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The Role of Racial Identity on the Mental Health and Functioning of Postpartum Black Mothers

Kortney Floyd

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ABSTRACT

THE ROLE OF RACIAL IDENTITY ON THE MENTAL HEALTH AND FUNCTIONING OF POSTPARTUM BLACK MOTHERS

by

KORTNEY M. FLOYD

Rates of postpartum depressive symptoms (PPDS) have ranged from 10% to 23% in mothers living in the United States. Due to cultural beliefs, Black mothers may be less likely to share their PPDS with their healthcare providers. Therefore, postpartum depression (PPD) may be more common in this population than statistics reveal. Racial identity, an understudied concept in postpartum mothers, has been shown to correlate with psychological health of Black adults. Understanding the influence of racial identity on PPDS and maternal functioning may be helpful in identifying Black mothers at greater risk of developing PPD. The purpose of this study was to assess the relationships between racial identity, PPDS, maternal functioning, and maternal-infant bonding of Black mothers.

A non-experimental, cross-sectional design was used. Black mothers were recruited using social media platforms and flyers distributed at various community locations. Mothers used Qualtrics to complete questionnaires, which measured their demographics and concepts of interest. Hierarchical cluster analysis determined the racial identity groups in the sample and other multivariate statistics were used to examine relationships among variables.

Black mothers (N = 116) ranged in age from 18 to 41 years (M = 29.5 ± 5.3) and their infants were 1 to 12 months old (M = 5.6 ± 3.5). The majority of mothers were married or cohabitating with their partner (71%), had a college degree (53%), worked full-time (57%), and had a total household income of > $26,000 (65%). Six racial identity clusters were identified in the sample (assimilated and miseducated, self-hating, anti-White, multiculturalist, low race salience, and conflicted). The clusters differed in their maternal functioning abilities but not their PPDS. Mothers with a low regard for Black race (i.e. self-hate) or a strong dislike for White race (i.e. anti-White) had lower maternal functioning, and lower maternal functioning was associated with higher PPDS. Individually, PPDS and maternal functioning influenced maternal-infant bonding, but maternal functioning more accurately predicted bonding.

The findings from this study emphasize the need for future research to further explore racial identity in Black postpartum mothers and to develop and utilize culturally appropriate tools to assess PPDS and functioning in Black mothers.

THE ROLE OF RACIAL IDENTITY ON THE MENTAL HEALTH AND FUNCTIONING OF POSTPARTUM BLACK MOTHERS

by

KORTNEY M. FLOYD

A DISSERTATION

Presented in Partial Fulfillment of Requirements for the
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2020

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LIST OF ABBREVIATIONS

BAM	Becoming a Mother Theory
CRIS	Cross's Racial Identity Scale
BIMF	Barkin Index of Maternal Functioning
EPDS	Edinburgh Postpartum Depression Scale
MAI	Maternal Infant Attachment Inventory
PPD	Postpartum Depression
PPDS	Postpartum Depressive Symptoms
STEM	Science, Technology, Engineering, and Math Activities

CHAPTER I

INTRODUCTION

In 2018, the prevalence of postpartum depressive symptoms (PPDS) in mothers living in the United States ranged from 10% to 23% (Bauman, et al., 2020). For Black mothers, prevalence rates of PPDS have ranged from 4% to 21% (Dolbier, Rush, Sahadeo, Shaffer, & Thorp, 2012; Evagorou, Arvaniti, & Samakouri, 2015; Hutto, Kim-Godwin, Pollard, & Kemppainen, 2011; Liu and Tronick, 2013). The prevalence rates for Black mothers may be higher because they are less likely to divulge their PPDS (Evagorou et al., 2015) or accept prescription medication and mental health therapies (Bodnar-Deren, Benn, Balbierz, & Howell, 2017) when compared to mothers of other racial/ethnic groups. Because Black mothers may hide their psychological PPDS from healthcare providers and/or family members, they may also experience physiological symptoms of postpartum depression (PPD) such as, tiredness, back pain, frequent crying, and headaches (Evagorou et al., 2015) which may affect their ability to care for themselves and their infant. As a result, it may be beneficial for healthcare providers to assess all mothers' maternal functioning abilities in addition to psychological symptoms of PPD (Barkin et al., 2017).

PPD is a mood disorder which may affect some postpartum mothers due to a combination of multiple factors that are physical, emotional, and chemical

(National Institute of Mental Health, n.d). The specific cause of PPD is unknown but there are various risk factors which increase a mother's risk of developing PPD, including experiencing prenatal depression, a lack of social support, stressful life events during the pregnancy, giving birth prematurely (before 37 weeks gestation), and having a traumatic birth experience (Ko, Farr, Dietz, & Robbins, 2012). PPD may develop after the first four weeks of childbirth and persist if not treated. In contrast, postpartum blues is a short-term mood disorder that mothers may experience in the first two weeks of the postpartum period (Mayo Clinic Staff, 2019). PPD is characterized by signs and symptoms comparable to depression experienced in other stages of life. Symptoms of PPD include change in appetite, feelings of sadness or hopelessness, lack of energy, inability to get out of bed, or inability to complete usual tasks (National Institute of Mental Health, n.d.). PPD occurs when these symptoms are severe and last for more than two weeks. PPDS range in severity; some mothers may doubt their abilities in caring for their infant while other mothers may have thoughts of harming themselves or their infant (Centers for Disease Control and Prevention [CDC], 2019). PPD can only be diagnosed after thorough assessment by a healthcare provider. This study only screened Black mothers for PPDS.

Background and Significance

Maternal and Infant Effects of Postpartum Depression

A mother's mental well-being can influence the overall health of herself and her infant. If a mother's mental well-being is compromised, her maternal functioning may be negatively impacted as well. Maternal functioning is a

mother's ability to care for herself and infant, transition and adapt to motherhood, and bond with her infant (Barkin et al., 2010). PPD may result in a decreased quality of life for the mother (Sadat, Abedzadeh-Kalahroudi, Kafaei, Atrian, Karimian, & Sooki, 2014) and suicidal ideation (CDC, 2019). Mothers with PPD are more likely to have poorer infant feeding practices than mothers without PPD. These practices include shorter duration in breastfeeding, increase in formula use, adding cereal to formula, and poor hygiene when preparing bottles, which may lead to infectious diseases in the infant (Madlala and Kassier, 2018). PPD may also negatively affect the bond shared between the mother and infant. A study of German mothers provided evidence that mothers with PPD are at higher risk of having an impaired bond with their infant when compared to mothers without PPD (Nonnenmacher, Noe, Ehrenthal, & Reck, 2016). Due to the exponential effect that a mother's mental state has on her physical health, maternal functioning, the health and development of her infant, and their maternal-infant bond, it is necessary to review the various factors which increase Black mothers' risk to develop PPD.

Ko and colleagues (2017) analyzed data from the Pregnancy Risk Assessment Monitoring System in 2012 to determine factors that increase mothers' risk for PPD. These factors are: age 24 years or less; education of 12 years or less; unmarried; 38+ weeks gestation and birth weight less than the 10th percentile; newborn admitted to the intensive care unit; smoking during the postpartum period; and having experienced three or more stressful life events the year prior to giving birth. Mothers who experience childbirth via caesarean

section, especially due to emergency, are at higher risk of developing PPD as well (Xu et al., 2017). The literature has contradictory findings regarding the number of living children a mother has being a risk for PPD. Theoretically, Rubin (1984) posed that mothers with more than one child adjust to being a new mother quicker than first-time mothers due to their experience and confidence in caring for children. However, recent research shows that the number of children a mother has does not influence her risk to develop PPDS (Barkin et al., 2017). In addition to the factors identified that may influence the development of PPD in the general population, there may be risk factors unique to Black women that may contribute to the prevalence rates of PPD.

Black Culture and Racial Identity

While lack of PPD diagnosis and treatment in Black women have been attributed to low socioeconomic status, Medicaid, and inaccessibility to healthcare services (Kozhimannil, Trinacty, Busch, Huskamp, & Adams, 2011; Witt et al., 2009), the influence of Black culture and the effects of experienced racism on the health outcomes and behaviors of Black mothers and their reproductive health should also be considered (Prather, Fuller, Marshall, & Jeffries, 2016). Black women may have a mistrust in healthcare providers due to a history of unethical medical experiments in this country involving Black people, such as the Tuskegee Experiment. In this government study, which began in 1932 hundreds of Black men who had syphilis were monitored to determine the long-term health effects of syphilis. These men were unaware that they were not receiving treatment; the scientists purposely withheld curative treatment from the

men even after Penicillin became the curative treatment of choice for syphilis in 1945. The study was finally terminated in 1972; an unethical study which caused death and illness to not only the men in the study, but to their wives and children as well (Green, Maisiak, Qi Wang, Britt, & Ebeling, 2013). While the Tuskegee experiment occurred decades ago, this unethical experiment still contributes to the distrust Black people for healthcare and science in America today.

Black women often hide their PPDS from healthcare providers or refrain from seeking medical help due to cultural norms which are unique to Black culture (Evagorou et al., 2016). Bodnar-Deren and colleagues (2017) found that when Black women discuss their depressive symptoms, they are more likely to discuss them with family and friends instead of healthcare providers. Moreover, Black women may decide to seek spiritual counseling and support from their church or guidance from God instead of seeking medical treatment (Keefe, Brownstein-Evans, & Polmanteer, 2016).

There is an unrealistic but prevalent expectation for Black women to be strong regardless of traumatic or life-altering events that may occur in life (Amankwaa, 2003; Woods-Giscombe, Robinson, Carthon, Devane-Johnson, & Corbie-Smith, 2016). This cultural norm is passed down from matriarchs in the family and can cause Black women to ignore their impaired mental and physical health for the sake of maintaining a mythical façade of strength. Black women may feel weak by admitting they are affected by PPD or other mental health issues due to this cultural expectation and therefore, may not share their feelings with healthcare providers or family members. While some Black mothers may not

admit to feeling “sad” or “depressed” they may report an inability to fulfill their own needs due to caring for their infant, which is a sign of impaired maternal functioning. Barkin et al. (2010, 2017) have appropriately detected PPDS in Black mothers by assessing their maternal functioning abilities in addition to their psychological symptoms of PPD. Therefore, it may be beneficial to screen Black mothers’ maternal functioning abilities in conjunction with traditional PPDS screening tools to detect PPDS more accurately in this population (Barkin et al., 2017).

Black mothers are affected by Black cultural beliefs and norms which can influence their perceptions and behaviors related to seeking treatment for PPD. There is also empirical evidence that one’s racial identity can influence mental well-being. Racial identity, which is the degree to which individuals define themselves with regard to their racial group membership, has been shown to influence the self-esteem and psychological well-being of Black people (Rivas-Drake, Umaña-Taylor, Schaefer, & Medina, 2017; Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003; Sellers, Smith, Shelton, Rowley, & Chavous, 1998; Whittaker-Neville, 2009). Black racial identity, as defined by Whittaker and Neville (2010), “refers to the process by which an individual of African descent acquires an understanding of [their] racial self-concept in a race-based society” (p. 384). This study used the all-encompassing term, “Black” when referring to all women of various ethnicities and nationalities who acknowledge they have African ancestry. Cross’ nigrescence model was utilized in this study because it categorizes the various Black racial identity attitudes as assimilation,

miseducation, self-hatred, Afrocentric, anti-White, and multiculturalist, which differentiate Black peoples' regard toward being Black (Worrell, Vandiver, & Cross, 2004).

There is extensive research on Black identity across the lifespan. The influence of Black identity on academic success, health, and social development is well documented in adolescent, college-aged, and young adults (Hoffman, Kurtz-Costes, Rowley, & Adams, 2017; Rivas-Drake et al., 2017; Sellers et al., 2003; Sellers et al., 1998; Yip, 2016). The literature suggests that Black people who have a positive regard towards being Black have healthier psychological well-being and academic success when compared to those who have a negative regard towards being Black. Interventions have been used to enhance Black peoples' positive regard towards their racial group. Black female college students' participation in science, technology, engineering, and math (STEM) activities were increased when shown advertisements that included Black men and women in STEM career fields (Shapiro et al., 2013). Culturally sensitive curriculums have been used to foster school engagement in Black female middle-school students (Jones, Lee et al., 2017). Moreover, racial identities reflective of positive regard have been shown to influence coping mechanisms when Black people experience racism or discrimination (Forsyth and Carter, 2012). Positive regard also mediates the negative psychological health effects of experienced racism, including decreased quality of life, anxiety, depression, anger/rage, embarrassment, and low self-esteem (Carter and Reynolds, 2011).

However, there is a lack of research examining the racial identity of Black mothers and its influence on their psychological well-being, as indicated by the presence or absence of PPDS and their level of maternal functioning. Because some racial identity attitudes significantly correlate with depression in Black women (Forsyth and Carter, 2012), it is necessary to determine if this correlation exists in Black mothers throughout the postpartum period. If there is a significant correlation between racial identity attitudes and PPDS, healthcare providers could incorporate racial identity screening in postpartum care to determine which Black mothers may be at higher risk for developing PPDS/PPD and educate and counsel them accordingly.

Statement of the Problem

The inclusion of Black mothers in research related to PPD is limited. Moreover, for studies examining factors that predispose them to PPD (Glasheen, Colpe, Hoffman, & Warren, 2015), the correlation between PPD and maternal functioning (Logsdon, Wisner, Sit, Luther, & Wisniewski, 2011), their acceptance of PPD treatment (Bodnar-Deren et al., 2017), and the bond shared with their infant (Sockol, Battle, Howard, & Davis, 2014); the Black women included in the samples were not reflective of all Black mothers. Many samples were homogenous in including low-income, unmarried, adolescent Black mothers, thereby limiting the generalizability of the studies' findings. The influence of Black mothers' racial identity on their development of PPDS, maternal functioning, and the bond shared with their infant has not been examined. When a mother's mental well-being is compromised due to PPDS and low maternal functioning,

her ability to care for herself and her infant, the physical health of herself and infant, and the bond shared between them are negatively affected (Barkin et al., 2010). Therefore, it is necessary to determine if racial identity attitudes, which are unique to Black mothers, is a risk factor for PPD. By assessing Black mothers' racial identity in conjunction with screening for PPDS and maternal functioning abilities, healthcare providers may be able to detect more accurately those at risk for and/or experiencing PPDS.

Purpose Statement

The purpose of this study was to examine the relationships between racial identity attitudes and PPDS, maternal functioning, and maternal-infant bonding in Black mothers four weeks to twelve months postpartum.

Specific Aims and Hypotheses

The specific aims are to:

1. Examine the relationships between racial identity attitudes (assimilation, miseducation, self-hatred, Afrocentric, anti-White, and multiculturalist), postpartum depressive symptoms, and maternal functioning of Black mothers during the postpartum period.
2. Examine the relationship between postpartum depressive symptoms and maternal-infant bonding in Black mothers during the postpartum period.
3. Examine the relationship between maternal functioning and maternal-infant bonding in Black mothers during the postpartum period.

The hypotheses are:

When controlling for risk factors such as age, socioeconomic status (level of education, household income, insurance type), relationship status, number of dependent children, and method of delivery:

Hypothesis 1a. Mothers with racial identity attitudes of multiculturalist and Afrocentric had lower levels of postpartum depressive symptoms and higher levels of maternal functioning.

Hypothesis 1b. Mothers with racial identity attitudes of assimilation, miseducation, self-hatred, and anti-White had higher levels of postpartum depressive symptoms and lower levels of maternal functioning.

Hypothesis 2a. Higher levels of postpartum depressive symptoms were associated with lower levels of maternal-infant bonding.

Hypothesis 3a. Lower levels of maternal functioning were associated with lower levels of maternal-infant bonding.

Research questions are:

Research Question 1: Was there a relationship between maternal functioning and postpartum depressive symptoms in Black mothers?

Research Question 2: Was maternal functioning a greater predictor of maternal-infant bonding than postpartum depressive symptoms in Black mothers?

Theoretical Framework

Motherhood is a phenomenon experienced by women of various ages, socioeconomic status, and race/ethnicity. Although the BAM theory is the dominate theory on motherhood, Mercer's work does not reflect the experiences of Black mothers because Mercer's research focused on mothers who were White women, middle to upper-class, highly educated, and partnered (Fouquier, 2013). Due to their cultural traditions and beliefs, Black mothers have different perspectives on motherhood (Fouquier, 2011). Previous research that has assessed the phenomena of motherhood lacked a theoretical framework that included the influence of race and culture on Black mothers. This in turn has yielded data that may not adequately reflect Black women's perspectives on motherhood.

For the purpose of this study, the BAM theory was triangulated with the Nigrescence theory to incorporate racial identity and its influence on the Black mother's maternal identity attainment by assessing their maternal functioning, mental well-being (presence or absence of PPDS), and maternal-infant bonding. The BAM theory by Mercer explains the complex process in which a woman transitions into motherhood (Mercer, 1995). By utilizing Walker and Avant's iterative theory derivation process (2011), the BAM theory was adapted for the purpose of this study to incorporate racial identity, a concept in Cross' Nigrescence theory (1971). Cross' Nigrescence theory describes the racial identity of Black people in America, which is the significance and meaning of self that individuals attribute to their membership within the Black racial group

(Sellers et al., 1998). The modified model (Figure 1) allows assessment of key concepts in BAM and the Nigrescence theory to better understand the influence of racial identity on Black mothers' postpartum depressive symptoms, maternal functioning, and bond with their infant.

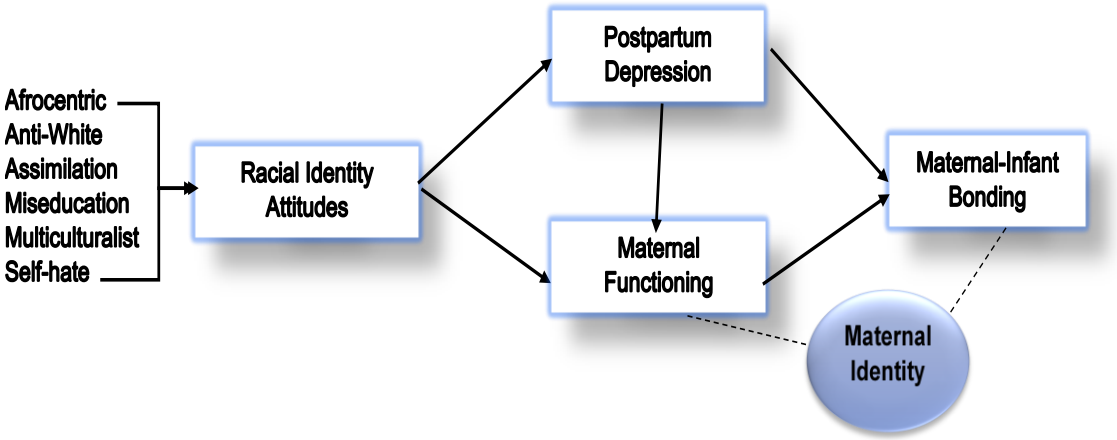


Figure 1. Integrated theoretical framework of racial identity and BAM (Mercer, 1994; Cross, 1971).

Becoming a Mother Theory

The BAM theory describes the process of a woman transitioning into motherhood, beginning the moment a woman realizes she is pregnant. During this process, the woman adapts to her new role as a mother, caring for herself and her infant, and balancing her responsibilities (Duffy, Donald, and Snowden, 2014). When adjusting to motherhood, a woman must respond to her own physical and mental needs and the needs of her infant. The ability of a mother to perform tasks related to caring for the infant and responding to their needs, such as feeding, bathing, changing diapers, and keeping pediatrician visits is maternal

functioning (Barkin et al., 2010). Maternal functioning is necessary to attain maternal identity, which is a woman's internalized view of herself as a mother (Rode and Kiel, 2015). This new role results from complex interchanges between the new mother, the infant, and the influence of various factors such as stress, the mother-father relationship, social support, and family functioning (Mercer, 1991). The BAM process occurs in four stages: (1) commitment, attachment, preparation stage (pregnancy); (2) acquaintance, learning and physical restoration stage (first two to six weeks following birth); (3) moving towards a new normal stage (two weeks to four months following birth); and (4) achievement of maternal identity stage (approximately four months following birth) (Mercer, 2004).

