceived gendered racism, and preterm birth by gestational age at birth. A quantitative method shifts from a broad viewpoint to a specific perspective to test hypotheses (L. Williams et al., 2014). It allows an investigation of the relationship between the independent and dependent variables and the significance of associations within a correlational design (Novosel, 2022). Using a quantitative method provides the ability to study a larger sample size and greater possibilities for the generalizability of the findings (Smith, 2023), as demonstrated by Lawrence et al. (2022) in their quantitative study to assess the correlation between life stressors, maternal morbidity, and racial disparities among 24,209 participants using the Pregnancy Risk Assessment Monitoring System (PRAMS) dataset. Researchers used quantitative, qualitative, and mixed-methods approaches in their study of preterm birth (Zahroh et al., 2022). However, more quantitative studies are published in the field because they employ more rigorous procedures (Smith, 2023). A qualitative methodology was not selected because they use nominal measurements (Salkind & Frey, 2020). In contrast, this study included ordinal scales for data collection and numerical data to explain the relationship between the continuous variables of psychosocial stress, perceived gendered racism, and preterm birth by gestational age at birth, which was coded dichotomously.

Research Design

By selecting a correlational design, this researcher explained the relationship between the variables. A correlational design was suitable for the study because this researcher did not seek to predict or establish a causal relationship (Sprenkle & Piercy, 2005). Rather, the design was used to examine and explain the association and strength of the relationship among two continuous variables, psychosocial stress and perceived gendered racism, and preterm birth by gestational age at birth dichotomously (L. Williams et al., 2014). The strategic rotation of preterm birth by gestational age at birth and psychosocial stress as control variables rendered a partial correlation analysis well-suited for this study (Salkind & Frey, 2020).

Population and Sample

The target population for this study comprised non-Hispanic Black women in New York State who had experienced pregnancy and childbirth. The three-year average of 29,624 births among non-Hispanic Black women in New York State, reported by the New York State Department of Health (2024) for 2019 to 2021, was used as the reference population size. The inclusion criteria for participation were non-Hispanic Black women aged 21 or older, at least six months postpartum at the time of data collection, who received prenatal care from hospital-operated prenatal clinics, Federally Qualified Health Centers, or private practices, and who reside in New York State. These criteria were essential for obtaining retrospective data on psychosocial stress and perceived gendered racism experienced during the prenatal period, as well as their preterm birth status.

Participants for this research were selected using a nonprobability sampling approach, with quota-based panels from Centiment's online research panel, a pre-recruited group of individuals who had expressed prior interest in participating in research. Nonprobability

sampling is a nonrandom approach in which each potential participant does not have an equal chance of being selected for the sample; however, it allows for a quicker way to identify and access the sample (Salkind & Frey, 2020). An effect size computation was performed using G*Power version 3.1 (Faul et al., 2009) to determine the minimum sample size required to test the research hypotheses. The results indicated that the required sample size to achieve 80% power to detect a medium effect at $\alpha = .05$ was $N = 84$ for a partial correlation. The sample was appropriate because the participants were non-Hispanic Black women at least six months postpartum who responded to questions by reflecting on their experiences related to psychosocial stress and perceived gendered racism during their prenatal period, and reported whether their recent birth was a preterm birth by gestational age at birth. By selecting non-Hispanic Black women at least six months postpartum, this researcher aimed to get retrospective responses uninfluenced by pregnancy hormones. Hormonal changes during pregnancy may affect how stressors are appraised and reported (Kiyak, 2024). However, by six months postpartum, the woman's hormone levels closely resemble pre-pregnancy levels (Kopp & Gerardis, 2023). Using a nonprobability sample allowed for a quicker way to identify and access the sample from the population (Sprenkle & Piercy, 2005).

The variables in this study were perceived psychosocial stress, gendered racism, and preterm birth by gestational age at birth. The control variable was strategically rotated, starting with preterm birth by gestational age at birth, followed by psychosocial stress. The self-report tools used to gather data included the Psychosocial Hassles Scale to measure psychosocial stress (Misra et al., 2001) and the Gendered Racial Microaggression Scale (GRMS) to measure perceived gendered racism (Lewis & Neville, 2015). Data on birth outcomes and demographics, including age, marital status, education, income, parity, and geographical

location, were examined. Although digital flyers (Appendix B) were initially planned as part of the recruitment strategy, they were not utilized because participants were recruited through Centiment's Audience Panel, a nonprobability online research panel. Participants completed the self-report tools online via Qualtrics and were compensated in accordance with their agreement with Centiment for completing the survey. This researcher conducted Pearson and partial correlation analyses in SPSS.

Research Questions

The focus of the study was to answer two research questions to explain the relationship between psychosocial stress, perceived gendered racism, and preterm birth in non-Hispanic Black women during pregnancy.

RQ1

What is the relationship between perceived gendered racism and psychosocial stress experienced by non-Hispanic Black women during pregnancy?

RQ2

What is the relationship between perceived gendered racism, psychosocial stress, and preterm birth experienced by non-Hispanic Black women during pregnancy?

Hypotheses

H1₀

Perceived gendered racism (predictor variable) does not have a statistically significant relationship with the psychosocial stress (outcome variable) for non-Hispanic Black women when experienced during pregnancy.

H1_a

Perceived gendered racism (predictor variable) has a statistically significant relationship with the psychosocial stress (outcome variable) for non-Hispanic Black women when experienced during pregnancy.

H2₀

When controlling for preterm birth by gestational age at birth (control variable), perceived gendered racism (predictor variable) does not have a statistically significant relationship with psychosocial stress (outcome variable), for non-Hispanic Black women when experienced during pregnancy.

H2_a

When controlling for preterm birth by gestational age at birth (control variable), perceived gendered racism (predictor variable) does have a statistically significant relationship with psychosocial stress (outcome variable), for non-Hispanic Black women when experienced during pregnancy.

H3₀

When controlling for psychosocial stress (control variable), perceived gendered racism (predictor variable) does not have a statistically significant relationship with preterm birth by gestational age at birth (outcome variable) for non-Hispanic Black women experienced during pregnancy

H3_a

When controlling for psychosocial stress (control variable), perceived gendered racism (predictor variable) has a statistically significant relationship with preterm birth by gestational age at birth (outcome variable) for non-Hispanic Black women experienced during pregnancy.

Significance of the Study

Understanding the relationship between psychosocial stress, perceived gendered racism, and preterm birth for non-Hispanic Black women during pregnancy helped draw associations to risk factors for adverse maternal and infant health outcomes (Dawson et al., 2023) and may inform ways to improve birth outcomes. Preterm birth is the second leading cause of infant deaths in the nation, following congenital anomalies (National Institutes of Health, 2021). Yu et al. (2023) estimated that public care costs for infants born between 32 and 36 weeks of gestation totaled \$361.9 million over 5 years, and that addressing preterm birth-related health may lead to lower medical costs.

Non-Hispanic Black babies are two times more likely to die than non-Hispanic White infants after a preterm birth (Karvonen et al., 2021), and understanding the relationship between psychosocial stress, perceived gendered racism, and preterm birth may inform how to improve prenatal health and increase life expectancy for non-Hispanic Black women and their babies. The findings from this study provide researchers and practitioners with guidance for decision-making on preterm birth and maternal and infant health outcomes. The findings added to the existing literature on disparities in preterm birth outcomes by drawing insight into the relationship between psychosocial stress and perceived gendered racism as one associated factor to the disparities in birth outcomes for non-Hispanic Black women during pregnancy (Rosenthal & Lobel, 2020).

Definitions of Key Terms

Gendered Racism

Oppression based on race and gender is gendered racism (Nelson et al., 2023).

Postpartum

The period between six and 52 weeks after a woman gives birth is referred to as the postpartum period (Kumarasinghe et al., 2024).

Pregnancy-Specific Stress

Concerns about becoming a new parent and caring for the baby or fears of labor and birth are pregnancy-related stress (Ibrahim & Lobel, 2020).

Preterm Birth

A baby is born prematurely when the live birth is < 37 weeks of gestational age (Brown et al., 2023).

Psychosocial Stress

Intense stress caused by social situations in an individual's life is psychosocial stress (Georgiades et al., 2023).

Summary

Higher rates of preterm births occur for non-Hispanic Black women with no clear understanding of the relationship between psychosocial stress and perceived gendered racism during pregnancy (Clarke et al., 2022). The purpose of this quantitative non-experimental correlation design was to explain the relationship between psychosocial stress and perceived gendered racism by non-Hispanic Black women during pregnancy, controlling for whether their recent birth was a preterm birth by gestational age at birth. The control variables of preterm birth by gestational age at birth and psychosocial stress were rotated. A preterm baby is born < 37 weeks of gestational age (Brown et al., 2023), and giving birth to a preterm baby increases the risks of subsequent preterm births (New York State Department of Health, 2022). Lazarus and Folkman's transactional model of stress and coping was the theoretical framework for this study,

positing that stress arises from two-way interactions, or transactions, between individuals and their environments (Biggs et al., 2017).

Upon obtaining approval from National University's Institutional Review Board (IRB), this researcher recruited a nonprobability sample using quota-based panels from Centiment's online research panel, a pre-recruited group of individuals who expressed prior interest in participating in research. Two hundred and sixteen of the 406 respondents met eligibility criteria: non-Hispanic Black women age 21 or older who were at least 6 months postnatal, residing in New York, and who received prenatal care from hospital-operated prenatal clinics, Federally Qualified Health Centers, or private practices. The variables were psychosocial stress, perceived gendered racism, and preterm birth by gestational age at birth. This researcher strategically rotated preterm birth by gestational age at birth and psychosocial stress as control variables. This researcher used the Psychosocial Hassles Scale to measure psychosocial stress (Misra et al., 2001) and the Gendered Racial Microaggression Scale (GRMS) to measure perceived gendered racism (Lewis & Neville, 2015), integrated into a single survey and analyzed using Pearson and partial correlation analyses in SPSS. Chapter 2 provides a review of the literature related to psychosocial stress, perceived gendered racism, and preterm birth.

Chapter 2: Literature Review

Non-Hispanic Black women have higher rates of poor maternal health outcomes, specifically preterm birth rates (Barreto et al., 2024), with an unclear understanding of the association between psychosocial stress and gendered racism when considering birth outcomes (Giurgescu et al., 2022; Minehart et al., 2021; Montoya-Williams et al., 2021). Explaining the relationship between psychosocial stress and perceived gendered racism experienced by non-Hispanic Black women during pregnancy may help to improve birth outcomes (Patterson et al., 2022; Riley et al., 2024; Rosenthal & Lobel, 2020). The theoretical framework that guided the research was Lazarus and Folkman's transactional model of stress and coping.

The literature review began with an in-depth review of the transactional model of stress and coping, its historical and contemporary uses in research, and an explanation of how this theory related to and was the best fit for the research. The literature review on the study problem was organized into three main categories. The first category was preterm birth, defined as a baby born prematurely when the live birth is < 37 weeks of gestational age (Brown et al., 2023). The second category was stress during pregnancy, which focused on pregnancy-specific stress and psychosocial stress. Pregnancy-specific stress is concerns related to the pregnancy about becoming a new parent and caring for the baby or fears of labor and birth (Ibrahim & Lobel, 2020; A. Johnson et al., 2023). Psychosocial stress is intense stress that is represented behaviorally and physiologically and is caused by social situations in the individual's life (Georgiades et al., 2023; Gondwe & Chapman, 2022). The third category, perceived gendered racism, is the perception of oppression based on race and gender (Howell, 2023; Nelson et al., 2023).

These three main categories were expounded in the third, fourth, and fifth sections: preterm birth and well-being, which looked at maternal and infant health outcomes, costs, and disparities in health outcomes; stress and pregnancy well-being as it related to pregnancy-specific stress, psychosocial stress and women during pregnancy; and racism and well-being, which looked at perceived gendered racism and its impact on women. Finally, the literature review concluded with an evaluation of the literature and an explanation of what this research contributes to the field. Collectively, these sections established a comprehensive foundation for understanding the interconnected factors influencing maternal health and provide a rationale for the present study.

Documentation

Various databases and search engines, both academic and public, were used to gather literature through the National University Library and the Internet. The databases used to search the literature were EBSCOhost databases, ScienceDirect Journals, APA PsycInfo, APA PsycTest, Sage Journals, Google Scholar, ProQuest, CINAHL, Gale Academic OneFile, and PubMed. The keywords and phrases included *preterm birth*, *premature birth*, *gendered racism*, *racism or discrimination and pregnancy*, *psychosocial stress during pregnancy*, *prenatal stress*, *racial and ethnic birth disparities*, and *maternal health outcomes for non-Hispanic Black/African American women*.

Framework

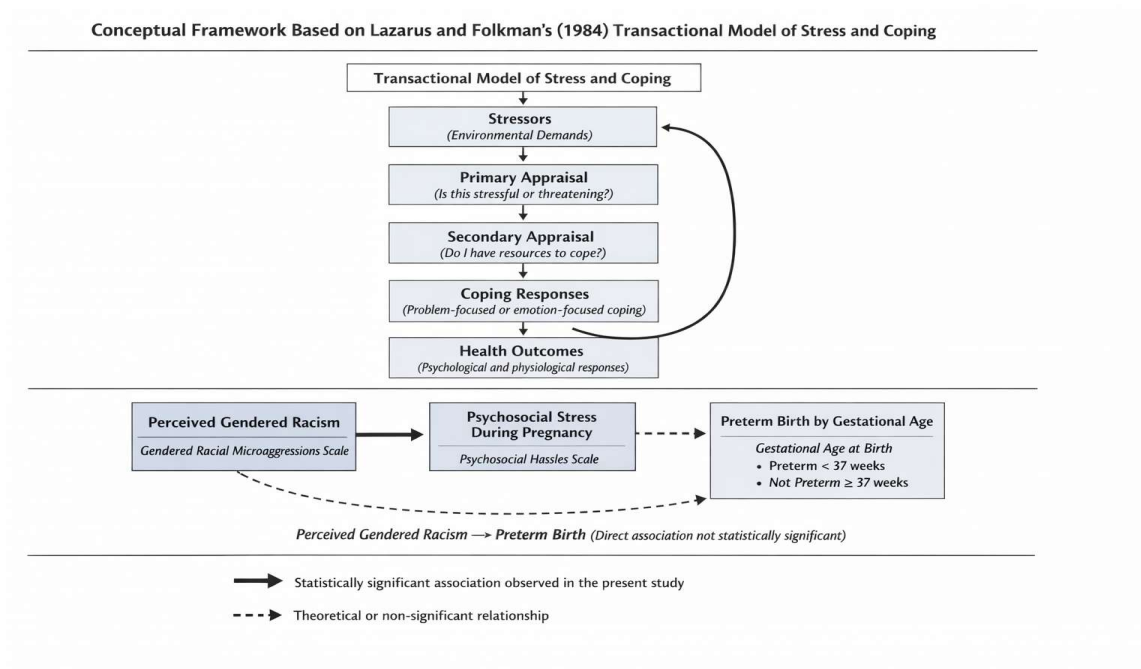
The theoretical framework selected for this study was Richard S. Lazarus and Susan Folkman's transactional model of stress and coping, which explains how stress occurs through a two-way transactional process between individuals and their surroundings (Coyne et al., 1981; Folkman, 1984; Lazarus & Folkman, 1984). Figure 1 illustrates the conceptual framework

derived from the theoretical framework guiding this study. The origins of the transactional model of stress and coping are rooted in Lazarus' early scholarly work on stress, which emerged approximately a decade after the commencement of an academic career in the late 1940s, during a period marked by increased research attention to stress following the Second World War (Lazarus, 1966, 2007). As a psychologist, Lazarus' research took a different approach to understanding stress, moving beyond the biological explanation of the stress response explained by physiologist Hans Selye's General Adaptation Syndrome theory, which described the physiological stress response (Selye, 1965; Szabo et al., 2017). Lazarus (2007) believed emotions portrayed the relationships between individuals and their environments. Lazarus theorized a more individualized response to stress, influenced by cognitions and emotions, shaped by personality attributes, and mediated through transactions with the environment, in which stress, emotions, and coping are integrated (Lazarus & Folkman, 1984; Lazarus, 1966, 1975, 2007; Robinson, 2018). He collaborated with Susan Folkman, expanding his research on stress.

Folkman studied under Lazarus as a doctoral student at the University of California, Berkeley, in the 1970s (Christensen et al., 2004). Folkman's (1984) first study, informed by Lazarus' cognitive appraisal and coping theory, examined the role of personal control in stress and coping and introduced the concepts of problem-focused and emotion-focused coping. More recent work by Folkman (2022) focused on the relationships among stress, coping, and hope, explaining how coping and hope reinforce one another. While working jointly, Lazarus and Folkman developed the Ways of Coping Checklist (WCCL), a 68-item inventory of cognitive and behavioral coping strategies used in response to stressors (Folkman & Lazarus, 1980). Their most notable research was the development of the transactional model of stress and coping, a

theory based on three key constructs: stress, appraisal, and coping, with the latter two constructs further elaborated in subsequent research (Biggs et al., 2017; Lazarus & Folkman, 1984; Roberto et al., 2024).

Figure 1
Framework Relationships



Note. The upper portion of the figure illustrates Lazarus and Folkman's (1984) transactional model of stress and coping, which conceptualizes stress as a dynamic transactional process involving appraisal of environmental stressors and the use of coping responses that influence health outcomes. The lower portion depicts the study variables and relationships examined in this research. Perceived gendered racism, measured using the Gendered Racial Microaggressions Scale (GRMS) Frequency and Appraisal subscales, is conceptualized as an environmental stressor and was significantly associated with psychosocial stress during pregnancy, measured using the Psychosocial Hassles Scale. Psychosocial stress is theoretically associated with preterm birth (<37 weeks of gestation) based on prior literature. Solid arrows represent statistically significant associations observed in the study, whereas dashed arrows represent theoretical or non-significant relationships.

Major Theory Components

The transactional model of stress and coping provided a framework for understanding how individuals experience and respond to stress through interactions with their environment (Biggs et al., 2017). Central to this theory are three major components: stressors, appraisal, and coping (Lazarus & Folkman, 1984). The following sections explain each of these constructs in greater detail.

Stressors

Stress arises from a bidirectional, relational process between the individual and the environment, in which the individual perceives the interaction as demanding beyond the person's internal or external capacity to manage (Folkman, 1984; Folkman, Lazarus, Gruen, & DeLongis, 1986). The situation or circumstance that creates stress is called a stressor only after it is perceived as overpowering or threatening the individual's resources (Carver & Vargas, 2011). The imbalance between resources and demand because of the stressor produces physical, psychological, and behavioral responses (Ghaffari et al., 2019; Wolfers & Utz, 2022). The response to the stressor is based on the individual's subjective meaning of the situation, driven by the cognitive appraisal and coping process (Lazarus, 2007), both of which mediate stress (Lazarus & Folkman, 1984). Appraisal functions and coping responses influence the way individuals adapt to their environment, impacting the individual's overall health, physical, psychological, and social health (Lazarus & Folkman, 1984).

Appraisal

The appraisal process is a subjective cognitive function and a crucial part of the transactional process, incorporating what is occurring internally and externally to the individual, comprising three functions: primary appraisal, secondary appraisal, and reappraisal (Avcioglu et

al., 2019; Folkman, Lazarus, Gruen, & DeLongis, 1986; Lazarus, 1966; Lazarus & Folkman, 1984). Magda Arnold's Appraisal theory, which explained the indeliberate connection between emotions and appraisal, with the appraisal causing emotions, informed Lazarus' study on appraisal and emotions (Leys, 2017). The appraisal process influences how individuals respond, generating emotions and coping behaviors (Lazarus & Folkman, 1987, 1984; Mupanduki, 2020). Whether the circumstance is appraised as distress or eustress, the mind produces emotions driven by the cognitive ability to assess potential and existing resources (Lazarus & Folkman, 1987; Lazarus, 2007). The primary, secondary, and reappraisal phases, which occur automatically, are necessary for human survival and for evaluating whether situations are benign-positive or harmful, supporting humankind's ability to flourish (Lazarus & Folkman, 1984).

The appraisal process begins with the primary appraisal, in which the individual subjectively assesses the relevance of the situation and whether it is harmless, stressful, or beneficial (Folkman et al., 1986; Lazarus & Folkman, 1984). If deemed stressful, the individual appraises the stressor as harm, loss, threat, or challenge and views it as aversive (Carver & Vargas, 2011). Stressors appraised as harmful are based on prior experiences with the situation, resulting in damage and loss, which is a particular form of harm related to the inaccessibility of something desired (Carver & Vargas, 2011; Folkman, 1984). Threat results from stressors appraised as anticipated harmful outcomes (Lazarus & Folkman, 1984). Perceived harm, loss, or threat elicits fear, anger, or resentment (Folkman, 1984). When there is a perception of a challenge, the stressor is appraised as difficult but beneficial to the individual, leads to growth, is perceived as attainable, and, when accomplished, results in positive outcomes associated with excitement and enthusiasm (Carver & Vargas, 2011; Folkman, 1984; Lazarus & Folkman, 1984). After the individual appraises the stressor as a harm, loss, threat, or challenge in

the primary appraisal process, they shift cognitively to the secondary appraisal process (Lazarus & Folkman, 1984).

In the secondary appraisal process, the individual evaluates all accessible resources to manage and respond to the stressor (Folkman, Lazarus, Dunkel-Schetter, et al., 1986). The individual considers the resources adequate or inadequate while determining how to cope with the situation (Lazarus & Folkman, 1984). When reviewing the options, the individual assesses the ability to either change, prevent, or overcome the potential harm or increase the chances of achieving the benefits of the challenge (Folkman, Lazarus, Gruen, & DeLongis, 1986). During the second appraisal process, the individual also assesses if action is necessary immediately or delayed while seeking additional information regarding the situation (Lazarus & Launier, 1978). The secondary appraisal process may lead to the reappraisal phase if new information is presented to the individual for assessment (Biggs et al., 2017).

Examining additional information to inform the primary or secondary appraisal is called reappraisal, which can occur before or after the coping process (Lazarus & Folkman, 1984). Reappraising a situation influences an individual's emotions as they reevaluate its impact or risk (Biggs et al., 2017). The outcome of reappraising new information from the individual's environment may change how the individual responds to and perceives the stressor; something that was once perceived as threatening may, after reappraisal, be viewed as challenging (Rice, 2000). Lazarus and Folkman (1987) described the reappraisal following a coping response as defensive reappraisal, in which the individual shifts or reinterprets their view of a previous or current threatening or harmful experience to a more positive or tolerable perspective. Reappraisal after coping is to determine if the coping was effective (Biggs et al., 2017). If the second appraisal or reappraisal process determines the resources insufficient or taxed, stress occurs, and

the individual shifts to the cognitive coping stage of the transactional process (Lazarus & Folkman, 1984).

