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Experiences of Racism and Breastfeeding Initiation and Duration Among First-Time Mothers of the Black Women's Health Study: A Dissertation

Michele K. Griswold

University of Massachusetts Medical School

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EXPERIENCES OF RACISM AND BREASTFEEDING INITIATION
AND DURATION AMONG FIRST-TIME MOTHERS OF
THE BLACK WOMEN'S HEALTH STUDY

A Dissertation Presented

By

MICHELE K. GRISWOLD

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University of Massachusetts Graduate School of Nursing, Worcester

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*Experiences of Racism and Breastfeeding Initiation and Duration
among First-Time Mothers of the Black Women's Health Study*

A Dissertation Presented

By

Michele Griswold

Approved as to style and content by:

Donna Perry

Sybil Crawford

Sharina Person

Date

Joan Vitello PhD, RN, NEA-BC, FAHA, FAAN
Dean & Professor
University of Massachusetts Worcester
Graduate School of Nursing

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Abstract

BACKGROUND: Breastfeeding and lactation are cited as sensitive periods in the life course that contribute to the accumulation of risks or opportunities ultimately shaping vulnerability or resilience later in life. As such, breastfeeding and lactation are critical components of health equity. Despite this, Black women in the U.S. initiate and continue to breastfeed at lower rates than White women and other groups. Underlying reasons for racial inequities in breastfeeding rates are poorly understood. Exposure to racism, one manifestation of historical oppression in the U.S. has been cited as a determinant of poor health outcomes for decades but has not been extensively described in the context of breastfeeding.

AIMS: To investigate the association between experiences of racism and 1.) breastfeeding initiation 2.) breastfeeding duration 3.) and the association between selected life-course factors and breastfeeding initiation and duration among participants of the Black Women's Health Study.

METHODS: This study was a prospective secondary analysis of the Black Women's Health Study. The sample included all participants who enrolled in 1995, responded to the racism assessment in 1997 and reported the birth of a first child following the racism assessment resulting in an N=2, 995 for the initiation outcome and N= 2,392 for the duration outcome. In addition to the racism assessment, we also included life-course factors (nativity, neighborhood segregation and social mobility). For each aim, we calculated odds ratios and 95% confidence intervals using binomial and multinomial logistic regression using two models. The first adjusted for age, the second adjusted for age, BMI, education, marital status, geographic region, neighborhood SES and occupation.

RESULTS: Associations between daily and institutional summary racism variables and breastfeeding initiation and duration were small and not statistically significant. Experiences of racism in the job setting was associated with lower odds of breastfeeding duration at 3-5 months compared with 3 months 95% CI [0.60, 0.98]. Experiences of racism with the police was associated with higher odds of breastfeeding initiation and duration at 3-5 months [1.01, 1.77] and at 6 months [1.10, 1.82] compared with women who did not report this experience. The participant's nativity and the nativity of her parents were life-course factors that predicted lower odds of breastfeeding initiation and duration. Neighborhood segregation did not reach statistical significance after adjusting for covariates but results trended toward lower odds of breastfeeding initiation and duration for women who reported living in a predominately Black neighborhood (compared with White) up to age 18 and for women who reported living in a predominately Black neighborhood in 1999.

CONCLUSION: Experiences of institutional racism in the job setting was associated with lower odds of breastfeeding duration. In addition to explicit experiences of racism, this study provides preliminary evidence surrounding life-course factors and breastfeeding. Individual level interventions may mitigate harmful effects of racism but structural level interventions are critical to close the gap of racial inequity in breastfeeding rates in the U.S.

Investigating the Relationship Between Experiences of Racism and Breastfeeding
Initiation and Duration among Participants of the
Black Women's Health Study

A Dissertation Proposal

Michele K. Griswold, MPH, RN, IBCLC

University of Massachusetts Graduate School of Nursing, Worcester

Introduction to the Problem

Marginalized populations in the United States have poorer health than dominant groups. Examples of differences in health include higher mortality rates, earlier onset of disease and greater disease severity. ⁽¹⁾ Breastfeeding is a health promoting behavior that is associated with reduced risk of many conditions that threaten the health and well-being of women and children across the lifespan. For marginalized women and children in the U.S., the health promoting effects of breastfeeding are critical in offering the equitable opportunity for improved physical, cognitive and developmental well-being. ⁽²⁾ This proposal argues that exposure to racism, as a fundamental cause of poor health, ⁽¹⁾ may also partially explain persistent racial and ethnic differences in breastfeeding rates.