While the BAM theory is segmented into stages, Mercer (2004) acknowledges that this process is not linear but continuous and leads to the adaptation of maternal identity. During the commitment, attachment, and preparation stage, the expectant mother acknowledges and accepts her pregnancy (Duffy et al., 2014). During the next stage of acquaintance, learning, and physical restoration the new mother begins to learn how to care for her infant and develops confidence in her abilities as a mother (Mercer and Walker, 2006). Eventually the new mother feels competent in caring for her infant and decides what advice given by outsiders is most appropriate for her family. This stage is known as moving towards a new normal. The final stage is when the mother develops her maternal identity.

Maternal identity is a key concept of BAM and is comprised of maternal competence, maternal satisfaction/gratification, and the mother's attachment to her child (Mercer, 1991). Maternal competence occurs when a mother can successfully perform tasks which fulfill the infant's physiological and emotional needs. When the mother finds joy and pleasure in performing her motherly duties, such as feeding her infant, she has maternal satisfaction/gratification. Lastly, the mother's ability to affectionately bond and interact with her infant is maternal attachment.

The concepts of maternal functioning and maternal mental well-being (the presence or absence of PPDS) are essential in describing the maternal identity attainment process and was examined in the study. While the concepts are centered around the mother, they influence the maternal-infant bond (Mercer, 1991). The bond developed between the mother and infant is established when the mother recognizes and responds to her infant's cues. By appropriately responding to the infant's needs, the infant's attachment/security is also nurtured (Mercer, 1991). The BAM reflects how the mother and infant are not separate entities but a team which work together and influence the other's well-being and development.

Nigrescence Theory

The Nigrescence theory by Cross (1971) has been revised three times since its creation; the revised version that was created in 2001 (Worrell et al., 2006) was referenced. The Nigrescence theory describes the racial identity of Black people in America, which is the significance and meaning of self that

individuals attribute to their membership within black racial groups (Sellers et al., 1998). Racial identity is expressed as attitudes which reflect how Black people define themselves within their racial group at specific times in their lives.

Racial identity attitudes are clustered into three categories: pre-encounter, immersion-emersion, and internalization. The pre-encounter category describes Black people that have low or negative salience toward their racial group. This cluster includes three attitudes: assimilation (pro-White), miseducation (believe negative stereotypes associated with Black people), and self-hatred (internalizes negative beliefs towards Black people). The immersion-emersion cluster describes Black people that no longer endorse negative stereotypes of their racial group, begin to broaden their perspectives and take deep interest in Black culture (Afrocentric attitude). Conversely, this category also includes the Black person that develops a strong hate for White people (anti-White attitude). The last category, internalization reflects one who embraces and respects people from all cultures while holding high salience for being Black (multiculturalist attitude). In the study, racial identity was defined as the attitudes discussed in each theme: assimilation, miseducation, self-hatred, Afrocentric, anti-White, and multiculturalist.

Recognizing racial identity as attitudes instead of stages allows the theory to adequately describe a person's identity across their life span (Worrell et al., 2006). This fluidity also allows a person to have multiple racial identities at once, which is necessary when describing people's perspectives since humans' emotions and experiences are not one-dimensional. There is empirical evidence

that racial identity is correlated with and predicts the psychological health and well-being of Black people in America (Franklin-Jackson & Carter, 2007; Pillay, 2005; Whittaker and Neville, 2009). Black people who hold positive regard for their race (Afrocentric or multiculturalist racial identity attitudes) tend to have healthy mental well-being while those who hold negative regard toward their race (assimilation, miseducation, and self-hatred racial identity attitudes) are more likely to experience depression. Moreover, Black people who despise the White race (anti-White racial identity attitude) may be hostile and experience paranoia. In a study of 229 Black adults, 190 being women, Carter and Reynolds (2011) found that those participants who held negative regard towards their Black race were more likely to experience anger, confusion, and signs/symptoms of depression. Conversely, participants with positive regard for their Black race were less likely to experience such emotions (Carter & Reynolds, 2011). Neblett, Banks, Cooper and Small-Glover (2013) found that Black young adults enrolled at a predominantly White university were less likely to experience depressive symptoms when they engaged in Black pride/cultural activities.

Because the Nigrescence theory relates mental well-being to racial identity attitudes and the BAM theory emphasizes the influence of the mother's mental well-being on her ability to adapt to motherhood, it is prudent to explore the relationships amongst racial identity attitudes, maternal mental well-being (the presence or absence of postpartum depressive symptoms), and maternal functioning. Furthermore, the relationship between maternal mental well-being

and maternal-infant bonding was assessed since the BAM theory emphasizes the symbiotic relationship between the two concepts.

Theoretical Assumptions

The followings are assumptions inherent in the BAM theory:

- A woman has a stable sense of self which is acquired throughout life and forms her perception of motherhood.
- A mother's own characteristics determine her reactions.
- The father or parenting partner, along with the infant will grow and develop as a result of the woman's competence as a mother.
- The infant has a role in a woman's process towards maternal identity.
- The father or parenting partner fulfils a role in the mother's progress towards maternal identity that no other person can.
- Maternal identity development is dependent upon maternal bonding and both influence the other.

The followings are assumptions inherent in the Nigrescence theory:

- Black racial identity is an important construct.
- General profiles of racial identity attitudes exist across Black people and these attitudes are stable, at least some of the time.
- Different racial identity profiles are related to different patterns of functioning.

CHAPTER II

REVIEW OF THE LITERATURE

While Black mothers have been included in research related to maternal identity and functioning, PPDS, and maternal-infant bonding, the influence of their racial identity on these concepts has not been examined. In order to assess the extent of existing research regarding the chosen variables, a literature review was performed. This chapter reviews factors associated with PPD in Black mothers, the role of culture and racial identity in Black mothers' lives, and then review various types of empirical data related to the variables chosen in the study: racial identity of Black people, maternal functioning, PPDS, and maternal-infant bonding.

Factors Associated with Postpartum Depression in Black Mothers

In the past few decades there has been an increase in the research dedicated to learning more about PPD, including risk factors which help healthcare providers better screen, identify, and treat those at highest risk for experiencing PPDS and PPD. Yet, most studies focused on the risk factors for White, married mothers who had long-standing relationships with their primary care providers and an abundance of social support (Abrams & Curran, 2007; Keefe et al., 2016a). For studies that did include Black mothers, socioeconomic status was significantly correlated with PPDS. Factors such as being unemployed (Doe et al., 2017), having little to no social support (Ronzio and

Mitchell, 2010), one's perceived social standing compared to others in the United States (Dolbier et al., 2013), and having experienced adverse life events (Guintivano, Sullivan, Stuebe, & Penders, 2018) influenced Black mothers' severity of PPDS. While these socioeconomic factors correlated with PPDS in the Black mothers within the samples, these factors are not unique to Black mothers. It is imperative to identify risk factors for PPD that are unique to Black mothers since this population is least likely to disclose PPDS or seek medical treatment (Bodnar-Deren et al., 2017; Evagorou et al., 2015).

When determining unique risk factors of PPDS in Black mothers, it is necessary to include race and racism, since these are unique factors that may influence the mental health of Black women in the United States. Heldreth and colleagues (2018) surveyed 1,349 Black mothers across the United States during the first month of their postpartum period to determine the relationship between their experienced racism as a child, everyday encounters with racism as an adult, and PPDS as a new mother. Fifty-three percent of the sample were living in poverty and married/living with the other parent of their child. Experiencing racism as a child, whether directly or indirectly, was positively correlated with PPDS one month after childbirth (Heldreth et al., 2018). Similarly, Dailey and Humphreys (2011) surveyed 119 pregnant Black women to determine their risk factors for PPDS. Pregnant Black women who were dealing with social discord in personal relationships or experienced everyday discrimination were more likely to be affected by PPDS. A woman's risk for developing PPDS is significantly

increased if the woman experiences depression during their pregnancy (Ko et al., 2017; National Institute of Mental Health, n.d).

Race and Culture of Black Mothers

When investigating the experiences of Black mothers, it is necessary to include the role that their race and culture have on their transition into motherhood. According to the BAM theory (Mercer, 1991), this new role of being a mother results from complex interchanges between the new mother, the infant, and the influence of a multitude of factors such as stress, the mother-father relationship, social support, and family functioning, but the influence of Black race and culture must also be considered. The prevalence of PPDS is higher in Black mothers when compared to other race/ethnic groups such as, Latino and White mothers and is attributed to socio-environmental factors such as limited healthcare access, and low socioeconomic status, (Kozhimannil, Trinacty, Busch, Huskamp, & Adams, 2011; Witt et al., 2009). Research has shown that Black racial identity attitudes, such as anti-White and self-hate correlate with depression, anxiety, and other mental health conditions in Black adults (Whittaker and Neville, 2010; Worrell et al., 2011). However, the correlation between PPDS and racial identity attitudes in Black women is not yet known, hence the primary aim of this study is to determine this relationship. By identifying a racially centered risk factor for PPDS in Black women, it is possible that healthcare providers can readily identify those mothers at higher risk to develop PPD, counsel them, and initiate treatment.

Currently, Black women are less likely to seek and accept mental health services, initiate and maintain treatment for PPDS (Bodnar-Deren et al., 2017; Kozhimannil et al., 2011). Some Black women have distrust in the American healthcare system and experience anxiety (Abdou and Fingerhut, 2014) or feel ignored by their healthcare providers and as a result, do not receive proper care for their condition(s) (Stones, Stulberg, & Kottenstette, 2017) when receiving care from White providers**.** This mistrust may be due to a long history of experimental and unethical treatment of Black people by healthcare providers in the United States (Green et al, 2013). The mistrust may also be heightened due to Black women's racial identity attitude; the attitude of Anti-White are associated with paranoia or hate/anger towards White people (Forsyth and Carter, 2012). However, it is not clear whether racial identity is associated with PPDS and maternal functioning in Black mothers. Having a better understanding of these relationships may help explain Black mothers' transition into motherhood. Fouquier (2013) performed a systematic review of 25 studies to assess how Mercer's BAM Theory has been utilized in research to describe Black women and their motherhood experiences. The review provided evidence that current research often supports a European perspective of motherhood since most women in the studies were older, married, white women (Fouquier, 2013) and therefore, may not adequately reflect the experiences of Black women when transitioning into motherhood.

There is a growing body of literature related to racial identity and its influence on Black mothers and their children. Abdou et al. (2010) conducted a

mixed-methods study of 54 (54% Black) predominately low-income, persons of color in the Los Angeles community to better understand the maternal and child health disparities which affected the residents. When discussing community/family norms, participants expressed that women were the primary caregivers for the children. As the primary caregiver women were responsible for feeding, bathing, and ensuring school attendance of the children. Men were expected to be the monetary providers in the household. While the concept of racial identity was not explicitly discussed, there was a common perspective from all participants in experiencing racism, being treated differently due to their race or ethnicity, and the negative emotions associated with those experiences. This is significant because other researchers have found that individuals who strongly identify as Black are often more aware of racist acts performed against them and have higher levels of perceived discrimination (Burrow and Ong, 2010). Similarly, Black mothers (N = 18) in a qualitative study by Fouquier (2011) reported that their awareness of systemic racism and their own experiences with racism influenced their child-rearing practices.

Racial Identity and Postpartum Depression in Black Mothers

Adapting to the role of being a mother may bring joy to many women but can also be a time of stress or depression. Because a mother's mental well-being can influence the overall health of herself and her infant, it is necessary to review the range of postpartum mental health, from baby blues to postpartum psychosis. Moreover, when considering the mental health of Black mothers, it is necessary

to consider the impact of race and culture, since they influence other aspects of motherhood such as parenting practices (Curenton et al., 2018).

The Nigrescence theory describes racial identity and its importance to Black people in America (Sellers et al., 1998). There is empirical evidence that the racial identity of Black people influences their mental well-being (Wilson, Sellers, Solomon, & Holsey-Hyman, 2017). Black adults who assimilate with White people and devalue their Blackness are more likely to experience intense feelings of internal rage, depression, confusion, and exhaustion (Carter and Reynolds, 2011; Neblett, Banks, Cooper, & Smalls-Glover, 2013). When these individuals are affected by an act of discrimination or racism, they may become deeply angered toward the White race and thus, described as having an anti-White racial identity. Black people with an anti-White racial identity are more likely to experience the mental and physical signs and symptoms of anxiety, depression, and rage (Forsyth and Carter, 2012). Conversely, Black people who hold positive regard for their race group and have a sense of Black pride (Afrocentric racial identity attitude), or are respectful of all other cultures (multiculturalist racial identity attitude) are less likely to experience such intense, taxing mental health symptoms and have a healthier state of mental well-being (Carter and Reynolds, 2011; Neblett, Banks, Cooper, & Smalls-Glover, 2013; Settles, Navarrete, Pagano, Abdou, & Sidanius, 2010).

Worrell, Mendoza-Denton, Telesford, Simmons, and Martin (2011) recruited Black college students over four semesters to determine which racial identity attitudes correlated with psychological adjustment; 76% (n = 682) of the

participants identified as female. The researchers found that students with the self-hate racial identity attitude had moderately positive correlations with obsessive compulsive behaviors ($r=.31$, $p<.001$), depression ($r=.37$, $p<.001$), anxiety ($r=.30$, $p<.001$), phobias ($r=.30$, $p<.001$), and psychoticism ($r=.35$, $p<.001$). Students with the anti-White racial identity attitude had moderately positive correlations with hostility ($r=.32$, $p<.001$) and paranoid ideation ($r=.33$, $p<.001$). The students with racial identity attitudes of Afrocentric and multiculturalist did not have a statistically significant relationship with symptoms of psychological maladjustment (Worrell et al., 2010). This further suggests that the racial identity profiles which reflect Black pride (Afrocentric) and respect for all cultures (multiculturalist) are correlated to positive mental well-being, while Black racial identity attitudes that represent hatred of self (self-hatred) and others (anti-White) are correlated with poor mental health. In another study of students, Hurd, Sellers, Cogburn, Butler-Barnes, and Zimmerman (2013) examined 570 Black adolescents (52% female) from their senior year of high school through five years post high school to determine the influence of their neighborhood's racial composition on their racial identity and mental well-being. This study found that young adults with Afrocentric racial identities, regardless of the concentration of Black people in their neighborhood, were less likely to have depressive symptoms. Those that lived in predominantly White neighborhoods experienced fewer depressive symptoms even if those participants thought society had negative thoughts about Black people. Hurd and colleagues (2013) speculated that these participants anticipated discrimination and racism because of their

belief that society held a negative regard for Black people. Therefore, they were less likely to be traumatized when being discriminated against and had coping mechanisms in place. Chae et al. (2017) investigated the relationship between racial identity, racial discrimination, and mental well-being in Black men (N=90) aged 30 to 50 years. Data analysis showed that the men who held positive regard toward their Black race were less likely to experience depressive symptoms, despite being the group who were most affected by discrimination (Chae et al., 2017). These studies show that one's own perception about being Black significantly impacts their mental well-being, regardless of society's negative thoughts about the Black race.

Research has demonstrated that race and culture may play a role in the postpartum mental health of Black women, regardless of living in the United States or in Europe (Bodnar-Deren et al., 2017; Templeton et al., 2003). Templeton et al. (2003) conducted a qualitative study which included focus groups and individual interviews of about 20 mothers of color, including Black mothers, living in a rural area of England. Some women participated in focus groups more than once, so the researcher did not report an exact number of participants. A theme relative to postpartum depression was "Issues Specific to Pregnancy and Birth". Participants expressed feeling as though they were going crazy due to unexplained loneliness, isolation, or crying. Some mothers assumed those feelings would just go away or were typical emotions mothers experience after having a baby. Some mothers had been diagnosed with PPD but admitted that mental illness was taboo or stigmatized in their culture and therefore, not

discussed. As a result, these mothers dealt with their problems within the family because you “don’t hang your dirty laundry out” with a therapist (Templeton et al., 2003, p. 215). Despite their crippling depression, many women continued to care for their children and family without seeking medical treatment or counseling, which often is the case for Black women. Also, it is important to note that while the Black mothers in Templeton and colleagues’ (2003) study lived in England, their hesitancy in seeking mental health treatment is like the behaviors of Black mothers in the United States (Bodnar-Deren et al., 2017).

Another qualitative study found that Black mothers in the United States may express dissatisfaction with mental healthcare services and their providers’ inability to listen to their issues and provide real solutions when they experienced PPDS (Keefe et al., 2016a). Nineteen Black mothers recalled and shared qualitative accounts of their experiences dealing with PPDS (Keefe et al., 2016a). The mothers shared that while therapy is supposed to treat PPD, it did nothing to resolve the source of their stress or depression, which often involved financial hardships in providing for their child(ren). Moreover, the mothers reported that when they felt ignored by their healthcare provider, their PPDS worsened. These mothers also felt no improvement when prescribed anti-depressant medication, so they immediately discontinued taking the medication. Overall, there is some evidence from two qualitative studies with small sample sizes that suggest Black mothers experience PPD differently than women of other races/cultures and seek medical treatment less often due to cultural norms. Due to the small sample sizes in these qualitative studies (Keefe et al., 2016a; Templeton et al., 2003) these

findings may not fully explain the phenomena of Black culture and PPD in Black mothers. Subsequently, the findings are not transferable to the population of Black mothers with PPD.

While there is evidence that individuals' Black racial identity influences their mental well-being, it is not known if this relationship exists between Black mothers' racial identity attitudes and PPDS since no studies investigating these concepts were found. Because the racial identity attitudes of Black people correlate with their mental health, whether a state of wellness or depression, it is necessary to assess if there is a relationship between the racial identity of Black mothers and PPDS. By identifying risk factors for PPD that are unique to Black women, such as their racial identity attitude type, healthcare providers may screen for and identify PPD in Black mothers, which may result in higher treatment acceptance among this population.

Racial Identity and Maternal Functioning of Black Mothers

The BAM theory describes the many ways that a woman's life changes once realizing she is pregnant. There is also a postpartum focus of BAM that includes the mother's ability to care for her infant and her confidence in doing so (Cabrera, 2018). Black mothers have expressed a major concern is resuming their typical activities while caring for their baby and family after childbirth (Amankwaa, 2003). The mental state of a mother can influence her ability to adapt to motherhood and success in caring for her infant (Barkin et al, 2010). Black mothers may experience somatic signs of PPD such as, an inability to care for themselves and their infant, fatigue, and an inability to function or complete

their daily activities (Amankwaa, 2003; Evagorou et al., 2015). Moreover, because PPDS may be viewed as a weakness, Black mothers may be hesitant to express feelings of PPD to maintain the façade of being a strong and resilient mother (Amankwaa, 2003; Curenton et al., 2018). Black mothers may be more inclined to share their frustrations with somatic symptoms of impaired maternal functioning than mental symptoms of depression (Barkin et al., 2016). Maternal functioning is a relatively new concept of interest so there is a dearth of research related to its relationship with the mental well-being of mothers, including Black mothers (Barkin et al., 2016).

Barkin and colleagues (2016) recruited 189 mothers (48% mothers of color) within the first four to twelve weeks postpartum to determine relationships among PPDS, sociodemographic characteristics, and maternal functioning. Researchers found that as a mother's PPDS worsened their level of maternal functioning decreased (Barkin et al., 2016). This inverse relationship between PPDS and maternal functioning was present in a similar study postpartum mothers (N=128) in which 73% of the participants were Black (*n*=90) (Barkin, McKeever, Lian, & Wisniewski, 2017). Logsdon, Wisner, Sit, Luther, and Wisniewski (2011) investigated whether maternal functioning improved when mothers received pharmaceutical treatment for major depressive disorder from 2.5 weeks through 12 months postpartum. Mothers who received pharmaceutical treatment and showed a decrease in PPDS exhibited maternal functioning levels similar to mothers without a major depressive disorder.

Because Black mothers are less likely to accept pharmaceutical treatment for PPD (Bodnar-Deren et al., 2017; Kozhimannil et al., 2011) they may be at higher risk to experience PPDS or impaired maternal functioning. Since some Black women do not divulge their PPDS to their healthcare provider, it may be necessary to assess maternal functioning, which is another indicator of PPD. When assessed in combination with the presence of emotional PPDS, providers may more accurately and effectively detect PPD in Black mothers. Additionally, no studies have examined the influence of racial identity on postpartum maternal functioning. Understanding whether there is a relationship between these two concepts may also better prepare providers caring for Black women.