Coping

During the coping phase, the individual assesses ways to manage the threat, lessen its impact, or remove it altogether while attempting to control the adverse situation that has a psychophysiological effect on the individual (Carver & Vargas, 2011; Lazarus & Folkman, 1984). Coping helps the individual manage stressors, whether internal or external, using cognitive and behavioral functions to address the perceived threat, determining how the individual reacts, and controlling the emotional response (Folkman, Lazarus, Dunkel-Schetter, et al., 1986; Lazarus, 2007; Lazarus & Folkman, 1984; C. Shaw, 1999). Defined as process-oriented, requiring effort, and not an automated response, such as a reflex, coping continuously changes based on the various demands and conflicts (Lazarus & Folkman, 1984). Lazarus and Folkman (1987) described two main functions of coping: problem-focused coping and emotion-focused coping, also known as cognitive coping, which differs from the actual coping response.

The problem-focused coping function reduces the adverse impact of the person-environment relationship by directly focusing on the stressor (Carver & Vargas, 2011). The individual feels some sense of control over the problem and conceptualizes problem-solving and decision-making to address the stressor (Folkman, 1984). When seeking a solution to reduce the stressor, problem-focused coping involves the individual assessing what to change in oneself or the environment (Folkman, 1984). The individual views the stressful interaction as changeable and, ultimately, either alters behavior and responses to the situation or learns to change the stressor in the environment (Folkman, 1984). An individual's coping response is not solely a problem-focused coping function but may be a combination or a shift between both coping

functions (Lazarus & Folkman, 1984, 1987). There is a connection between the two coping functions. Clearly, when individuals perceive control over their stressors, which is a problem-focused function, their level of emotional distress decreases, which is associated with the functioning of emotion-focused coping (Carver & Vargas, 2011; Folkman, 1984).

In emotion-focused coping, the individual focuses on decreasing the distressing feelings caused by the stressor (Carver & Vargas, 2011). The individual views the stressor as uncontrollable but concentrates on the positives in a negative situation (Folkman, 1984). By emphasizing the positive aspects of a negative outcome, a sense of secondary control develops, shifting how the individual experiences the stressor (Folkman, 1984). Emotion-focused coping involves individuals changing their perspective or internal state regarding the problem (Folkman, 1984; C. Shaw, 1999). Using emotion-focused strategies helps individuals manage emotions, leading to more effective problem-solving and coping responses (Carver & Vargas, 2011; Folkman, 1984).

The coping responses, which differ from coping functions, are avoidance, disengagement, or approach, and are influenced by the individual's internal resources (e.g., beliefs and values) and external resources (e.g., social supports; Carver & Vargas, 2011; Lazarus & Folkman, 1984). During an avoidance response, the individual tries to avoid addressing the stressor, which relates to a problem-focused coping function (Carver & Vargas, 2011). With disengagement, an emotion-focused coping function, the individual attempts to escape the distressful emotions by responding as if the stressor does not exist (Lazarus & Folkman, 1984). An approach coping response directly addresses the stressor and the emotion experienced; it is a problem-focused coping and an emotion-focused coping function (Carver & Vargas, 2011). These three coping responses describe how individuals respond to a stressor, and, over time, researchers have added

to them based on further studies (Roth & Cohen, 1986; Skinner et al., 2003). Coping responses predict the mental and physical health outcomes, with approach coping responses linked to better health outcomes than disengaged and avoidance coping responses (Cerea et al., 2021; Khoury et al., 2021; Mayo et al., 2022; Riaz et al., 2020).

Historical and Contemporary Research

Lazarus and Folkman's transactional model of stress and coping has been used to understand how individuals experience and cope with stress across different fields of study in historical and contemporary research, whether assessing employee performance and experiences in the workplace (de Cordova et al., 2024; Eastman, 2022; Hart, 2023; Mupanduki, 2020) or understanding student performance in educational or learning settings (Franco, 2022; Manocchi, 2017; Terry, 1991), caregiver well-being (C. W. Jones & Lynn, 2018; Ochoa-Dominguez et al., 2023; Quine & Pahl, 1991; Roberto et al., 2024) and overall health implications and outcomes (Byers & Smyth, 1997; Grzesik & Ghosh, 2023; Jean-Baptiste et al., 2020; Kocalevent et al., 2014; Kwesell et al., 2022; Obbarius et al., 2021; Paek et al., 2016; Reyes, 2015; Varni & Katz, 1997). Lazarus and Folkman's (1987) cross-sectional research found a modest correlation between coping and somatic health. Other researchers' studies on the relationship between stress, coping, physical health, and well-being aligned with Lazarus and Folkman's study, particularly in examining coping functions and their impact on health (Penley et al., 2002). However, there is no definitive understanding of why some people who encounter stress become ill while others remain healthy; studies continue to understand better the connection between stressors and the manifestation of disease (Obbarius et al., 2021).

Justification for the Selected Theory

The studies that used Lazarus and Folkman's transactional model of stress and coping to understand health and well-being outcomes aligned with this study. Considering the different factors of a person's life, González-Ochoa et al. (2020) and González-Ochoa et al. (2018) further elaborated on the model using a biopsychosocial lens to explain the stress a woman's body undergoes because of the pregnancy process, emphasizing the interactional process of stress and its impact on the growing fetus (Kiyak, 2024). The biopsychosocial model, originally proposed by Engel (1977), served as an alternative framework under consideration for this study. The biopsychosocial model represents a shift from the traditional biomedical paradigm, which primarily attributed disease causation to biological and physiological factors and conceptualized the body as a mechanistic entity (Bolton, 2023; Engel, 1979; Fuller, 2017).

In contrast, the biopsychosocial model emphasizes that health and illness occur from the complex interplay of biological, psychological, and social factors (Bolton, 2023). This holistic perspective redefines health as more than the absence of disease, focusing on the individual experiencing illness rather than solely on the pathology itself by underscoring that an individual's experiences, beliefs, values, and social interactions significantly influence their health outcomes (Wainwright & Low, 2020). Subsequently, the biopsychosocial model promotes a more collaborative patient-healthcare provider relationship and a comprehensive approach to overall well-being (Bolton, 2023; Engel, 1977, 1979).

While the biopsychosocial model broadly acknowledges the complex interplay of internal and external factors in health (Wainwright & Low, 2020), similar to the transactional model of stress and coping, the transactional model of stress and coping provides a more granular and in-depth examination of the psychological processes through which individuals perceive and respond to stressful situations (Biggs et al., 2017; Lazarus & Folkman, 1984; Roberto et al.,

2024). Its emphasis on cognitive appraisal and coping mechanisms offers a focused lens on the specific psychological contributions related to perception and the influence on health and illness (Lazarus & Folkman, 1984), which was deemed more relevant to the research objectives. The transactional model of stress and coping was chosen because non-Hispanic Black women's experiences of psychosocial stress and perceived gendered racism create a response that aligns with the interactive process of stress, appraisal, and coping (Moody et al., 2023; Nelson et al., 2023). Therefore, to better understand the relationship between psychosocial stress and perceived gendered racism by non-Hispanic black women during pregnancy while controlling for whether their recent birth was a preterm birth, it was first important to understand the influence of preterm birth on well-being.

Preterm Birth and Well-being

Preterm birth has a significant impact on births in the United States, where for every ten babies born, one is born preterm (Centers for Disease Control and Prevention, 2024c). Preterm birth is categorized into different degrees: extremely preterm < 28 weeks of gestation, very preterm < 37 weeks of gestation, and late preterm < 34 to less than 37 weeks of gestation (Van Meurs & Hintz, 2025). The United States spends a vast amount yearly on healthcare (Celona et al., 2020; Courtemanche, 2024; Greenberg & Schneider, 2024). According to the Centers for Medicare & Medicaid Services (2024), the United States spent \$4.9 trillion in 2023. Even with high health care costs, the United States, as a first-world country, has higher rates of adverse perinatal outcomes than other high-income countries (Deichen Hansen, 2021; Gunja et al., 2024).

Preterm births are the primary reason for perinatal adverse outcomes and the second cause of infant deaths, with disparate outcomes impacting wellbeing (Brown et al., 2023; Kornfield et al., 2022; National Institutes of Health, 2021). Although well-being is subjective

and shaped by an individual's perception of their life experiences, it encompasses various interrelated dimensions, including physical and mental health, a sense of competence and purpose, social connectedness, optimism, and financial stability (Ungvarsky, 2024). Well-being influences life expectancy, performance, and productivity in work and society (Ruggeri et al., 2020). Adverse perinatal outcomes have a systemic impact, starting with affecting the health and well-being of the mother and infant.

Maternal and Infant Health Outcomes

Preterm births have immediate and long-term effects on the mother and infant and result in increased risk of morbidity and mortality for both mother and infant (Ohuma et al., 2023). Depending on the degree of prematurity, the effects of preterm birth impact the overall health and development of babies, influencing neurodevelopment, cognitive and motor skills, pulmonary functioning, mental and behavioral health, and overall quality of life even into adulthood (Kelly & Griffith, 2020b; Kelly & Tobias, 2021). Adverse neurodevelopmental and cognitive challenges because of preterm birth create deficits such as attention problems, internalizing behaviors, and executive functioning deficits (Gilchrist et al., 2022), which impact academic performance, including an increased risk for autism spectrum disorders (Hee Chung et al., 2020; Liljenwall et al., 2023; C. Shaw, 1999). These challenges increase the need for early intervention or special education services for the child, impacting the child's quality of life (Ahmed, Pullenayegum, McDonald, Beltempo, Premji, Pole, et al., 2024; Inder et al., 2024; Lock et al., 2024; Montagna et al., 2020; Townley Flores et al., 2021). Women who experience preterm births struggle with risks to physical and mental health, with the preterm birth causing traumatic incidents (Givrad et al., 2021; Grekin et al., 2021; Sharp et al., 2021). Preterm births create a variety of short-term costs at delivery and post-term, and long-term costs within the first

five years of life (Yu et al., 2023) and into adulthood, impacting the mother, infant, and the economy overall (O'Neil et al., 2021).

Economic Costs of Preterm Births

The costs of preterm births have ripple effects across the American economy. The fiscal implications of preterm births are not insignificant and cost the American economy an exorbitant amount of money, estimated at over \$25 billion annually, which includes costs related to the medical care of the mother and infant at delivery, and postpartum or postnatal, special education services for the child, and decreased workplace performance (Burchard et al., 2022; Waitzman et al., 2021). The direct cost to the economy associated with preterm births includes medical or healthcare expenses for the mother and child, and early intervention or special education services for the child (O'Neil et al., 2021; Yu et al., 2023). The indirect costs of preterm births include maternal, parental, or familial emotional distress (Hofheimer et al., 2024), decreased work performance or labor productivity for the mother, parents, or caregivers of the child (Murthy et al., 2021; Perez Patel et al., 2024), and the potential for loss of contribution to the labor force by the child based on the severity of the prematurity (Waitzman et al., 2021). Without understanding how to improve preterm birth rates through systemic change, families, communities, and the larger economy will continue to struggle with increased indirect and direct costs, beginning with healthcare (Burchard et al., 2022; Hofheimer et al., 2024; Waitzman et al., 2021).

Healthcare. Increased healthcare usage, a direct cost of preterm births, is expensive. At birth, Medicaid covered 41% of babies born in 2021, with 11.9% of these births preterm, and non-Hispanic Black babies made up 15.3%, the highest rate of these preterm births (Center for Medicaid and CHIP Services, 2024). When looking at the Neonatal Intensive Care Unit (NICU)

cost related to clinical tests and treatments to care for babies born < 32 weeks of gestation, King et al. (2021) determined the cost at \$4,154,568,786.00 across fifty-one hospitals in the United States caring for 24,099 preterm infants from 2012 to 2018. The Lai and Lorch (2023) study on the association of preterm birth and major morbidities such as lung conditions, bleeding in the brain, intestinal and retinal issues, and infections sustained from invasive procedures and extended hospital stays resulted in higher medical costs and aligned with the increased cost findings of the King et al. (2021) study. Lai and Lorch's (2023) and King et al.'s (2021) findings were consistent with prior studies on the association between preterm births and increased morbidity and comorbidities, as well as higher medical costs. Premature births not only affect healthcare costs but also have implications for the child's education and the economy.

Education. Preterm births affect academic performance and are influenced by developmental, behavioral, or medical issues (Lock et al., 2024). Children born prematurely have increased health risks for inflammatory chronic conditions found in K. G. Anderson et al.'s (2024) study on very preterm infants and a connection to neurodevelopmental challenges, and in line with Inder et al.'s (2024) study and previous studies on preterm births and neurologic outcomes. The consequences of preterm birth result in increased absenteeism due to illness or behavior, developmental or cognitive challenges that impact their school performance (Townley Flores et al., 2021).

Research consistently demonstrates an increased risk of poor academic outcomes among children born preterm, including learning difficulties, reduced school readiness, and attention-deficit issues (Lock et al., 2024; Montagna et al., 2020). In Ahmed, Pullenayegum, McDonald, Beltempo, Premji, Pole, et al. (2024), the researchers found that preterm births were associated with lower educational attainment and economic achievement among individuals in their late

twenties. Supporting prior research and aligned with Ahmed, Pullenayegum, McDonald, Beltempo, Premji, Pole, et al. (2024), van Beek et al. (2022) found that academic attainment decreased the earlier the gestational age at birth, and babies born thirty weeks or fewer gestationally lead to increased risk for deficits and low academic performance in 12-year-olds completing elementary school. Preterm birth not only influences the child's academic performance but also impacts the workforce; parents' time at work, or the child's ability to contribute consistently to the economy (Kelly & Griffith, 2020b; Kelly & Tobias, 2021; O'Neil et al., 2021; Waitzman et al., 2021).

Workforce. Parents and caregivers who have experienced preterm birth face challenges related to the birth outcome, which require them to take additional time away from work, reducing their contribution to the workforce (O'Neil et al., 2021). Perez Patel et al. (2024) found higher workplace absenteeism due to medical issues among employees a year after a preterm birth than among those with full-term births, which may contribute to decreased productivity. Some mothers, after giving birth to a preterm baby, decide not to return to work because of the many needs of the baby (Waitzman et al., 2021). Namiiro et al. (2023) found that “the parents perceived preterm infants as delicate, complicated, and their care more costly compared to those born at term” (p. 1). Von Klein et al.’s (2025) study concurs with Perez Patel et al.’s (2024) and Namiiro et al.’s (2023) studies by demonstrating that caregivers worked decreased hours or left the workforce because of the complex needs of a preterm birth.

Preterm births also limit children's ability to fully contribute to the workforce as adults because of their complex needs (Ahmed, Pullenayegum, McDonald, Beltempo, Premji, Pole, et al., 2024). An umbrella review conducted by Kelly and Griffith (2020b) on adolescents and adults born preterm found that preterm adults had a decreased likelihood of post-secondary

education and employment because of their complex health conditions related to their preterm birth. These pulmonary, cardiovascular, neurodevelopmental, behavioral, and mental health challenges caused by preterm births make it challenging to take part in the workforce (Kelly & Griffith, 2020b; Kelly & Tobias, 2021). Another review on very preterm and extremely low birth weight and adulthood aligned with the literature related to preterm births and the association with a decreased chance of completing a postsecondary degree; however, it showed different results about employment, where the adults who were born preterm had jobs and were functioning well in their communities (Saigal, 2023). However, while employed, one study found that adults born preterm earned lower incomes, required assistance from social services, and had lower upward mobility than adults born full-term (Ahmed, Pullenayegum, McDonald, Beltempo, Premji, Shoukry, et al., 2024). Preterm births not only influence socioeconomic status and contributions to the workforce but are also associated with psychological and emotional distress (R. J. Shaw et al., 2023; R. J. Shaw et al., 2020).

Psychological and Emotional Costs

Preterm births create a mental and emotional strain on families, resulting from the medical complications due to prematurity and challenges associated with caring for the premature child (Givrad et al., 2021; Sandnes et al., 2024; Schmöcker et al., 2020; Schuetz Haemmerli et al., 2020; R. J. Shaw et al., 2023; Stefana et al., 2021). A parent's confidence in parenting, known as parental efficacy, is affected by a premature birth as they navigate their child's health and developmental challenges (Fitzallen et al., 2024). The fear and anxiety that mothers or parents experience regarding the survival of their premature infants in the NICU is a substantial source of emotional stress (Givrad et al., 2021). The birth of a preterm infant and their care in the NICU can be highly stressful, and the childbirth experience alone may have been

traumatic for the mother, potentially leading to post-traumatic stress disorder (PTSD) in the postpartum period (Givrad et al., 2021; Sharp et al., 2021).

Research is mixed regarding the level of stress parents of a preterm birth feel compared to full-term birth parents (Sandnes et al., 2024; Sharp et al., 2021; R. J. Shaw et al., 2023). Studies show that psychological stress extends beyond the mother and affects the father, who is concerned about the mother's and infant's well-being after a preterm birth (Dowtin et al., 2020; Schmöker et al., 2020; Stefana et al., 2021). Paternal stress derived from preterm birth compared to maternal stress has been mixed (Stefana et al., 2021). Schmöker et al. (2020) found no overall difference in stress levels between mothers and fathers; however, they found that maternal stress declined during the first year after birth, while paternal stress rose between six and twelve months postpartum. In contrast, Schuetz Haemmerli et al. (2020) found that women experienced higher levels of stress two to three years after the preterm birth, aligning with most existing literature, primarily due to the link between gender and psychosocial stress.

Furthermore, increased anxiety was reported for mothers of very preterm and extreme preterm births; however, these findings were not always consistent (R. J. Shaw et al., 2023). Sandnes et al. (2024) identified that parents of infants with very low birth weight and extremely low birth weight exhibited symptoms of depression, anxiety, and post-traumatic stress. In contrast, Genova et al. (2022) found no difference in maternal depression of mothers of extremely low birth weight, very low birth weight, and full-term babies. Similarly, Alves et al. (2023) found no significant differences in perceived quality of life four to six months after delivery between mothers and fathers of preterm births and those of full-term births.

The NICU stay, which at times may be lengthy depending on the degree of prematurity, creates separation between the infant and the mother, impacting the mother-infant bond and

attachment (R. J. Shaw et al., 2020). The preterm birth may also create a strain on a parent's relationship as they manage the stress of having a preterm baby (Dowtin et al., 2020). Parents experience varying depressive symptom patterns as they navigate their infant's time in the NICU and adjust to bringing the baby home (Garfield et al., 2021). Following the NICU experience, parents may perceive their infant as vulnerable because of the serious or life-threatening experiences their infant encountered (Bergman Lewis, 2022). The experience of having an infant in the NICU can significantly alter parental perceptions of the child's vulnerability (R. J. Shaw et al., 2023). This heightened sense of fragility may contribute to hypervigilance, overprotective parenting, and separation anxiety from the displaced parental anxiety, a phenomenon identified as Vulnerable Child Syndrome (Bergman Lewis, 2022; Hoge et al., 2020; Hoge et al., 2021). Such parental responses are associated with adverse effects on the child's behavior, neurodevelopment, and overall quality of life (Bergman Lewis, 2022; Hoge et al., 2020; Hoge et al., 2021; R. J. Shaw et al., 2023; R. J. Shaw et al., 2020).

Studies have shown mental health and neurodevelopmental challenges are associated with preterm births, showing up later in childhood and adolescence frequently expressed through internalizing behaviors such as anxiety disorders, interpersonal challenges characterized by social withdrawal and avoidance alongside disruptive or oppositional personality traits, autism spectrum disorder, and externalizing behaviors such as hyperactivity (Gilchrist et al., 2022; R. J. Shaw et al., 2023; Van Meurs & Hintz, 2025). Still, findings are mixed, with Bosch et al. (2021) finding that two-year-olds born preterm showed limited behavioral issues. Conversely, other studies suggest preterm birth is linked to an increased risk of psychiatric hospitalization in later life, with lower gestational age associated with a greater chance of such outcomes (P. Anderson et al., 2021; Kelly & Griffith, 2020a; R. J. Shaw et al., 2023). Particularly, very preterm birth

has been correlated with an elevated risk of developing depressive symptoms between the ages of five and twenty-five (Upadhyaya et al., 2021). However, inconsistencies persist within the literature, with some studies reporting no significant differences in the prevalence of mood and anxiety disorders during adolescence between individuals born very preterm and those born full term (R. J. Shaw et al., 2023).

As preterm infants mature, psychological and emotional challenges may persist into adolescence and adulthood, often manifesting as elevated levels of anxiety, depression, shyness, and reduced social functioning, as shown by self-reported measures (Kelly & Griffith, 2020a). These mental health challenges may impact the individual's quality of life, as Eriksen et al. (2023) demonstrated in their study of adults who were preterm at a very low birth weight, who reported more mental health challenges than adults born full term when screened. In contrast, Burnett et al. (2023) reported that adults aged twenty-five who were born extremely preterm or extremely low birth weight demonstrated generally positive mental health outcomes, comparable to individuals born full-term. Although inconsistencies persist in the literature regarding psychological and emotional effects of preterm birth, due to the influence of various mediating and confounding factors, there is consensus on the necessity for continued research (R. J. Shaw et al., 2023).

Disparities in Health Outcomes

Persistent health disparities exist for non-Hispanic Black women in the United States, influenced by historical social injustices and ongoing structural and systemic inequities in the healthcare system, leading to strong mistrust in the healthcare system in communities of color (Alhalel et al., 2022). The racial disparities in prenatal outcomes identified over a century ago persist as a significant public health concern (Hoffman, 1896), with disproportionate health

outcomes for non-Hispanic Black women in maternal health remaining at the forefront. Non-Hispanic Black women are over three times as likely to die from pregnancy-related complications compared to non-Hispanic White women (Brown et al., 2023). Research on structural and systemic inequities, such as access to quality care, distrust in the provider, and not feeling heard and respected, or the underrepresentation of same-race physicians, shows the association to preterm birth (Alhalel et al., 2022; Curtis et al., 2024).

Research, including Hardeman et al.'s (2021) study, demonstrates how structural racism, specifically through neighborhood policing, fuels preterm birth disparities by increasing psychological stress and elevating the risk of preterm birth for all pregnant individuals. However, the impact varies significantly by race and origin: Black U.S.-born pregnant women faced a 100% higher chance of preterm birth, White pregnant women a 90% higher chance, and Black foreign-born pregnant women a 10% higher chance compared to those in low police-contact areas (Hardeman et al., 2021). These findings highlight that racism, specifically the cumulative exposure to racialized policing because of systemic racism, is associated with preterm birth disparities, particularly affecting Black U.S.-born women (Dreyer, 2021). Hardeman et al.'s (2021) research complements prior findings from Bower et al.'s (2018) study, both identifying racism as a critical factor influencing racial disparities in birth outcomes. While Hardeman et al. (2021) focus on structural racism, Bower et al. (2018) highlight the impact of interpersonal racism on preterm birth rates among non-Hispanic Black women, particularly in relation to prenatal care adequacy.