The current recommendation in the U.S. is six months of exclusive breastfeeding with continuation up to a minimum of one year ⁽²⁾ The World Health Organization recommends a two-year minimum of breastfeeding. ⁽³⁾ Despite these recommendations, breastfeeding rates are significantly lower than national targets particularly for black women in the U.S. compared with white women and other ethnic groups. ⁽⁴⁾ For example, in 2012, even after adjusting for socioeconomic status and maternal education, the exclusive breastfeeding rate at 6 months for black women was 13.9% compared with 20.8% for white women. ⁽⁵⁾ The national target is 25.5% at 6 months. ⁽⁶⁾ Lower rates of breastfeeding initiation and duration contribute to an inequitable burden of risk for black women and children in the U.S. with potential lifelong consequences.

Factors that contribute to persistent racial inequities are unclear. What is clear is that racial inequities in breastfeeding reflect a pattern of health differences in which black women and their children fare poorly compared with other groups on outcomes such as breast cancer, heart disease, stroke and diabetes. ⁽⁷⁾ Moreover, breastfeeding has been shown to reduce the risk

of these conditions. For example, recent studies report that lactation may reduce the risk for specific subtypes of breast cancer that are more prevalent among and carry higher mortality rates for black women compared with white women. ^(8,9) Additionally, a longer duration of breastfeeding has been associated with a reduction in obesity, hypertension, diabetes, and hyperlipidemia. All of these are important risk factors for cardiovascular disease, which leads to higher mortality rates for black women. ⁽¹⁰⁻¹³⁾

Knowledge development that seeks to identify an underlying context for persistent racial and ethnic differences in breastfeeding rates is critical because currently, research that aims to close the racial gap in breastfeeding is limited.⁽¹⁴⁾ In the interim, opportunities to optimally support the health and well-being of black mothers and children through breastfeeding are lost. Moreover, “disparities in one generation may further disadvantage the starting point for the next generation” ⁽¹⁵⁾ (p. 971) thus perpetuating a cycle of health inequities. Research that limits breastfeeding barriers to either structural causes such as employment or to biological causes such as low milk production,⁽¹⁶⁾ limits the scope of possible interventions ⁽¹⁷⁾ and effectively dismisses the rich context in which black women live. For example, the explicit acknowledgement to a historical context of oppression has generally been absent from breastfeeding research, dismissing a frame of reference for some black women that may be critical to their self-valuation and self-definition^(18, 19)

Exposure to racism is one manifestation of historical oppression that has been widely cited as an underlying contextual factor contributing to adverse birth outcomes, adult-onset asthma and obesity among other poor outcomes for black women. ⁽²⁰⁻²²⁾ Chronic exposure to racism is believed to lead to poor health via multiple complex mechanisms such as adverse physiological responses to stress that may arise through individual but also structural pathways.

(23) Examples of structural pathways include economic and social deprivation, inadequate medical care, laws and policies among others. (17) Despite a growing body of research that has identified factors that appear to influence breastfeeding initiation and duration among black women, racism as it may apply to breastfeeding inequities has not been investigated.

Thus, the overarching goal of this proposed research is to develop context-specific knowledge that explains persistent racial differences in breastfeeding. The investigation of multiple domains may assist in identifying multilevel points of intervention. (1)

Specifically, this proposed secondary data analysis aims to investigate the relationship between experiences of racism and breastfeeding initiation and duration among black women in the U.S. The sample will be drawn from participants of the Black Women's Health Study (BWHS). (24) The BWHS is a longitudinal cohort study of 59,000 women that began in 1995. Despite the age of the data, the BWHS is to my knowledge, the only national dataset inclusive of both racism and breastfeeding variables and with a sufficient sample size of women who self-identify as black to address the research aims.

The specific aims are:

1. To investigate the relationship between experiences of racism and breastfeeding initiation.
 - It is hypothesized that higher levels of exposure to racism are inversely associated with breastfeeding initiation.
2. To investigate the relationship between experiences of racism and breastfeeding duration.
 - It is hypothesized that higher levels of exposure to racism are inversely associated with breastfeeding duration.
3. To investigate the relationship between experiences of racism and breastfeeding initiation and duration according to selected factors.
 - It is hypothesized that there will be effect modification of some or all of the selected factors on the association between racism and breastfeeding initiation and duration.

Background and Significance

Reframing the Context of the Breastfeeding Narrative

The following proposal aims to: 1.) reframe the context of breastfeeding to move away from reduced health risk as its principal benefit and toward a broader perspective that highlights breastfeeding as a critical opportunity for equity⁽²⁵⁾ across the human lifespan 2.) argue that the inequality gap in breastfeeding rates is unjust and 3.) describe the mechanisms or pathways by which racism may influence breastfeeding practices of black women in the U.S.