Attaining Maternal Identity

When a woman becomes a mother, an adjustment to her new role must occur. The process of a woman attaining maternal identity or having an internalized view of herself as a mother (Rode and Kiel, 2015) is influenced by several concepts, including mental well-being. The mother's mental well-being, particularly when experiencing PPDS, can negatively influence her ability to attain maternal identity and her level of maternal functioning. A mother's ability to adjust to motherhood is influenced by her ability to complete maternal tasks (Barkin et al., 2017), which also influences her attainment of maternal identity and the bond developed with her infant (Mercer, 1991). Overall, these concepts have a cyclical relationship and are critical to the mother and infant's well-being and bond shared. Therefore, evidence of associations between PPDS and maternal functioning with maternal-infant bonding are described.

Postpartum Depression and Maternal-Infant Bonding

The BAM theory not only describes the metamorphosis that a woman undergoes to become a mother, it also describes the relationship between the mother and her infant. BAM theory provides evidence that the mother's mental well-being, maternal functioning, and resulting maternal identity influences the bond shared between herself and the infant. A mother's mental and physical health impacts her ability to function as a mother, which effects the mother's ability to respond to the infant's cues and needs leading to the bond shared between the two (Fowles and Horowitz, 2006). Due to the symbiotic relationship between maternal mental well-being and maternal-infant bonding, it is necessary to review these concepts. However, there is a lack of research related to PPD in Black mothers and its impact on the bond shared with their infant. As a result, this review includes studies in which Black mothers were not included.

Maternal-infant bond refers to the deep, emotional attachment or connection between a mother and her infant through the first two years of the child's life (Gulsein and Yildiz, 2013). The mother's attachment to the infant begins immediately after childbirth and is enhanced when the infant is placed skin-to-skin with the mother; the bond is then further developed through feeding and other activities performed by the mother to care for the infant (Lai, Hung, Stocker, Chan, & Lui, 2015). Bonding is not only an emotional connection, but literature has shown that it has long-term effects on the infant's socialization, security, and well-being (Leerkes & Zhou, 2018). Additionally, attachment has a protective effect against the development of PPD (Brandon, Pitts, Denton,

Stringer, & Evans, 2009; Delavari, Mohammad-Alizadeh-Charandabi, & Mirghafourvand, 2018; Kingston, Tough, & Whitfiled, 2012). Positive, secure maternal-infant bonding develops as the mother addresses the infant's needs on a consistent basis which develops the trust infant has in others and eventually, their positive feelings of self-worth (Leerkes & Zhou, 2018).

Mothers with PPD are at higher risk of inadequately responding to infant cues (Johnson, 2013; McGrath, 2011) which can result in an impaired bond between the mother and infant (Santona et al., 2015). The infant may then develop mistrust in others and feelings of unworthiness (Leerkes & Zhou, 2018; Santona et al., 2015). Sockol and colleagues (2014) investigated the predictors of an impaired maternal-infant bond in 180 postpartum mothers (17% Black) who were hospitalized due to mental illness (77% major depressive disorder) 1- 44 weeks postpartum; The only significant predictor of an impaired maternal-infant bond was the mother's severity of PPDS symptoms. Mothers with PPD, especially those with suicidal thoughts, were at higher risk for rejecting and/or abusing their infant (Sockol et al., 2014). Similarly, in a sample of 150 Lebanese mothers at 10 -12 weeks postpartum, those at highest risk for impaired bonding with their infant were mothers with more severe symptoms of PPDS who were unhappy in their marriage and had low social support (Kurdahi Badr et al., 2018).

When mothers with PPD reject their infant, the infant may display emotional and behavioral issues. These issues are readily acknowledged by the mother and can fuel the impaired bond between them (Sontana et al., 2015). Sixty mothers and their infants (age 12-36 months) were recruited in Rome to

determine the differences between the maternal-infant bond in mothers with and without PPD (Sontana et al., 2015). The researchers found that the mothers with PPD were less engaged and less caring towards their infants; some openly rejected their infants. The infants would refuse the foods their mothers offered them, which led to the mothers becoming controlling and rigid during feeding times, i.e., not allowing the child to feed themselves (Sontana et al., 2015). Research supports that PPD has a significant negative effect on the maternal-infant bond and the infant's sense of security. However, there is lack of research including Black mothers. Therefore, it is necessary to assess the impact of PPD on maternal-infant bonding in Black mothers and their infants.

Maternal Functioning and Maternal-Infant Bonding

Because infants are completely dependent on their mothers (or other parent/caregiver) for all basic life necessities, mothers must respond to their infants' cues to be comforted, fed, and protected. Subsequently, mothers often neglect their own needs in order to respond to and care for their infant (Barkin & Wisner, 2013). When a mother's source of stress is providing basic needs for her infant, such as food, clothing, and shelter; showing her infant love and affection is of utmost importance (Keefe, Brownstein-Evans, & Polmanteer, 2018). While certain scenarios may impair a maternal-infant bond, such as separation if an infant has a prolonged stay in the neonatal intensive care unit, the focus of this review is the relationship between maternal functioning and maternal-infant bond in mothers with PPDS/PPD. PPD negatively impacts maternal functioning which can result in impaired maternal-infant bonding (Logsdon et al., 2011). Due to the

long-term implications of an impaired maternal-infant bond on the mother's maternal well-being and the infant's psychosocial development, interventions have been developed to enhance the maternal infant bond by improving the maternal functioning of mothers with PPD.

Mascheroni and Ioni (2019) performed a literature review of interventions that improve the parent-infant bond. The review included twelve interventions that support positive maternal-infant bonding and one that enhanced the paternal-infant bond. Of the twelve interventions that enhanced maternal-infant bond, five focused on mothers diagnosed with PPD. These five interventions varied from certified nurse midwives providing psychotherapy sessions over the telephone to weekly online therapy sessions that included role play. Therapies that were administered either online (O'Mahen et al.,2014) or via telephone (Posmontier, Neugebauer, Stuart, Chittams, & Shaughnessy, 2016) were not effective in improving the maternal-infant bond. Tsivos, Calam, Sanders, and Wittkowski (2015) conducted a randomized control trial to determine feasibility of the Triple P Program in improving the bond shared between mothers with PPD and their infant. This treatment modality was in-person over eight sessions with a trained provider. There was only one session that focused on the mother's response to the infant's needs. The remaining seven sessions emphasized partner/spousal support, communicating with one another, and establishing a routine. This intervention was not effective in enhancing the maternal-infant bond (Tsivos et al., 2015). The researchers suggest that these treatment modalities were ineffective because there was either no in-person interaction with the

provider or because there was no emphasis on improving maternal functioning (Mascheroni & Ioni, 2019).

The fourth treatment modality reviewed by Mascheroni and Ioni (2019) was a metacognitive therapy intervention which focused on enhancing the maternal functioning of mothers with PPD. This study yielded positive results; the maternal-infant bond was transformed from impaired to healthy and this healthy bond was maintained three and six months after the completion of therapy (Bevan, Wittkowski, & Wells, 2013). This relationship was also evident with the Mother Baby Interaction Therapy (Horowitz, Posmontier, Chiarello, & Geller, 2019). The Mother Baby Interaction Therapy utilizes a clinician to coach mothers with PPD in recognizing infant cues and to respond sensitively. The intervention has resulted in improved maternal functioning and decreased severity of PPDS. The fifth treatment modality in the review conducted by Mascheroni and Ioni (2019) was a neurostimulation therapy using transcranial magnetic stimulation. This method improved the maternal-infant bond as well (Garcia, Flynn, Pierce, & Caudle, 2010) but is outside the scope of this study. Overall, all five interventions were focused on enhancing the maternal-infant bond of mothers with PPD, but only the three which improved mothers' maternal functioning abilities were successful. This finding supports the relationship between maternal functioning and maternal-infant bonding in women with PPD. Examining the relationship between maternal functioning and maternal-infant bond in Black mothers advances the limited science in this area and may further support the need to screen for maternal functioning in this population.

Summary

While the literature review suggests that there is a clear relationship between maternal mental well-being or PPD, maternal functioning, and maternal-infant bonding, these findings may not apply to Black mothers. Many of the previous studies on maternal identity and motherhood had homogenous samples that included educated, partnered, White mothers and low-income, single, often adolescent, Black mothers (Fouquier, 2013). Therefore, the findings of these studies cannot be generalized to all Black mothers. Not much is known about the role of racial identity and its correlation with Black mothers' mental well-being. Although empirical evidence shows that racial identity relates to the mental well-being of Black people in America, there are no studies which investigate this correlation in Black mothers during the postpartum period. As discussed, being Black can be central to one's identity and impossible to exclude from influencing one's journey in life; the journey into motherhood for Black women is no different. This research not only focused on maternal mental well-being, but explored the bond shared between the mother and infant. Assessing the maternal-infant bond is necessary due to its relationship with maternal mental well-being and maternal functioning.

The research is significant because it provides a better understanding of the influence of racial identity on the psychological well-being of Black mothers in America. This research provides knowledge about the unique needs of Black mothers prompting healthcare providers to assess PPDS in Black mothers in a holistic and culturally sensitive manner. Future research may develop

interventions which consider the cultural differences of Black mothers, thereby transforming maternal-child healthcare for Black mothers, improving the mental health of Black mothers, strengthen maternal functioning and promote a strong maternal-infant bond.

CHAPTER III

METHODOLOGY

This chapter describes the research design of the study and is organized as follows: study design, sample and setting, instruments, data collection procedures, data management plan, data analysis for specific aims, limitations, and protection of human subjects.

Design

A non-experimental, cross-sectional design was used. This design was selected because the statistical relationships between the chosen variables (e.g., racial identity attitudes, PPDS, maternal functioning, and maternal-infant bond) were determined (Price, Jhangiani, Chiang, Leighton, & Cuttler, 2017) at one point in time among the participants during the first 4 weeks to 12 months of the postpartum period. This time period was chosen because mothers are at risk for PPDS after the first four weeks to twelve months of the postpartum period; new mothers may experience postpartum blues during the first two weeks which is a short-term mood disorder (Mayo Clinic Staff, 2019). Data were collected using self-report questionnaires which were completed on the Qualtrics platform online using the participants' device of choice.

Sample and Setting

The target population for this study was Black mothers that are within four weeks to twelve months of the postpartum period. A non-random (convenience

and snowball) sample of these mothers who met the inclusion criteria were recruited throughout the metropolitan area of Atlanta, Georgia. Participants were recruited using paper and digital advertisements within health departments, women's health clinics, pediatric offices, childcare facilities, hair salons, Black mom blogs, public libraries, universities, and various social media platforms (Twitter, Facebook, Linked In, Instagram). Multiple sites were used to obtain a diverse, heterogeneous sample of Black mothers, thereby enhancing the generalizability of findings.

Inclusion criteria for mothers were:

- self-identify as Black or African American;
- age 18 years and older;
- four weeks to twelve months postpartum;
- does not self-report being previously diagnosed with or treated for depression, postpartum depression, or other mental health conditions, such as bipolar disorder. Mothers previously diagnosed with and/or treated for PPD are at higher risk for PPD with subsequent pregnancies (National Institute of Mental Health, n.d.);
- discharged home from the hospital at the same time as their newborn. Mothers who have newborns with medical problems or complications that require extended hospitalization are more likely to experience PPD (National Institute of Mental Health, n.d.);
- youngest child is a singleton, between four weeks and twelve months of age. Mothers with multiple births such as twins or triplets, are more

likely to experience severe depression when compared to mothers of singletons (Choi, Binshai, & Minkovitz, 2009);

- all children that the mother cares for does not have a chronic condition. Mothers who have children with chronic conditions are likely to experience stressors associated with depression (Pinquart, 2019);
- able to read, write, and speak English.

Sample Size Calculation

G*Power calculator version 3.1.9.4 (Faul, Erdfelder, Lang, & Butler, 2007) was used to determine the sample size needed to address the specific aims of the study. Based on multiple regression and correlation analysis procedure with a power of .80, .15 effect size, and seven independent variables at an alpha level of .05, the recommended sample size is at least 115 participants. To consider attrition of participants, the target sample size was 125 participants. Previous research investigating the correlations among racial identity attitudes and mental health status of Black college students yielded weak to moderate statistically significant correlations (r=.25, r=.37) between depressive symptoms and self-hate or anti-White racial identity attitudes (*n*= 340) (Worrell et al., 2011), so this study used a moderate effect size of .15 to conduct power analysis.

Recruitment of Sample

Participants were recruited in the metropolitan areas surrounding Atlanta Georgia by using physical flyers posted within health departments, women's health clinics, pediatric offices, childcare facilities, public libraries, universities, and hair salons. Any sites with email capabilities had the option to share the

digital flyer with potential participants via email as well. Prior to recruitment the student PI discussed the study purpose with the office manager, supervising physician, lead nurse, daycare owner, and/or other pertinent office staff at the locations described above. Consent to advertise and passively recruit participants were obtained from each location. While the staff may have provided study information to potential participants, only the PI answered questions/concerns of potential participants regarding the study. The email address and telephone number of the PI was provided on the flyer and digital advertisements so interested mothers contacted the PI with any questions or concerns. Digital advertisements were also posted on Black mom blogs, Certified Nurse Midwife association social media pages, and various social media platforms (Twitter, Facebook, LinkedIn, Instagram).

Participants remained anonymous throughout the recruiting process because their names nor other identifying information were collected by the PI. Referral or snowball technique was also used to recruit participants. Eligible participants who completed the survey were asked to let other mothers know about the study and refer potential participants to contact the PI if they were interested in participating in the study.

Potential study participants accessed the Qualtrics survey via the unique URL provided by the PI. When potential participants accessed the link, screening questions were displayed in a sequential format to determine eligibility. The screening questions (Appendix A) determined if the potential participant (1) identified as Black/African American; (2) was not currently receiving treatment for

or had not been previously diagnosed with depression, PPD, or other mental health concerns; (3) the participant's youngest child was 12 months of age or younger; (4) the mother and infant were discharged home from the hospital at the same time; and (5) no children for which the potential participant cared for had chronic health conditions.

Protection of Human Subjects

Institutional Review Board approval was obtained from Georgia State University and the Georgia Department of Public Health to ensure all participants were protected. In this study, participants did not have any more risks than they would in a normal day of life. There was the possibility that participation in this study caused participants some discomfort when answering questions about being African American/Black. However, participants could discontinue the survey at any time. The consent form (Appendix H) for the study as well as all advertisements indicated that all interested applicants were voluntarily participating in this study and had the right to discontinue participating and/or skip survey questions at any time without repercussions.

The confidentiality of all participants and their records were upheld to the extent allowed by law. A study participant number was used on study records rather than their name or other identifying information. The data were collected via the internet using the Qualtrics survey platform, which is a secure application. The PI did not collect IP addresses which may have revealed participants' identities. Lastly, the computers used by the PI and other members of the

research team to access the Qualtrics survey platform and data were password protected.

Mothers in this study who had an elevated score reflective of PPDS on the Edinburgh Postpartum Depression Scale (10 or greater), or a score that indicated low maternal functioning on the Barkin Index of Maternal Functioning scale (80 or less) received an electronic letter via email (Appendix G) that encouraged them to discuss their feelings about adjusting to motherhood and any difficulties they were experiencing with their primary care/women's health provider. A resource for contacting mental health providers was included in the letter as well.

Instruments

Eligible participants completed five questionnaires to collect their racial identity attitudes, PPDS, maternal functioning, maternal-infant bonding, and demographics (close-ended questions to capture maternal characteristics such as age, education level, relationship status, and income level). The instruments that used in this study are a Demographics Survey, the Cross Racial Identity Scale (CRIS), the Edinburgh Postpartum Depression Scale (EPDS), the Barkin Index of Maternal Functioning (BIMF), and the Maternal Infant Attachment Inventory (MAI).

Demographic Survey

A survey developed by the PI (Appendix B), consisted of 12 multiple choice items that captured sociodemographic information of participants: (1) mother's age; (2) age of the youngest and oldest child(ren); (3) number of dependent children that the participant cares for; (4) number of adults in the home 18 years and older; (5) mode of delivery for birth of youngest child (vaginal

or cesarean delivery); (6) current employment status; (7) type of healthcare insurance, if any; (8) educational level; (9) relationship status; and (10) income level. These variables (e.g., age, education, income level) are standard because they influence the health outcome disparities within this population of mothers and their children (Barkin et al., 2017). Variables such as number of dependent children for which the participant cares for, age of youngest child, mode of delivery during childbirth, and relationship status provided information crucial in understanding each mother's postpartum experience and burden (Barkin et al., 2017).

Racial Identity

The Cross Racial Identity Scale (CRIS) (Appendix C) was developed in the 2000s to operationalize the concept of Black racial identity as posed in literature of the 1960s (Worrell, Vandiver & Cross, 2004). The CRIS has been used extensively in Black college-aged adults and Black females up to 55 years of age (Whittaker and Neville, 2010; Worrell et al., 2011). The CRIS is a 40-item survey with six subscales which quantify racial identity attitudes. Ten items (1, 8, 11, 15, 19, 21, 27,29, 32, and 35) are included on the scale as filler items but are not used in scoring. Worrell, Vandiver, and Cross (2004) created the ten filler items to insert distance between items that measure the same racial identity subscale. The six subscales are assimilation, miseducation, self-hatred, anti-White, Afrocentricity, and multiculturalist; each subscale has five items. The CRIS uses a seven-point Likert scale and responses range from "1" – strongly disagree to "7" – strongly agree (Worrell et al., 2011). A total score is not derived, subscale scores were determined by dividing the sum of the five item

sub-scale scores by five and obtaining subscale scores ranging from 1 to 7 (Worrell, Vandiver, & Cross, 2004). Higher scores reflect stronger endorsements of the racial identity attitude which corresponds with the subscale(s).

Criterion related validity for the CRIS was determined by comparing the CRIS to subscales of other tools which measure the racial identity of Black people in America. The comparison to Seller's Multidimensional Inventory of Blackness and the Multigroup Ethnic Identity Measure determined that the CRIS had a moderate correlation with both tools [r = .50 to .55] (Worrell et al., 2011), indicating that the CRIS and these other tools have a positive relationship. In previous research, the Cronbach alpha of the CRIS ranged from .78 to .91 in samples of Black individuals, including women ranging from age 18 – 60 years (Hair, Anderson, Tatham, & Black, 1995; Worrell et al., 2011). In this study, the sub scales had high reliability as well (α = .79 - 87).

Maternal Identity

Empirical evidence reflects the influence that a mother's compromised mental state may have on the child's development and the maternal-infant bond (Kurdahi Badr et al., 2018; Madlala and Kassier, 2018; Rotherham-Fuller et al., 2018). Because a mother's state of mental health, particularly PPD and level of maternal functioning, can negatively influence her maternal identity, it is necessary to quantify and measure these concepts as they relate to Black mothers and their infant.

Postpartum depressive symptoms. The Edinburgh Postnatal Depression Scale (EPDS) (Appendix D) was used to measure PPDS. The EPDS has been used extensively in clinical practice to detect major and minor depressive

symptoms in postpartum mothers (Hanusa, Scholle, Haskett, Spadaro, & Wisner, 2008). The EPDS is a screening tool and therefore, is not used to diagnose PPD but to detect PPDS and mothers with scores indicative of PPD require referral for further evaluation and diagnosis.

The EPDS is a 10-item questionnaire which includes items such as, “I have been able to laugh and see the funny side of things” and “the thought of harming myself has occurred to me”. Each item has four possible responses which range from: “no, not at all” to “yes, very often:”; or “no, not at all” to “yes, quite a lot”; “as much as I ever did” to “no, not at all”; or “yes, most of the time I haven’t been able to cope at all” to “no, I have been coping as well as ever” with each item score ranging from 0 to 3. Questions 3 and 5 through 10 are reverse coded. Total scores range from 0 – 30 with higher scores indicating more depressive symptoms; the clinical threshold is a score of 10, which indicates depressive symptoms and requires further assessment (Cox et al., 1987).