National data confirms the research on racism and birth outcomes, revealing significant disparities in preterm birth and infant mortality rates (U.S. Department of Health and Human Services Office of Minority Health, 2025). Data show that the prevalence of preterm births

among non-Hispanic Black women is approximately 50% higher than that of Hispanic and non-Hispanic White women (Centers for Disease Control and Prevention, 2024d). The infant mortality rate for non-Hispanic Black women is 2.4 times higher than for non-Hispanic White women, starkly reflecting this disparity (Centers for Disease Control and Prevention, 2024c). These figures underscore the need for equity-driven interventions and healthcare changes informed by social determinants of health (Centers for Disease Control and Prevention, 2024a).

The multifaceted interplay of the social determinants of health (SDOH), which “are the conditions in which people are born, grow, work, live, worship, and age” (Centers for Disease Control and Prevention, 2024a, para. 1) intertwined with racial discrimination, and barriers accessing quality health care make up fundamental drivers of adverse maternal inequities, including preterm births (Alhalel et al., 2022; Brown et al., 2023; Curtis et al., 2024; Erickson & Carlson, 2022). As a systems lens to health, SDOH is categorized into five domains: economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context (U.S. Department of Health and Human Services: Healthy People 2030, 2025). A systematic review conducted by Siddika et al. (2023) highlights an association among social and economic drivers of health, including poor physical environment, neighborhood crime and violence, accessibility to health services, and preterm birth. Consistent with research on SDOH, Stookey et al. (2024) found that the domains co-occur and impact preterm birth. The Centers for Disease Control and Prevention (2024a) identifies SDOH with racism as the fundamental contributors to health inequities within communities of color. These disparities in health outcomes contribute to increased stress, impacting pregnancy well-being (Brown et al., 2023; Kim et al., 2024).

Stress and Pregnancy Well-being

Stress and well-being are interconnected (Guidi et al., 2021) and are essential to consider when studying pregnant women. Stress is a multifaceted and intricate phenomenon (Dorsey et al., 2022) that everyone encounters to varying degrees at different points in life (Taborsky et al., 2021), affecting well-being from a biopsychosocial perspective (Karunamuni et al., 2021). It occurs when the pregnant woman becomes overwhelmed and unable to manage life's demands (Jayachandran et al., 2021; Traylor et al., 2020). Stress experienced during pregnancy impacts the health of the mother and the developing baby (Dhaliwal et al., 2022; Wu et al., 2020) and is characterized as stress directly related to the pregnancy or stress caused by social environments (Dhaliwal et al., 2022; Ibrahim & Lobel, 2020). The physiological response to psychosocial stress during pregnancy is characterized by elevated cortisol production, which may induce hyperactivity or dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, which is a central component of the stress response system responsible for maintaining homeostatic balance under conditions of stress (Cao-Lei et al., 2020).

Elevated maternal stress is associated with increased blood pressure, heightening the risk of developing preeclampsia, and may contribute to an increased likelihood of gestational diabetes and adverse outcomes (Avorgbedor et al., 2025; Chen et al., 2020). Pregnancy alone causes significant physical, physiological, and psychological changes that make the woman's body more biologically susceptible to stressors (Davis & Narayan, 2020). Increased maternal stress during pregnancy changes the gestational stress biology, particularly the neuroendocrine and inflammatory pathways, impacting fetal and infant brain development, and potentially increasing the infant's vulnerability to psychopathology (Graham et al., 2022; Nolvi et al., 2023; Wu et al., 2020).

External stress compounds the stress the pregnant woman's body is already enduring due to physiological changes through allostasis; these chemical reactions increase heart rate and blood pressure (Guidi et al., 2021). Stress disrupts the body's homeostasis, signaling the activation of neural, neuroendocrine, and neuroendocrine-immune mechanisms to restore balance, a process called allostasis (McEwen, 1998). Frequent and chronic activation of allostasis results in wear and tear on the body, a phenomenon known as allostatic load (McEwen, 1998). Allostatic overload breaks down the body, making it more susceptible to disease and poorer health outcomes (Guidi et al., 2021; Zara et al., 2025). The type and duration of the stress impacts pregnant women differently (March of Dimes, 2023).

Pregnancy-Specific Stress

The psychological distress associated specifically with pregnancy, including concerns about transition to parenthood, or maternal competence, responsibilities of caring for the infant, worries related to bodily changes, and the infant's health, is called pregnancy-specific stress (Ibrahim & Lobel, 2020; Scorza et al., 2021). Pregnancy-specific stress may create challenges in the mother-infant relationship by disrupting maternal caregiving responsiveness (Grande et al., 2022). Scorza et al. (2021) investigated the association between pregnancy-specific stress and maternal caregiving sensitivity among pregnant Hispanic adolescents. Their findings indicated that elevated levels of stress related to physical symptoms and socio-economic concerns, consistent with prior research, were associated with maternal warmth, an affective dimension of caregiving (Scorza et al., 2021). In contrast, pregnancy-specific stress was not associated with maternal contingent responsiveness at 14 months postpartum, a measure of a mother's ability to read and respond appropriately to her infant's cues (Scorza et al., 2021). A primary limitation of this study is the homogeneity of the sample, composed exclusively of adolescent mothers, which

limits the generalizability of the findings to older maternal populations who experience and respond to pregnancy-specific stress in distinct ways, particularly with respect to expressions of maternal warmth (Scorza et al., 2021).

Psychosocial Stress

Psychosocial stress is intense stress arising from social and cultural interactions within an individual's environment (Dhaliwal et al., 2022; Gondwe & Chapman, 2022). Relationship discord, economic hardship, work or school demands, perceived neighborhood safety and cohesion, experiences of racism and discrimination, and life changes can create psychosocial stress, which is marked by perceived stress, anxiety, and depressive symptomatology (Dhaliwal et al., 2022; Dhaurali et al., 2024; Georgiades et al., 2023; B. C. Lawrence et al., 2022; Moog et al., 2021). Structural inequities related to access to quality healthcare, economic opportunity, food security, education, housing, and exposure to discrimination and racism intensify the psychosocial stress experienced by pregnant women (Mehra et al., 2020; Riley et al., 2024).

Psychosocial stress disrupts maternal health, increasing susceptibility to gestational diabetes, hypertension, and depression, while elevating the risk of adverse pregnancy outcomes (Dhaurali et al., 2024; Moog et al., 2021). Dhaliwal et al. (2022) found that psychosocial stress during pregnancy was associated with feelings of being overwhelmed, diminished sense of control, and reduced interest or capacity for experiencing enjoyment or contentment. These feelings were significantly associated with lower sociodemographic status, adverse biological factors, and negative health behaviors, including poor dietary quality and tobacco use during pregnancy (Dhaliwal et al., 2022). Similarly, Dhaurali et al. (2024) identified a relationship between psychosocial stress during pregnancy, postpartum depressive symptoms, and postpartum contraception use. Their findings showed the association between women

experiencing elevated psychosocial stress and inconsistent contraceptive practices following childbirth, thereby increasing the risk of unplanned pregnancies. However, Dhaurali et al. (2024) operated under the assumption that postpartum contraceptive use is a normative expectation, without adequately accounting for the cultural beliefs and values that may influence reproductive decision-making. Using self-reported data collected between two and six months postpartum introduces potential biases, including social desirability and recall bias. Although Dhaliwal et al. (2022) captured the multidimensional nature of psychosocial stress within a diverse maternal population, their analysis omitted critical dimensions such as perceived racism and discrimination, which other studies identify as integral to a comprehensive understanding of psychosocial stress during pregnancy (Alhalel et al., 2022; Curtis et al., 2024; Geronimus, 2023; Giurgescu et al., 2022; Kim et al., 2024; Nam et al., 2022; Peterson et al., 2020).

When the psychosocial stress experienced by pregnant women is transferred to the fetus through the placenta by DNA methylation, it alters the physiological system of the fetus, impacting behavior and health (Cao-Lei et al., 2020). The fetus's gene expression is altered or reprogrammed through epigenetic mechanisms as the pregnant woman works to manage stress in her environment, increasing the risk of developmental challenges for the child (Camerota et al., 2021; Camerota et al., 2024). The study by Amiel Castro et al. (2020) with a sample of thirty-four healthy pregnant women in the second trimester found no significant association between maternal chronic stress or depression and low birth weight, nor was pregnancy or birth-related anxiety associated with shorter gestational length. However, the small sample size in Amiel Castro et al. (2020) may have reduced the study's statistical power, potentially preventing it from detecting a true effect.

Chronic Versus Acute Stress. The stress pregnant women experience varies by duration, emergence, and impact on health and well-being. Chronic stress is ongoing and long-term, while acute stress is short-term and intense (Metz & Ozberk, 2020; Traylor et al., 2020). Chronic stress with limited buffers or protective factors increases the risk of adverse health outcomes, and when experienced by pregnant women, this effect is amplified by impacting infant development and health (Amiel Castro et al., 2020; B. C. Lawrence et al., 2022; Traylor et al., 2020). During stress, the pregnant woman undergoes continuous physiological changes aimed at maintaining homeostasis involving neuroendocrine responses, mainly the activation of the hypothalamic-pituitary-adrenal (HPA) axis, leading to a flood of cortisol throughout the body (Cao-Lei et al., 2020). Increased cortisol levels raise blood pressure and heart rate as the body's acute stress response attempts to adapt through allostasis (Lueth et al., 2022). Chronic or repeated acute stress contributes to the accumulative allostatic load, the wear and tear on the body over time, resulting in allostatic overload, associated with chronic diseases and premature death (Guidi et al., 2021; Lueth et al., 2022; Traylor et al., 2020). Stress experienced during pregnancy varies across populations, with disparities between non-Hispanic Black women and non-Hispanic White women (Kim et al., 2024; B. C. Lawrence et al., 2022; Traylor et al., 2020).

Disparities in Stress Experienced During Pregnancy

Multiple factors contribute to the disparities in stress experienced during pregnancy, arising from the complex interaction of socioeconomic, environmental, and structural factors shaped by systemic inequities, with racism and discrimination serving as primary determinants (Alhalel et al., 2022). These structural factors, such as racial bias in systems such as healthcare, housing, education, and criminal justice, unequal opportunities and unequal access to individual

and neighborhood resources, all components of the SDOH experienced by non-Hispanic Black women, generate stress associated with preterm birth (Kim et al., 2024; Riley et al., 2024).

Racism and Well-being

Racism is a chronic form of psychosocial stress and has been linked to hypertension and other cardiovascular issues among non-Hispanic Black women (Scott-Morring, 2025).

Encounters with racism and discrimination are associated with reduced emotional well-being (A. Johnson et al., 2023) and adversely impact “women's health and well-being directly and indirectly through increasing vulnerability to individual stressors” (Kim et al., 2020, p. 660).

Findings from Kim et al. (2020) further indicate that racism and chronic stress are associated with maternal age and preterm birth among non-Hispanic Black women. However, while there is a vast amount of literature on the connection between experiences of racism, chronic stress, and adverse health outcomes, the findings across the research are inconsistent (Cénat et al., 2025).

There are deviations in studies on how racism is conceptualized and measured, as well as in the many variables and moderating factors, such as the resources available, social determinants of health, beliefs, and coping methods (J. Lawrence et al., 2022).

Perceived Gendered Racism and Pregnancy

Gendered racism, which is an intersectional form of racism, is the experience of discrimination based on both race and gender, which combined are associated with heightened levels of psychosocial distress (Christian, 2020; Clarke et al., 2022; M. K. Jones et al., 2022; Nelson et al., 2023; Patterson et al., 2022). Grounded in the intersectionality framework, gendered racism co-occurs and interacts with the lived experiences of non-Hispanic Black women (Moody et al., 2023; Rosenthal & Lobel, 2020). When an individual appraises a situation as discriminatory or biased towards them because of microaggressions related to sex

and race, their perception of the experience can lead to stress and, when excessively repeated, becomes chronic stress (Clarke et al., 2022). Perceived gendered racism is chronic psychosocial stress experienced by more women than men and more non-Hispanic Black women than non-Hispanic White women (Clarke et al., 2022). Evidence suggests that the lived experiences of being a non-Hispanic Black woman in America present health risks (Kim et al., 2024; Simmons et al., 2024; Tipre & Carson, 2022) and increased allostatic load.

Allostatic Load. The study by Zara et al. (2025) examining income inequality, gender disparities, and ethnic differences in allostatic load found that women exhibited higher allostatic load than men. Notably, non-Hispanic Black and Hispanic women experienced greater allostatic load than non-Hispanic White women (Zara et al., 2025). However, while the study by Lueth et al. (2022) showed an association between elevated allostatic load in early pregnancy, the study found no significant relationship between psychosocial stress experienced by non-Hispanic Black women and adverse pregnancy outcomes.

Weathering. The weathering hypothesis refers to the biopsychosocial process by which chronic exposure to stressors, such as structural racism, accelerates biological aging and leads to adverse physiological changes and health conditions (Dawson et al., 2023; Geronimus, 2023). Weathering occurs in response to cumulative social and economic adversity and is assessed through indicators of allostatic load and epigenetic markers of accelerated aging (Simons, Lei, Klopak, et al., 2021). Racism exacerbates the weathering process by intensifying chronic stress and elevating the risk of chronic disease among non-Hispanic Black women, as demonstrated in findings from Simons, Lei, Klopak, et al. (2021). Weathering may also increase the risk of preterm birth in communities of color, burdening non-Hispanic Black women (Beck et al., 2020; Geronimus, 2023; Patterson et al., 2022; Peterson et al., 2020). However, inconsistencies persist

across the literature, as evidenced by the findings of Kim et al. (2020), whose study did not establish a conclusive association between cumulative chronic stress and racism with weathering among non-Hispanic Black women or other racial groups. One limitation of Kim et al.'s (2020) study was the exclusion of critical dimensions of chronic stress related to psychological distress, acculturation-rated stress, and neighborhood contextual factors because of data unavailability. Also, the study sample included only women from four racial/ethnic groups within the designated study area, limiting the generalizability of the findings.

When non-Hispanic Black women experience perceptions of gendered racism, their bodies respond to the chronic stress, which impacts their growing baby (B. C. Lawrence et al., 2022; J. Lawrence et al., 2022; Patterson et al., 2022; Peterson et al., 2020). Their experiences may affect their interactions with healthcare providers and their use and navigation of systems due to mistrust and feelings of not being heard (Alhalel et al., 2022). Perceived gendered racism increases the risks of mental health issues such as depression and anxiety, and elevated risk of adverse maternal and infant outcomes for non-Hispanic Black women (Clarke et al., 2022; M. K. Jones et al., 2022; Patterson et al., 2022).

To improve maternal and infant health outcomes, systems must prioritize psychological well-being and emotional safety during pregnancy and understand how racism, including perceived gendered racism, undermines this safety (Lyndon et al., 2023; Odems et al., 2025). The enduring legacy of slavery, historical reproductive injustices in medicine, and the persistent negative perceptions of non-Hispanic Black women (Aina et al., 2020; Lyndon et al., 2023; Scott, 2021; Scott & Davis, 2021) contribute to structural and systemic racism. This systemic racism erodes Black women's sense of emotional safety during pregnancy, leading to heightened worry and racialized harm as demonstrated by Odems et al.'s (2025) research on the link between

anti-Black, structural, and obstetric racism and increased worry about pregnancy and birth within Black communities.

Despite existing inconsistencies in the literature regarding the direct association between the weathering hypothesis and preterm births (Kim et al., 2020), the systematic review and meta-analysis by Beldon et al. (2024) demonstrated a significant link between exposure to systemic racism and adverse pregnancy outcomes, specifically preterm birth, small for gestational age, and low birth weight, for Black women. Beldon et al. acknowledged a limitation in the existing literature regarding the varied impacts of systemic racism on pregnancy outcomes, which their study sought to address. Their findings align with prior research showing how chronic exposure to racism and social inequities, mediated by the physiological stress response, contributes to adverse pregnancy outcomes for non-Hispanic Black women (Cuevas et al., 2020). While perceived gendered racism is understood as an interpersonal stressor, effectively improving birth outcomes for non-Hispanic Black women requires a comprehensive approach that includes dismantling both structural and systemic racism (Aina et al., 2020; Kim et al., 2020; Krieger et al., 2020; Riley et al., 2024).

Summary

Non-Hispanic Black women have higher rates of poor maternal health outcomes, specifically preterm birth rates, with an unclear understanding of the association between psychosocial stress, gendered racism, and preterm births. The theoretical framework selected to inform the research was Lazarus and Folkman's transactional model of stress and coping to help understand the two-way transactional process individuals experience when encountering stress in their surroundings. The transactional model of stress was chosen because non-Hispanic Black women's experiences of psychosocial stress and perceived gendered racism create a response that

aligns with the interactive process of stress, appraisal, and coping, which are the three main components of the model.

Adverse maternal and infant health outcomes of preterm births have rippling effects across the American economy, costing an exorbitant amount of money, estimated at over \$25 billion annually. The high costs include medical care for the mother and infant at delivery and postpartum, special education services for the child, and decreased workplace performance. These costs also include psychological and emotional costs families experience from the medical complications due to prematurity and challenges associated with caring for the premature child. Health disparities exist for non-Hispanic Black women in America compared to non-Hispanic White women, influenced by historical injustices and structural and systemic inequities, creating psychosocial stress that impacts pregnancy and well-being. Chronic psychosocial stress of gendered racism creates allostatic overload and a weathering on non-Hispanic Black women, breaking down their bodies, making them more susceptible to disease and poorer health outcomes. The research on the association between psychosocial stress and gendered racism is mixed, with inconsistencies across studies. This study explained the relationship between psychosocial stress and perceived gendered racism by non-Hispanic Black women during pregnancy, controlling for whether their recent birth was a preterm birth by gestational age at birth.

Chapter 3: Research Method

The problem addressed by this study was that higher rates of preterm births occur for non-Hispanic Black women with no clear understanding of the relationship between psychosocial stress and perceived gendered racism during pregnancy (Clarke et al., 2022). The purpose of this quantitative non-experimental correlation design was to explain the relationship between psychosocial stress and perceived gendered racism by non-Hispanic Black women during pregnancy, controlling for whether their recent birth was a preterm birth by gestational age at birth. Chapter 3 outlines the research methodology and design used for the study, explains the rationale for this methodological choice to answer the two research questions, and considers alternative methodologies. It also includes a detailed description of the population and sampling strategy, including how participants were recruited. Furthermore, this chapter includes descriptions of the instruments used, the operational definitions of the variables, the procedures followed, the methods for data collection and analysis, and the assumptions, limitations, delimitations, and ethical assurances that guided the study.

Research Methodology and Design

This researcher used a quantitative, non-experimental correlation design to examine the associations between perceived gendered racism, preterm birth by gestational age at birth, and psychosocial stress. Preterm birth by gestational age at birth was the control variable. Then the role of the control variable was strategically rotated to answer the following two research questions:

RQ1: What is the relationship between perceived gendered racism and psychosocial stress experienced by non-Hispanic Black women during pregnancy?

RQ2: What is the relationship between perceived gendered racism, psychosocial stress, and preterm birth experienced by non-Hispanic Black women during pregnancy?

Using numerical data and statistics, quantitative methodologies enable researchers to observe and examine relationships between independent and dependent variables (Salkind & Frey, 2020). Depending on the research design, quantitative methodologies can either ascertain the presence and significance of associations within a correlational design (Novosel, 2022) or, in experimental contexts, enable causal inference through the manipulation of an independent variable, randomization, and the inclusion of a control group (Field, 2013). A strength of quantitative research is its rigor, use of larger sample sizes, and deductive reasoning, which enhance the potential to generalize findings to broader populations through statistical inference (T. Smith, 2023).

This researcher did not predict or establish a causal relationship for this study, but examined and explained the association and strength of the relationship among three continuous variables (Salkind & Frey, 2020). As such, a correlation design was more appropriate to explore the associations and strength of the relationships between psychosocial stress, perceived gendered racism, and preterm birth by gestational age at birth (L. Williams et al., 2014). To examine the relationship between perceived gendered racism and psychosocial stress among non-Hispanic Black women during pregnancy (RQ1), Pearson correlation analyses were conducted.

For RQ2, which investigated the interrelationships among perceived gendered racism, psychosocial stress, and preterm birth by gestational age at birth, partial correlation analyses were performed. In these analyses, the role of the control variable was strategically rotated. Specifically, the association between perceived gendered racism and psychosocial stress was

examined while controlling for preterm birth by gestational age at birth. Subsequently, the association between perceived gendered racism and preterm birth by gestational age at birth was examined while controlling for psychosocial stress. This systematic control for potential confounding variables allowed for examination of the unique relationships among the study variables (Salkind & Frey, 2020).

While recognizing the multi-factorial nature of these constructs, other potential confounders such as socioeconomic status, medical comorbidities, or social support were not included as control variables. Limiting the analysis to one control variable per partial correlation maintains focus on the core relationships, enhances statistical manageability, and helps to preserve statistical power within the available sample size (Salkind & Frey, 2020). Consistent with the nature of partial correlation analysis, variables in this study were not categorized as independent and dependent. Instead, the continuous variables were referred to as the outcome variable, predictor variable, and control variable, to denote their conceptual roles within the analysis (Salkind & Frey, 2020; Sprenkle & Piercy, 2005).

Alternative Methodologies

In evaluating alternative methodologies for this study, qualitative phenomenological, mixed methods, and quantitative regression designs were considered. While a phenomenological design could offer in-depth insights into the subjective lived experiences (Dziak, 2025) of non-Hispanic Black women regarding psychosocial stress, perceived gendered racism, and preterm birth, its reliance on qualitative data and nominal measurements made it unsuitable for the study's aim of utilizing ordinal scales and numerical data (Salkind & Frey, 2020). Similarly, a mixed-methods design, despite its potential for comprehensive understanding, was deemed impractical due to its increased time demands related to the need for dual data

collection instruments, the requirement for separate yet integrated qualitative and quantitative data analyses, and the need for researcher expertise in handling diverse data types (Sprenkle & Piercy, 2005). Regression designs, encompassing both simple and multiple linear regression, appeared as more suitable because of their ability to assess associations (Field, 2013; Sprenkle & Piercy, 2005). This determination was based on conceptualizing perceived gendered racism and preterm birth as predictor variables, with psychosocial stress designated as the outcome variable.

Simple Linear Regression. A simple linear regression explains the relationship between only one independent variable and one dependent variable, which must be continuous variables (Sprenkle & Piercy, 2005). Simple linear regression, used to predict or explain an outcome and to quantify the strength and direction of a bivariate association without inferring causality (Salkind & Frey, 2020), was considered. However, simple linear regression was deemed unsuitable because the study involved two outcome variables, which require a multivariate approach.

Multiple Linear Regression. A multiple linear regression design was initially considered for this study because the study included two outcome variables, which may be continuous or categorical, to examine the relationship to the one continuous predictor variable (Sprenkle & Piercy, 2005). Multiple linear regression also allows for examining the strength of the relationship of the independent variable to each dependent variable when analyzing the data and the variables (Field, 2013). While multiple linear regression is suitable for analyses involving more than one independent or dependent variable, this researcher did not select it for the study, which focused on exploring relationships and the unique contributions of variables, rather than prediction or forecasting. A correlational design was deemed more appropriate for

this study, driven by the absence of a cause-and-effect hypothesis, the presence of two continuous and one dichotomous variable, and the need to control for a control variable.