Breastfeeding and Equity

Breastfeeding is a complex human behavior involving the transfer of an exceptionally unique substance from mother to infant that cannot be replicated through alternative substances. Together, the substance and the behavior contribute to a “human care package” that offers a critical opportunity to promote equity for human capital through processes that are unavailable to infants who do not receive human milk and mothers who do not lactate. The interdependent members of the dyad inextricably link the substance of human milk to the behaviors associated with breastfeeding. For example, the biochemical composition of milk is influenced by complex factors such as stage of lactation, milk removal during lactation and maternal diet thereby providing the infant with individualized milk that changes in composition, as the infant’s needs change. ^(26, 27) In addition, breastfeeding provides a critical opportunity for women’s health as well as human connection with lifelong consequences.

Despite that breastfeeding promotion has long focused on specific health benefits for infants and children, emerging research that focuses on benefits to the mother is striking. For example, undifferentiated stem cells mobilized in the breast via lactation or milk removal (initiated by the infant) may be capable of cell regeneration, both in normal functioning breast

cells but also in the repair of abnormal cells. The stem cells, absent in the non-lactating breast are up-regulated with milk removal suggesting that the process of lactation is biologically important for the mother yet unavailable to women who do not lactate.⁽²⁸⁾ This finding is particularly important given that lactation may provide protection for invasive breast cancers that are more prevalent among black women than white women. ^(8, 9)

The human care package also promotes human connection. Long understood in animal models, emerging research in humans highlights the complex neuroendocrine processes involved with breastfeeding and lactation through the secretion of oxytocin (OT). OT levels have been shown to increase in response to mother-infant interaction and reciprocally, OT administered to mothers stimulates maternal behaviors.⁽²⁹⁾ For example, a recent study used MRI to examine areas of the brain associated with attachment in response to a mother's own infant's cry and another unrelated infant's cry. Findings demonstrated higher levels of sensitivity (a measure of attunement to her infant) to own infant's cry but effects were stronger among breastfeeding mothers compared with mothers who were not breastfeeding.⁽³⁰⁾ OT released during breastfeeding is also hypothesized to positively affect maternal mood but to date, this has not been widely investigated.⁽³¹⁾ This is an important area of research given that anxiety,⁽³²⁾ stress and depression ^(31, 33, 34) have been linked to early breastfeeding discontinuation.

Thus, the recipe for the human care package is comprised of complex biochemical ingredients that are interdependently influenced by complex synchronous behaviors of the mother and infant. The human care package promotes human well-being beyond the domain of disease risk and produces positive effects throughout the human lifespan. For example, one study found that maternal sensitivity was a critical factor in determining improved temperament of the child at 18 months. ⁽³⁵⁾ Improved bonding has been shown to promote more positive parenting

with subsequent improved cognitive and neurological outcomes for children. ⁽³⁶⁾ A recent study reported that improved cognitive outcomes of breastfed children led to higher levels of educational achievement and increased income ⁽³⁷⁾ in adulthood. These outcomes have the potential to benefit subsequent generations through access to society's goods and resources.⁽¹⁾

This perspective presents a powerful case for the breastfeeding narrative to extend beyond health and toward human equity. Importantly, the establishment and continuation of breastfeeding occur at critical time points in the life course of both mother and child. The life course framework ⁽³⁸⁾ emphasizes that exposures to adverse events during sensitive developmental stages can affect health and well-being of the next stage. Effects of adverse events that occur during these sensitive periods are stronger than during periods that are not considered sensitive.⁽¹⁵⁾ Accumulation of disadvantage further compromises the subsequent stages as do the accumulation of advantage in the opposite direction. Pregnancy, birth and lactation share neuroendocrine processes ⁽³³⁾ and pregnancy, birth and lactation have also been cited as critical time periods in the Developmental Origins of Health and Disease hypothesis. ⁽³⁹⁾ Breastfeeding initiation and duration may theoretically assist in linking the exposures of one generation to its effects on the next, not unlike maternal exposures during pregnancy. In this sense, harmful exposures to the breastfeeding mother such as racism, will also be harmful to the infant as the premature interruption of breastfeeding has potential lifelong and multi-generational consequences.

When considered together, individualized milk for the infant, biological processes of lactation for the mother and dyadic effects of human connection, the human care package produces human capital. If the opportunity to establish breastfeeding during this sensitive period in the life course is lost for lack of support of the biological process or for structural reasons, it

can only rarely be regained. Therefore, it is vital to reframe the breastfeeding narrative to move away from specific health effects and toward a context that underscores the importance of breastfeeding to optimize the opportunity for humans to thrive equitably. When considered in this context, societal forces such as racism that may prevent or reduce breastfeeding practices across racial and ethnic lines perpetuate the selection of privilege for some at the expense of others and are therefore by definition, unjust. The following briefly justifies this claim.