The EPDS has been used within the United States and internationally on Black women during the prenatal period and throughout the first postpartum year (Gibson, McKenzie-McHarg, Shakespeare, Price, & Gray, 2009; Horowitz, Murphy, Gregory, & Wojcik, 2011). The sensitivity of the EPDS ranges from .59 to .80 and has a specificity of .77 to .88 (Bodnar-Deren et al., 2017), both of which are adequate and significantly more accurate than other tools designed to detect PPDS (Hanusa et al., 2008). In this study the EPDS scale was acceptable with a Cronbach’s alpha of .89. Mothers in the study who had a score of 10 or higher, indicating PPDS received an electronic letter via email encouraging them

to discuss their PPDS with their primary care/women's health provider. A resource to contact mental health providers/therapists in Georgia was included in the letter.

Maternal functioning. The Barkin Index of Maternal Functioning (BIMF) (Appendix E) was used to measure maternal functioning. The instrument was developed in 2010 to assess maternal identity, functional status, and psychological well-being of postpartum mothers (Barkin et al., 2010). The index has 20 items on a Likert scale with responses ranging from "0" – strongly disagree to "7" – strongly agree; two items, 16 and 18 are reverse coded. Total scores range from 0 – 120, with higher scores indicating higher maternal functioning; total scores of 80 or lower indicate low maternal functioning and possibly PPDS (Barkin et al., 2017). BIMF includes items such as, "I am a good mother" and "I am taking good care of my baby's physical needs (feedings, changing diapers, doctor's appointments) (Barkin et al., 2010). Through focus groups, the instrument developers determined that seven functional areas must be addressed to quantify maternal functioning: (1) self-care; (2) infant care; (3) mother-child interaction; (4) psychological well-being; (5) social support; (6) management; and (7) adjustment. Although some items in BIMF measures psychological well-being, these items are different than those in the EPDS because BIMF emphasizes the woman's ability to complete tasks related to caring for herself and her infant. Psychological well-being items in BIMF include, "I am comfortable with the way I've chosen to feed my baby (either bottle or breast, or both)", "I trust my own feelings (instincts) when it comes to taking care

of my baby", and "Anxiety or worry often interferes with my mothering ability." The EPDS focuses on the woman's psychological symptoms of PPD and no items reference the infant or the mother's adjustment to motherhood. While BIMF includes the domain of psychological well-being, it is within the context of mothering.

BIMF has been used in studies which included Black women within the first postpartum year (Barkin et al., 2017) but the majority of participants were White (Barkin et al., 2014; Ayudin and Kukulu, 2018). The 20-item BIMF has adequate to moderate internal consistency with a Cronbach alpha from .73 (Ayudin and Kukulu, 2018) to .87 and moderate to strong, positive inter-item correlations ranging from .50 to .70 (Barkin et al., 2014); in this study the Cronbach alpha was .84. There is also the option to use BIMF as an 18-item tool when providers are not interested in capturing mothers' anxiety levels or perceptions of others. This 18-item option removes items 16 ("I worry about how other people judge me (as a mother") and 18 ("Anxiety or worry often interferes with my mothering ability") which measure maternal anxiety and judgement from others (Barkin et al., 2014). The 18-item version was used by the student PI in a small feasibility study (*N*=33 Black mothers) and had a Cronbach alpha of .87 (Floyd and Aycock, 2020).

Maternal-infant bonding. The Maternal Attachment Inventory (MAI) (Appendix F) was developed in the 1990s by Muller to assess affectionate maternal-infant attachment (Muller, 1994) and was used to assess maternal-infant bonding in the study. The tool has been used to assess the relationship

between mothers and their infant(s) at two days to 12 months in the postpartum period. The MAI has been used in studies which included postpartum women and their infants of various ethnicities and nationalities and has been translated to multiple languages, including Korean and Portuguese (Perrelli et al., 2014). However, the samples predominantly consisted of White, partnered, middle-class mothers (Damato, 2004; Mathews, Emerson, Moore, Fial, & Hanna, 2019; Muller, 1996; Wilkinson and Scherl, 2006). MAI consists of 26-items with a 4-point Likert scale with responses ranging from “1” – seldom to “4” – always. Total scores range from 26 to 104 with higher scores reflecting higher levels of affectionate maternal-infant attachment. The MAI has not been validated in samples with Black mothers. In previous studies the MAI had adequate Cronbach alphas of .76 to .93 with White/European mothers and their infants throughout the first year of the postpartum period (Mathews et al., 2019). The tool also had an adequate Cronbach alpha of .76 to .85 in samples with Taiwanese mothers and infants 4 weeks to 8 months postpartum (Lai et al., 2014). In this study the Cronbach alpha was .93. The MAI has also been found to highly correlate with other scales including How I Feel about Baby scale (r=.45) (Perrelli et al., 2014). This reflects that the scale measures similar concepts related to the mother’s feelings towards her infant but that the scales are not identical, which justifies using the more recently developed MAI scale.

Data Collection and Analysis

Data Collection Procedures

All potential participants contacted the PI via email or telephone to get more information about the study and/or to receive a unique URL, which provided

access to screening questions, consent form, and questionnaires within the Qualtrics survey. Based on inclusion/exclusion criteria, those eligible then proceeded to review the consent for study participation. Consent information was provided within the Qualtrics survey and read/reviewed by the participant independently. Potential participants provided their consent after completing the screening questions which determined eligibility, but before completing the questionnaires, and demographic survey. The email address and phone number of the PI was provided on the Qualtrics survey if eligible participants had questions about the consent information or the study. Potential participants were informed that their participation in the study was voluntary and could be terminated at any time, if they desired. By proceeding to complete these questionnaires, the participants were agreeing to participate and providing consent. Interested online participants who do not meet eligibility criteria were shown a screen that thanked them for their willingness to participate but were not required to consent to the study because the questionnaire items were not provided.

Eligible participants that completed the questionnaires online and provided a valid mailing address received a $10 gift certificate in the mail. To ensure participants' anonymity, mailing address information was collected using a separate anonymized raffle in Qualtrics. The questionnaires had 106 total items and were arranged in the following order starting with Cross Racial Identity Scale, Barkin Index of Maternal Functioning, Edinburgh Postnatal Depression Scale, Maternal Attachment Inventory, and Demographic Questions. Qualtrics

survey settings were also enacted to prompt participants to respond to uncompleted items but were not required for survey completion. Participants whose surveys contained missing data were contacted if participants' email addresses or phone numbers were provided. Surveys did not need to be completed at one sitting if taken online on participants' own device. Participants had the opportunity to save progress and return to complete their survey later. Surveys remained open until the target sample size of completed surveys were achieved. After that time, any incomplete surveys were closed and no longer available to participants for completion. Qualtrics survey settings were established so that no person was able to complete the survey or eligibility criteria more than once without permission.

Because participants were screened for PPDS and maternal functioning, mothers with scores indicative of PPDS or low maternal functioning were contacted via email by the PI. The electronic letter (Appendix G) provided to these participants informed them that they may be experiencing signs of PPD or low maternal functioning based on their responses to the questionnaires. The letter encouraged the mother(s) to contact their primary care or women's health provider to obtain further evaluation for PPD. A resource that provided a list of mental healthcare providers/therapists in Georgia were included along with the contact information (email and telephone number) of the PI.

Data Management Plan

Throughout recruitment the PI reviewed the questionnaires for missing data and obtained additional information from participants, as needed. The results were securely stored on the Qualtrics website and once all unidentifiable

data were collected, was transferred to International Business Machines Statistic Package for Social Sciences (IBM SPSS) version 25 for Windows (Armonk, NY) and Statistical Software for Data Science (STATA) version 16 for Windows (College Station, TX) for analysis.

Data Analysis

Prior to conducting analysis to address the research questions and hypotheses, the quality of the data was assessed for outliers and incomplete responses. Descriptive statistics (i.e. frequencies, percentages and measures of central tendency) were used to describe the demographic characteristics of the sample, the independent, and dependent study variables. Bivariate correlations using Pearson correlation coefficients were used to identify the relationships between study variables if data were symmetrical. If data were skewed, Spearman's rho correlation was used. Study variables were examined for outliers and assumption violations of logistic regression analyses prior to inferential data analyses and resolved, as needed. The influence of maternal characteristics (age, education level, relationship status, income level, mode of delivery during childbirth, and number of living children) on maternal functioning, presence of PPDS, and maternal-infant bonding was also explored.

Data analysis for specific aims. When addressing hypotheses 1a and 1b of the primary aim to investigate the relationships among racial identity attitudes, PPDS, and maternal functioning, a hierarchical cluster analysis was performed to aggregate participants based on their CRIS racial identity attitude scores. Descriptive statistics described the sample and the racial identity attitude types present in the sample. Analysis of variance determined whether the racial identity

attitude clusters differed in their PPDS and maternal functioning scores. When addressing the secondary aim and hypothesis 2 to determine the relationship between PPDS and maternal-infant bonding, Spearman's correlation and logistic regression analysis was used. Spearman's correlation and logistic regression was also used to address the third aim and hypothesis 3 to determine the relationship between maternal functioning and maternal-infant bonding within the sample. Lastly, the two research questions were addressed. The first research question, to determine whether there was a relationship between maternal functioning levels and postpartum depressive symptoms, Spearman's correlation was used. The second research question asked which variable, maternal functioning or postpartum depressive symptoms, was the stronger predictor of maternal-infant bonding. To address this question multiple linear regression analysis was used.

CHAPTER IV

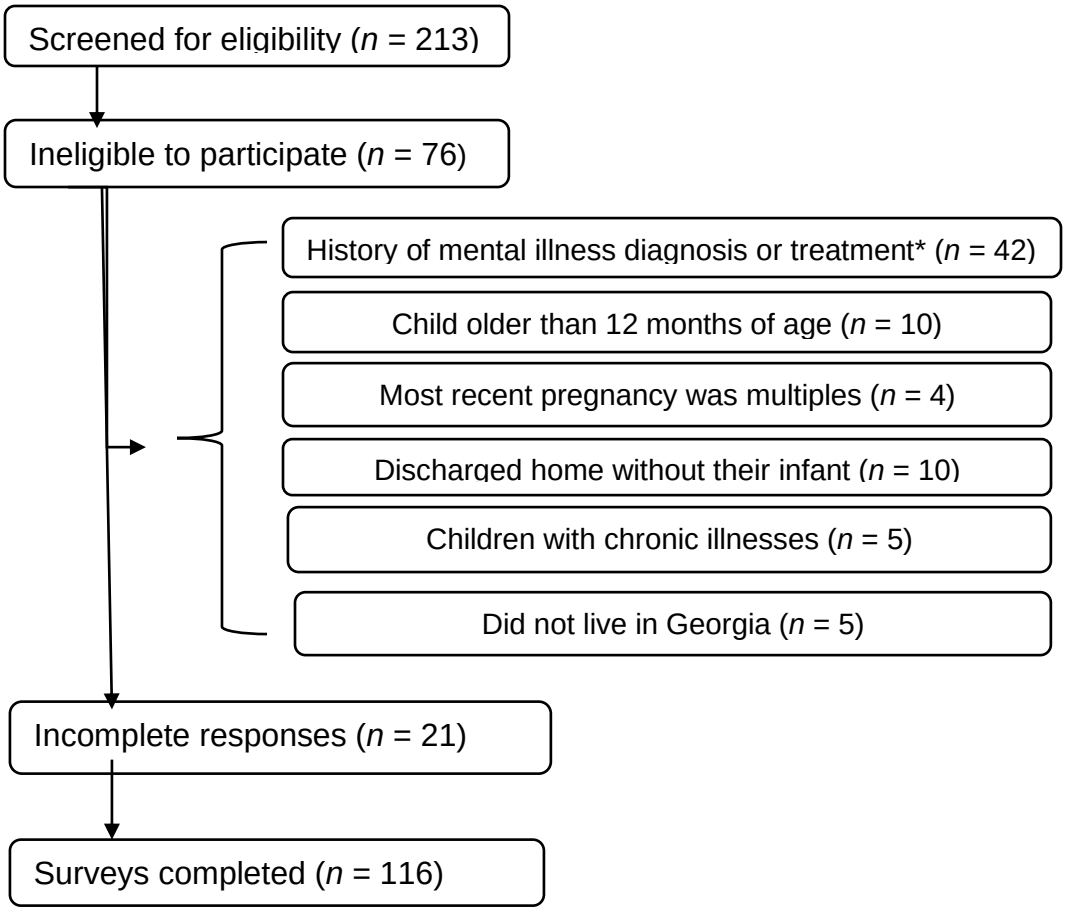
RESULTS

This chapter presents the findings of this exploratory correlational study investigating the relationships between racial identity attitudes, postpartum depressive symptoms, maternal functioning, and maternal-infant bonding in postpartum Black mothers. A description of the mothers' characteristics and study variables are provided and the findings from hypotheses testing and research questions are presented.

Screening and Response Rate

From February 12, 2020 to April 29, 2020, 213 Black postpartum mothers accessed the Qualtrics online platform to learn about the study and to be screened for eligibility. Based on the screening questions presented within the Qualtrics survey, 76 mothers were not eligible to participate. Of the 137 who were eligible and consented to participate, 22 did not complete the surveys. These mothers were contacted via email and asked to provide their answers via Qualtrics using a special hyperlink to their incomplete survey; 1 mother chose to complete the survey. Of the 22 incomplete surveys: 18 (82%) participants only answered a few screening questions or completed the consent form but did not provide answers to the study instruments, 2 (9%) only completed the racial identity instrument and 2 (9%) completed 3 study instruments but not the

maternal-infant attachment tool or demographic questions. Data from the 22 incomplete surveys were not included in the analysis. The final sample included 116 participants (recruitment rate 54%), meeting the target sample size assuming 80% power and .15 effect size. Figure 2 provides details of screening and response rates.



*Mothers who indicated a history of mental illness diagnosis or treatment in screening questions were contacted via email to ensure mother had been diagnosed with or received treatment for a mental illness in the past.

Figure 2. Screening and response rate

Data Cleaning

The survey data were transferred from Qualtrics to SPSS. Prior to testing the hypotheses, descriptive statistics were performed to check each study variable's distribution, outliers, and missing data. Normality was assessed for the three main variables (PPDS, maternal functioning, and maternal-infant bonding) as well as two covariates (income and number of dependent children) by examining skewness, kurtosis, histograms, and a goodness of fit test (Shapiro-Wilk test). Normality of racial identity attitudes was not assessed but a cluster analysis was performed which will be described later. Assessment of the variables indicated that all were skewed. A logarithmic transformation and a square root transformation were conducted on these variables, but normal distribution was not achieved for any variables. Therefore, only non-parametric correlational analyses were performed.

Demographic Characteristics of the Sample

Black mothers (N = 116) ranged in age from 18 to 41 years (M = 29.5; SD = 5.3) and their infants were 1 to 12 months old (M = 5.6; SD = 3.5). The majority of mothers were married or cohabitating with their partner (71%), had a college degree (53%), worked full-time (57%), had delivered their youngest child vaginally (62%), were enrolled in Medicaid/Medicare (55%), and had a total household income of $26,000 or more (65%). See Table 1 for the demographic characteristics of the sample.

Table 1

Demographic characteristics of the sample (N = 116)

	Mean (SD)
Mother's age (years)	29.5 (±5.3)
Infant's age (months)	5.6 (±3.5)
Total number of dependent children	1.9 (±1.1)
	n (%)
Type of Delivery	
Vaginal	72 (62)
Caesarean	44 (38)
Mother's education level	
Did not complete high school	8 (7)
High school or GED	43 (37)
Associate degree/Technical degree	10 (9)
College degree or postgraduate	55 (47)
Household income past 12 months	
Less than $26,000	41 (35)
$26,000 - $49,999	21 (18)
$50,000 - $74,999	24 (21)
$75,000 - $149,999	18 (16)
$150,000 or more	12 (10)
Type of Insurance	
None	32 (28)
Medicaid/Medicare	64 (55)
Private	20 (17)
Relationship status	
Single	34 (29)
Living with partner/Married	82 (71)
Employment status	
Unemployed/Stay-at-home-mom	36 (31)
Part-time	14 (12)
Full-time	66 (57)

Descriptive Statistics of Study Variables

The descriptive statistics of the study variables (i.e. racial identity attitudes, depressive symptoms, maternal functioning and maternal-infant bond) and definitions for the racial identity attitudes are provided in Table 2 along with the instrument Cronbach alpha coefficients. All instruments had adequate Cronbach's alpha coefficients of .79 or greater.

Table 2

Descriptive statistics of study variables

	M (SD)	Actual Range	Possible Range	α
Racial Identity Attitudes				.84
Assimilation	2.6 (±1.4)	1 – 6.4	1 – 7	.81
Miseducated	3 (±1.5)	1 – 6.8	1 – 7	.87
Self-hate	1.9 (±1.5)	1 – 6.2	1 – 7	.87
Anti-White	1.8 (±0.9)	1 – 4.8	1 – 7	.83
Afrocentric	3.7 (±1.2)	1.4 – 6.8	1 – 7	.79
Multiculturalist	5.5 (±1.1)	1 – 7	1 – 7	.79
Postpartum depressive symptoms	7.1 (±5.3)	0 – 30	0 – 30	.89
Maternal functioning	97.4 (±13.3)	42 – 120	0 – 120	.84
Maternal-infant bond	100.3 (±6.8)	51 – 104	26 – 104	.93

Racial Identity Attitude Definitions:
Assimilation: Adopts ways/beliefs of White people to dissociate from Black culture
Miseducated: Believes negative stereotypes of Black people
Self-hate: Internalizes negative beliefs towards Black people
Anti-White: Strong hate for White people
Afrocentric: Takes deep interest in Black culture
Multiculturalist: Respects all cultures while having high regard for being Black

Racial Identity Attitudes

Of the six racial identity subscales represented in the study, the multiculturalist (*M* = 5.5 ±1.1) and Afrocentric (*M* = 3.7 ±1.2) subscales were the only ones with above average mean scores. This suggests that overall, the

mothers in the sample have a high regard for being Black and have respect for other cultural groups. Conversely, the self-hate (*M* = 1.9 ±1.5) and anti-White (*M* = 1.8 ±0.9) subscales had the lowest mean scores. This suggests that most mothers in the sample did not possess a strong hate for themselves for being Black, nor a strong disdain for White people. This finding further supports that the sample has a high regard for the Black racial group and respect for other racial groups.

In explaining the racial identity subscale scores, each mother has a score for each of the six racial identity attitudes. Therefore, each mother had six racial identity scores, one from each subscale (assimilation, miseducation, self-hated, Afrocentric, anti-White, and multiculturalist). Worrell and colleagues (2004) recommend that these six subscale scores make up their individual racial identity profile. Those individual racial identity profiles are then analyzed to create clusters of mothers who have similar racial identity attitude profiles. Creating racial identity clusters of participants based on their individual racial identity profiles reflects the multi-faceted racial identity of Black people. Therefore, to better understand the CRIS racial identity profiles of postpartum Black mothers within this study, a hierarchical cluster analysis was conducted. Following the analysis each participant could only be assigned to one cluster, which represents her racial identity.

Cluster analysis is an exploratory multivariate technique that identifies homogenous groups of participants within a sample based on specified characteristics (Johnson, 1967). Every participant was given a mean score for

each racial identity attitude subscale. Prior to conducting the hierarchical cluster analysis, each racial identity attitude subscale mean score was converted into a standardized z score, which facilitated comparison between various groups despite the outliers within the data (Field, 2009). Ward's hierarchical clustering method using a Euclidian squared distance score was used within this data set to maximize the significance of differences between each cluster (Ward, 1963). A dendrogram was also used to visualize the number of possible racial identity clusters identified within the sample. These methods determined a potential of 5 or 6 cluster solutions. Then, a *k*-means cluster analysis was performed, using the 5 and 6 cluster specification. The 6-cluster solution more closely aligned with findings in the literature (Whittaker & Neville, 2010; Worrell, et al., 2006) and adequately described the different racial identity groups within the sample (Figure 3).

Racial identity attitude clusters. The 6-cluster groups ranged in size from 5 – 42 participants. To name the clusters identified within this study, the categorizations of previous studies conducted by Worrell and colleagues (2006), and Whittaker and Neville (2010) were used. While the majority of the clusters: anti-White, low race salience, assimilated and miseducated, self-hating, and multiculturalist, aligned closely with the groups identified by Worrell and colleagues (2006), the remaining cluster, labeled as conflicted, more closely reflected the groups as described by Carter (1996) and Neville and Lilly (2000).