Population and Sample

The target population for this study comprised non-Hispanic Black women in New York State who have experienced pregnancy and childbirth. The three-year average of 29,624 births among non-Hispanic Black women in New York State, reported by the New York State Department of Health (2024) for 2019 to 2021, was used as the reference population size. The target population was appropriate because it was composed of non-Hispanic Black women who had gone through pregnancy and childbirth, experiences necessary to answer the research questions. The inclusion criteria for participation were non-Hispanic Black women aged 21 or older, at least six months postpartum at the time of data collection, who received prenatal care from hospital-operated prenatal clinics, Federally Qualified Health Centers, or private practices, and who resided in New York State. These criteria were essential for obtaining retrospective data on psychosocial stress and perceived gendered racism experienced during the prenatal period, as well as their preterm birth status. Recruiting participants at least six months postpartum aimed to mitigate the potential influence of fluctuating pregnancy hormones on self-reported data, as hormone levels at this stage are generally comparable to pre-pregnancy levels (Kopp & Gerardis, 2023).

The research took place online using Centiment's Audience Panel, in the virtual environment of the Internet, allowing participants to complete the survey remotely from their homes or any location they felt comfortable with, as long as they had internet access and a suitable device. The participants were geographically focused on residents of New York State. This research was not conducted in a specific physical research site, clinic, or organization.

Using a virtual setting expanded the reach to eligible participants across a broad geographical area, thereby facilitating the recruitment of a large and diverse sample.

Participants in this research were selected using a nonprobability sampling approach, with quota-based panels from Centiment's Audience Panel, an online research panel of pre-recruited individuals who had previously expressed interest in participating in research.

Nonprobability sampling is a nonrandom approach in which each potential participant does not have an equal chance of being selected for the sample; however, it allows for a quicker way to identify and access the sample (Salkind & Frey, 2020). While the use of a nonprobability sampling approach, such as quota-based panels, limits the generalizability of the findings due to the potential for selection bias (Sprenkle & Piercy, 2005), it ensures participants represent the required sample description and is effective for obtaining a sample from diverse populations (Salkind & Frey, 2020).

Additionally, the use of Centiment's Audience Panel limited the generalizability of the findings, as participants were recruited through a nonprobability online panel. Although demographic quotas (e.g., age group, education level, household income, marital/partnership status, parity, and geographic region) were initially proposed to enhance representativeness, these specific study-level quotas were not implemented during data collection. Instead, recruitment relied on Centiment's existing quota-based panel infrastructure, which utilizes respondent profiling and targeted sampling to access diverse demographic subgroups within the non-Hispanic Black women population in New York State. Limiting the study to New York State provided a focused lens for examining the experiences of non-Hispanic Black women during pregnancy. Confining the study was relevant given New York State's maternal and infant health landscape, including its C+ preterm birth grade (ranking 14 nationally) and an infant

mortality rate for Black birthing families that is 2.4 times the state average (March of Dimes Peristats, 2024b). This geographic focus enables the findings to directly inform system changes related to the unique socio-political context and healthcare policies prevalent in New York, enhancing the relevance and interpretability of results concerning the complexities of psychosocial stress, perceived gendered racism, and preterm births within this specific state.

Although demographic quotas were initially proposed to enhance sample diversity, formal study-specific quotas were not implemented during data collection. Instead, recruitment relied on Centiment's quota-based panel infrastructure, which uses respondent profiling and targeted sampling to access diverse demographic subgroups. Because the sample was drawn from an online nonprobability panel, participants did not have an equal or known probability of selection. An effect size computation was performed using G*Power version 3.1 (Faul et al., 2009) to determine the minimum sample size required to test the research hypotheses. The results indicated that the required sample size to achieve 80% power to detect a medium effect at a significance criterion of $\alpha = .05$ was $N = 84$ for a partial correlation.

While digital flyers (Appendix B) were initially planned as part of the recruitment strategy, they were not utilized during data collection. This modification did not affect the study's eligibility criteria, survey content, or analytic procedures. Participants were recruited through Centiment's Audience Panel, a nonprobability online research panel. Panel members received a recruitment letter (Appendix C), informed consent form, a description of the study purpose and participation details, and the study assessments (Appendices H and J). Data were collected electronically using Qualtrics, a cloud-based survey platform (R. Smith, 2021). Centiment provided access to a diverse pool of respondents, and no direct organizational

partnerships or on-site recruitment efforts were required. Participants were compensated in accordance with their agreement with Centiment upon survey completion.

Instrumentation

The self-report tools used to gather data included the Psychosocial Hassles Scale to measure psychosocial stress (Misra et al., 2001) and the Gendered Racial Microaggressions Scale (GRMS) to measure perceived gendered racism (Lewis & Neville, 2015). All necessary permissions for the use of the research instruments were obtained from the respective authors or publishers before data collection (see Appendices G and I). The Psychosocial Hassles Scale, a 12-item, four-point Likert scale, is a subscale of the Prenatal Psychosocial Profile (Curry et al., 1998) and an adaptation of Kanner et al.'s (1981) longer Hassles and Uplifts Scales. The Psychosocial Hassles Scale assessed daily stressors and perceived stress experienced during pregnancy. It included areas such as family and marital problems, problems with friends, financial worries, working during pregnancy, pregnancy itself, moving, and neighborhood crime. The Psychosocial Hassles Scale is an instrument with established reliability and validity. Its convergent validity was demonstrated in foundational research with pregnant women through a strong correlation of $r = .71$ (Curry et al., 1998). Furthermore, its reliability was supported by high internal consistency, with several studies reporting Cronbach's alpha coefficients exceeding .70, which is the acceptable threshold (Curry et al., 1998; Gunaydin & Zengin, 2021; Phelan et al., 2015).

The Gendered Racial Microaggressions Scale is a 26-item measure developed by Lewis and Neville (2015). It assessed the frequency of microaggressions and the corresponding stress appraisal using six-point Likert scales. The scale allowed researchers to analyze whether certain microaggressions were more stressful than others, independent of how often they occur. It

provided an understanding of the psychosocial burdens associated with gendered racism through four subscales: assumptions of beauty and sexual orientation, silenced and marginalized, strong Black woman stereotype, and angry Black women stereotype (Lewis & Neville, 2015; Matsuzaka et al., 2022). The foundational research on the GRMS demonstrated a Cronbach's alpha of .94, with the four subscales' internal consistency exceeding the .70 threshold (Lewis & Neville, 2015). Furthermore, its reliability was supported by high internal consistency, with several studies reporting Cronbach's alpha coefficients exceeding .70 (Dale et al., 2023; Howell et al., 2024; Lewis & Neville, 2015). Additionally, self-reported data on birth outcomes (gestational age at birth in weeks; Appendix F) and demographics (age, marital status, education, income, parity, and geographical location) were collected.

Operational Definitions of Variables

For this study, all variables were operationally defined to ensure clarity, consistency, and alignment with the selected measurement instruments. Each variable was defined based on how it was measured and used in the analysis. The following section provides detailed operational definitions for each variable included in the study.

Perceived Gendered Racism

Perceived gendered racism was operationally defined as the everyday verbal, behavioral, and environmental expressions of oppression experienced by Black women, due to the intersection of their race and gender; it was measured by the GRMS developed by Lewis and Neville (2015). This 26-item instrument captured the experiences of Black women across four subscales: assumptions of beauty and sexual objectification, silenced and marginalized, strong Black woman stereotype, and angry Black woman stereotype. For each microaggression, participants rated its frequency on a six-point Likert scale (from 0 = never, 1 = less than once a

year, 2 = a few times a year, 3 = about once a month, 4 = a few times a month, and 5 = once a week or more) and its corresponding stress appraisal on a five-point Likert scale (0 = never happened to me; 1 = not at all stressful, 2 = slightly stressful, 3 = moderately stressful, 4 = very stressful, and 5 = extremely stressful). Total frequency scores, ranging from 0 to 130, were derived by summing all frequency ratings, with higher scores indicating more frequent experiences. Similarly, total stress appraisal scores ranging from 0 to 130 were calculated by summing the stress ratings, where higher scores reflected greater perceived impact. Subscale scores for both frequency and stress appraisal were calculated to identify the most frequent or impactful types of gendered racial microaggressions. Given its summation of Likert-type responses, this scale was treated as an interval-level measure.

Preterm Birth

Preterm birth was operationally defined as childbirth occurring less than 37 weeks of gestation and “further classified as: late preterm (34 to less than 37 weeks), moderately preterm (32 to less than 37 weeks) and very preterm (less than 32 weeks)” (March of Dimes Peristats, 2024a, para. 1), with non-preterm birth classified as early term (37 to less than 39 weeks), and full term (39 to less than 41 weeks), late term (41 to less than 42 weeks), and post term after 42 weeks (Martin & Osterman, 2024). This information was collected via self-report on the survey. Participants were asked to indicate the number of weeks of gestation at which they delivered their baby. Gestational age at birth was recorded in weeks rather than weeks and days, as initially proposed before data collection. This scale was operationalized as a dichotomous measure.

Psychosocial Stress

Psychosocial stress was operationally defined as the daily stressors and perceived stress experienced during pregnancy. To quantify psychosocial stress, this researcher used the

Psychosocial Hassles Scale (Curry et al., 1998). This 12-item tool captured daily stressors and perceived stress among pregnant individuals using a four-point Likert scale, where respondents indicate: 1 = no stress, 2 = some stress, 3 = moderate stress, and 4 = severe stress. The total stress score, ranging from 12 to 48, was calculated by summing the numerical ratings of all items. Given its summation of Likert-type responses, this scale was treated as an interval scale, with higher scores indicating higher stress levels.

Study Procedures

This researcher used Qualtrics to administer the study online, accessible on mobile or desktop devices. Institutional Review Board approval from National University was obtained on September 4, 2025, with subsequent protocol modifications approved on September 15, 2025, and October 6, 2025. Data were collected using an online survey administered through Qualtrics and accessible via mobile and desktop devices. Participants were recruited through Centiment's Audience Panel, which distributed recruitment letters to panel members who agreed to participate in research surveys. Digital flyers, as initially proposed, were not utilized during the recruitment process.

Interested individuals were screened for eligibility based on the following inclusion criteria: non-Hispanic Black women aged 21 years or older, who gave birth 6 months or more ago (meaning my baby or child is 6 months or older), residing in New York State, and having received prenatal care from hospital-operated prenatal clinics, Federally Qualified Health Centers, or private practices. Eligible participants received an informed consent outlining the study purpose, procedures, potential risks and benefits, and participant rights, including the right to withdraw without penalty. Only participants who provided affirmative consent were permitted

to proceed. A total of 406 participants consented to participate, of whom 216 met the eligibility criteria, and 170 completed all survey questions.

Participants were instructed to reflect on their experiences during pregnancy when responding to survey items. The survey included questions assessing demographic characteristics and preterm birth status by gestational age at birth, followed by the Psychosocial Hassles Scale and the GRMS. Most participants (99%) completed the survey in under 30 minutes, with a small proportion (1%) taking longer than 1 hour. Upon completion, participants received a debriefing statement that included additional study information, the researcher's contact details, and referrals to culturally competent and accessible mental health support resources (Appendix K). All data were collected confidentially to protect participant privacy.

Data Analysis

Although the study was not preregistered prior to data collection, the analytic plan was documented and registered on the Open Science Framework (OSF) after data collection to promote transparency and reproducibility (Center for Open Science, 2025). Data were collected cross-sectionally through Qualtrics' secure, independently audited data center as participants completed the online survey. All statistical analyses were performed using IBM SPSS Statistics, with a significance level of $\alpha=.05$. Before analysis, raw data were screened for errors, outliers, and missing values. Although Multiple Imputation (MI) was initially proposed as a method for handling missing data, the final analyses were conducted using listwise deletion. A complete-case analysis was applied, retaining only participants with complete data on all variables included in each model. Statistical assumptions were assessed, such as linearity, which was examined through visual inspection of scatterplots. Normality was evaluated using visual inspection of Q-Q plots and histograms supplemented by the Shapiro-Wilk test, and

homoscedasticity was assessed by visually inspecting residual plots to ensure a consistent spread of residuals across the range of predicted values.

Participant demographics are presented in Table 1. The analytic sample included 215 participants with complete demographic data. Most participants were between 30 and 39 years of age (54.4%), had completed at least a bachelor's degree (56.2%), and reported a household income of \$60,000 or higher (58.6%). The majority resided in New York City (57.7%) and were married or in a domestic partnership (67.9%). Over half of the participants reported having given birth two or more times (57.2%). Gestational age at birth was reported for 215 participants. Among respondents with complete gestational age data, 27.1% were classified as preterm and 72.9% as not preterm ($N = 170$). Sample sizes varied across descriptive analyses due to item-level nonresponse; therefore, valid percentages are reported.

Descriptive statistics (means, standard deviations, frequencies, percentages) were calculated for all demographic and study variables. Descriptive statistics were computed for all continuous study variables to summarize central tendency and variability (Table 2). These include the GRMS – Frequency (GRMSF), the GRMS – Appraisal (GRMSA), their respective subscales, and the Psychosocial Hassles Scale score. Preterm birth status, coded dichotomously (0 = not preterm, 1 = preterm), was summarized using frequencies and percentages. The Total Psychosocial Hassles Scale score demonstrated a mean of 25.53 ($SD = 8.77$), with observed scores ranging from 4.00 to 48.00 ($N = 214$), indicating substantial variability in reported psychosocial stress among participants.

For perceived gendered racial microaggressions, the GRMSF total scale score had a mean of 2.46 ($SD = 1.23$; $N = 176$), with scores spanning from 0.43 to 5.65. Subscale means for GRMSF ranged from 2.26 (Beauty/Sexual Objectification; $SD = 1.31$) to 2.82 (Angry Black

Woman; $SD = 1.36$), suggesting moderate levels of reported frequency across domains. The Strong Black Woman subscale demonstrated a mean of 2.74 ($SD = 1.31$), while the Silenced and Marginalized subscale had a mean of 2.46 ($SD = 1.32$). The GRMSA total scale score had a mean of 2.58 ($SD = 1.31$; $N = 170$), with a range of 1.00 to 6.00. Subscale means for GRMSA ranged from 2.48 (Strong Black Woman; $SD = 1.25$) to 2.79 (Angry Black Woman; $SD = 1.37$). Across both GRMSF and GRMSA measures, standard deviations indicated moderate variability, supporting the use of correlational analyses.

Preterm birth status was examined descriptively, using only complete gestational age data. Among participants with sufficient information to determine preterm status ($N = 170$), 124 (72.9%) were classified as not preterm, and 46 (27.1%) were classified as preterm based on gestational age at birth. Percentages for preterm birth status reflect valid responses among participants with complete gestational age data. Listwise deletion resulted in a valid analytic sample of 170 participants for analyses requiring complete data across all study variables. Differences in sample size across measures reflect item-level nonresponse and eligibility requirements rather than data anomalies. The observed distributions and variability of study variables supported the assumptions required for subsequent Pearson and partial correlational analyses.

A Pearson correlation analysis was conducted to test the null hypothesis ($H1_0$) that perceived gendered racism (predictor variable) does not have a statistically significant relationship with psychosocial stress (outcome variable) among non-Hispanic Black women during pregnancy. The alternative hypothesis ($H1_a$) proposed that perceived gendered racism has a statistically significant relationship with psychosocial stress. Partial correlation analyses were conducted to test the null hypotheses ($H2_0$ and $H3_0$). For $H2_0$, it was hypothesized that perceived

gendered racism would not have a statistically significant relationship with psychosocial stress among non-Hispanic Black women during pregnancy when controlling for preterm birth by gestational age at birth. The alternative hypothesis (H2_a) stated that perceived gendered racism would have a statistically significant relationship with psychosocial stress when controlling for preterm birth. For H3₀, it was hypothesized that perceived gendered racism would not have a statistically significant relationship with preterm birth by gestational age at birth when controlling for psychosocial stress. The alternative hypothesis (H3_a) stated that perceived gendered racism would have a statistically significant relationship with preterm birth when controlling for psychosocial stress.

Assumptions

Five main assumptions were applied to this study. The first assumption was that the chosen control variable would exhibit a linear relationship with both the predictor and outcome variables, thereby justifying its inclusion in the statistical model. The second assumption of this study was that the self-report measures for perceived gendered racism and psychosocial stress were reliable and valid instruments capable of accurately capturing these constructs within the study population of non-Hispanic Black women during pregnancy. Specifically, the GRMS was assumed to be a reliable and valid measure, as demonstrated in prior studies with non-Hispanic Black women conducted by Dale et al. (2023), Howell (2023), and Lewis and Neville (2015). Research on the GRMS in these studies consistently reported strong internal consistency, with Cronbach's alpha coefficients exceeding the generally accepted threshold of .70 (e.g., .88 to .94). Furthermore, the Psychosocial Hassles Scale was considered a reliable and valid instrument for assessing stress during pregnancy. Prior studies with pregnant women by Curry et al. (1998), Gunaydin and Zengin (2021), and Phelan et al. (2015) supported its psychometric soundness,

similarly showing Cronbach's alpha coefficients for the Psychosocial Hassles Scale exceeding .70 across various subscales and populations.

A third assumption was that participants would accurately recall their experiences related to perceived gendered racism and psychosocial stress, despite a potential recall period of six or more months postpartum. This study also assumed that participants would provide truthful and accurate responses to all survey questions, rather than responding based on perceived social desirability or the researcher's expectations. To mitigate this concern, although a digital flyer was initially proposed as part of the recruitment strategy, it was not utilized during data collection because recruitment was conducted through Centiment's Audience Panel, which distributed the recruitment materials directly to eligible panel members. The recruitment letter and informed consent document clearly described the study's purpose and content, allowing participants to make an informed decision before participating and supporting transparency in the data collection process.

The fourth assumption was that the incentive (Centiment's compensation) provided to participants would not unduly influence their responses, ensuring that answers reflected genuine experiences and opinions rather than being motivated solely by the incentive. Moderate monetary incentives effectively boosted online survey response rates (Abdelazeem et al., 2023; Shiyab et al., 2023). Finally, the fifth assumption was that the proposed sample size would provide adequate statistical power to detect statistically significant relationships among the study variables, should such relationships genuinely exist within the non-Hispanic Black women's population during pregnancy.

Limitations

This study's findings should be interpreted in light of several limitations. First, the study's reliance on self-reported data may have introduced recall bias, particularly given the retrospective nature of the questions about pregnancy experiences, which were asked several months after the baby's birth. Dependence on participant recall may have influenced the accuracy of reported experiences and, consequently, affected the construct and internal validity of the findings. Additionally, the exclusive use of an online survey format introduced the possibility of digital exclusion bias, potentially limiting participation to non-Hispanic Black women with reliable internet access and sufficient technological literacy. As a result, the sample may be skewed toward individuals with greater digital access, raising concerns regarding external validity.

Furthermore, recruitment through Centiment's Audience Panel, a nonprobability online research panel, constituted a convenience-based sampling approach that inherently limits generalizability. Individuals who opt into online panel research may systematically differ from the broader population of non-Hispanic Black women during pregnancy, introducing potential selection bias. Although demographic quotas were initially proposed to enhance representativeness, these study-specific quotas were not implemented during data collection. Instead, recruitment relied on Centiment's quota-based panel infrastructure, which uses respondent profiling and targeted sampling to access diverse demographic subgroups. Because participants were not randomly selected and did not have a known probability of selection, the findings may not be fully representative of the broader population of non-Hispanic Black women in New York State. In addition, missing data were addressed using listwise deletion, which reduced the analytic sample and may have limited statistical power and precision of the

estimates. Finally, this non-experimental correlational design, which collected cross-sectional data, precluded causal inferences, limiting conclusions to associations rather than directional or causal relationships among the variables.

Delimitations

The main delimitation was that this researcher's study focused on non-Hispanic Black women ages 21 and older who had experienced pregnancy, residing in New York State. This delimitation explicitly excluded other racial/ethnic groups, nationalities, other gender identities, men, and individuals who had not been pregnant. This explicit focus allowed for a specific examination of the unique experiences of perceived gendered racism and its impact on psychosocial stress within non-Hispanic Black women during pregnancy without the confounding effects of other racial, ethnic, or gender identities. It also recognized the distinct socio-political landscape in which perceived gendered racism was experienced within this country. It also helped ensure the study could provide culturally relevant and specific insights from non-Hispanic Black women.

Another delimitation was the exclusion of other potential confounding variables. While acknowledging the multi-factorial nature of psychosocial stress and birth outcomes, this researcher strategically rotated preterm birth by gestational age at birth and psychosocial stress as control variables within this partial correlation analysis. Other potential demographic, social, or health-related confounders, such as socioeconomic status, medical comorbidities, or social support, were not included as control variables. This helped keep the statistical analysis focused and manageable, directly addressing the main research questions without complicating the analysis with many additional control variables.

The final delimitation of the study was its focus on examining correlational relationships among the variables rather than testing the effectiveness of any intervention or program designed to reduce racism or psychosocial stress. It was appropriate given the study's purpose of explaining the relationships among psychosocial stress, perceived gendered racism, and preterm birth by gestational age at birth. As such, the study was designed to identify associations among the variables without making causal inferences or evaluating intervention outcomes.

Ethical Assurances

Participant recruitment and data collection began after the National University Institutional Review Board (IRB) approved the study. Upon approval, all participants received an informed consent form that comprehensively outlined the study's purpose, procedures, potential risks, anticipated benefits, and their rights as research participants, including the option to withdraw from the study at any point without penalty. The study posed minimal risks to participants. However, the discussion of sensitive topics such as perceived gendered racism and psychosocial stress may have evoked distressing feelings for some. To mitigate this, information on relevant, culturally competent, and accessible mental health support resources was initially proposed for inclusion in the informed consent form; however, it was subsequently determined that presenting this information at the conclusion of the survey was more appropriate.

Participant confidentiality and, where applicable, anonymity were rigorously protected through the utilization of the Qualtrics platform. Qualtrics provided a robust technical security infrastructure and a comprehensive suite of features designed to protect participant confidentiality through secure data storage, encryption, and restricted researcher access (Qualtrics XM, 2025). Survey data were exported from Qualtrics into Microsoft Excel for data management and preparation. Although IP addresses were included in the initial export as part of

the platform's standard data output, they were not used for identification or analytic purposes. IP address information was excluded from the analytic dataset prior to statistical analysis, and only de-identified data were uploaded into SPSS for analysis. All files were stored securely with access restricted to the researcher. Accordingly, the study maintained participant confidentiality rather than complete anonymity.

The researcher's role as President and CEO of a multi-service nonprofit, which included a maternal and infant health program for marginalized families, and active participation in birth equity and Black maternal health advocacy groups, reflected a strong personal and professional commitment to improving maternal health outcomes for non-Hispanic Black women. While this background provided invaluable expertise and a deep understanding of the research context and population, the researcher acknowledged the potential for perceived conflicts of interest. All research procedures, from data collection and analysis to interpretation and reporting of findings, adhered strictly to scientific methodologies and best practices to mitigate the influences of bias. The researcher made efforts to minimize bias by using standardized measures, the Qualtrics platform, and Centiment's Audience Panel. Data were collected and managed to protect participant confidentiality, including the removal of IP address information before analysis, as described in the Study Procedures section. No organizational-specific data or client information from the researcher's nonprofit was used.

The researcher disclosed any potential conflicts of interest in the research declarations. The researcher's organizational affiliations were transparently stated. Also, National University's Institutional Review Board oversaw this study to ensure that all ethical guidelines and regulations were met, independent of the researcher's professional affiliations. The researcher was not involved in direct recruitment or data collection from current or former clients of the

nonprofit to avoid undue influence or coercion. For this research, the researcher's role was limited to reviewing and analyzing data collected via the Qualtrics platform. No direct participant recruitment, survey administration, or participant interaction occurred outside of the Qualtrics survey interface.

Summary

This chapter provided the reader with the research methodology and design the researcher used, which was a quantitative, non-experimental correlation design to explain the relationship between psychosocial stress and perceived gendered racism experienced by non-Hispanic Black women during pregnancy, controlling for whether their recent birth was a preterm birth by gestational age at birth. This researcher strategically rotated preterm birth by gestational age at birth and psychosocial stress as control variables within the study. A quantitative correlational design was used to examine the magnitude and direction of relationships among the study variables.

Pearson correlation analyses assessed bivariate associations, whereas partial correlation analyses evaluated relationships while statistically controlling for a specified control variable. This approach aligned with the non-experimental design and research questions. The chapter included the rationale for this methodological choice, a population description, a sampling strategy, a recruitment process, the instruments used, study procedures, data collection and analysis, assumptions, limitations, delimitations, and ethical assurances that guided the study. The structure of this chapter was organized to set the stage for the findings that are presented in the next chapter.

Chapter 4: Findings

The problem to be addressed by this study is that higher rates of preterm births occur for non-Hispanic Black women with no clear understanding of the relationship between psychosocial stress and perceived gendered racism during pregnancy (Clarke et al., 2022). The purpose of this quantitative non-experimental correlation design was to explain the relationship between psychosocial stress and perceived gendered racism by non-Hispanic Black women during pregnancy, controlling for whether their recent birth was a preterm birth by gestational age at birth. Preterm birth by gestational age at birth and psychosocial stress were rotated as control variables. Two research questions and their corresponding hypotheses formed the foundation for this study:

RQ1: What is the relationship between perceived gendered racism and psychosocial stress experienced by non-Hispanic Black women during pregnancy?

H1₀: Perceived gendered racism (predictor variable) does not have a statistically significant relationship with the psychosocial stress (outcome variable) for non-Hispanic Black women when experienced during pregnancy.

H1_a: Perceived gendered racism (predictor variable) has a statistically significant relationship with the psychosocial stress (outcome variable) for non-Hispanic Black women when experienced during pregnancy.

RQ2: What is the relationship between perceived gendered racism, psychosocial stress, and preterm birth experienced by non-Hispanic Black women during pregnancy?

H2₀: When controlling for preterm birth by gestational age at birth (control variable), perceived gendered racism (predictor variable) does not have a statistically significant

relationship with psychosocial stress (outcome variable), for non-Hispanic Black women when experienced during pregnancy.

H2_a: When controlling for preterm birth by gestational age at birth (control variable), perceived gendered racism (predictor variable) does have a statistically significant relationship with psychosocial stress (outcome variable), for non-Hispanic Black women when experienced during pregnancy.

H3_a: When controlling for psychosocial stress (control variable), perceived gendered racism (predictor variable) does not have a statistically significant relationship with preterm birth by gestational age at birth (outcome variable) for non-Hispanic Black women experienced during pregnancy.

H3_a: When controlling for psychosocial stress (control variable), perceived gendered racism (predictor variable) has a statistically significant relationship with preterm birth by gestational age at birth (outcome variable) for non-Hispanic Black women experienced during pregnancy.

Chapter 4 presents participant demographic characteristics, results of statistical assumption testing, and descriptive statistics for the study variables. The chapter also reports the primary analyses conducted to address the research questions. A summary of the findings concludes the chapter.

Validity and Reliability of the Data

The constructs of psychosocial stress, perceived gendered racism, and preterm birth by gestational age at birth were assessed using the following measures: Psychosocial Hassles Scale, Gendered Racial Microaggressions Scale (GRMS), and a self-reported preterm birth by gestational age at birth question. Evidence supporting the validity and reliability of the

Psychosocial Hassles Scale has been established in prior research. Convergent validity was demonstrated in foundational studies with pregnant women, with a strong reported correlation of $r = .71$ (Curry et al., 1998). Additionally, acceptable to high internal consistency reliability has been consistently reported, with Cronbach's alpha coefficients exceeding $.70$ across multiple studies (Curry et al., 1998; Gunaydin & Zengin, 2021; Phelan et al., 2015). Prior research has documented strong internal consistency for the GRMS. Foundational validation studies reported Cronbach's alpha of $.94$ for the overall scale, with internal consistency coefficients for all four subscales exceeding the $.70$ threshold (Lewis & Neville, 2015). Subsequent studies have similarly demonstrated acceptable to high reliability, with Cronbach's alpha coefficients consistently exceeding $.70$ across diverse samples (Dale et al., 2023; Howell et al., 2024; Lewis & Neville, 2015).

Analytic rigor and transparency were supported by standardized data collection and systematic statistical procedures. Data were collected cross-sectionally using Qualtrics' secure, independently audited platform as participants completed the online survey. All analyses were conducted using IBM SPSS Statistics, with statistical significance evaluated at an alpha level of $.05$.

Preliminary Analyses

Before analysis, the dataset was screened for data entry errors, outliers, and missing values. Missing data resulting from participants not responding to one or more survey items were exported as missing values, preserving the integrity of participant responses. They were subsequently addressed during data screening and analysis in SPSS. The original sample consisted of 406 respondents. Due to survey branching, item nonresponse, and eligibility for pregnancy-related items, valid case counts varied across study variables, with missingness

ranging from 47.3% to 58.1%. Specifically, 47.3% of data were missing for the Total Psychosocial Hassles Scale, 56.7% for the GRMSF total score, and 58.1% for both the GRMSA total score and preterm birth by gestational age at birth. Pearson and partial correlation analyses were conducted using only complete cases. The final analytic sample consisted of $N = 170$ participants, yielding $df = 167$ and representing 41.4% of the original sample. Listwise deletion was applied to ensure consistency across multivariable analyses. Statistical assumptions were evaluated to determine the appropriateness of Pearson and partial correlation analyses.

Internal consistency reliability was assessed for all multi-item scales and subscales included in the analyses. As presented in Table 1, Cronbach's alpha coefficients ranged from .70 to .98, indicating acceptable to excellent reliability across measures. These reliability estimates were consistent with those reported in prior validation studies.

Table 1

Internal Consistency Reliability of Study Measures

Measure	Items (k)	Cronbach's α
Psychosocial Hassles Scale (Total)	11	.87
GRMS Frequency (GRMSF)		
GRMSF Total Scale	26	.97
GRMSF Beauty/Sexual Objectification	10	.95
GRMSF Silenced & Marginalized	7	.92
GRMSF Strong Black Woman	3	.70
GRMSF Angry Black Woman	3	.77
GRMS Appraisal (GRMSA)		
GRMSA Total Scale	26	.98
GRMSA Beauty/Sexual Objectification	10	.97
GRMSA Silenced & Marginalized	7	.95
GRMSA Strong Black Woman	5	.91
GRMSA Angry Black Woman	3	.83

Note. Cronbach's alpha coefficients were computed separately for each multi-item scale and subscale using item-level responses. Values $\geq .70$ indicate acceptable internal consistency.

Assumption Testing

Before conducting Pearson and partial correlational analyses, linearity was assessed visually using scatterplots. Normality was evaluated using skewness and kurtosis, visual inspection of histograms and Q-Q plots, and the Shapiro-Wilk test. Skewness and kurtosis values for all continuous variables fell within acceptable ranges, although minor departures were observed; distributions were approximately normal as presented in Figures 2-12. Boxplots were examined for the Psychosocial Hassles Scale and the GRMS total and subscale scores to assess the presence of outliers and the overall distributional characteristics, as shown in Figure 13. Visual inspection indicated no extreme outliers and generally symmetric distributions across variables. A small number of mild outliers were identified; however, their frequency and magnitude were limited and did not meaningfully affect the distributions. Accordingly, all cases were retained for subsequent analyses.

Figure 2

Normal Q-Q Plot of Total Psychosocial Hassles Scale Score

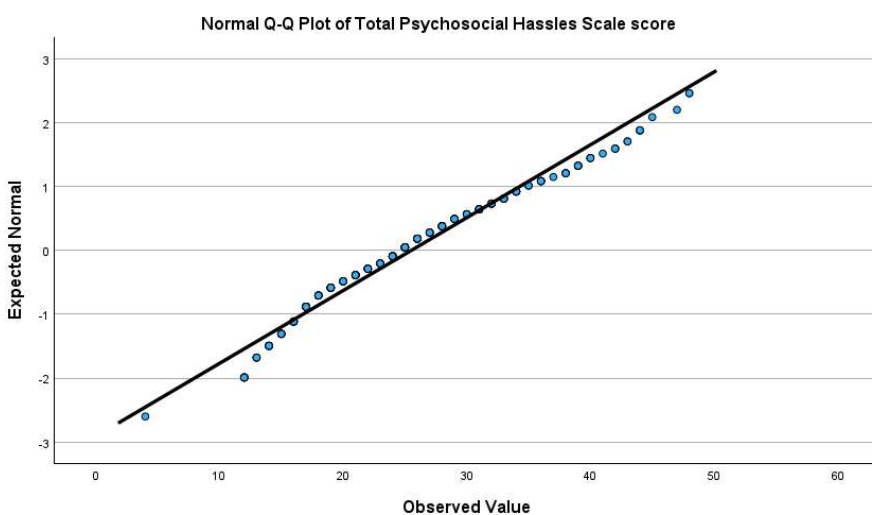


Figure 3

Normal Q-Q Plot of GRMSF Scale Score

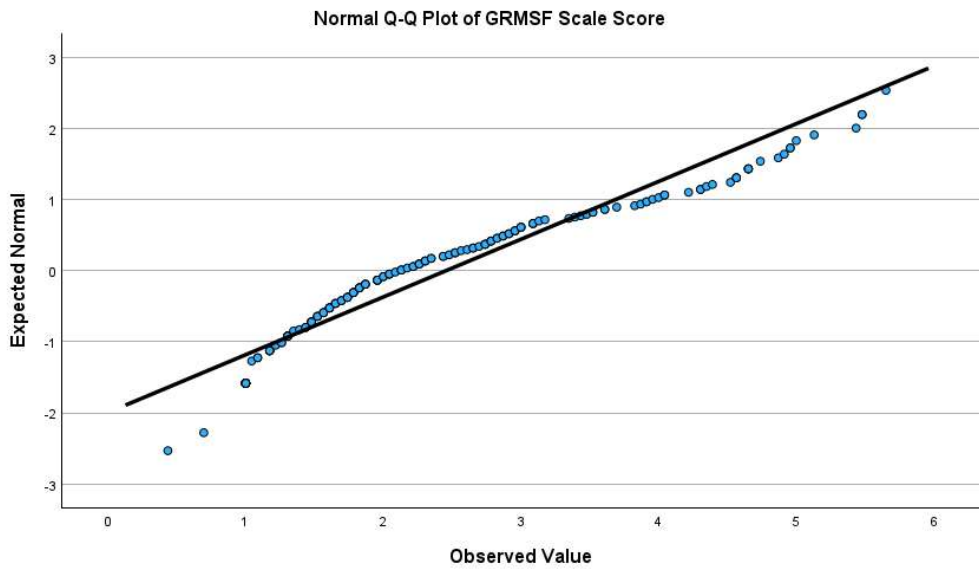


Figure 4

Normal Q-Q Plot of GRMSF Assumptions of Beauty and Sexual Objectification Subscale Score

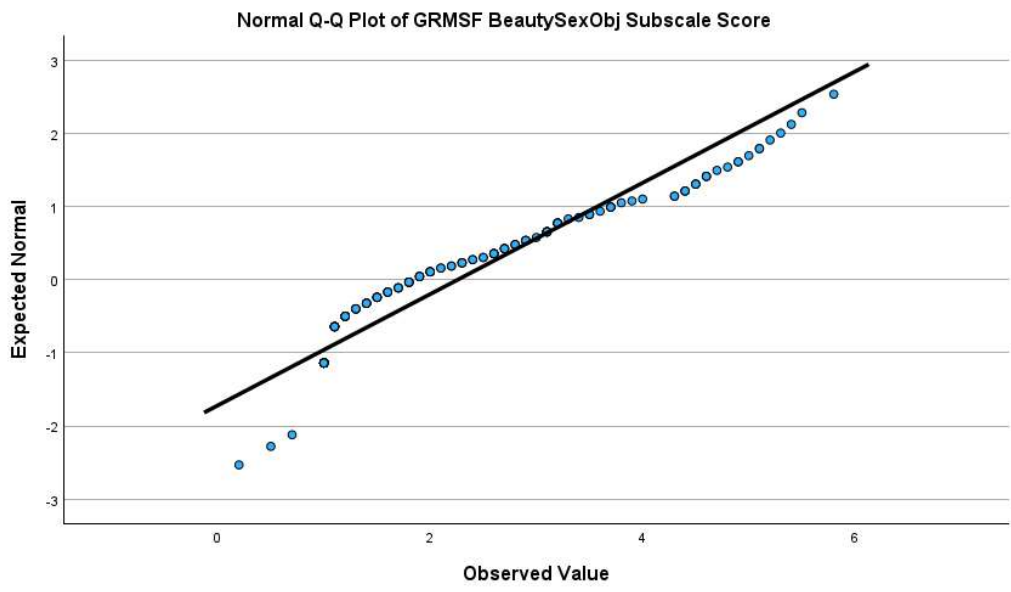


Figure 5

Normal Q-Q Plot of GRMSF Silenced and Marginalized Subscale Score

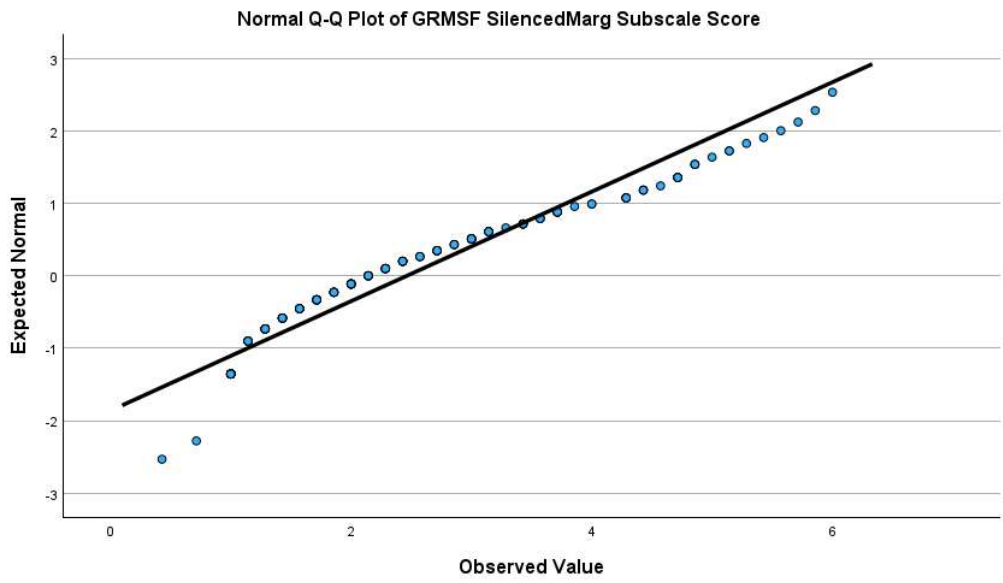


Figure 6

Normal Q-Q Plot of GRMSF Strong Black Woman Subscale Score

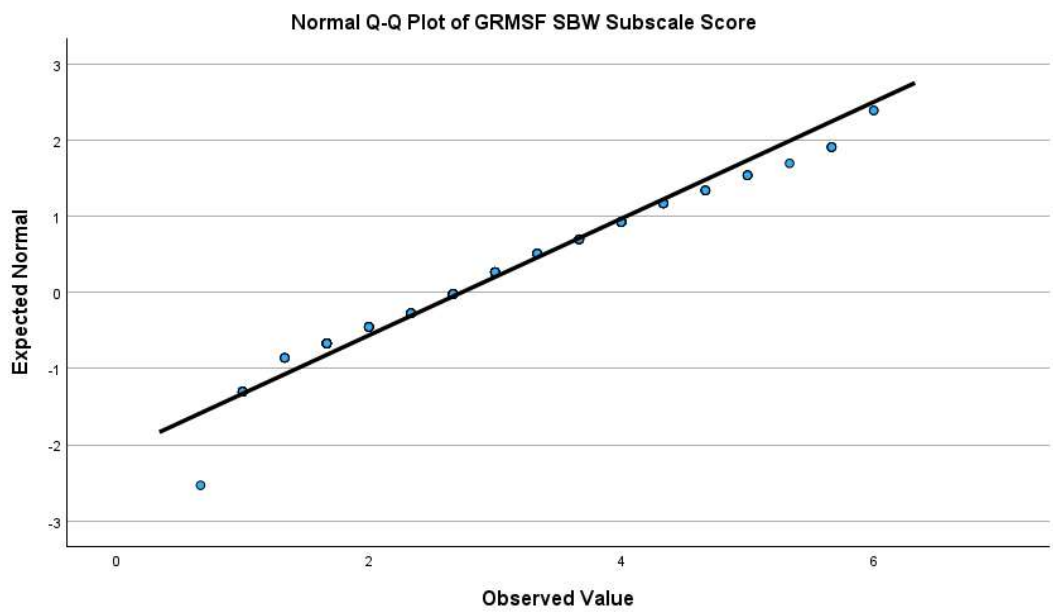
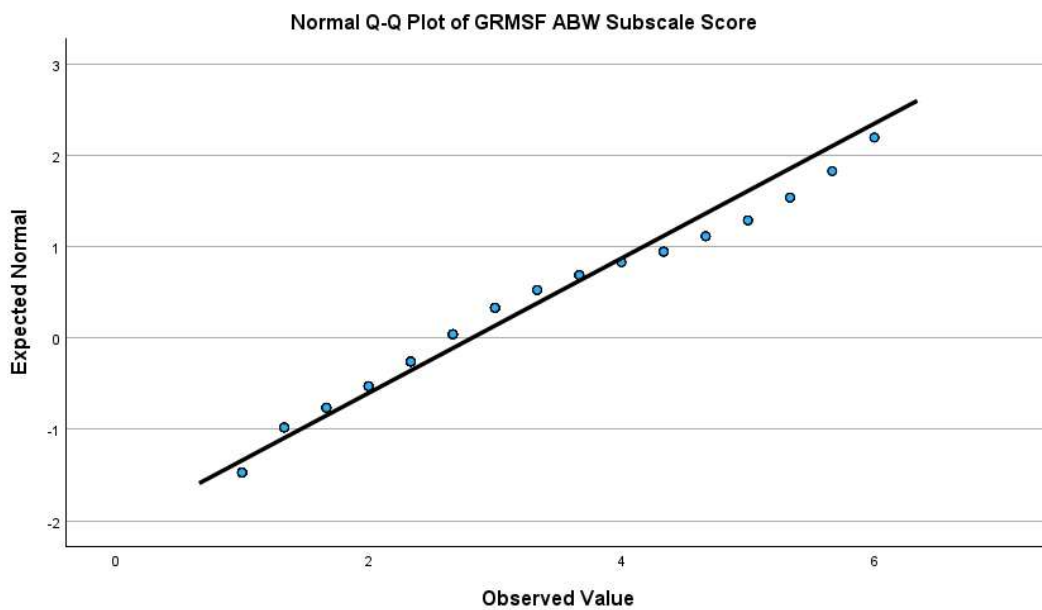


Figure 7

Normal Q-Q Plot of GRMSF Angry Black Woman Subscale Score

**Figure 8**

Normal Q-Q Plot of GRMSA Scale Score

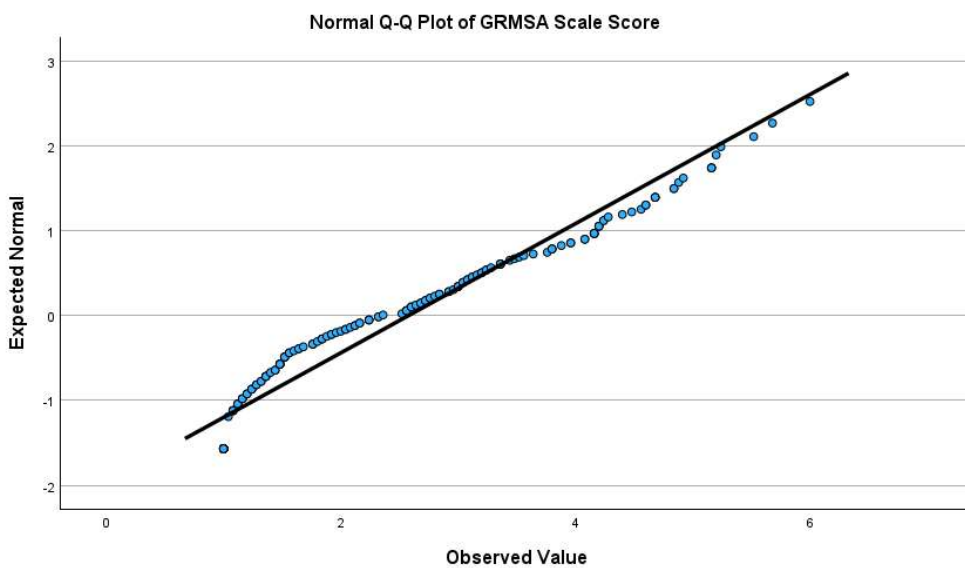


Figure 9

Normal Q-Q Plot of GRMSA Assumptions of Beauty and Sexual Objectification Subscale Score