The six racial identity clusters are described in order of the three racial identity categories (pre-encounter, immersion-emersion, and internalization)

according to Cross's Nigrescence theory (Cross & Vandiver, 2001; Worrell et al., 2000). The pre-encounter category describes Black people who have low or negative salience toward their racial group and includes three racial identity subscale attitudes: assimilation, miseducation, and self-hating. The immersion-emersion cluster describes Black people who no longer endorse negative stereotypes of their racial group, begin to broaden their perspectives and take deep interest in Black culture (Afrocentric attitude). Conversely, this category also includes Black people who have a strong hate for White people (anti-White attitude). The last category, internalization, reflects a Black person who embraces and respects people from all cultures while holding high salience for being Black (multiculturalist attitude).

Cluster 1: Low race salience. Cluster 1 (n = 5) is characterized by having negative or below average z-scores in all six racial identity subscales; these findings are reflective of the pre-encounter category in Cross's Nigrescence theory. The construct of race is unimportant to mothers within this cluster. As a result, they either feel indifference or negatively towards the Black race (Worrell et al., 2006), hence the term low race salience. Mothers in this group may be more likely to find other common characteristics outside of race, such as nationality or faith, to establish their community or support systems.

Cluster 2: Assimilated and miseducated. Cluster 2 (n = *19*) had the highest subscale score of assimilation (z = 1.17) with a high score of miseducation (z = 0.90) as well. Therefore, this cluster is labeled as assimilated and miseducated, and is also within the pre-encounter category. Mothers within

this cluster prefer to identify as an American and focus on the similarities shared between all Americans instead of the commonalities among Black people in America (Worrell et al., 2006). Because this cluster also had an above average miseducation score, these mothers may also endorse negative stereotypes associated with Black people in America.

Cluster 3: Self-hating. Cluster 3 (*n* = 12) had the highest self-hate score (*z* = 1.82) when compared to all other clusters and is therefore labeled as the self-hate cluster. Self-hate is the last cluster within the pre-encounter category. Mothers in this cluster have a very negative regard towards being Black and internalize this by hating themselves (Worrell et al., 2011).

Cluster 4: Anti-White. Cluster 4 (*n = 25*) had negative scores in the pre-encounter subscales (assimilation, miseducation, and self-hate), which describes Black people that have low or negative salience toward their racial group. This cluster also had above average scores in anti-White (*z* = 1.06) and Afrocentric (*z* = 0.61) subscales. Because anti-White was the most positive attitude within this cluster when compared to other clusters, the participants were characterized as being Anti-White. This cluster is within the immersion-emersion category. The mothers within this cluster may be experiencing a time of uncertainty regarding their racial identity. These mothers may be immersing themselves in anti-White ideology while simultaneously participating in activities centered around African cultures and beliefs (Worrell et al., 2006).

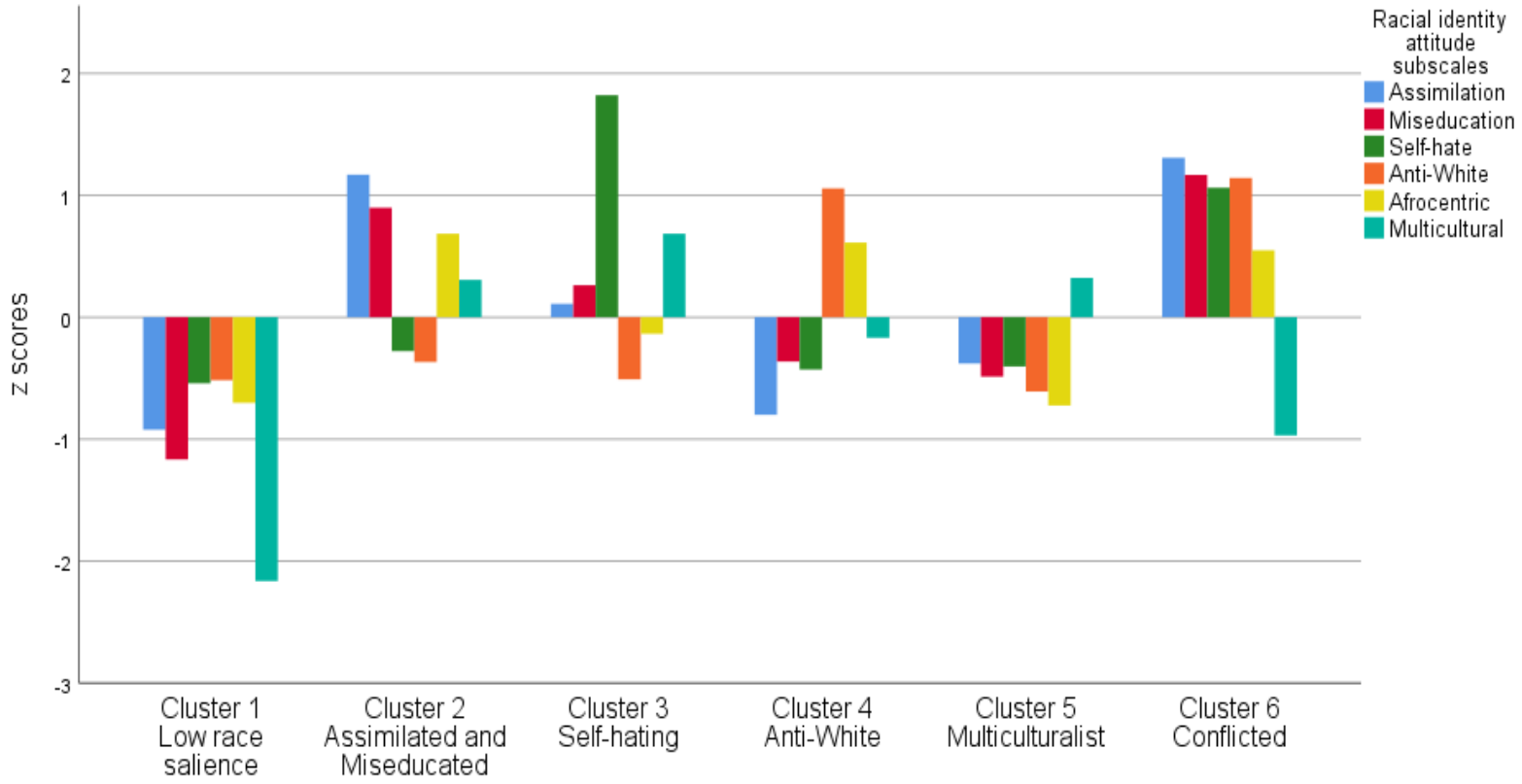


Figure 3. Racial identity clusters within a sample of Black postpartum mothers.

Cluster 5: Multiculturalist. Cluster 5 (*n* = 42) had negative scores for all CRIS subscales except the multiculturalist subscale (*z* = 0.32) and falls in the internalization category. This cluster also contained the most participants than any other group. According to Worrell and colleagues (2006), Black people with a multiculturalist racial identity find great importance in being Black while also embracing other races or cultures and dismissing negative race-based beliefs.

Cluster 6: Conflicted. Cluster 6 (*n* = 13) had above average scores in assimilation (*z* = 1.3), miseducation (*z* = *1*.17), self-hate (*z* = *1*.06), anti-White (*z* = 1.14), and Afrocentric (*z* = 0.55) but yet a very negative multicultural score (*z* = -0.97). While this cluster had the highest score for anti-White subscale, when considering its scores for all other subscales, categorizing this cluster as anti-White would not be an adequate or accurate description. The conflicted cluster does not closely align with the categories presented within Cross's Nigrescence Theory, however, previous studies (Carter, 1996; Neville & Lilly, 2000) identified conflicted clusters within their samples and described them as being in a conflicted stage of racial identity. While these mothers feel the need to assimilate to the dominant American culture, as evidenced by their above average scores in the pre-encounter phase, their above average scores in anti-White and Afrocentric subscales also show they are transitioning to a more complex perspective on White and Black issues within this country (Worrell et al., 2006). Moreover, the negative multicultural score shows that these mothers are not yet ready to embrace all groups of people in America, such as Hispanics, Asian-Americans, Whites, Jewish people, gays, or lesbians. (Worrell et al., 2004).

Postpartum Depressive Symptoms

Mean PPDS measured by the Edinburgh Postnatal Depression Scale (EPDS) were 7.1 (±5.3), indicating low levels of postpartum depressive symptoms. The EPDS provides cut-offs for mild (total score 10 -12) or severe PPDS (total score 13 or greater). Using these cut-off scores, there were 17 (15%) mothers with mild PPDS and 17 (15%) with severe PPDS. It is important to note that mothers 1 – 12 months postpartum had EPDS scores which indicated PPDS; the majority of mothers experiencing PPDS were 4 – 12 months postpartum (*n* = 24, 71%). While mothers regardless of PPDS severity require further clinical assessment to be diagnosed or treated for PPD, mothers with scores indicating severe PPDS may need more urgent intervention. Furthermore, the last question of the EPDS asks mothers if they have thought of harming themselves. Regardless of total EPDS scores, mothers who respond "sometimes", "hardly ever", or "yes, quite often" to having thoughts of self-harm require urgent intervention as well. Of the 34 mothers with scores indicating PPDS, 13 (38%) chose answers which reflected they had thought about harming themselves; 2 mothers without scores indicating PPDS also chose answers which indicated thoughts of self-harm. Non-parametric tests (chi-square and Mann-Whitney U) were used to compare demographic characteristics between mothers with and without PPDS; no statistically significant differences were observed.

Maternal Functioning

Mean maternal functioning scores measured by the Barkin Index of Maternal Functioning (BIMF) were 97.4 (±13.3), indicating high levels of maternal functioning. Mothers with a total score less than 80 may indicate poor maternal functioning; 11(9%) mothers had poor maternal functioning scores. A Mann-Whitney U test determined that mothers with poor maternal functioning were younger (*Mdn* = 27 years) than mothers with adequate maternal functioning (*Mdn* = 30 years), *U* = 793.50, *p* = .04; there were no other distinguishing demographic differences between the two groups.

Maternal-Infant Bonding

This sample of Black mothers had a mean maternal-infant bond score measured by the MAI of 100.3 (±6.83), indicating affectionate maternal-infant bonding. Due to the exploratory nature of this study, the MAI scores were dichotomized so that scores less than the median score of 103 indicate less affectionate maternal-infant bonding (*n* = 57, 49%) and scores 103 or greater indicate greater affectionate maternal-infant bonding (*n* = 89, 51%). Using median splits to create dichotomization is common in studies to simplify analysis, interpretation, and categorize variables related to mental health (Decoster, Gallucci, & Iselin, 2011). Mann Whitney U and Chi square analysis was performed to determine differences in demographics among mothers with lesser or greater bonding with their infant. A chi-square test of independence was performed to examine the relation between employment status and maternal-infant bonding. The relation between these variables was significant, X^2 (2, *N* =

116) = 13.13, p = .001. Mothers who worked full-time were more likely than mothers who stayed at home to have less affectionate bonds with their infant. A chi-square test of independence was also performed to examine the relation between income level and maternal-infant bonding. The relation between these variables was significant, X^2 (5, *N* = 116) = 13.37, p = .02. Mothers with a total household income of at least $26,000 were more likely than mothers whose total income household income was lesser to have less affectionate bonds with their infant.

Relationships among Major Study Variables

Bivariate correlations were performed to describe the relationships between select demographic characteristics and major study variables. The CRIS racial identity subscale (assimilation, miseducation, self-hate, anti-White, Afrocentric, and multiculturalist) scores were used in this correlation instead of the cluster scores, since the subscale scores have been shown to correlate with psychological states of well-being and distress (Neville & Lilly, 2000). Correlations among the CRIS racial identity profile clusters and psychological status will be discussed later. Spearman's rank correlation coefficients (r_s) were calculated for all variables due to their non-normal distribution. While there was no single demographic variable (mother's age, income, number of dependent children, relationship status, mode of delivery) that had a significant correlation with every major study variable, previous literature and the Becoming a Mother theory find that these demographic variables, as well as relationship status and mode of delivery, influence mothers' adaptation to motherhood and their

psychological state (Ko, et al., 2017; Mercer, 1995). Therefore, these variables were included as covariates in the hypothesis testing. The correlation values for select study variables are presented in Table 3.

Table 3

Spearman's rank correlation coefficients among study variables (N=116)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
Racial identity attitude subscales:													
1. CRIS assimilation													
2. CRIS miseducation	**.59**												
3. CRIS self-hate	**.32**	**.27**											
4. CRIS anti-White	.04	.17	**.21**										
5. CRIS Afrocentric	.16	**.29**	.15	**.44**									
6. CRIS multiculturalist	-.02	-.04	-.07	**-.26**	.01								
7. Postpartum depressive score	-.03	.11	**.19**	.17	.09	.05							
8. Maternal functioning score	.12	-.05	**-.29**	**-.24**	-.05	-.03	**-.48**						
9. Maternal-infant bonding score	**.19**	-.01	-.18	-.14	-.01	-.05	-.16	**.37**					
10. Mother's age	-.05	**-.25**	.03	.15	-.14	**-.25**	-.16	-.06	-.16				
11. Income	**-.44**	**-.56**	-.17	-.01	-.15	.02	-.08	-.10	**-.28**				
12. Dependent children	.08	-.02	.00	.06	.03	.01	**-.20**	-.01	.04				

Note: Correlations in bold are significant at $p < .05$. Cross Racial Identity Scale (CRIS) subscales assimilation, miseducation, self-hate, anti-White, Afrocentric, and multiculturalist: scores range 1 – 7. Edinburgh Postnatal Depression Scale (EPDS) scores range 0 – 30. Barkin Index of Maternal Functioning (BIMF) scores range 0 – 120.

Hypothesis Testing

Specific Aim 1. *Examine the relationships between racial identity attitudes (assimilation, miseducation, self-hatred, Afrocentric, anti-White, and multiculturalist), postpartum depressive symptoms, and maternal functioning of Black mothers during the postpartum period.*

Hypothesis 1a. *Mothers with racial identity attitudes of multiculturalist and Afrocentric had lower levels of postpartum depressive symptoms and higher levels of maternal functioning.*

Hypothesis 1b. *Mothers with racial identity attitudes of assimilation, miseducation, self-hatred, and anti-White had higher levels of postpartum depressive symptoms and lower levels of maternal functioning.*

The racial identity clusters identified in this sample (low race salience, assimilated and miseducated, self-hating, anti-White, multiculturalist, and conflicted) were used in these hypotheses test to better understand their relationship with psychological status. There was no Afrocentric cluster within this sample of Black mothers, therefore this relationship is unable to be assessed in this study.

The first analysis of variance was performed to test whether there was a difference in PPDS scores between the six CRIS clusters. The dependent variable was PPDS and the six CRIS racial identity clusters served as the independent or grouping variables. The analysis provided evidence that there were no statistically significant differences in mean PPDS scores by racial identity clusters (See Table 4). Therefore, the null hypothesis would be retained.

Table 4

Kruskal Wallis H test on Black mothers' postpartum depressive scores by racial identity cluster membership. (N = 116)

Cluster	*n*	Mean	H	df	p
Low race salience	5	6.8	3.2	5	.67
Assimilate and Miseducated	19	5.84			
Self-hating	12	10.58			
Anti-White	25	7.08			
Multiculturalist	42	6.52			
Conflicted	13	7.53			

EPDS (Edinburgh Postnatal Depression Scale): scores less than 10 indicate no postpartum depressive symptoms, scores 10 – 12 indicate mild postpartum depressive symptoms, scores 13 and greater indicate severe postpartum depressive symptoms.

To further explore PPDS by racial identity clusters, the prevalence of PPDS within each cluster was also examined for descriptive purposes (Table 5). The clusters with the largest percentage of mothers with EPDS scores of 10 or greater were the self-hating (*n* = 5, 42%), conflicted (*n* = 5, 38%), and the anti-White cluster (*n* = 9, 36%).

Table 5

Postpartum depressive symptom (PPDS) and racial identity cluster membership (n = 34)

Racial Identity Attitude Cluster	*n*	EPDS Mean (SD)	*n* (%) of cluster with PPDS
Low race salience	5	6.8 (± 5.8)	1 (20)
Assimilated and miseducated	19	5.8 (± 3.95)	3 (16)
Self-hating	12	10.6 (± 8.23)	5 (42)
Anti-White	25	7.08 (± 4.96)	9 (36)
Multiculturalist	42	6.5 (± 4.51)	11 (26)
Conflicted	13	7.54 (± 6.41)	5 (38)

EPDS (Edinburgh Postnatal Depression Scale): scores 10 – 12 indicate mild PPDS, scores 13 and greater indicate severe PPDS.

The second analysis of variance was performed to test whether there was a difference in maternal functioning levels between the six CRIS racial identity clusters. The dependent variable was maternal functioning and the six CRIS racial identity clusters served as the independent or grouping variables. A Kruskal-Wallis H test showed there was a statistically significant difference in total maternal functioning scores between the different racial identity clusters, $\chi^2(5) = 20.108$, $p < .05$ (See Table 6). Dunn's pairwise tests were carried out for the six pairs of groups. There was very strong evidence ($p < .05$, adjusted using the Bonferroni correction) of a difference in total maternal functioning scores between the assimilated and miseducated cluster, self-hating cluster, and the anti-White cluster. The mean rank for the assimilated and miseducated cluster was the highest of the groups, while the self-hating and anti-White clusters had the lowest mean ranks.

Table 6

Kruskal Wallis H test on Black mothers' maternal functioning (BIMF) scores by racial identity cluster membership. (N = 116)

Cluster	*n*	Mean rank	H	df	p
Low race salience	5	74.4	20.108	5	.00
Assimilate and miseducated	19	81.34*			
Self-hating	12	34.08*			
Anti-White	25	45.88*			
Multiculturalist	42	61.39			
Conflicted	13	56.46			

* p < .05 Dunn's pairwise test with Bonferroni correction. BIMF (Barkin Index of Maternal Functioning)

These findings suggest that the assimilated and miseducated cluster had the largest number of mothers with adequate maternal functioning and the self-

hating cluster had the largest number of mothers with inadequate maternal functioning followed by the anti-White cluster. There was no evidence of a difference between the other pairs. These results support the alternative hypothesis because there are differences in maternal functioning between the CRIS racial identity clusters. Moreover, the mothers in the multiculturalist cluster had higher mean maternal functioning scores when compared with those in the anti-White and self-hating clusters. Mothers in the assimilated and miseducated cluster had higher mean maternal functioning scores than the multiculturalist cluster.

Specific Aim 2. *Examine the relationship between postpartum depressive symptoms and maternal-infant bonding in Black mothers during the postpartum period.*

Hypothesis 2a. *Higher levels of postpartum depressive symptoms were associated with lower levels of maternal-infant bonding.*

Spearman's correlation was conducted to determine the relationship between PPDS and maternal-infant bonding in Black mothers. Standardized *z* scores were calculated for each variable prior to performing the analysis. Results of the Spearman's correlation indicated no significant linear relationship between the two variables ($r_s = -.16$, $p = .08$). Next, a logistic regression was performed to determine the effect of PPDS scores on the likelihood that participants had a less affectionate bond with their infant. The mother's age, number of dependent children, income, relationship status, and mode of delivery were included as covariates. The dependent variable, maternal-infant bond scores which measure

the strength of the maternal-infant bond was coded as 0 or 1; 0 is for more affectionate bond (MAI median score 103 or greater) and 1 for less affectionate bond (MAI median score 102 or lesser). The independent variable was the total PPDS scores (converted to standardized z scores) at the continuous level.

The full logistic regression model containing all predictor variables was statistically significant, $\chi^2(12, N = 116) = 22.59$, $p < .05$, indicating that the model was able to distinguish between mothers who reporting having, or not having an affectionate bond with their infant. The model explained between 17% (Cox and Snell R^2) and 24% (Nagelkerke R^2) of the variance in maternal-infant bonding and correctly classified 72% of cases. As shown in Table 7, only two of the independent variables made a statistically significant contribution to the model (PPDS scores and income level). The strongest predictor of reporting a less affectionate maternal-infant bond was PPDS, with an odds ratio of 1.1. This indicated that for every 1-point increase in PPDS scores, mothers were at least 1 time more likely to have a less affectionate bond with their infant. The odds ratio of 8.3 for income indicated that mothers with an income of at least $150,000 were over 8 times more likely to have a less affectionate bond with their infant than mothers who earned less than $26,000. Therefore, the null hypothesis was correctly rejected because the logistic regression analysis indicated that there is a relationship between mothers' PPDS and bonding with their infant; higher levels of PPDS were associated with lower levels of maternal-infant bonding in Black mothers.