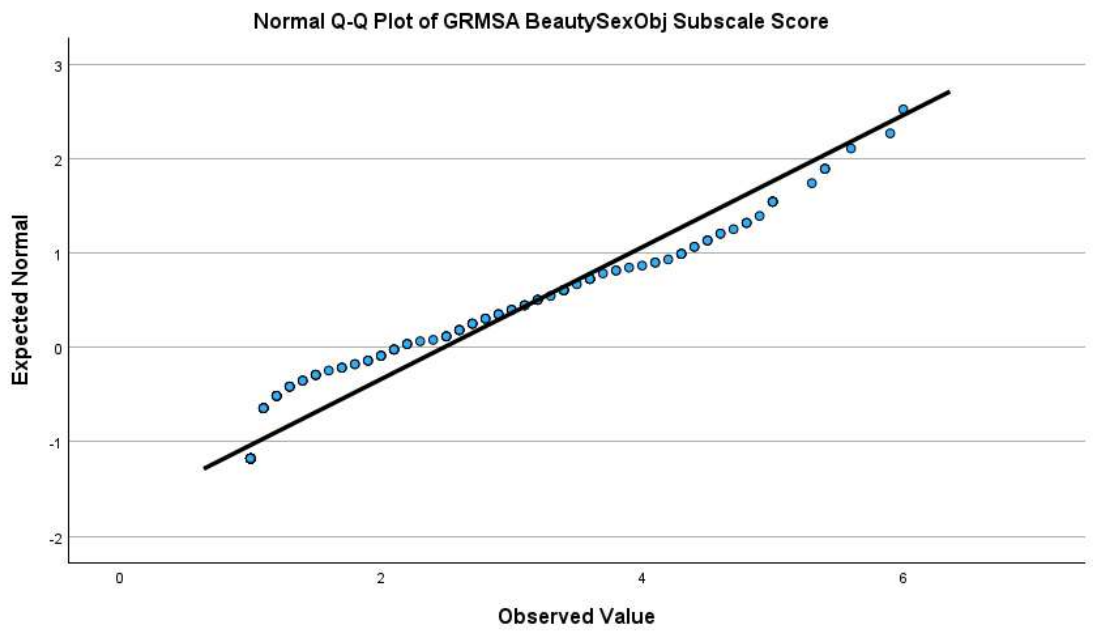


Figure 10

Normal Q-Q Plot of GRMSA Silenced and Marginalized Subscale Score

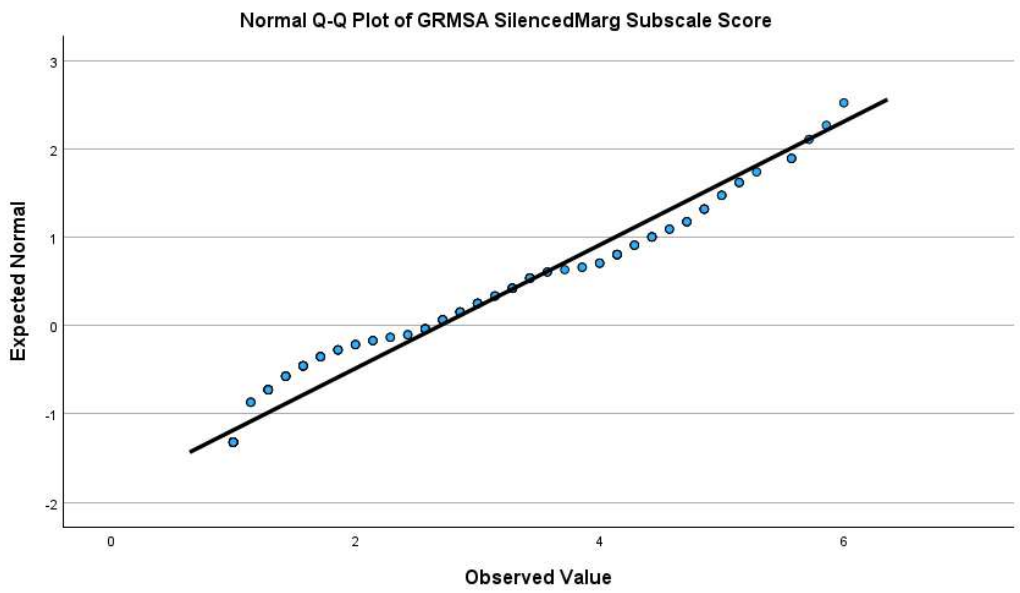


Figure 11

Normal Q-Q Plot of GRMSA Strong Black Woman Subscale Score

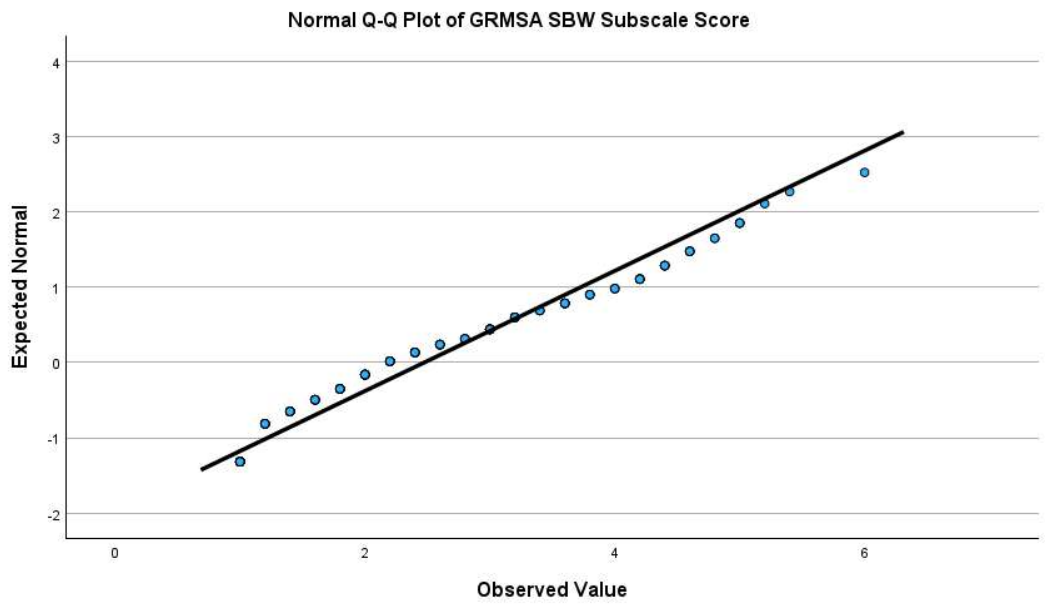


Figure 12

Normal Q-Q Plot of GRMSA Angry Black Woman Subscale Score

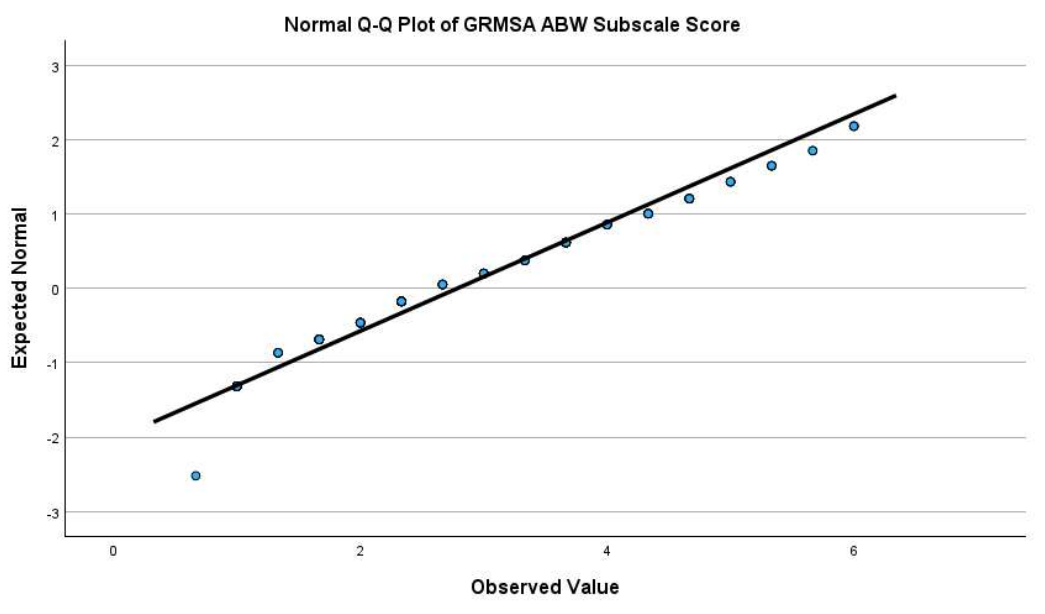
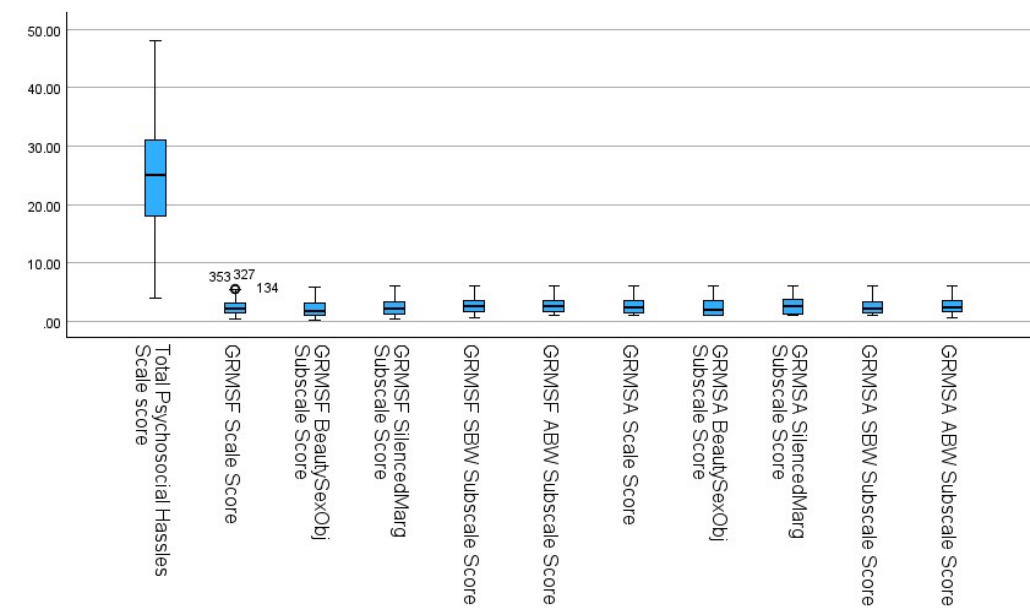


Figure 13

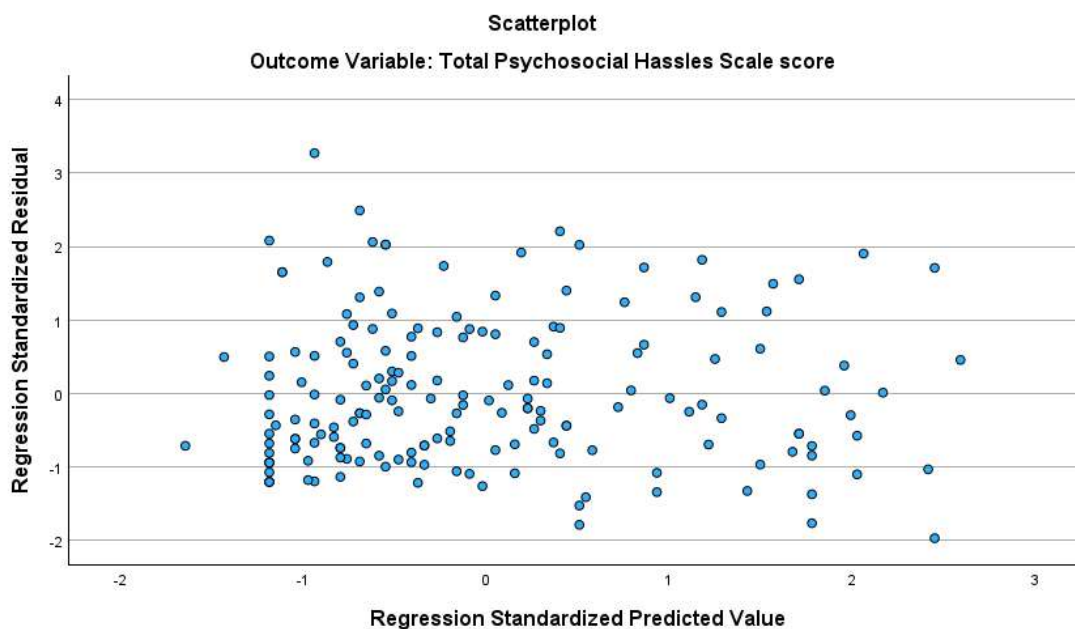
Boxplots of Psychosocial Hassles and Gendered Racial Microaggression Scale Scores



Homoscedasticity was examined through residual plots to confirm consistent variance across predicted values presented in Figure 14. No extreme outliers were identified, and correlations with control variables did not indicate problematic multicollinearity. Pearson correlations were examined to assess potential multicollinearity among the continuous study variables (Table 4). Although the GRMS Frequency and Appraisal total scores were strongly correlated ($r = .87$), they were analyzed separately rather than simultaneously, reducing concerns about multicollinearity. No other correlations exceeded commonly cited thresholds ($r \geq .90$), indicating that multicollinearity was not a concern for the present analyses. Overall, the assumptions of linearity, normality, and homoscedasticity were adequately met, supporting the use of Pearson and partial correlation analyses.

Figure 14

Scatterplot of Standardized Residuals Versus Standardized Predicted Values



Descriptive statistics, including means, standard deviations, frequencies, and percentages, were computed for all demographic and study variables. Pearson correlation analyses were conducted to examine the association between psychosocial stress and perceived gendered racism among non-Hispanic Black women during pregnancy. Partial correlation analyses were subsequently performed to evaluate these relationships while controlling for relevant control variables: preterm birth by gestational age at birth and psychosocial stress. Statistical significance of partial correlations was evaluated using t-tests, with degrees of freedom reported for each analysis. The analyses yielded findings that partially supported the proposed hypotheses.

Results

The original sample consisted of 406 respondents. Data were collected between October 19, 2025, and October 27, 2025, with each participant completing the survey at a single time point. Of the original sample, 216 participants met the study eligibility criteria. An a priori power

analysis was conducted using G*Power which determined that a minimum sample size of 84 participants was required to detect a medium effect size with 80% statistical power at a significance criterion of $\alpha = .05$. A total of 170 participants had sufficient data to determine preterm birth by gestational age at birth, and complete data across all variables included in the partial correlation analyses, constituting the final analytic sample ($df = 167$). The final analytic sample, therefore, exceeded the minimum sample size required to achieve adequate statistical power. Eligibility criteria required participants to be non-Hispanic Black women aged 21 or older, residing in New York State, who had given birth at least 6 months prior to participation. They had received prenatal care from hospital-operated clinics, Federally Qualified Health Centers, or private practices. Participants were instructed to reflect on their most recent pregnancy when responding to survey items.

Regarding birth outcomes, gestational age at birth was reported by 215 participants. Among those with complete gestational age data sufficient to determine preterm classification ($N = 170$), 46 participants (27.1%) were classified as preterm, and 124 participants (72.9%) were classified as not preterm. Percentages reflect valid responses only. Sample sizes varied across descriptive analyses due to eligibility requirements and item-level nonresponse rather than data anomalies.

Participant demographic characteristics are presented in Table 2. The demographic analytic sample included 215 participants with complete demographic data. Most participants were between 30 and 39 years of age (54.4%), had completed at least a bachelor's degree (56.2%), and reported an annual household income of \$60,000 or higher (58.6%). The majority resided in New York City (57.7%), were married or in a domestic partnership (67.9%), and reported having given birth two or more times (57.2%).

Table 2*Participant Demographics*

Characteristics	<i>n</i>	% (Valid)
<i>Age (N = 215)</i>		
21-29 years	44	20.5
30-39 years	117	54.4
40 years or older	54	25.1
<i>Education Level (N = 215)</i>		
Less than high school	8	3.7
High school graduate or GED	46	21.4
Some college or Associate's degree	40	18.6
Bachelor's degree	88	40.9
Graduate degree (e.g., MA, PhD, MD, JD)	33	15.3
<i>Household Income (Past 12 Months) (N = 215)</i>		
Less than \$30,000	43	20.0
\$30,000-\$59,999	41	19.1
\$60,000-\$99,999	63	29.3
Prefer not to answer	5	2.3
<i>Current Residence in New York State (N = 215)</i>		
New York City	124	57.7
Other urban/suburban area	64	29.8
Rural area	25	11.6
Prefer not to answer	2	0.9
<i>Marital/Partnership Status (N = 215)</i>		
Married or in a domestic partnership	146	67.9
Single, never married	57	26.5
Divorced	4	1.9
Separated	7	3.3
Widowed	1	0.5
<i>Participant Demographics Continued</i>		
Characteristics	<i>n</i>	% (Valid)
<i>Parity (Number of Births) (N = 215)</i>		

1 (first birth)	91	42.3
2 or more	123	57.2
Prefer not to answer	1	0.5
Gestational Age at Birth (Categorical) ($N = 215$)		
Very preterm (<32 weeks)	13	6.0
Moderately preterm (32 - <34 weeks)	27	12.6
Late preterm (34 - <37 weeks)	22	10.2
Early term (37 - <39 weeks)	30	14.0
Full term (39 weeks - <41 weeks)	99	46.0
Late term (41 weeks - <42 weeks)	9	4.2
Postterm (≥ 42 weeks)	15	7.0
Preterm Birth Status (complete cases only; $N = 170$)		
Not preterm	124	72.9
Preterm	46	27.1

Note. Percentages are based on valid responses. Sample sizes vary due to item-level nonresponse. Preterm birth status was calculated only for participants with complete gestational age at birth data.

Descriptive statistics for all continuous study variables are presented in Table 3. These include total and subscale scores for the Gendered Racial Microaggressions Scale–Frequency (GRMSF), the Gendered Racial Microaggressions Scale–Appraisal (GRMSA), and the Total Psychosocial Hassles Scale. Preterm birth by gestational age at birth was dichotomized (0 = not preterm, 1 = preterm) and summarized using frequencies and percentages. The observed distributions and variability of study variables supported the assumptions required for subsequent Pearson and partial correlation analyses.

Table 3

Descriptive Statistics for Study Variables

Variable	n	Min	Max	M	SD	%
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Psychosocial Stress						
Total Psychosocial Hassles Scale	214	4.00	48.00	25.53	8.77	-
Gendered Racial Microaggressions - Frequency (GRMSF)						
GRMSF Total Scale	176	0.43	5.65	2.46	1.23	-
GRMSF Beauty/Sexual Objectification	176	0.20	5.80	2.26	1.31	-
GRMSF Silenced & Marginalized	176	0.43	6.00	2.46	1.32	-
GRMSF Strong Black Woman	176	0.67	6.00	2.74	1.31	-
GRMSF Angry Black Woman	176	1.00	6.00	2.82	1.36	-
Gendered Microaggressions - Appraisal (GRMSA)						
GRMSA Total Scale	170	1.00	6.00	2.58	1.31	-
GRMSA Beauty/Sexual Objectification	170	1.00	6.00	2.48	1.43	-
GRMSA Silenced & Marginalized	170	1.00	6.00	2.69	1.43	-
GRMSA Strong Black Woman	170	1.00	6.00	2.48	1.25	-
GRMSA Angry Black Woman	170	0.67	6.00	2.79	1.37	-
Birth Outcome						
Preterm birth status (0 = not preterm)	124	-	-	-	-	72.9
Preterm birth status (1 = preterm)	46	-	-	-	-	27.1

Note. Means (M), standard deviations (SD), and ranges are reported for continuous variables.

Percentages (%) are reported for categorical variables. Sample sizes vary due to item-level nonresponse. Preterm birth status was calculated using complete gestational age at birth data only ($N = 170$). The assumptions for Pearson and partial correlation analyses were evaluated and met.

Primary Analyses

A Pearson correlation analysis was conducted to examine the relationship between psychosocial stress and perceived gendered racism. Results indicated that the total Psychosocial Hassles scale was significantly and positively associated with the GRMSF total score ($r = .448, p$

< .001) and the GRMSA total score ($r = .442, p < .001$) as presented in Table 4. Similar significant positive associations were observed between the total Psychosocial Hassles scale and all GRMSF and GRMSA subscale scores, with correlation coefficients ranging from .381 to .463 (all $ps < .001$) as presented in Table 5. Consistent with the descriptive statistics presented in Table 2, mean scores on the total Psychosocial Hassles Scale and GRMS measures were near the midpoint of their respective scales, indicating overall moderate levels of reported psychosocial stress and perceived gendered racism within the sample. Strong positive associations were also observed between the GRMSF and GRMSA total scores and their respective subscales after controlling for preterm birth by gestational age at birth, indicating substantial shared variance among related measures. These results are presented in Tables 4 and 5.

Table 4

Pearson Correlations Among Psychosocial Stress and Perceived Gendered Racism Variables

Variable	1	2	3
1. Total Psychosocial Hassles Scale	—		
2. GRMSF Total Scale	.448***	—	
3. GRMSA Total Scale	.442***	.874***	—

Note. Values are Pearson correlation coefficients (r). *** $p < .001$ (two-tailed). Analyses were conducted using pairwise deletion; sample sizes varied across correlations ($N = 170$ – 214).

GRMSF = Gendered Racial Microaggressions Scale—Frequency; GRMSA = Gendered Racial Microaggressions Scale—Appraisal.

Partial correlation analyses were conducted to examine the relationships between perceived gendered racism and psychosocial stress while controlling for preterm birth by gestational age at birth. Results indicated a statistically significant association between GRMSF total score and psychosocial stress ($r = .445, p < .001$). Similarly, the partial correlation between

GRMSA total score and psychosocial stress was statistically significant ($r = .438, p < .001$). The results are presented in Table 5.

Table 5

Partial Correlations Between Perceived Gendered Racism and Psychosocial Stress Controlling for Preterm Birth by Gestational Age at Birth

Predictor	Psychosocial Stress (r)	p
GRMSF Total Scale	.445	<.001
GRMSF Beauty/Sexual Objectification	.381	<.001
GRMSF Silenced & Marginalized	.463	<.001
GRMSF Strong Black Woman	.422	<.001
GRMSF Angry Black Woman	.409	<.001
GRMSA Total Scale	.438	<.001
GRMSA Beauty/Sexual Objectification	.405	<.001
GRMSA Silenced & Marginalized	.404	<.001
GRMSA Strong Black Woman	.453	<.001
GRMSA Angry Black Woman	.419	<.001

Note. $N = 170$. Partial correlations controlled for preterm birth by gestational age at birth (1 = preterm, 0 = not preterm).

After controlling for psychosocial stress, none of the GRMS total or subscale scores demonstrated statistically significant associations with preterm birth by gestational age at birth. Effect sizes for these associations were small and negligible, indicating minimal shared variance between GRMS total or subscale scores and preterm birth by gestational age at birth when Psychosocial Hassles were held constant. The results are presented in Table 6.

Table 6

Partial Correlations Between Perceived Gendered Racism and Preterm Birth by Gestational Age at Birth Controlling for Psychosocial Stress

Predictor	Preterm Birth (r)	<i>p</i>
GRMSF Total Scale	.019	.810
GRMSF Beauty/Sexual Objectification	.012	.879
GRMSF Silenced & Marginalized	.033	.673
GRMSF Strong Black Woman	-.008	.914
GRMSF Angry Black Woman	.025	.749
GRMSA Total Scale	.032	.677
GRMSA Beauty/Sexual Objectification	.042	.584
GRMSA Silenced & Marginalized	.017	.823
GRMSA Strong Black Woman	.039	.618
GRMSA Angry Black Woman	.007	.928

Note. $N = 170$. Partial correlations controlled for psychosocial stress. None of the correlations were statistically significant ($p > .05$). Preterm birth status was calculated only for participants with complete gestational age at birth data.

Research Question 1

This research question examined the relationship between perceived gendered racism and psychosocial stress experienced by non-Hispanic Black women during pregnancy. To address Research Question 1, a Pearson correlation was conducted. As shown in Table 4, perceived gendered racism was significantly and positively associated with psychosocial stress. The GRMSF total score demonstrated a moderate positive correlation with psychosocial stress ($r = .448, p < .001$), and the GRMSA total score showed a similarly moderate positive correlation ($r = .442, p < .001$). Correlations in the .40–.45 range indicate moderate effect sizes. The null hypothesis ($H1_0$) was rejected, and the alternative hypothesis ($H1_a$) was supported.

Research Question 2

This research question examined the relationship between perceived gendered racism, psychosocial stress, and preterm birth experienced by non-Hispanic Black women during pregnancy. To address Research Question 2, partial correlation analyses were used to evaluate relationships among perceived gendered racism, psychosocial stress, and preterm birth by gestational age at birth while accounting for relevant control variables. Partial correlation analyses controlling for preterm birth by gestational age at birth indicated that perceived gendered racism remained significantly and positively associated with psychosocial stress. As presented in Table 5, both the GRMSF total score ($r = .445, p < .001$) and the GRMSA total score ($r = .438, p < .001$) demonstrated moderate positive associations with psychosocial stress after adjustment. The null hypothesis (H_{2o}) was rejected, and the alternative hypothesis (H_{2a}) was supported.

Additional partial correlation analyses examined the relationship between perceived gendered racism and preterm birth by gestational age at birth while controlling for psychosocial stress. As shown in Table 6, these partial correlations were not statistically significant (all $ps > .05$). Effect sizes were small to negligible, with correlation coefficients ranging from $-.008$ to $.042$, across both frequency-based and appraisal-based measures of perceived gendered racism. The non-significant partial correlations support retention of the null hypotheses (H_{2o}/H_{3o}), and the alternative hypotheses (H_{2a}/H_{3a}) were not supported.

Comparison of Results to the Literature Review

Research Question 1 examined the relationship between perceived gendered racism and psychosocial stress experienced during pregnancy by non-Hispanic Black women. The Pearson correlation indicated moderate, positive, statistically significant associations between

psychosocial hassles and gendered racial microaggressions (GRMS Frequency and Appraisal; p s $< .001$; Table 4). This pattern is consistent with prior research characterizing racism and gendered racism as a chronic form of psychosocial stress associated with heightened distress (Christian, 2020; Nelson et al., 2023; Peterson et al., 2020). The findings also align with the transactional model of stress and coping, which conceptualizes stress as arising from ongoing transactions between individuals and environmental demands, shaped by cognitive appraisal processes (Biggs et al., 2017; Lazarus & Folkman, 1984). In the literature, perceived gendered racism was framed as an intersectional, socially embedded stressor that could contribute to psychosocial distress during pregnancy (Clarke et al., 2022; Patterson et al., 2022; Rosenthal & Lobel, 2020). The observed direction and strength of the associations in this study align with the past research and theory.

Research Question 2 evaluated the relationship between perceived gendered racism, psychosocial stress, and preterm birth experienced by non-Hispanic Black women during pregnancy. First, the association between perceived gendered racism and psychosocial stress remained moderate, positive, and statistically significant when controlling for preterm birth by gestational age at birth (Table 5). This finding is consistent with the existing studies, which identify perceived gendered racism as a psychosocial stressor linked to distress and stress-related experiences among non-Hispanic Black women (Clarke et al., 2022; Nelson et al., 2023; Patterson et al., 2022) and is also consistent with the transactional model of stress and coping's emphasis on appraisal and coping processes in shaping stress responses to environmental conditions (Biggs et al., 2017; Lazarus & Folkman, 1984).

In contrast, the partial correlations between perceived gendered racism and preterm birth by gestational age at birth, controlling for psychosocial stress, were not statistically significant

and were small to negligible in magnitude (Table 6). This pattern is consistent with the past mixed and inconclusive empirical literature regarding direct associations among psychosocial stress, gendered racism, and preterm birth outcomes (Clarke et al., 2022; Giurgescu et al., 2022; Minehart et al., 2021). The literature also noted variability across studies in how racism-related exposures are conceptualized and measured, and that findings related to pregnancy outcomes can differ across studies and contextual conditions (Cénat et al., 2025; J. Lawrence et al., 2022). Accordingly, the absence of statistically significant partial correlations with preterm birth in the present study was consistent with prior research.

Overall, the results demonstrated a pattern that was largely consistent with the research and theoretical framework presented earlier. Specifically, perceived gendered racism was significantly associated with psychosocial stress in both Pearson and adjusted analyses. In contrast, associations with preterm birth by gestational age at birth were not statistically significant when psychosocial stress was held constant. This pattern aligns with prior literature reporting mixed findings on direct associations between psychosocial factors and birth outcomes (Clarke et al., 2022; Giurgescu et al., 2022) and supports the interpretation that psychosocial stress may be a more proximal correlate of this relationship.

Summary

This quantitative study analyzed data from a final analytic sample of 170 participants to address two research questions using Pearson and partial correlation analyses. Perceived gendered racism served as the predictor variable, psychosocial stress as the outcome variable, and preterm birth by gestational age at birth as the control variable. In subsequent analyses, psychosocial stress was rotated as the control variable, with perceived gendered racism retained

as the predictor variable and preterm birth by gestational age at birth specified as the outcome variable.

Results addressing Research Question 1 indicated statistically significant, moderate, positive associations between perceived gendered racism and psychosocial stress, as measured by both frequency- and appraisal-based dimensions. Results addressing Research Question 2 demonstrated that these associations remained statistically significant when controlling for preterm birth by gestational age at birth. In contrast, partial correlation analyses examining the relationship between perceived gendered racism and preterm birth, while controlling for psychosocial stress, were not statistically significant and reflected small to negligible effect sizes.

Chapter 5 discusses the study's findings in relation to the existing literature and the guiding theoretical framework. The chapter also restates the study problem and purpose and examines the limitations of the current study. Finally, recommendations for future research and professional practice are presented.

Chapter 5: Discussion, Recommendations, and Study Summary

The problem addressed by this study was that higher rates of preterm births occur for non-Hispanic Black women with no clear understanding of the relationship between psychosocial stress and perceived gendered racism by non-Hispanic Black women during pregnancy (Clarke et al., 2022). The purpose of this quantitative non-experimental correlation design was to explain the relationship between psychosocial stress and perceived gendered racism by non-Hispanic Black women during pregnancy, controlling for whether their recent birth was a preterm birth by gestational age at birth. Preterm birth by gestational age at birth and psychosocial stress were rotated as control variables. Two research questions guided this study: (1) What is the relationship between perceived gendered racism and psychosocial stress experienced by non-Hispanic Black women during pregnancy? and (2) What is the relationship between perceived gendered racism, psychosocial stress, and preterm birth experienced by non-Hispanic Black women during pregnancy?

Data were collected via self-report surveys, including the Psychosocial Hassles Scale and the Gendered Racial Microaggression Scale, administered to participants recruited through Centiment's Audience Panel, resulting in a final analytic sample of 170 participants. Pearson and partial correlation analyses indicated statistically significant, moderate positive associations between perceived gendered racism and psychosocial stress that remained significant when controlling for preterm birth by gestational age at birth. However, no statistically significant relationship was observed between perceived gendered racism and preterm birth by gestational age at birth when psychosocial stress was controlled. These findings suggest that psychosocial stress may represent an important correlate connecting perceived gendered racism experiences with maternal health disparities.

Several limitations warrant consideration. The use of retrospective self-reported data may have introduced recall bias, potentially affecting participants' responses and threatening internal validity. The online survey format and recruitment via a nonprobability panel may have resulted in digital exclusion and selection bias, thereby limiting the generalizability of the findings to non-Hispanic Black women who met eligibility criteria and had access to internet-enabled devices. Missing data were addressed using listwise deletion, which reduced the analytic sample size and may have decreased statistical power and increased the margin of error around the estimates. Finally, the non-experimental correlation design limited the interpretation of the results to associations. It did not allow for causal inferences regarding the relationships among perceived gendered racism, psychosocial stress, and preterm birth by gestational age at birth.

This chapter presents a discussion of the study's major findings in relation to the existing literature and theoretical framework. The results are interpreted in the context of prior research examining psychosocial stress, perceived gendered racism, preterm birth as it relates to and maternal health disparities among non-Hispanic Black women. It also offers recommendations for professional practice and directions for future research. The chapter concludes with a summary of the study's key contributions and broader implications.

Discussion

This study examined the relationships among perceived gendered racism, psychosocial stress, and preterm birth by gestational age at birth among non-Hispanic Black women during pregnancy. The study was guided by Lazarus and Folkman's (1984) transactional model of stress and coping, which provided a framework for understanding how cognitive appraisal and coping processes influence stress-related health outcomes. Within this framework, the findings were interpreted in relation to psychosocial stress pathways that may shape maternal health

experiences. Specifically, the discussion addresses (a) the relationship between perceived gendered racism and psychosocial stress, (b) the persistence of this relationship when controlling for preterm birth by gestational age at birth, and (c) the absence of a direct relationship between perceived gendered racism and preterm birth by gestational age at birth when psychosocial stress was controlled. The results contribute to the literature on maternal health disparities by clarifying the associations among perceived gendered racism, psychosocial stress, and preterm birth by gestational age at birth.

Relationship Between Perceived Gendered Racism and Psychosocial Stress

The first major finding of this study was the presence of statistically significant, moderate positive associations between perceived gendered racism and psychosocial stress among non-Hispanic Black women during pregnancy. Pearson correlation analyses revealed that both the frequency and appraisal dimensions of the Gendered Racial Microaggressions Scale, which measured perceived gendered racism, were moderately and positively associated with the Psychosocial Hassles Scale, which measured psychosocial stress ($r = .448$ and $r = .442$, respectively; $p < .001$). These findings indicate that higher levels of perceived gendered racism were associated with higher levels of reported psychosocial stress. Consistent with the transactional model of stress and coping, experiences of perceived gendered racism can function as environmental stressors that individuals cognitively appraise and respond to through emotional and behavioral coping processes (Lazarus & Folkman, 1984). In this framework, when perceived stressors exceed coping resources, psychosocial stress may emerge (Lazarus & Folman, 1984). These findings also align with prior research demonstrating that racism and discrimination function as chronic psychosocial stressors (Georgiades et al., 2023; Gondwe & Chapman, 2022; Peterson et al., 2020).

The results are also consistent with literature emphasizing that the intersection of race and gender produces distinct and cumulative stress burdens for non-Hispanic Black women (Nelson et al., 2023; Patterson et al., 2022). Within the transactional model of stress and coping, perceived gendered racism may be appraised as a threat or harm, activating emotional and physiological stress responses. When coping resources are perceived as insufficient to manage stressors, sustained psychological stress may result. The observed associations between perceived gendered racism and psychosocial stress support the model's focus that stress arises through ongoing transactions between the environmental demands and perceived coping capacity. These findings extend the transactional model of stress and coping to maternal health and intersectional stressors during pregnancy, and highlight the importance of investigating maternal health disparities among non-Hispanic Black women.

These findings also further support Geronimus' (2023) weathering hypothesis, which posits that chronic exposure to racialized stress contributes to cumulative physiological wear and tear. The moderate magnitude of the correlations observed in this study reinforces the conceptualization of perceived gendered racism as a meaningful psychosocial stressor during pregnancy. Importantly, the findings extend existing scholarship by examining this relationship specifically within a postpartum sample reflecting retrospectively on prenatal experiences through a transactional lens. Within this framework, women may reappraise prior stressors arising from interactions with their environment, evaluate how they engaged coping strategies, and recognize their capacity to manage stress, thereby reinforcing coping confidence beyond the immediate stress experience. Additionally, the significant association between perceived gendered racism and psychosocial stress observed in this study provides further empirical

evidence that intersectional forms of discrimination may contribute to stress-related pathways linked to maternal health disparities.

Persistence of the Relationship Between Perceived Gendered Racism and Psychosocial Stress After Controlling for Preterm Birth by Gestational Age at Birth

The second major finding was that the association between perceived gendered racism and psychosocial stress remained statistically significant after controlling for preterm birth by gestational age at birth. Partial correlation analyses demonstrated that the relationship between perceived gendered racism and psychosocial stress persisted with nearly identical effect sizes ($r = .445$ and $r = .438$; $p < .001$) when preterm birth by gestational age at birth was statistically controlled. This finding supports the conclusion that the observed association between perceived gendered racism and psychosocial stress was not attributable to differences in preterm birth by gestational age at birth within the sample. This finding is consistent with literature indicating that psychosocial stress operates through biopsychosocial and neuroendocrine pathways independent of specific birth outcomes (Cao-Lei et al., 2020; Guidi et al., 2021; Wu et al., 2020). Chronic stress activation, including dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis and increased allostatic load (McEwen, 1998), may occur regardless of gestational age at delivery. Thus, perceived gendered racism appears to function as an independent correlate of psychosocial stress during pregnancy.

The persistence of this association reinforces the relevance of Lazarus and Folkman's (1984) appraisal framework. Experiences of gendered racism may be repeatedly appraised as taxing or threatening within the social environment, contributing to ongoing cognitive and emotional strain. These results support the Transactional Model of Stress and Coping theoretical premise that stress arises not solely from the presence of stressors but from the dynamic

interaction between environmental demands and perceived coping resources. In the present study, the significant association between perceived gendered racism and psychosocial stress provides empirical support for the Transactional Model of Stress and Coping by demonstrating how perceived social stressors may contribute to heightened stress during pregnancy.

Relationship Between Perceived Gendered Racism and Preterm Birth by Gestational Age at Birth After Controlling for Psychosocial Stress

In contrast, partial correlation analyses did not reveal a statistically significant direct association between perceived gendered racism and preterm birth by gestational age at birth when psychosocial stress was controlled (all $ps > .05$), with small to negligible effect sizes ranging from $-.008$ to $.042$. These results supported the retention of the null hypotheses (H2₀/H3₀) regarding the relationship between perceived gendered racism and preterm birth by gestational age at birth. Although the literature linked racism to adverse birth outcomes (Bower et al., 2018; Dreyer, 2021; Hardeman et al., 2021), the present findings did not demonstrate a direct independent relationship within this analysis.

These results may suggest that psychosocial stress functions as a more immediate correlate in the relationship between perceived gendered racism and preterm birth outcomes. The research reviewed demonstrated that maternal stress influences gestational biology through neuroendocrine and inflammatory pathways (Cao-Lei et al., 2020; Graham et al., 2022). Structural racism and social determinants of health contribute to disparities in preterm birth (Centers for Disease Control and Prevention, 2024a; Siddika et al., 2023; Stookey et al., 2024), yet these effects may operate through cumulative stress exposure rather than direct isolated associations.

Within the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), coping resources are understood to moderate the effects of perceived stressors. Social support, in particular, functions as an external coping resource that may help individuals manage or buffer stressful experiences (Carver & Vargas, 2011). Social support may mitigate the psychological impact of stressors such as perceived gendered racism by strengthening coping capacity and promoting resilience during pregnancy. From this perspective, strong social support systems may serve as protective factors, helping some women maintain healthier pregnancies despite exposure to chronic social stressors (Rosenthal & Lobel, 2020). This buffering role of social support may partially explain why perceived gendered racism was significantly associated with psychosocial stress in this study, but did not demonstrate a statistically significant direct relationship with preterm birth.

Additionally, the absence of a statistically significant direct association in this study does not negate the broader literature on racism and birth disparities. Instead, it suggests that the relationship between perceived gendered racism and preterm birth may operate through indirect pathways, potentially mediated by psychosocial stress and related physiological mechanisms. This interpretation aligns with Geronimus' (2023) weathering hypothesis, which posits that chronic exposure to racialized stress contributes to cumulative physiological wear and tear. From this perspective, the effects of chronic stressors may emerge gradually through sustained psychosocial and biological processes rather than through a direct, immediate relationship with birth outcomes. Given the non-experimental correlational design of this study, longitudinal or mediation analyses would be necessary to clarify these pathways further.

Descriptive Context of the Findings

The patterns of heterogeneity of lived experiences among non-Hispanic Black women, as observed in the descriptive statistics, were consistent with prior research demonstrating elevated psychosocial burdens and persistent disparities in maternal health outcomes (Lawrence et al., 2022; Montoya-Williams et al., 2021). According to Lazarus and Folkman's (1984) Transactional Model of Stress and Coping, stress arises from the dynamic interaction between individuals and their environments, in which experiences are cognitively appraised and managed through coping processes. Variability in perceived gendered racism and psychosocial stress may therefore reflect differences in how individuals appraise and respond to social stressors within their environments. The findings collectively reinforce that psychosocial stress during pregnancy cannot be fully understood without accounting for intersecting experiences of racism and gender-based discrimination. While the results do not establish causality, they highlight the importance of examining psychosocial mechanisms when addressing maternal health inequities.

Synthesis of Findings

Taken together, the results support three primary conclusions. First, perceived gendered racism was significantly and moderately associated with psychosocial stress during pregnancy. Second, this association remained stable when accounting for preterm birth by gestational age at birth, suggesting an independent relationship. Third, no statistically significant direct association was observed between perceived gendered racism and preterm birth by gestational age at birth when psychosocial stress was controlled. Although the absence of a direct statistical relationship may appear inconsistent with broader literature on racism and birth disparities, the findings may suggest that this relationship may operate through indirect pathways, particularly through psychosocial stress and related physiological mechanisms.

These findings are consistent with the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), which conceptualizes stress as emerging from the interaction between environmental demands and perceived coping capacity. Within Lazarus and Folkman's (1984) framework, perceived gendered racism may be appraised as a chronic environmental demand that contributes to elevated psychosocial stress when coping resources are perceived as insufficient. The results also align with the Weathering theory (Geronimus, 2023) and the broader literature linking chronic stress exposure and structural racism to maternal health disparities (Hardeman et al., 2021; Bower et al., 2018). From this perspective, the health effects of chronic social stressors may emerge gradually through sustained psychosocial and physiological processes rather than through a direct relationship with birth outcomes.

The findings may also hint at the potential role of coping resources in shaping how stressors influence maternal health outcomes. Within the Transactional Model of Stress and Coping, social support functions as an external coping resource that may help individuals manage or buffer stressful experiences (Carver & Vargas, 2011). Supportive networks, including family members and community relationships, may help mitigate the psychological impact of stressors such as perceived gendered racism by strengthening coping capacity and promoting resilience during pregnancy (Rosenthal & Lobel, 2020). This buffering role of social support may partially explain why perceived gendered racism was significantly associated with psychosocial stress in this study, but did not demonstrate a statistically significant direct relationship with preterm birth by gestational age at birth.

With respect to the research problem, this study addressed a gap in the literature regarding the relationship among psychosocial stress, perceived gendered racism, and preterm birth by gestational age at birth. While prior studies linked racism to adverse birth outcomes

(Bower et al., 2018; Hardeman et al., 2021), the present findings may suggest that this relationship may operate indirectly through psychosocial stress. These results advance theory by empirically applying the Transactional Model of Stress and Coping to maternal health disparities and highlight psychosocial stress as a potential leverage point for improving prenatal care. However, causal interpretations cannot be made due to the nonprobability sampling and non-experimental correlation design. Despite these limitations, the study contributes to ongoing efforts to understand and address maternal health inequities by emphasizing the role of psychosocial stress shaped by perceived gendered racism in pregnancy-related outcomes.

Recommendations for Practice

Notwithstanding the study's limitations, the findings add to the expanding body of scholarship in this area by highlighting the psychosocial dimensions of pregnancy experiences among non-Hispanic Black women. Because this researcher found significant associations between perceived gendered racism and psychosocial stress in this study, this study may inform clinical and community-based strategies aimed at reducing stress-related disparities during pregnancy. Healthcare providers and community organizations should consider integrating culturally responsive stress screening, supportive counseling, and community-based support resources into prenatal care to address better the psychosocial stressors experienced by non-Hispanic Black women.

For marriage and family therapists (MFTs), these findings underscore the importance of assessing perceived gendered racism within relational and systemic contexts of how social environments influence stress appraisal and coping. MFTs can explore how interactions within families, communities, and broader systems influence women's stress experiences during pregnancy. They may incorporate culturally trauma-responsive approaches to help women

process discrimination-related stress, strengthen coping strategies, and leverage family and social supports.

Additionally, these findings highlight the need for medical family therapists working in integrated settings to use an interdisciplinary approach alongside clinicians and patients. By collaborating with obstetric and behavioral health providers, medical family therapists can support the integration of psychosocial assessment in prenatal care, facilitate discussions about discrimination-related stress, and coordinate referrals to mental health and community resources. Furthermore, they may also advocate for more equitable, patient-centered care practices within healthcare systems.

For educators, these findings support integrating training on intersectionality, psychosocial stress, and culturally responsive care into clinical curricula. Training can prepare future MFTs and other clinicians to recognize and address the impact of gendered racism on maternal health. Using the transactional model of stress and coping as a guiding framework may help future MFTs better understand how stress is appraised and managed within social contexts. This approach can strengthen MFTs' ability to provide culturally and trauma-responsive care.

The findings of a statistically significant, moderate positive association between perceived gendered racism and psychosocial stress may suggest important implications for understanding stress-related disparities during pregnancy. Consistent with literature demonstrating that psychosocial stress activates neuroendocrine pathways linked to adverse maternal outcomes (Cao-Lei et al., 2020; Guidi et al., 2021), this result may offer empirical support for considering stress associated with perceived gendered racism as an important factor in prenatal care. Although causal inferences cannot be drawn from this non-experimental correlation design, the findings may underscore the potential value of culturally responsive stress

screening, structured conversations about discrimination-related stressors, and referral pathways to supportive mental health services during pregnancy.

At the community level, these findings may also reinforce existing literature on social determinants of health and cumulative stress exposure (Centers for Disease Control and Prevention, 2024a; Siddika et al., 2023). Because psychosocial stress remained central in the analytic model, it may represent an important correlate within the broader pathway linking structural inequities to maternal health outcomes. Although the study does not establish that specific interventions would reduce disparities, the results may suggest the need for further investigation into community-based strategies that strengthen coping resources, enhance social support, and provide culturally grounded perinatal programming. These suggested approaches align with the appraisal and coping framework described by Lazarus and Folkman (1984) and warrant continued exploration through future longitudinal and intervention research aimed at reducing maternal health inequities.