Table 7

Model I. Summary of a multivariate regression analysis predicting maternal-infant bonding in postpartum Black mothers. (N = 116)

Predictor	*β*	SE(β)	OR	*W*	*p*
Postpartum depressive symptoms	.09	.04	1.10	5.49	.02*
Mother's age	.06	.05	1.06	1.31	.25
Number of dependent children	-.19	.22	.82	.76	.38
Income (5)	2.12	.96	8.34	4.89	.03
Relationship status				1.85	.39
Delivery				.154	.93
Constant	-3.13	1.47	.04	4.53	.03*

Summary statistics (block)	χ^2	df	*p*
Hosmer and Lemeshow	11.85	8	.16
Model	22.59	12	.03*

* $p < .05$

Specific Aim 3. *Examine the relationship between maternal functioning and maternal-infant bonding in Black mothers during the postpartum period.*

Hypothesis 3a. *Lower levels of maternal functioning were associated with lower levels of maternal-infant bonding.*

A bivariate correlation was performed between the standardized *z* scores of total maternal functioning and maternal-infant bonding in postpartum Black mothers. Results of the Spearman's correlation indicated that there was a significant moderate and negative association ($r_s = -.37$, $p < .05$) indicating the lower the maternal functioning the lower the maternal infant bond. Next, a logistic regression was performed to determine the effect of maternal functioning scores on the likelihood that participants had a less affectionate bond with their infant.

The mother's age, number of dependent children, income, relationship status, and mode of delivery were included as covariates. The dependent variable, maternal-infant bond scores which measure the strength of the maternal-infant bond was coded as 0 or 1; 0 is for affectionate bond (MAI median score 103 or greater) and 1 for less affectionate bond (MAI median score 102 or lesser). The independent variable was the total maternal functioning scores (converted to standardized z scores) at the continuous level.

The full logistic regression model containing all predictor variables was statistically significant, $\chi^2(12, N = 116) = 26.48$, $p < .05$, indicating that the model was able to distinguish between mothers who had an affectionate or less affectionate bond with their infant. The model explained between 20% (Cox and Snell R^2) and 27% (Nagelkerke R^2) of the variance in maternal-infant bonding and correctly classified 71% of cases. As shown in Table 8, only two of the independent variables made a statistically significant contribution to the model (maternal functioning score and income level). The strongest predictor of reporting a less affectionate maternal-infant bond was maternal functioning, with an odds ratio of .95. This indicated that for every 1-point increase in maternal functioning scores, mothers were at least 1 time less likely to have a less affectionate bond with their infant. The odds ratio of 7.02 for income indicated that mothers with an income of at least $150,000 were over 7 times more likely to have a less affectionate bond with their infant than mothers who earned less than $26,000. Therefore, the null hypothesis was correctly rejected because Spearman's correlation and logistic regression analysis indicated that there is a

relationship between mothers' maternal functioning and bonding with their infant; lower levels of maternal functioning was associated with lower levels of affectionate maternal-infant bonding in Black mothers.

Table 8

Model II. Summary of a multivariate regression analysis predicting maternal-infant bonding in postpartum Black mothers. (N = 116)

Predictor	*β*	SE(β)	OR	*W*	*p*
Maternal functioning	-.05	.02	.95	8.66	.00*
Mother's age	.05	.05	1.05	.90	.34
Number of dependent children	-.26	.22	.77	1.42	.24
Income (5)	1.95	.96	7.02	4.09	.04*
Relationship status				1.22	.54
Delivery				.27	.87
Constant	3.05	2.19	21.05	1.94	.16

Summary statistics (block)	χ^2	df	*p*
Hosmer and Lemeshow	1.99	8	.98
Model	26.48	12	.01*

* $p < .05$

Research Questions

Research Question 1: *Is there a relationship between maternal functioning and postpartum depressive symptoms in Black mothers?*

The Spearman's correlation indicated that PPDS and maternal functioning, according to the EPDS and BIMF scores respectively, had a significant negative correlation ($r_s = -.48$, $p < .05$) indicating the higher the PPDS, the lower the maternal functioning.

Research Question 2: *Is maternal functioning a greater predictor of maternal-infant bonding than postpartum depressive symptoms in Black mothers?*

The second and third specific aims determined that individually, PPDS and maternal functioning had a significant relationship with maternal-infant bonding. The regression analysis in the second aim determined that as mothers' PPDS increased, their likelihood to have a less affectionate bond with their infant increased. Additionally, the regression analysis in the third specific aim determined that as mothers' maternal functioning levels decreased, they were more likely to have a less affectionate bond with their infant as well. In order to answer the second research question, a regression analysis was performed to determine which variable, PPDS or maternal functioning, was the better predictor of maternal-infant bonding in Black mothers when controlling for mother's age, number of dependent children, income, relationship status, and mode of delivery. The dependent variable, maternal-infant bond scores which measure the strength of the maternal-infant bond was coded as 0 or 1; 0 is for strong affectionate bond (MAI median score 103 or greater) and 1 for less affectionate bond (MAI median score 102 or lesser). The independent variables were the PPDS and maternal functioning scores (converted to standardized z scores) at the continuous level.

The full logistic regression model (Table 9) containing all predictor variables was statistically significant, $\chi^2(13, N = 116) = 27.04$, $p < .05$, indicating that the model was able to distinguish between mothers who had affectionate or

less affectionate bonds with their infant. The model explained between 21% (Cox and Snell R^2) and 28% (Nagelkerke R^2) of the variance in maternal-infant bonding and correctly classified 71% of cases. As shown in Table 9, only two of the independent variables made a statistically significant contribution to the model (maternal functioning score and income level); PPDS were not a statistically significant predictor. The strongest predictor of reporting a less affectionate maternal-infant bond was maternal functioning, with an odds ratio of .96. This indicated that for every 1-point decrease in maternal functioning scores, mothers were at least 1 time more likely to have a less affectionate bond with their infant. The odds ratio of 7.8 for income indicated that mothers with an income of at least $150,000 were over 7 times more likely to have a less affectionate bond with their infant than mothers who earned less than $26,000. Therefore, maternal functioning scores are the greater predictor of Black mothers' bond with their infant.

Table 9

Model III. Summary of a multivariate regression analysis predicting maternal-infant bonding in postpartum Black mothers. (N = 116)

Predictor	*β*	SE(β)	OR	*W*	*p*
Maternal functioning	-.04	.02	.96	4.23	.04*
Postpartum depressive symptoms	.04	.05	1.04	.56	.45
Mother's age	.05	.05	1.05	1.03	.31
Number of dependent children	-.24	.23	.79	1.09	.30
Income (5)	2.06	.98	7.8	4.41	.04*
Relationship status				1.45	.49
Delivery				.30	.86
Constant	1.76	2.78	5.79	.40	.53

Summary statistics (block)	χ^2	df	*p*
Hosmer and Lemeshow	10.33	8	.24
Model	27.04	13	.01*

* $p < .05$

Summary

This chapter summarizes the results of a cross-sectional, correlational study to test the relationships between racial identity, PPDS, maternal functioning, and maternal-infant bonding of postpartum Black mothers. In this sample of mostly older, educated Black mothers of infants with a mean age of 5 months, racial identity attitudes varied. One-third of mothers had PPDS while the majority of the sample had adequate maternal functioning and high maternal-infant bonding. Few demographic characteristics differed by theoretical variables; mothers with poor maternal functioning were significantly younger and mothers with less affectionate bond with their infant were employed full-time and had a total household income of at least $26,000.

The sample of postpartum Black mothers were grouped into six racial identity clusters based on their racial identity subscale scores. The six clusters were labeled as (1) low race salience, (2) assimilated and miseducated, (3) self-hating, (4) anti-White, (5) multiculturalist, and (6) conflicted. Analysis of variance determined the clusters differed in their maternal functioning abilities but not in their PPDS. The assimilated and miseducated cluster had the highest maternal functioning mean scores, while the self-hating cluster and anti-White cluster were among the lowest mean scores. Regression analysis determined that individually, PPDS and maternal functioning influenced maternal-infant bonding in Black mothers. As mothers' PPDS scores increased, the affectionate bond with their infant lessened. Additionally, as mothers' maternal functioning scores decreased, their affectionate bond with their infant decreased. However, regression analysis model building determined that maternal functioning was the greater predictor of maternal-infant bonding when controlling for select demographic characteristics. Lastly, there was a significant relationship between maternal functioning and PPDS such that higher PPDS was associated with lower maternal functioning scores.

CHAPTER V

DISCUSSION AND CONCLUSIONS

This chapter presents a discussion of the hypotheses testing and overall study results presented in Chapter IV. The chapter also describes the limitations and strengths of this study, implications for clinical practice, and recommendations for future research. This research adds to the body of literature related to racial identity and its relationship with the mental well-being of Black people by replicating previous works (Whittaker & Neville, 2010; Worrell, et al., 2006) which focus on racial identity attitude clusters and their relationships with psychological well-being and depression. This is the first study that focuses on the relationship between Black racial identity and postpartum depressive symptoms and maternal functioning of Black postpartum mothers. The study examined the applicability of concepts in the Becoming A Mother and Cross's Nigrescence Theories in Black postpartum mothers.

This study attracted 213 Black postpartum mothers over a 3-month period and only 15% declined participation, which suggests a strong interest in the topic under study and value of social media in recruiting Black mothers to participate in research. Of the 213 mothers, 42 did not enroll in the study because they identified as having a history of mental illness or treatment and of the 116 that did enroll, 34 (29%) had mild to severe PPDS based on the EPDS. This further

demonstrates the need to address mental health and depression among Black women in the postpartum period as well as throughout their pregnancy. While the primary mode of recruitment was via social media, the demographic characteristics of the sample varied. Often, postpartum mental health research recruits a specific subset of Black women – those who live in low-income, resource-scarce areas and use Medicaid. Not only does this narrow focus minimize generalization of research findings, postpartum health disparities affect all Black mothers. Black mothers are not a monolith and therefore, it is necessary to include Black mothers of various demographics to fully describe and understand the unique factors which influence their postpartum mental health.

Racial Identity of Black Postpartum Mothers

Each participant had varied scores in the six CRIS subscales, which were then used to create a racial identity profile for each participant (Worrell, et al., 2004). The racial identity profile captures the various intricacies and complexities that a Black person may have regarding being Black in America. This sample of postpartum Black mothers were grouped into six racial identity clusters based on their racial identity subscale scores/profile. The six clusters were labeled as (1) low race salience, (2) assimilated and miseducated, (3) self-hating, (4) anti-White, (5) multiculturalist, and (6) conflicted. Prior research has identified up to nine clusters, as six were identified in this study lends to the complexity of racial identity and varying life experiences of Black postpartum mothers. In general, based on number of mothers falling within each cluster, most mothers were identified as having a positive regard for their Black race.

The most populous cluster was multiculturalist which consisted of 42 (36%) participants. This cluster is in the internalization category because it includes Black mothers who are proud to be Black and respect or embrace people of other races, cultures, and sexual orientation. This finding reflects the demographics in the area from which participants were recruited. Participants were recruited throughout the state of Georgia, with most mothers living in metropolitan areas within or surrounding Atlanta. According to the US Census of 2018, metro Atlanta has the largest population of Black people (34%) in the nation. The area also has a diverse population of White, Asian, Hispanic, and foreign-born people (Metro Atlanta Chamber, 2019). Therefore, many of the Black mothers in this study live in an area saturated with racial and cultural diversity, which may account for the large number of mothers in the multicultural cluster who respect or accept other races and cultural groups. Black people with a high regard for their own race and respect for others, as the case with multicultural racial identity are more likely to have a higher level of mental well-being when compared to other racial identities (Forsyth & Carter, 2012; Sellers, et al., 2003). Therefore, the mothers in this cluster may be less likely to experience PPDS, and consequently, have higher levels of maternal functioning and bonding with their infant when compared to racial identity clusters that do not have high regard for being Black, for example anti-white, self-hate and assimilation & miseducation .

The anti-White cluster was the next most populous cluster (*n* = 25; 22%) and consisted of mothers who are immersed in Black culture and are proud to be

Black and also have a distrust in or hate for White people (Worrell et al., 2006). This cluster also had a below-average score in the multiculturalist subscale, meaning these mothers do not embrace other cultures. Taking all these aspects of their racial identity profile into consideration, these mothers may have experienced an encounter with a White racist and as a result, developed an extreme hate for the White race and desire to dismantle White supremacy (Hooks, 1992). The experienced racism may also cause them to immerse themselves into Black culture and separate from other cultures and races (Worrell, et al., 2006). Racism persists throughout the United States, including Georgia and is a major public health issue. Due to the anger that Black people in this racial identity internalize, the anti-White cluster often has higher levels of depression or psychological distress when compared to other racial identity groups (Neville and Lilly, 2000), which may put these mothers at higher risk for PPD, poor maternal functioning, and poor bonding with their infant.

Although fewer mothers (*n* = 12) fell within the self-hate category, this cluster was found to have the poorest mental health, as described later. The last cluster associated with negative regard toward their Black race and poorer mental well-being was assimilation and miseducation; it was the third most populous cluster (*n* = 19). Black people were some of the earliest people to permanently settle in the United States in 1619, albeit by force and enslavement, yet they continue to fight for racial equality in this country (Pinkney, 1969). Although the Atlanta area is known to be the diverse city that is a “blue [liberal] dot in a solidly red [conservative] state” (Albert-Deitch, 2014), racism against

Black people still occurs. Some Black people believe that acquiring ideals and beliefs of Northern Europeans/White Americans is the key to attaining freedom from oppression and racism (Pinkney, 1969). Therefore, the mothers in this cluster may have acquired White beliefs and ideals, including upholding negative stereotypes towards Black people to appear less threatening. Their goal in using this assimilationist approach is to avoid the abusive and hostile treatment often aimed towards Black people in this racist society. Lastly, the low race salience and conflicted clusters had the least number of mothers and reflects those who either do not place great importance on race in general, or have contradictory feelings towards being Black, respectively. These clusters have been recently identified in the literature so there is a lack of data related to their relationships with psychological distress or well-being. There is one study by Whittaker and Neville (2010) that identified a low race salience cluster in Black American college students; these students had lower levels of psychological well-being when compared to multiculturalists but higher than those with an anti-White identity. More research is needed to better understand racial identity attitudes in Black mothers and their relationship to psychological well-being and distress.

Racial Identity and Postpartum Depressive Symptoms

In the United States Black mothers' prevalence rates of PPD have ranged from 4% to 21% (Dolbier, et al., 2012; Evagorou, et al., 2015; Hutto, et al., 2011; Liu & Tronick, 2013). Similar to previous studies (Barkin, et al., 2017; Bodnar-Dereen, et al., 2017), the mothers in this study had an overall low average EPDS score, indicating a low level of PPDS. Of the 116 mothers in this study, 29%

experienced mild to severe PPDS based on the EPDS. Although having PPDS does not always result in a diagnosis of PPD, scores on the EPDS instrument indicative of PPD should necessitate an evaluation by a mental health provider. Fifteen percent of the mothers in this study experienced severe PPDS and based on the study's screening questions, they had not been previously diagnosed with PPD. While mothers, regardless of PPDS severity (i.e. mild or severe) require further clinical assessment, mothers with EPDS scores indicating severe PPDS need more urgent evaluation. All mothers in this study who had EPDS scores of 10 and higher or disclosed suicidal thoughts, were provided resources to speak with a counselor for assistance and encouraged to speak with their healthcare provider for further assessment. Black women often do not receive treatment for mental illness, including PPD due to: (1) their distrust in the healthcare industry (Woods-Giscombe, et al., 2016); (2) their cultural difference in depressive symptomology that may result in an underdiagnosis of depression (Walton & Payne, 2016); and (3) having a strong religious faith and reliance on God to alleviate depression (Woods-Giscombe, et al., 2016).

It is of great concern that the mothers with PPDS in this study either did not recognize their symptoms of PPD, or sought treatment and had not been diagnosed with PPD, which suggests that creative educational strategies are needed to address PPD in Black women. There is no uniform guidance for women's healthcare providers to perform assessments for PPDS. The American College of Obstetricians and Gynecologists recommends that mothers contact their healthcare provider within three weeks after giving birth and have a

complete postpartum checkup within twelve weeks after childbirth (March of Dimes, 2018). Within this sample, the majority of mothers with severe PPDS were at least four months postpartum (71%). Based on the recommendations, these mothers would not be regularly screened by their women's health provider since they are beyond the recommended twelve weeks postpartum visit. As a result, their PPDS remain undetected and untreated.

The literature consistently provides evidence that Black women are enrolled in treatment plans for depression and/or PPD far less often than mothers of other races. These findings suggest that Black mothers are experiencing PPDS beyond the standard postpartum visit, and therefore, are not being assessed or referred for evaluation when they need it. Because PPD can affect the overall health of a mother and her infant, it is necessary to investigate why there is such a discrepancy in Black mothers' being diagnosed with and being offered treatment for PPD. These findings emphasize the need for more research to understand Black mothers' experiences with postpartum depression, specifically elucidating depressive symptomology that is unique to Black mothers.

When examining the sample's demographic characteristics, non-parametric tests were used to compare mothers with PPDS (EPDS scores 10 or greater) or without, and there were no statistically significant differences. In previous research related to PPDS, Black mothers who were low – income and received Medicaid, were compared to White or Latina mothers (Bodnar-Dereen et al., 2017; Keefe, et al., 2016). Those studies then found significant differences between the race groups of mothers, including insurance status, relationship

status, number of children, and type of delivery (Bodnar-Dereen, et al., 2017). However, this study shows that demographic characteristics are insignificant, and all Black mothers are susceptible to experience PPD. Therefore, other unique factors must be identified that may help explain risk-factors for PPD in Black women. This study focused on the concept of racial identity as a predictor of PPDS in Black mothers, suggesting those who have a positive regard for one's race would have lesser PPDS. Identifying the role of racial identity may provide a better understanding of who may be at greater risk for experiencing PPDS.

The first hypothesis that mothers with racial identity attitudes of multiculturalist and Afrocentric had lower levels of postpartum depressive symptoms and mothers with racial identity attitudes of assimilation, miseducation, self-hatred, and anti-White had higher levels of postpartum depressive symptoms was not supported by the data. There was no Afrocentric racial identity cluster within this sample of Black mothers. While some clusters in the sample had positive or above average Afrocentric scores (assimilated and miseducated, anti-White, and conflicted), other subscale scores were always higher and therefore, the clusters could not be characterized as being Afrocentric. While many mothers embraced their Black race identity, it was not their dominant subscale or way of thinking.

The results of the analysis of variance showed that the racial identity clusters did not significantly differ in their PPDS scores. Previous research that compared racial identity attitude clusters and mental health outcomes in Black people found significant differences in depressive symptoms among the different

groups (Neville & Lilly, 2000; Whittaker & Neville, 2010; Worrell, et al., 2011). There may be several explanations as to why there were no significant differences in PPDS. Little is known about the relationship between the racial identity attitude profiles of Black mothers and PPDS. Because some clusters in this study had small sample sizes it may have been difficult to detect differences, therefore, future research should include large samples of mothers in all racial identity attitude groups to better understand the relationship between racial identity attitudes and PPDS.

Secondly, Black mothers may experience PPD in ways other than emotionally. Previous research that have found differences in depressive symptoms among racial identity clusters in Black adults have used assessment tools which focus on the emotional aspect of depression (Neville & Lilly, 2000; Whittaker & Neville, 2010; Worrell, et al., 2011). Although the EPDS measures the emotional symptoms of PPD, this study did not yield the same findings as previous research. Therefore, Black mothers may experience PPD differently than Black adults experience depression. Mothers in African countries have been shown to experience somatic symptoms of PPD (Halbreich, et al., 2007; Haroz, et al., 2017; Jinadu and Daramola, 1990). Nigerian mothers were likely to experience nausea and vomiting or burning in their head (Jinadu and Daramola, 1990), Ugandan mothers often presented with suicidal thoughts (Nakku, Nakasi, & Mirembe, 2006), while Moroccan mothers felt like there was a lump in their throats (Halbreich, et al., 2007). African mothers also complained of headaches, body pain, vertigo, and neck pain from all the pressure of the expectations of

motherhood (Evagorou, et al., 2016). Black women are more likely to hide their emotional symptoms of distress (Woods-Giscombe, et al., 2017) so like African mothers, they may experience physical symptoms of PPD, such as fatigue, back pain, headaches, crying, hemorrhoids, hair loss, or anxiety in caring for their infant (Evagorou, et al., 2016; Howell, Mora, Horowitz, & Leventhal, 2005). As a result, screening tools such as the EPDS, an instrument developed in Scotland to measure the emotional symptoms of PPDS, may not accurately detect PPDS in Black mothers. There is a paucity of data related to the depressive symptomology in Black mothers living in the United States, which may differ from the typical emotional symptoms of European culture. More research is needed to determine if there are more accurate ways to detect PPDS in Black mothers instead of the commonly used EPDS.

Although there were no significant differences in PPDS between the racial identity groups, other findings provide some insight. Descriptive statistics revealed that the multiculturalist cluster, which had the highest percentage of mothers, had the second lowest mean PPDS score. This finding supports previous research in that those who find great importance in being Black while also embracing other races or cultures experience less symptoms of depression than other clusters (Forsyth & Carter, 2012; Settles, 2010). In contrast to previous research, the assimilated and miseducated cluster (16%) had the lowest PPDS scores, indicating mental well-being and an absence of PPDS. Previous research has shown that Black people who assimilate with the dominant White American culture and hold a negative regard towards their Black race experience

higher rates of depression (Carter and Reynolds, 2011; Neblett, et al., 2013). The mothers in the assimilated and miseducated cluster also had below average scores in the self-hating subscale. Therefore, although they have adopted the beliefs and behaviors of the dominant White American culture, they do not have low self-esteem or hate themselves because they are Black. Although metro Atlanta has a large percentage of Black residents, White people comprise more than 70% of the population (Metro Atlanta Chamber, 2019). These mothers may have less distress by assimilating to the dominant culture while still maintaining a positive sense of self, as reflected in their low EPDS scores. Lastly, mothers in the self-hating cluster (10%) had the highest mean PPDS scores and the largest percentage of mothers with PPDS (EPDS scores of 10 or higher) when compared to other clusters. This relationship between self-hate and depression has been demonstrated in previous studies of Black adults (Forsyth & Carter, 2012; Whittaker & Neville, 2010; Worrell, et al., 2011), but this is the first study to replicate that finding in postpartum Black mothers.

More research is needed to determine if racial identity attitudes of Black mothers are predictive of PPD and whether the CRIS can be used as a screening tool to determine Black mothers at risk for PPD. Mixed methodology studies could determine which racial identity groups are at highest risk for PPD and then describe the mothers' experiences with PPD. These findings could provide more information regarding postpartum depressive symptomology of Black mothers and potentially lead to the development of an instrument which assesses Black mothers' risk for PPD while considering their racial identity.

Racial Identity and Maternal Functioning

Maternal functioning is a mother's ability to care for herself and her infant. Because functioning abilities can be impaired by PPDS, it may help in explaining Black mothers' experiences with PPD since, as noted previously, the commonly used EPDS may not be the most accurate screening measure. Overall, this sample had adequate maternal functioning (M = 97.4 ± 13.3), but 11 mothers had scores less than 80 on the BIMF indicating poor maternal functioning. This average maternal functioning score was lower than that found in a study by Barkin et al. (2017) that examined a sample primarily of Black mothers (n = 90) who were single, received Medicaid, and had an income of $20,000 or less. Their average BIMF score was 7 points higher at 104; but the number of mothers with poor maternal functioning was not provided. The mothers in this study completed the BIMF online from their homes, having never met the researcher. This anonymity may have provided a level of comfort in providing candid answers without fear of judgement, considering some Black mothers desire to always appear strong regardless of circumstances. These findings emphasize the need to address the distrust Black mothers may have in the healthcare industry by establish trust and rapport with mothers in order to adequately assess PPDS, including maternal functioning abilities.

In this study maternal functioning was significantly associated with higher PPDS (r_s = -.48). This finding was similar to what Barkin et al. (2017) found in their study of mostly Black mothers (r = -.45), which strengthens the evidence for this relationship for Black mothers. In this study, inferential analysis determined

that mothers with poor maternal functioning were more likely to be younger than mothers with adequate functioning. Women with more children have discovered parenting techniques and established routines in caring for their previous child(ren) (Rubin, 1984), which could explain why they were more likely to have adequate functioning when compared with younger mothers. Older age was significantly associated with having more dependent children; therefore, it is likely that younger mothers had poorer maternal functioning because they had fewer children and motherhood experience. This is a population that may require more frequent screening and treatment guidelines.

There is limited research that focuses on the maternal functioning of Black mothers. This study examined the maternal functioning of Black mothers and focused on the concept of racial identity as a predictor, suggesting those who have a positive regard for one's race would have higher levels of maternal functioning. Identifying the role of racial identity may provide a better understanding of who may be at greater risk for poor maternal functioning, which may indicate PPD.

The first hypothesis stated that mothers who have racial identity attitudes of multiculturalist and Afrocentric would have higher levels of maternal functioning and mothers who have racial identity attitudes of assimilation, miseducation, self-hatred, and anti-White would have lower levels of maternal functioning. The analysis of variance partially supported the alternative hypothesis. The significant differences in maternal functioning were between the mothers in the assimilated and miseducated, self-hating, and anti-White clusters.

The self-hating and anti-White clusters had the lowest maternal functioning scores, but the assimilated and miseducated had the highest maternal functioning score. To explain these findings, it is necessary to understand the characteristics of mothers within the anti-White and self-hate clusters. Mothers in the anti-White cluster are developing their positive regard for being Black and are learning to embrace their race. This newfound perspective and change in beliefs may cause Black people to have increased stress levels or even experience depressive symptoms due to their heightened awareness of the stressors associated with being Black in America (Neville and Cross, 2017; Wilson, et al., 2017), which in this sample of Black mothers is expressed as inadequate maternal functioning. Low maternal functioning can indicate PPD, and therefore these findings align with those between the self-hating cluster and PPDS in this study, as well as self-hate and depression in previous studies (Carter and Reynolds, 2011; Neblett, et al., 2013). Because the mothers in the self-hating clusters had the highest level of PPDS and the lowest level of maternal functioning when compared to other clusters, they may be more susceptible to developing PPD. The finding for the assimilated and miseducated cluster, similar to its finding in regards to PPDS, suggests women in this group had a high level of mental well-being, which is contrary to previous research findings (Carter and Reynolds, 2011; Neblett, et al., 2013). As previously mentioned, these mothers may have healthy mental well-being, and thus adequate maternal functioning due to their positive self-esteem, as reflected in their below average self-hating subscale scores. While there was no significant difference found for the

multiculturalist cluster in level of maternal functioning, this group, which made up one-third of the sample descriptively, had the third highest mean rank for functioning. This finding is similar to previous research findings, in which Black people who have a positive regard for their Black race and also welcome interaction with people of other races have the highest level of psychological well-being and lower levels of depression (Forsyth & Carter, 2012; Settles, 2010; Whittaker & Neville, 2010).

Because the maternal functioning instrument is relatively new and this study is the first to assess the relationship between racial identity and maternal functioning, it is not possible to compare these findings to previous research. Although the overall sample had adequate maternal functioning, when used in conjunction with racial identity attitudes, Black mothers who may be at risk for PPD were identified. More research with larger cluster sizes is needed to confirm the BIMF instrument's utility in detecting those at highest risk for PPD based on their racial identities. Furthermore, it has been proposed that maternal functioning may better explain or help to explain PPD in Black mothers and as a result, may be a more useful screening measure or enhance screening for PPD.

Postpartum Depressive Symptoms, Maternal Functioning, and Maternal-infant Bonding

The mothers in this study had MAI scores which indicated a high level of maternal-infant bonding (M = 100.3). This finding was consistent with a study of Turkish mothers who received eight weeks of prenatal education about various topics related to motherhood, including bonding with their infant and

physical/emotional postpartum changes (*M* = 100.1) (Sercekus & Baskali, 2016) but higher than the mean scores in a study which included Korean mothers whose babies had been admitted into a neonatal intensive care unit (*M* = 85.6) (Ahn & Kim, 2004). This suggests that the mothers in this study were caring for healthy babies and were likely knowledgeable about motherhood. Inferential analyses determined that mothers who worked full-time and/or had a total household income of at least $50,000, were more likely to have a less affectionate bond with their infant than stay-at-home mothers or those who earned less than $26,000. However, these findings must be interpreted with caution due to the small sample size and the number of variables included in the regression analysis model; future research with a larger sample size would be needed to determine the validity of these findings. Also, the demographics survey did not differentiate between mothers who chose to be a stay-at-home mother versus those who were unemployed and seeking work, further limiting these findings from inferential analyses.

While some American women feel working outside of the home interferes with their ability to be a mother, middle-class Black mothers integrate working into their ideology of motherhood (Dow, 2019). It is possible that the middle-class mothers in this sample had feelings of guilt due to working full-time, which was expressed as having a less affectionate bond with their infant. These mothers may need more support in strengthening their bond with their infant. The difference in mean MAI scores may be explained by different levels of PPDS or

maternal functioning. This is the first study using the MAI to assess maternal-infant bonding in a large sample of Black mothers.

In this study it was hypothesized that higher levels of PPDS and lower levels of maternal functioning would be associated with lower levels of maternal-infant bonding. The hypothesis was supported, based on regression analyses controlling for select demographic characteristics that demonstrated, decreases in maternal-infant bond with increases in PPDS and decreases in maternal functioning scores. Further analysis revealed that maternal functioning was a greater predictor of maternal-infant bond than PPDS. This finding further supports the use of the BIMF to detect not only poor functioning, but also to determine Black mothers at risk for PPD and as a result, may develop a weak bond with their infant. However, due to cultural beliefs, Black women may continue to provide for and appropriately respond to their infant's cues because that is what expected. Black women may feel it is necessary to portray themselves as "Superwomen" and excel at all their roles despite hardships (Woods-Giscombe, et al., 2016). This cultural belief may result in mothers with PPDS continuing to function at a high level, further supporting the need for an instrument that detects Black mothers' risk for PPD while considering the influence of Black culture on these concepts.

The BAM theory postulates that a mother's mental state can negatively influence her ability to adjust to motherhood and bond with her infant. More recent research supports the theory and has found that PPDS influences maternal-infant bonding, but these studies included samples with a majority of

White mothers (Sockol et al., 2014) or were conducted internationally and did not include Black mothers (Kurdahi Badr et al., 2018; Sontana et al., 2015). The studies found that mothers with PPDS, especially those with severe symptomology such as suicidal ideation, were more likely to have a poor or dysfunctional bond with their infant. The results of this study duplicate these findings and support the relationships as described theoretically. However, the theoretical framework for this study was triangulated to include Cross's Nigrescence Theory to include the influence that racial identity has on Black mothers' psychological state and adaptation to motherhood, a relationship that was not emphasized in the BAM theory. This innovative modification of the BAM theory to include concepts from Cross's Nigrescence Theory provided a more complex insight into unique influences on the postpartum mental health of Black mothers that had not yet been previously studied. Findings from this study supported the influence of racial identity on maternal functioning, but not PPDS. Therefore, more research is needed to fully understand the relationship between racial identity and maternal functioning, including PPDS.

Limitations of the Study

There are limitations with the study that should be considered when evaluating the findings. While the sample size determined by power analysis was achieved, the size of racial identity clusters greatly varied. The small cluster sizes could have limited analysis of variance findings; future research should aim to have a larger sample size to mitigate inconclusive results possibly due to small cluster sizes. Secondly, this study used a cross-sectional design, which was

appropriate for the study's aims but causal relationships between variables cannot be determined. Because racial identity and postpartum mental health are such complex concepts, a study using mixed methodology could more adequately explain the variance of PPDS of Black mothers. Qualitative interviews could then describe the experiences and depressive symptomology of Black mothers in the racial identity clusters, which may help identity unique risk factors for PPDS as well as characteristics that enhance psychological well-being. Furthermore, a longitudinal study could reflect the changes in PPDS over time as opposed to a cross-sectional design, which only captures a single instance in time.

Secondly, the representativeness of the sample may also be limited due to sampling bias. Participants were passively recruited online through social media platforms and various physical locations, such as pediatrician offices and hair salons. The women who inquired about the study may be experiencing PPDS or have more interest in the subject-matter of the study and therefore, more inclined to participate. Conversely, mothers who may dissociate from the Black race may be less inclined to participate in the study since Black racial identity was explored. Additionally, most mothers were in their late twenties and educated. These factors limit the generalization of the findings.

The coronavirus pandemic began affecting Americans in March 2020, about a month after this study began. During this time, the research team was no longer able to actively recruit participants or collaborate with healthcare providers due to emergency response needs in responding to the pandemic and the need

to discontinue non-essential in-person contact to minimize the spread of disease. As a result, recruitment efforts were solely online or through word of mouth by previous study participants, which could affect the representativeness of the sample. Moreover, the threat of coronavirus to the mother and infant child could have negatively influenced the mother's mental health. There were no measures available to differentiate between PPDS and stress or depression due to the coronavirus pandemic. Another factor that may have affected mothers' racial identity attitudes was the killing of an unarmed Black man, Ahmaud Arbery by two White men in Coastal Georgia (Fausset, 2020). The case began garnering national attention during the study. Although the murder occurred in late February of 2020, months later no arrests had been made; arrests were made in May 2020. Because recruitment for this study ended in late April, it is possible some mothers may have been aware of this case, which may have affected their regard for White people or their pride in being Black.

Lastly, all data collected were based on self-report and could not be confirmed by in-person observations or medical records. Additionally, the instruments to assess PPDS and maternal functioning are used in clinical practice, they are not diagnostic; therefore, further assessment would be needed to diagnose PPD. Having an objective measure to diagnose PPD and assess the maternal-infant bond would strengthen the validity of the study.

Strengths of the Study

Although there were limitations in this study, there were also strengths. This study was the first to assess racial identity attitudes of Black postpartum

mothers and its relationship with their mental health. Cross's Nigrescence theory has been used in studies investigating the psychological well-being or mental distress in Black adolescents and adults, but never in postpartum Black mothers. This study considered the influence of Black mothers' racial identity on theoretical concepts in Mercer's Becoming a Mother Theory, which has never been implemented in the literature. Secondly, this study began to address the gap in the literature regarding Black women's experiences in adjusting to motherhood and includes their perspectives in an area of research which overwhelmingly compares them to their antithesis - affluent, partnered, educated White women. The mothers were not merely in the study to be a comparison group for the dominant White culture in America, but to identify unique predictors of PPDS in Black mothers. Additionally, the target sample size was achieved, and demographic characteristics of the sample varied which enhance generalizability. Because Black mothers are often undiagnosed or hesitant to receive treatment for PPD, holistic and culturally sensitive ways to assess their PPDS is necessary. This study begins to address the lesser explored reasons which may contribute to and alleviate this health disparity which afflicts Black mothers.

Implications for Nursing

The findings from this study further emphasized the importance of race and culture on the mental health of Black women, particularly postpartum mothers. Findings from this study also suggests that all Black mothers, regardless of demographic characteristics are susceptible to PPDS. In order to

properly care for these mothers, nurses must be open to the possibility that there are other factors, such as racial identity and functioning which may play a role in Black mothers' adjustment to motherhood and that PPD may present differently in Black mothers. For example, Black women/mothers displaying characteristics of self-hate, may require referral for mental health evaluation. When considering a mother's functional abilities, nurses can help in identifying Black mothers who may be at risk for or experiencing PPD by observing and/or asking how they are caring for themselves and their infant. Additionally, talking with Black mothers about their functioning and how it is associated with PPDS may enhance their understanding of the PPD experience.

Culturally competent nursing care should also acknowledge that Black people are not a monolith and their racial identity is reflective of their life experiences. Some Black women are trying to maintain a superwoman persona while dealing with the stress of being a new mother and adjusting to motherhood. Other Black women may be coping with sexism and racism in their workplace and/or private life, while processing local and national instances of racial injustice. And yet there may be mothers whose source of stress lies in the loss of a loved one who helped them raise their children. All of these examples of life experiences and stressors contribute to racial identity and influence mental health.

Recommendations for Future Research

The findings from this study support various directions for future research. This study provides a basis for larger studies needed to identify the role of racial

identity attitudes in PPD, not only for Black mothers but for those of other minority groups. Research using a mixed methodology is needed to determine the depressive symptomology in Black mothers, and if so, a proper tool to assess those symptoms. More research assessing Black mothers' functioning abilities using the BIMF is needed to determine a clinical threshold for poor functioning; translational research could determine its usefulness in holistically detecting PPDS in clinical practice as well. Lastly, more research is needed to support guidelines for when, where and how Black mothers are screened and educated about PPDS.

Conclusion

This cross-sectional, exploratory study was the first to describe the racial identity attitude clusters present within a diverse sample of Black postpartum mothers. The findings add to the literature by partially explaining the relationship between racial identity attitudes and the psychological state of Black women. The data suggest that racial identity attitudes correlate with a mother's maternal functioning, which is the mother's ability to care for herself and infant, transition and adapt to motherhood, and bond with her infant. Postpartum mothers who do not have a high regard for being Black, such as those who are anti-White, or self-hate may be at higher risk for poor mental health. The risk may be greater for younger mothers with fewer dependent children, who have less experience with mothering. Poor maternal functioning correlated with a less affectionate infant bond, which could influence the infant's well-being and socialization in the future. Some of the Black mothers in this study experienced severe PPDS but were not

diagnosed with PPD or enrolled in mental health services. This finding emphasizes the need for future research to further explore Black racial identity in postpartum mothers and to develop and strategically utilize culturally appropriate tools to holistically assess PPDS in Black mothers. Addressing these mental health disparities in Black mothers will ensure that the mothers at risk for postpartum depression and poor maternal functioning are referred to mental health services in order to improve the mental and physical health of Black mothers and their infants.

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Appendices

Appendix A: Screening Questions

Screening Questions

1. Do you identify as a Black or African American mother?
    a. Yes. Questionnaire will proceed to Screening Question 2
    b. No. Participant will not be able to complete the study questionnaire and the following message will appear: “You are ineligible to participate in this study. The Research Team thanks you for time and willingness to participate in this study.”

2. Have you ever been diagnosed with or received treatment for a mental health concern such as: substance abuse/addiction, bipolar disorder, depression, postpartum depression, or schizophrenia?
    a. Yes. Participant will not be able to complete the study questionnaire and the following message will appear: “You are ineligible to participate in this study. The Research Team thanks you for time and willingness to participate in this study.”
    b. No. Questionnaire will proceed to Screening Question 3

3. Are you currently being treated for depression or postpartum depression?
    a. Yes. Participant will not be able to complete the study questionnaire and the following message will appear: “You are ineligible to participate in this study. The Research Team thanks you for time and willingness to participate in this study.”
    b. No. Questionnaire will proceed to Screening Question 4

4. Is your youngest child 12 months old or younger?
    a. Yes. Questionnaire will proceed to Screening Question 5
    b. No. Participant will not be able to complete the study questionnaire and the following message will appear: “You are ineligible to participate in this study. The Research Team thanks you for time and willingness to participate in this study.”

5. Did you go home from the hospital without your baby? This can happen if your baby was sick and had to stay in the hospital or ICU for several days.
    a. Yes. Participant will not be able to complete the study questionnaire and the following message will appear: “You are ineligible to participate in this study. The Research Team thanks you for time and willingness to participate in this study.”
    b. No. Questionnaire will proceed to Screening Question 6

6. Do any of your children have a serious or long-term health concern? This could be any health concern that requires several visits with specialists, surgeries, or medications. Some of these concerns include spina bifida, cerebral palsy, heart disease.
    a. Yes. Participant will not be able to complete the study questionnaire and the following message will appear: “You are ineligible to participate in this study. The Research Team thanks you for time and willingness to participate in this study.”
    b. No. Questionnaire will proceed to Informed Consent form.