Recommendations for Future Research

This study may provide a foundation for future research examining the relationships between perceived gendered racism, psychosocial stress, and preterm birth by gestational age at birth. To address the limitations of the present study, future research should incorporate probability-based sampling strategies and diverse recruitment methods to improve representativeness and reduce potential selection and digital-exclusion bias. Because nonprobability sampling and online recruitment reach only individuals with internet access and familiarity with Centiment's Audience Panel, the results cannot be generalized beyond the subset of non-Hispanic Black women who met eligibility criteria and had access to internet-enabled devices. Further studies may also benefit from prospective data collection during pregnancy,

which could reduce recall bias associated with retrospective self-reported experiences. Additionally, the inclusion of biological stress markers (e.g., cortisol or inflammatory indicators) could allow researchers to examine the physiological mechanisms through which psychosocial stress may relate to maternal health outcomes.

Building on this research, future studies could also use multiple linear regression models to estimate the unique contribution of perceived gendered racism while controlling for sociodemographic factors, and logistic regression analyses may be appropriate when modeling preterm birth as a binary outcome. Moreover, prospective longitudinal research following women throughout pregnancy may help clarify whether perceived gendered racism precedes increases in psychosocial stress and whether sustained stress exposure is associated with gestational age at birth. Although longitudinal studies may strengthen causal inference, they are often more costly and time-intensive due to extended follow-up and participant retention requirements.

Finally, future research should incorporate randomized or controlled intervention designs to examine whether culturally responsive stress-reduction strategies can meaningfully reduce psychosocial stress and improve gestational outcomes among non-Hispanic Black women. Pre-post or comparison-group intervention studies evaluating enhanced prenatal support programs may also provide valuable insight. Although the present study did not establish causality, it suggests that psychosocial stress is a central correlate of perceived gendered racism, an association that prior literature has connected to maternal health disparities. These findings may suggest support for continued investigation into targeted strategies aimed at reducing stress-related inequities during pregnancy. Collectively, these suggested research designs may build on this study's current results by clarifying potential causal mechanisms, strengthening

methodological rigor, and advancing evidence-based approaches to improve maternal health outcomes among non-Hispanic Black women.

Study Summary

This study addressed a critical gap in the maternal health literature by examining the interrelationships among perceived gendered racism, psychosocial stress, and preterm birth by gestational age at birth among non-Hispanic Black women. Persistent racial disparities in maternal and infant health outcomes, particularly the disproportionately high rates of preterm birth, are not fully explained by traditional biomedical or socioeconomic risk factors. While prior research has linked chronic stress and racial discrimination to adverse health outcomes, less clarity existed regarding how perceived gendered racism and psychosocial stress operate together during pregnancy and whether these experiences are directly associated with birth outcomes.

Using a quantitative, non-experimental correlation design, this study examined Pearson and partial correlations among the variables while strategically controlling for preterm birth by gestational age at birth and psychosocial stress. The findings revealed statistically significant, moderate, positive associations between perceived gendered racism and psychosocial stress during pregnancy. However, no statistically significant direct association was observed between perceived gendered racism and preterm birth by gestational age at birth when psychosocial stress was held constant. Analyzed through the lens of Lazarus and Folkman's (1984) Transactional Model of Stress and Coping, these findings suggest that perceived gendered racism functions as an environmental stressor that is cognitively appraised and experienced as psychosocial stress during pregnancy. These results also suggest that psychosocial stress represents an important correlate linking experiences of perceived gendered racism with maternal health disparities, although causal relationships cannot be inferred.

The significance of this study lies in its contribution to a growing body of scholarship recognizing structural and intersectional stressors as important determinants of maternal health. By empirically documenting the association between perceived gendered racism and psychosocial stress during pregnancy, this research may advance understanding of how lived experiences may shape maternal well-being beyond traditional biomedical risk frameworks. The findings may also suggest that coping resources, including social support and culturally responsive care, buffer the effects of psychosocial stress during pregnancy, consistent with the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984).

Addressing maternal health disparities requires attention not only to biological risk factors but also to the psychosocial realities associated with gendered racism and chronic stress. These findings suggest that psychosocial stress is a measurable and meaningful correlate of perceived gendered racism during pregnancy and may highlight the potential importance of strengthening culturally responsive clinical and community-based supports. Future research, particularly longitudinal and intervention-based studies, may further clarify how psychosocial stress pathways and supportive resources may influence maternal and infant health outcomes. Ultimately, the findings contribute to a growing understanding that addressing maternal health disparities requires examining not only biological risk factors but also the psychosocial and structural conditions that shape the pregnancy experiences of non-Hispanic Black women.

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Appendix A: IRB Letter

Appendix A contains National University's Institutional Review Board (IRB) approval letter and documentation of the two approved modifications for this study.



9388 Lightwave Ave.
San Diego, CA 92123
irb@nu.edu

Notice of Exemption

September 4, 2025

To: Corine Lurry-Mabin

Project Title: Psychosocial Stress, Perceived Gendered Racism, and Preterm Birth by Gestational Age at Birth: Associations Among Non-Hispanic Black Women During Pregnancy

NU IRB Number: IRB-FY25-26-150

Determination: Exempt from further review 45 CFR 46.101 Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

Status: Active - Research activities may begin as of September 4, 2025

Dear Corine Lurry-Mabin:

The study referenced above has been reviewed by the National University IRB. The IRB has determined your research is exempt from further review under 45 CFR 46.104, which means you will not need to renew your study and may begin your study effective immediately. However, if you find the need to change your study in any way, you will need to submit a modification to the IRB prior to implementing the changes. This will allow the IRB to determine whether or not the study still meets exemption criteria.

Please review your Post Approval Responsibilities here: [Approved Documents Guidelines](#)

For any questions regarding your protocol, please reach out to the IRB at irb@nu.edu.

Sincerely,

Handwritten signature of Joseph M. Marron in black ink.

Dr. Joseph Marron, IRB Chair

Handwritten signature of Brianne Mongeon in black ink.

Dr. Brianne Mongeon, Director, HRPP & IRB

Handwritten signature of Jenessa Eberhardt in black ink.

Jenessa Eberhardt, Associate Director, HRPP & IRB



9388 Lightwave Ave.
San Diego, CA 92123
irb@nu.edu

Notice of Exemption
September 15, 2025

To: Corine Lurry-Mabin

Project Title: Psychosocial Stress, Perceived Gendered Racism, and Preterm Birth by Gestational Age at Birth: Associations Among Non-Hispanic Black Women During Pregnancy

NU IRB Number: IRB-FY25-26-150

Modification Determination: Exempt from further review 45 CFR 46.101

Status: Active - Research activities may begin as of September 15, 2025

Dear Corine Lurry-Mabin:

The study referenced above has been reviewed by the National University IRB. The IRB has determined the proposed modification to your research is exempt from further review under 45 CFR 46.101, which means you will not need to renew your study and may begin your study effective immediately. However, if you find the need to change your study in any way, you will need to submit a modification to the IRB prior to implementing the changes. This will allow the IRB to determine whether or not the study still meets exemption criteria.

Please review your Post Approval Responsibilities here: [Approved Documents Guidelines](#)

For any questions regarding your protocol, please reach out to the IRB at irb@nu.edu.

Sincerely,

Handwritten signature of Joseph M. Marron in black ink.

Dr. Joseph Marron, IRB Chair

Handwritten signature of Brianne Mongeon in black ink.

Dr. Brianne Mongeon, Director, HRPP & IRB

Handwritten signature of Jenessa Eberhardt in black ink.

Jenessa Eberhardt, Associate Director, HRPP & IRB



9388 Lightwave Ave.
San Diego, CA 92123
irb@nu.edu

Notice of Exemption
October 6, 2025

To: Corine Lurry-Mabin

Project Title: Psychosocial Stress, Perceived Gendered Racism, and Preterm Birth by Gestational Age at Birth:
Associations Among Non-Hispanic Black Women During Pregnancy
NU IRB Number: IRB-FY25-26-150
Modification Determination: Exempt from further review 45 CFR 46.101

Status: Active - Research activities may begin as of October 6, 2025

Dear Corine Lurry-Mabin:

The study referenced above has been reviewed by the National University IRB. The IRB has determined the proposed modification to your research is exempt from further review under 45 CFR 46.101, which means you will not need to renew your study and may begin your study effective immediately. However, if you find the need to change your study in any way, you will need to submit a modification to the IRB prior to implementing the changes. This will allow the IRB to determine whether or not the study still meets exemption criteria.

Please review your Post Approval Responsibilities here: [Approved Documents Guidelines](#)

For any questions regarding your protocol, please reach out to the IRB at irb@nu.edu.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Joseph M. Marron'.

Dr. Joseph Marron, IRB Chair

A handwritten signature in cursive script, appearing to read 'Brianne Mongeon'.

Dr. Brianne Mongeon, Director, HRPP & IRB

A handwritten signature in cursive script, appearing to read 'Jenessa Eberhardt'.

Jenessa Eberhardt, Associate Director, HRPP & IRB

Appendix B: Flyer

Understanding Health Experiences During Pregnancy

Study Purpose: To understand the relationship between psychosocial stress, perceived gendered racism, and preterm birth in non-Hispanic Black women during pregnancy.

You are eligible for this study if you meet all the following criteria:

1. You are currently residing in New York State
2. You are age 21 or older
3. You identify as a non-Hispanic Black woman
4. You have received prenatal care from a hospital-operated prenatal clinic, Federally Qualified Health Center (FQHC), or a private practice
5. You are at least 6 months postpartum (meaning your baby was born 6 or more months ago)

In this study, participants will:

1. Complete a 15-minute online survey
2. Your responses will be anonymous - that is, recorded without any identifying information linked to you.

Participants will be asked questions about:

1. Demographics - age, education level, household income, geographic region within NYS, marital or partnership status, and number of previous births
2. Baby's birth (weeks of pregnancy at birth) from your most recent pregnancy
3. Experiences with daily stressors and stress during the most recent pregnancy
4. Experiences with racial and gender-based microaggressions during the most recent pregnancy



Seeking non-Hispanic Black Women to Share Their Health Experiences During Pregnancy To Improve Maternal Health Outcomes!

To participate in this study, please contact: CORINE E. LURRY-MABIN, Doctoral Student at National University

Thank you for considering participating in this voluntary research!

Appendix C: Recruitment Letter



National University IRB
9338 Lightwave Ave., San Diego, CA 92123
irb@nu.edu

Email Recruitment for an Online Survey/Questionnaire (Centiment Online Panel)

Dear Valued Participant,

My name is Corine E. Lurry-Mabin, and I am a doctoral student at National University. I am conducting an online survey to understand the relationship between psychosocial stress, perceived gendered racism, and preterm birth in non-Hispanic Black women. In order to participate, you must meet all of the following criteria:

1. You are currently residing in New York State
2. You are age 21 or older
3. You identify as a non-Hispanic Black woman
4. You have received prenatal care from a hospital-operated prenatal clinic, Federally Qualified Health Center (FQHC), or a private practice
5. You are at least 6 months postpartum (meaning your baby was born 6 or more months ago)

The online survey is anonymous and has 75 questions and will take 15 minutes to complete, and will ask questions about:

- Your background (demographics related to age, education level, household income, geographic region within NYS, marital or partnership status, and number of previous births)
- Your baby's birth (weeks of pregnancy at birth) from your most recent pregnancy
- Your experiences with daily stressors and stress during your most recent pregnancy
- Your experiences with racial and gender-based microaggressions during your most recent pregnancy

Follow this link if you wish to participate in this voluntary research: [\[link\]](#)

Thank you for your time,

Corine E. Lurry-Mabin, MS, PhD candidate, National University

Appendix D: Demographic Questionnaire

Please tell us a little about yourself and your most recent pregnancy. Your answers help us understand the diverse experiences of participants in this study.

1. What is your current age?

- 21-29 years
- 30-39 years
- 40 years or older
- Prefer not to answer

2. What is the highest level of education you have completed?

- Less than High School
- High School Graduate or GED
- Some College or Associate's Degree
- Bachelor's Degree
- Graduate Degree (e.g., Master's, Ph.D., M.D., J.D.)
- Prefer not to answer

3. Which category best describes your total household income before taxes in the past 12 months?

- Less than \$30,000
- \$30,000 - \$59,999
- \$60,000 - \$99,999
- \$100,000 or more
- Prefer not to answer

4. Which of the following best describes where you currently live in New York State?

- New York City (including the Bronx, Brooklyn, Manhattan, Queens, Staten Island)
- Other Urban/Suburban Area (e.g., Albany, Buffalo, Rochester, Syracuse, Westchester, Long Island)
- Rural Area (e.g., small towns or countryside areas outside major cities/suburbs)
- Prefer not to answer

5. What is your current marital or partnership status?

- Married or in a domestic partnership
- Single, never married
- Divorced
- Separated
- Widowed
- Prefer not to answer

6. How many times have you given birth (including your most recent baby)?

- 1 (This was my first birth)
- 2 or more (I have given birth multiple times)
- Prefer not to answer

Appendix E: Gestational Age at Birth Questionnaire

Thinking back to your most recent pregnancy, please select the category that best describes your baby's gestational age at birth:

- Less than 32 weeks (Very Preterm)
- 32 weeks to less than 34 weeks (Moderately Preterm)
- 34 weeks to less than 37 weeks (Late Preterm)
- 37 weeks to less than 39 weeks (Early Term)
- 39 weeks to less than 41 weeks (Full Term)
- 41 weeks to less than 42 weeks (Late Term)
- 42 weeks or more (Postterm)

Appendix F: Permission To Use the Psychosocial Hassles Scale

From: Bullock, Linda C (lcb2u) <lbullock@virginia.edu>
Sent: Thursday, July 17, 2025 8:17 AM
To: Corine Lurry-Mabin
Subject: RE: Request to Use the Prenatal Psychosocial Profile

Corine – you absolutely have my permission to use the PPP scale. I am delighted – and I am sure Dr. Mary Ann Curry who was the originator of the scale – but deceased – would also be happy to know that this is still being used for important research. I have used the PPP in all my studies and find it to be easy to administer and one that women can relate to. Good luck on your study. LB

From: Corine Lurry-Mabin
Sent: Wednesday, July 16, 2025 8:35 PM
To: Bullock, Linda C (lcb2u) <lbullock@virginia.edu>
Subject: Request to Use the Prenatal Psychosocial Profile

Hello Dr. Bullock

I am a PhD candidate working on my dissertation to explain the relationship between psychosocial stress, perceived gendered racism, and preterm birth in non-Hispanic Black women during pregnancy. I am requesting permission to use the modified version of the Prenatal Psychosocial Profile scale used by Phelan, A. L., DiBenedetto, M. R., Paul, I. M., Zhu, J., & Kjerulff, K. H. (2015). Psychosocial Stress During First Pregnancy Predicts Infant Health Outcomes in the First Postnatal Year. *Maternal and Child Health Journal*, 19(12), 2587–2597. <https://doi.org/10.1007/s10995-015-1777-z>, which I want to administer to the women at least six months after the women have given birth, to respond retrospectively. I've already received permission from Dr. Phelan's colleague, Dr. Kjerulff, to use the modified version, but I wanted to request permission from you as the current contact for the original scale. Please let me know if you permit me to use the scale.

I appreciate your consideration.

Best regards,

Corine E. Lurry-Mabin
 914-268-7033

Kjerulff, Kristen H <khk2@psu.edu>
 To: Corine Lurry-Mabin

Hi Corine,

Following is the version of the psychosocial hassles scale that we administered 1-month postpartum in the First Baby Study.

Best wishes, Kris Kjerulff

Appendix G: Psychosocial Hassles Scale

Thinking back to your most recent pregnancy, please consider the following items. For each, tell us how much of a hassle it caused you during that pregnancy, by selecting the most appropriate response: cause no stress (1), some stress (2), moderate stress (3), severe stress (4), don't know (8), or refuse to respond (9)

		No stress	Some stress	Moderate stress	Severe stress	Don't know	Refuse to respond
a	Worries about food, shelter, health care, and transportation	1	2	3	4	8	9
b	Money worries like paying bills	1	2	3	4	8	9
c	Problems related to family	1	2	3	4	8	9
d	Having to move, either recently or in the future	1	2	3	4	8	9
e	Recent loss of a loved one	1	2	3	4	8	9
f	The pregnancy itself	1	2	3	4	8	9
g	Fights with partner	1	2	3	4	8	9
h	Fights with other family members	1	2	3	4	8	9
i	Work or job problems	1	2	3	4	8	9
j	Problems with your friends	1	2	3	4	8	9
k	Feeling generally overloaded	1	2	3	4	8	9
l	Crime or safety in your neighborhood	1	2	3	4	8	9

Appendix H: Permission to Use the Gendered Racial Microaggressions Scale

From: Jioni Lewis <jalewis1@umd.edu>
Sent: Saturday, July 19, 2025 12:53 PM
To: Corine Lurry-Mabin
Cc: hneville@illinois.edu <hneville@illinois.edu>
Subject: Re: Requesting Permission to Use the Gendered Racial Microaggression Scale

Hi Corine,
 Apologies for my delay. Thanks so much for your interest in using the Gendered Racial Microaggressions Scale for your research. Your project sounds very timely and interesting. I have started conducting some research on Black perinatal women as well so I'm excited to hear you'd like to use the GRMS in your study. Please complete the scale utilization form linked below. Once you submit the form, you will receive **a link on your screen** that includes the scale items and scoring information. Please let me know if you have additional questions! Best of luck with your project!

GRMS Utilization Form: <https://forms.gle/y6Ug8EyCvuhbz6pKA>

Sincerely,
 Jioni A. Lewis, Ph.D. (she/her)
Associate Professor & Co-Director of Training
 Counseling Psychology Doctoral Program
 University of Maryland, College of Education
 Website: <https://education.umd.edu/jioni-lewis>



Chair, Committee on Women in Psychology (2023-2025)
[American Psychological Association](#)

Vice President for Education & Training (2022-2025)
[Society of Counseling Psychology \(APA Division 17\)](#)

Past President, Psychology of Black Women (2020-2021)
 Society for the Psychology of Women (APA Division 35)

On Fri, Jul 18, 2025 at 8:53 PM Corine Lurry-Mabin wrote:
 Hello Drs. Lewis and Neville,

I am a PhD candidate working on my dissertation to explain the relationship between psychosocial stress, perceived gendered racism, and preterm birth in non-Hispanic Black women during pregnancy. I am requesting permission to use the Gendered Racial Microaggression Scale, which I want to administer to the women at least six months after

the women have given birth, to respond retrospectively. Please let me know if you can share a copy and permit me to use the scale.

I appreciate your consideration.

Best regards,

Corine E. Lurry-Mabin
914-268-7033

Appendix I: Gendered Racial Microaggression Scale

Gendered Racial Microaggressions Scale Directions. Please think about your experiences as a Black woman. Please read each item and think of how often each event has happened to you during your most recent pregnancy. In addition, please rate how stressful each experience was for you. Stressful can include feeling upset, bothered, offended, or annoyed by the event.

Frequency

0	1	2	3	4	5
Never	Less than once a year	A few times a year	About once a month	A few times a month	Once a week or more

Appraisal

0	1	2	3	4	5
This has never happened to me	Not at all Stressful	Slightly stressful	Moderately Stressful	Very stressful	Extremely stressful

Based on my experiences as a Black woman...

Item	Frequency	Appraisal
1. Someone accused me of being angry when I was speaking in a calm manner.		
2. Someone assumed that I did not have much to contribute to the conversation.		
3. I have been told that I am too independent.		
4. Someone has made me feel unattractive because I am a Black woman.		
5. In talking with others, someone has told me to calm down.		
6. My comments have been ignored in a discussion in a work, school, or other professional setting.		
7. I have been told that I am too assertive.		
8. Someone has made a sexually inappropriate comment about my butt, hips, or thighs.		
9. I have been perceived to be an "angry black woman."		
10. Someone has challenged my authority in a work, school, or other professional setting.		
11. Someone made a negative comment to me about my skin color/skin tone.		
12. Someone made me feel exotic as a Black woman.		
13. Someone has imitated the way they think Black women speak in front of me (for example, "g-i-r-l-f-r-i-e-n-d").		
14. I have been disrespected by people in a work, school, or other professional setting.		

15. Someone made me feel unattractive because of the size of my butt, hips, or thighs.		
16. I have been assumed to be a strong Black woman.		
17. Someone has assumed that I should have a certain body type because I am a Black woman.		
18. I have felt unheard in a work, school, or other professional setting.		
19. I have received negative comments about my hair when I wear it in a natural hairstyle.		
20. I have been told that I am sassy and straightforward.		
21. Someone objectified me based on my physical features as a Black woman.		
22. I have felt someone has tried to "put me in my place" in a work, school, or other professional setting.		
23. Someone assumed I speak a certain way because I am a Black woman.		
24. I have felt excluded from networking opportunities by White co-workers.		
25. I have received negative comments about the size of my facial features.		
26. Someone perceived me to be sexually promiscuous (sexually loose).		

Please do not copy, reproduce, or circulate the Gendered Racial Microaggressions Scale without written permission from the author.

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Appendix J: Mental Health Resources

Here is a list of national and NYS-specific mental health resources for participants:

General Crisis and Support Services

- **National Suicide Prevention Lifeline:** This is a national service that connects you with trained crisis counselors 24/7. In New York, this service connects you to local contact centers that can provide support for those experiencing a mental health crisis, suicidal thoughts, or substance use issues.
 - **Phone/Text:** 988
 - **Chat:** <https://988lifeline.org/chat/>
- **Crisis Text Line:** Offers free, 24/7 support from a trained crisis counselor.
 - Text HOME to 741741 from anywhere in the U.S.
 - Website: <https://www.crisistextline.org/>
- **New York State Office of Mental Health (OMH) Helpline:** Provides information and referrals to mental health programs across the state.
 - Phone: 1-800-597-8481

New York City-Specific Resource (NYC)

- NYC 988 (formerly NYC Well): The single point of access for mental health and substance misuse support in New York City. You can reach out on behalf of yourself or someone else. They can also help you find a provider, regardless of insurance coverage.

Phone/Text: 988

Website: <https://nyc.gov/988>

Additional Resources for Finding a Therapist

- **NYS Mental Health Program Directory:** This directory, from the NYS Office of Mental Health, provides a searchable list of all programs in the state that are operated, licensed, or funded by the OMH. You can filter by county, population served, and other criteria.
 - **Website:** <https://www.ny.gov/services/find-mental-health-program>
- **National Alliance on Mental Illness (NAMI) of NYS:** Offers various support groups and resources for individuals and families.
 - **Website:** <https://www.naminys.org/>
- **Psychology Today:** An online directory where you can search for therapists by location, insurance, and specialty.
 - **Website:** <https://www.psychologytoday.com/us/therapists>
- **Melanin & Mental Health:** Connects individuals with culturally competent clinicians.
 - **Website:** <https://www.melaninandmentalhealth.com/>
- **Therapy for Black Girls:** An online space dedicated to encouraging the mental wellness of Black women and girls.
 - **Website:** <https://www.therapyforblackgirls.com/>