Appendix B: Demographic Survey

Demographic Survey

Please provide your mailing address, email address, and phone number to receive your gift certificate for completing the study.

Mailing Address _____City/State _____Zip Code _____
Telephone number _____ Email address _____

1. How old are you? _____ years
2. How old is your youngest child? _____ months
3. How many children do you have? ____
4. How many of your children live with you? ___
5. How was your youngest child born?
    a. Vaginal delivery
    b. Caesarean (c-section) delivery
6. Are you currently working?
    a. No. If no,
        i. Are you a stay-at-home mom? Yes or No
    b. Yes. If yes,
        i. Full-time
        ii. Part-time
7. What type of health care insurance do you have?
    a. Medicaid/Medicare
    b. Private Insurance
    c. No insurance so pay cash for health care
8. What best describes your level of education?
    a. Did not complete High School
    b. High school diploma or GED
    c. Technical school
    d. Some college
    e. Associate's degree
    f. Bachelor's Degree
    g. Master's Degree
    h. Doctorate Degree
9. What best describes your current relationship status?
    a. Single
    b. Living with partner
    c. Married
    d. Divorced
    e. Widowed
10. What best describes your total household income before taxes for the past 12 months?
    a. Less than $26,000
    b. $26,000 - $34,999
    c. $35,000 - $49,999
    d. $50,000 - $74,999
    e. $75,000 - $149,999
    f. $150,000 or more

Appendix C: Cross Racial Identity Scale

CROSS SOCIAL ATTITUDE SCALE

Instructions: Read each item and indicate to what degree it reflects your own thoughts and feelings, using the 7-point scale below. There are no right or wrong answers. Base your responses on your opinion at the present time. **To ensure that your answers can be used, please respond to the statements as written,** and place your numerical response on the line provided to the left of each question.

1	2	3	4	5	6	7
strongly disagree	disagree	somewhat disagree	neither agree nor disagree	somewhat agree	agree	strongly agree

	1	2	3	4	5	6	7
1. As an African American, life in America is good for me.	❍	❍	❍	❍	❍	❍	❍
2. I think of myself primarily as an American, and seldom as a member of a racial group.	❍	❍	❍	❍	❍	❍	❍
3. Too many Blacks "glamorize" the drug trade and fail to see opportunities that don't involve crime.	❍	❍	❍	❍	❍	❍	❍
4. I go through periods when I am down on myself because I am Black.	❍	❍	❍	❍	❍	❍	❍
5. As a multiculturalist, I am connected to many groups (Hispanics, Asian-Americans, Whites, Jews, gays & lesbians, etc.).	❍	❍	❍	❍	❍	❍	❍
6. I have a strong feeling of hatred and disdain for all White people.	❍	❍	❍	❍	❍	❍	❍
7. I see and think about things from an Afrocentric perspective.	❍	❍	❍	❍	❍	❍	❍
8. When I walk into a room, I always take note of the racial make-up of the people around me.	❍	❍	❍	❍	❍	❍	❍
9. I am not so much a member of a racial group, as I am an American.	❍	❍	❍	❍	❍	❍	❍
10. I sometimes struggle with negative feelings about being Black.	❍	❍	❍	❍	❍	❍	❍
11. My relationship with God plays an important role in my life.	❍	❍	❍	❍	❍	❍	❍
12. Blacks place more emphasis on having a good time than on hard work.	❍	❍	❍	❍	❍	❍	❍
13. I believe that only those Black people who accept an Afrocentric perspective can truly solve the race problem in America.	❍	❍	❍	❍	❍	❍	❍
14. I hate the White community and all that it represents.	❍	❍	❍	❍	❍	❍	❍

1	2	3	4	5	6	7
strongly disagree	disagree	somewhat disagree	neither agree nor disagree	somewhat agree	agree	strongly agree

	1	2	3	4	5	6	7
15. When I have a chance to make a new friend, issues of race and ethnicity seldom play a role in who that person might be.	❍	❍	❍	❍	❍	❍	❍
16. I believe it is important to have both a Black identity and a multicultural perspective, which is inclusive of everyone (e.g., Asians, Latinos, gays & lesbians, Jews, Whites, etc.).	❍	❍	❍	❍	❍	❍	❍
17. When I look in the mirror at my Black image, sometimes I do not feel good about what I see.	❍	❍	❍	❍	❍	❍	❍
18. If I had to put a label on my identity, it would be "American," and not African American.	❍	❍	❍	❍	❍	❍	❍
19. When I read the newspaper or a magazine, I always look for articles and stories that deal with race and ethnic issues.	❍	❍	❍	❍	❍	❍	❍
20. Many African Americans are too lazy to see opportunities that are right in front of them.	❍	❍	❍	❍	❍	❍	❍
21. As far as I am concerned, affirmative action will be needed for a long time.	❍	❍	❍	❍	❍	❍	❍
22. Black people cannot truly be free until our daily lives are guided by Afrocentric values and principles.	❍	❍	❍	❍	❍	❍	❍
23. White people should be destroyed.	❍	❍	❍	❍	❍	❍	❍
24. I embrace my own Black identity, but I also respect and celebrate the cultural identities of other groups (e.g., Native Americans, Whites, Latinos, Jews, Asian Americans, gays & lesbians, etc.).	❍	❍	❍	❍	❍	❍	❍
25. Privately, I sometimes have negative feelings about being Black.	❍	❍	❍	❍	❍	❍	❍
26. If I had to put myself into categories, first I would say I am an American, and second I am a member of a racial group.	❍	❍	❍	❍	❍	❍	❍
27. My feelings and thoughts about God are very important to me.	❍	❍	❍	❍	❍	❍	❍
28. African Americans are too quick to turn to crime to solve their problems.	❍	❍	❍	❍	❍	❍	❍

1	2	3	4	5	6	7
strongly disagree	disagree	somewhat disagree	neither agree nor disagree	somewhat agree	agree	strongly agree

	1	2	3	4	5	6	7
29. When I have a chance to decorate a room, I tend to select pictures, posters, or works of art that express strong racial-cultural themes.	❍	❍	❍	❍	❍	❍	❍
30. I hate White people.	❍	❍	❍	❍	❍	❍	❍
31. I respect the ideas that other Black people hold, but I believe that the best way to solve our problems is to think Afrocentrically.	❍	❍	❍	❍	❍	❍	❍
32. When I vote in an election, the first thing I think about is the candidate's record on racial and cultural issues.	❍	❍	❍	❍	❍	❍	❍
33. I believe it is important to have both a Black identity and a multicultural perspective, because this connects me to other groups (Hispanics, Asian-Americans, Whites, Jews, gays & lesbians, etc.).	❍	❍	❍	❍	❍	❍	❍
34. I have developed an identity that stresses my experiences as an American more than my experiences as a member of a racial group.	❍	❍	❍	❍	❍	❍	❍
35. During a typical week in my life, I think about racial and cultural issues many, many times.	❍	❍	❍	❍	❍	❍	❍
36. Blacks place too much importance on racial protest and not enough on hard work and education.	❍	❍	❍	❍	❍	❍	❍
37. Black people will never be free until we embrace an Afrocentric perspective.	❍	❍	❍	❍	❍	❍	❍
38. My negative feelings toward White people are very intense.	❍	❍	❍	❍	❍	❍	❍
39. I sometimes have negative feelings about being Black.	❍	❍	❍	❍	❍	❍	❍
40. As a multiculturalist, it is important for me to be connected with individuals from all cultural backgrounds (Latinos, gays & lesbians, Jews, Native Americans, Asian-Americans, etc.).	❍	❍	❍	❍	❍	❍	❍

Appendix D: Edinburgh Postnatal Depression Scale

Edinburgh Postnatal Depression Scale[1] (EPDS)

Name: _____ Address: _____

Your Date of Birth: _____ _____

Baby's Date of Birth: _____ Phone: _____

As you are pregnant or have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt **IN THE PAST 7 DAYS**, not just how you feel today.

Here is an example, already completed.

I have felt happy:
- ☐ Yes, all the time
- ☒ Yes, most of the time — This would mean: "I have felt happy most of the time" during the past week.
- ☐ No, not very often — Please complete the other questions in the same way.
- ☐ No, not at all

In the past 7 days:

1. I have been able to laugh and see the funny side of things
   - ☐ As much as I always could
   - ☐ Not quite so much now
   - ☐ Definitely not so much now
   - ☐ Not at all

2. I have looked forward with enjoyment to things
   - ☐ As much as I ever did
   - ☐ Rather less than I used to
   - ☐ Definitely less than I used to
   - ☐ Hardly at all

*3. I have blamed myself unnecessarily when things went wrong
   - ☐ Yes, most of the time
   - ☐ Yes, some of the time
   - ☐ Not very often
   - ☐ No, never

4. I have been anxious or worried for no good reason
   - ☐ No, not at all
   - ☐ Hardly ever
   - ☐ Yes, sometimes
   - ☐ Yes, very often

*5 I have felt scared or panicky for no very good reason
   - ☐ Yes, quite a lot
   - ☐ Yes, sometimes
   - ☐ No, not much
   - ☐ No, not at all

*6. Things have been getting on top of me
   - ☐ Yes, most of the time I haven't been able to cope at all
   - ☐ Yes, sometimes I haven't been coping as well as usual
   - ☐ No, most of the time I have coped quite well
   - ☐ No, I have been coping as well as ever

*7 I have been so unhappy that I have had difficulty sleeping
   - ☐ Yes, most of the time
   - ☐ Yes, sometimes
   - ☐ Not very often
   - ☐ No, not at all

*8 I have felt sad or miserable
   - ☐ Yes, most of the time
   - ☐ Yes, quite often
   - ☐ Not very often
   - ☐ No, not at all

*9 I have been so unhappy that I have been crying
   - ☐ Yes, most of the time
   - ☐ Yes, quite often
   - ☐ Only occasionally
   - ☐ No, never

*10 The thought of harming myself has occurred to me
   - ☐ Yes, quite often
   - ☐ Sometimes
   - ☐ Hardly ever
   - ☐ Never

Administered/Reviewed by _____ Date _____

[1]Source: Cox, J.L., Holden, J.M., and Sagovsky, R. 1987. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry* 150:782-786 .

[2]Source: K. L. Wisner, B. L. Parry, C. M. Piontek, Postpartum Depression N Engl J Med vol. 347, No 3, July 18, 2002, 194-199

Appendix E: Barkin Index of Maternal Functioning

Barkin Index of Maternal Functioning

Please **circle the number** that best represents how you have felt **over the past two weeks**. Please try to answer each question as honestly as possible as your responses will help us to better understand the postpartum experience.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1. I am a good mother.	0	1	2	3	4	5	6
2. I feel rested.	0	1	2	3	4	5	6
3. I am comfortable with the way I've chosen to feed my baby (either bottle or breast, or both).	0	1	2	3	4	5	6
4. My baby and I understand each other.	0	1	2	3	4	5	6
5. I am able to relax and enjoy time with my baby.	0	1	2	3	4	5	6
6. There are people in my life that I can trust to care for my baby when I need a break.	0	1	2	3	4	5	6
7. *I am comfortable* allowing a trusted friend or relative to care for my baby (can include baby's father or partner).	0	1	2	3	4	5	6
8. I am getting enough adult interaction.	0	1	2	3	4	5	6
9. I am getting enough encouragement from other people.	0	1	2	3	4	5	6
10. I trust my own feelings (instincts) when it comes to taking care of my baby.	0	1	2	3	4	5	6
11. I take a little time each week to do something for myself.	0	1	2	3	4	5	6
12. I am taking good care of my baby's physical needs (feedings, changing diapers, doctor's appointments).	0	1	2	3	4	5	6
13. I am taking good care of my physical needs (eating, showering, etc).	0	1	2	3	4	5	6
14. I make good decisions about my baby's health and well being.	0	1	2	3	4	5	6
15. My baby and I are getting into a routine.	0	1	2	3	4	5	6
16. I worry about how other people judge me (as a mother).	0	1	2	3	4	5	6
17. I am able to take care of my baby and my other responsibilities.	0	1	2	3	4	5	6
18. Anxiety or worry often interferes with my mothering ability.	0	1	2	3	4	5	6
19. *As time goes on*, I am getting better at taking care of my baby.	0	1	2	3	4	5	6
20. I am *satisfied* with the job I am doing as a new mother.	0	1	2	3	4	5	6

Appendix F: The Postnatal Attachment Inventory

The Postnatal Attachment Inventory

The following sentences describes thoughts, feelings, and situations new mothers may experience. Circle the letter under the word that applies to you.

(a) Almost always (b) Often (c) Sometimes (d) Almost never

1. I feel love for my baby.....	a.	b.	c.	d.
2. I feel warm and happy with my baby.....	a.	b.	c.	d.
3. I want to spend special time with my baby...	a.	b.	c.	d.
4. I look forward to being with my baby.....	a.	b.	c.	d.
5. Just seeing my baby makes me feel good…	a.	b.	c.	d.
6. I know my baby needs me.....	a.	b.	c.	d.
7. I think my baby is cute.....	a.	b.	c.	d.
8. I'm glad this baby is mine.....	a.	b.	c.	d.
9. I feel special when my baby smiles.....	a.	b.	c.	d.
10. I like to look into my baby's eyes.....	a.	b.	c.	d.
11. I enjoy holding my baby.....	a.	b.	c.	d.
12. I watch my baby sleep.....	a.	b.	c.	d.
13. I want my baby near me.....	a.	b.	c.	d.
14. I tell others about my baby.....	a.	b.	c.	d.
15. It's fun being with my baby.....	a.	b.	c.	d.
16. I enjoy having my baby cuddle with me.....	a.	b.	c.	d.
17. I'm proud of my baby.....	a.	b.	c.	d.
18. I like to see my baby do new things.....	a.	b.	c.	d.
19. My thoughts are full of my baby.....	a.	b.	c.	d.
20. I know my baby's personality.....	a.	b.	c.	d.
21. I want my baby to trust me.....	a.	b.	c.	d.
22. I know I am important to my baby.....	a.	b.	c.	d.
23. I understand my baby's signals.....	a.	b.	c.	d.
24. I give my baby special attention.....	a.	b.	c.	d.
25. I comfort my baby when he/she is crying....	a.	b.	c.	d.
26. Loving my baby is easy.....	a.	b.	c.	d.

Scoring: a = 4 points, b = 3 points, c = 2 points, d = 1 points. All items are summed for a single score.

Appendix G: Follow-up Letter

Good afternoon,

I am Kortney Floyd, a student researcher at Georgia State University. I am conducting the study that includes the online survey you completed. Thank you for taking part in the study.

I looked at your answers about being a mother. You may be having a tough time or feeling depressed. Please talk to your doctor or mental health care provider about your feelings. They can connect you with the help you may need.
You can also go to https://www.therapyforblackgirls.com/gd_therapist/ to find a Black mental health provider in your area.

Call me at 770.241.2048 or email me at kfloyd7@gsu.student.edu if you have questions.

Kortney Floyd, MSN RN

Appendix H: Informed Consent

Georgia State University
Informed Consent

Title: The Role of Racial Identity on the Mental Health and Functioning of Postpartum Black Mothers
Principal Investigator: Dawn Aycock, PhD, RN
Student Principal Investigator: Kortney Floyd, MSN, RN

Introduction and Key Information
You are invited to take part in a research study. It is up to you to decide if you would like to take part in the study.

The purpose of this study is to learn about your experiences as a Black mother, your culture, your ability to function as a mother, and the bond you have with your baby. Your role in this study will last 20 minutes. You will be asked to complete 4 questionnaires about your cultural beliefs and your experiences as a mother. The questionnaires are available through an email link.

Participating in this study will not expose you to any more risks than you would experience in a typical day. This study is not designed to benefit you personally. This study may help in understanding how Black mothers care for their baby and themselves. We will also gain information about how being African American/Black may affect women's experiences in motherhood. The study may influence how Black mothers are educated and cared for after they give birth.

Purpose
The purpose of this study is to learn about Black mothers' perceptions of their race/culture, functioning, and bond with their baby. You are invited to take part in this research study because you are a Black mother with a baby that is 1 – 12 months old. A total of 145 mothers will take part in this study.

Procedures
If you decide to take part, you will complete 4 questionnaires about your cultural beliefs and your experiences as a mother. The questionnaires are available through an email link. Answering the questions will take 20 minutes of your time. Also, we will get basic information about you and your baby.

You may receive a follow up call and/or email after you submit your questionnaires to let you know if you have low scores on any of the questionnaires. This is so you can share how you are feeling with your doctor or healthcare provider. We may also call or email you if the researcher has a question about missing answers.

Future Research
Researchers will remove information that may identify you and may use your data for future research. If we do this, we will not ask for any additional consent from you.

Risks
In this study, you will not have any more risks than you would in a normal day of life. There is the possibility that participation in this study may cause you some discomfort when answering questions about being African American/Black. If you experience any discomfort when answering those questions, you may discontinue taking the survey at any time. No injury is expected from this study, but if you believe you have been harmed, contact the research team as soon as possible. Georgia State University and the research team have not set aside funds to compensate for any injury.

Benefits
This study is not designed to benefit you personally. This study may help in understanding how Black mothers care for their baby and themselves. We will also gain information about how being African American/Black may affect women's experiences in motherhood. The study may influence how Black mothers are educated and cared for after having their baby.

Alternatives
The alternative to taking part in this study is to not take part in the study.

Compensation
You will receive a gift card of $10 in the mail for participating in this study. The gift card will be sent to your physical address after you submit your questionnaires.

Voluntary Participation and Withdrawal
You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. You may skip questions or stop participating at any time. You may refuse to take part in the study or stop at any time, this will not cause you to lose any benefits to which you are otherwise entitled.

Confidentiality
We will keep your records private to the extent allowed by law. The following people and entities will have access to the information you provide:

- Kortney Floyd and Dawn Aycock (research team)
- GSU Institutional Review Board
- Office for Human Research Protection (OHRP)

We will use a study participant number rather than your name on study records. The data will be collected via the internet using the Qualtrics survey platform,

which is a secure application. The computers used by the research team to access the Qualtrics survey platform and data will be password protected. The code sheet that connects your email address to your study participant number will also be kept separately from the questionnaires that you complete. All the study materials will be destroyed after the information is reported. Your name and other facts that might point to you will not appear when we present this study or publish its results. The findings will be summarized and reported in group form. You will not be identified personally. We will keep your personal information private. Your privacy will be kept to the extent allowed by law. Data sent over the Internet may not be secure, but we are using a secure application and not collecting IP addresses.

The health information you give us will be used in this research study. We will remove all information that can identify you. We will share it with other people for this research study. If you decide you want to be in this study, it means that you agree to let us use and share your personal health information for the reasons we have listed in this consent form.

While we are doing this research, the research team may use only the personal health information that you have given us: your age, and the age of your child. The people and places that will be able to look at your personal health information are: Dr. Dawn Aycock and Kortney Floyd. They will look at it so they can work on this research study. We may also share your health information with the Georgia State University Institutional Review Board (IRB). Your personal health information may be shared by the people or places we have listed. It will be shared in a way that does not fall under the protection of federal regulations that apply to the privacy of health information. This research may be shown to other researchers. This research may be published, but we will take steps to make sure that you cannot be identified.

If you acknowledge this consent form by completing and submitting the questionnaires you are letting us use your personal health information until the end of the study. You have the right to say that you do not want us to use your personal health information after we have collected it. If you decide you don't want us to use your information anymore you must write a letter asking us not to use your information. You will need to send the letter to the person who received your completed questionnaires. This will be the only person who will be able to know which information is yours.

Contact Information

Contact Dr. Dawn Aycock at 404-413-1178 daycock@gsu.edu or Kortney Floyd at 770-241-2048 kfloyd7@student.gsu.edu

- If you have questions about the study or your part in it,
- If you have questions, concerns, or complaints about this study.

The IRB at Georgia State University reviews al research that involves human participants. You can contact the IRB if you would like to speak to someone who is not involved directly with the study. You can contact the IRB for questions, concerns, problems, information, input, or questions about your rights as a research participant. Contact the IRB at 404-413-3500 or irb@gsu.edu

Consent

You can print a copy of this consent form to keep.

If you are willing to volunteer for this research, please click continue to go to the questionnaires.