Breastfeeding and Inequity

There has been considerable discussion in the health disparities literature regarding definition of the terms health inequality, health inequity and health disparity. ^(40, 41) These terms have been used somewhat interchangeably in the breastfeeding literature to describe differences in breastfeeding rates among racial and ethnic groups. For the purposes of this proposal, a distinction is made between health inequality and health inequity. Health inequality is a term used to describe general differences in health outcomes of individuals or groups. In contrast, health inequity “is a specific type of health inequality that denotes an unjust difference in health” ⁽⁴⁰⁾ (p. 2). For example, observed differences in breastfeeding rates between social groups are inequalities. Determining which inequalities are unjust is based on “normative judgment” which in turn involves assessing the “...reasoning that underlies the health inequality.” ⁽⁴¹⁾ Unjust differences in breastfeeding rates are predicated on two factors here but there are likely more examples.

First, in the U.S., race and ethnicity independently predict breastfeeding practices ⁽⁴²⁾ but limitations of national surveillance breastfeeding data provide challenges for the examination of within group underlying contextual information. For example, in the U.S., 11 federally funded datasets measure one or more outcomes on breastfeeding exclusivity, initiation and duration but

because these are not coordinated, results are difficult to compare. ⁽⁴³⁾ In addition, data surveillance practices in the U.S. do not allow for extensive analysis by race because study sample sizes include large proportions of women who identify as white, have higher education levels, are middle income and older. ⁽⁴⁴⁾ This is problematic because other demographic factors that are associated with lower breastfeeding rates are lower levels of income, lower levels of maternal education, being unmarried as well as residing in the southeastern United States and in rural areas compared with urban. ⁽⁴⁵⁾ Despite that it has been posited that any social difference in health deserves an explanation, ⁽⁴¹⁾ current surveillance methods present explanatory challenges. Nonetheless, “no data” does not necessarily indicate “no problem.” ⁽¹⁷⁾

Secondly, research to date surrounding breastfeeding inequities by race has not explicitly incorporated the historical context of black women in the U.S. even though “a priori contextual knowledge” can help to inform research questions surrounding race and health inequities. ⁽¹⁵⁾ In support of a theoretical connection between racism and breastfeeding behaviors of black women, several reports have cited a link between historical oppression and current breastfeeding behaviors of black women born in the U.S. Specifically, it has been reported that during the time of slavery in the U.S., women who were slaves were expected to breastfeed the owner’s children, often at the expense of their own. ⁽⁴⁶⁻⁴⁸⁾ This scenario is suggestive of historical trauma ^(17, 49) yet, despite this historical context, research has not explicitly focused on the effects of historical oppression where breastfeeding is concerned. From a critical perspective, it could be argued that ignoring this important historical context is a privilege afforded to those in dominant social groups.

If breastfeeding inequality is viewed through a lens of inequity, then questions arise about the social gradient that can neither be answered by datasets limited by higher proportions of

white respondents nor by those that omit important contextual variables. Exposure to racism is one such variable. A robust body of literature describes the association between racism and health in the U.S. ^(17, 50) but this association has not been studied with regard to breastfeeding. While a thorough analysis of the relationship between racism and health is beyond the scope of this proposal, it is important in the context of this proposal to briefly define race and racism and to highlight several examples of how poor health has been linked to racism.

Race, Racism and Health

Race has been defined as “a social construct that encompasses the notion of... innate difference based on phenotype, ancestry and/or culture, and that intersects in complex ways with other forms of privilege/oppression.” ⁽⁵⁰⁾ (p. 144) This definition highlights the context of privilege and oppression as central to understanding race as a social construct. Although a biological-genetic construct of race has been long refuted as a discrete cause of differences in health among racially disparate groups, the social construct of race provides a powerful rationale to study breastfeeding inequities. ⁽⁵¹⁾

Racism is defined as “phenomena that results in avoidable and unfair inequalities in power, resources and opportunities across racial or ethnic groups...” ⁽⁵²⁾ (p. 2) Racism can be expressed as beliefs such as negative stereotypes, as emotions such as fear or hatred and as behaviors that range from threats to violence. ⁽⁵²⁾ Racism can also operate subtly as in micro-aggressions ⁽⁵³⁾ as well as be deeply embedded in social systems and structures. Systemic or structural racism occurs when power is exercised knowingly or unknowingly to deny access to goods and services such as health care, labor opportunities, housing and education. Racism is one form of oppression but there are others that are based on a range of social characteristics such as gender, age, class, sexuality, mental and physical ableness among others. ⁽⁵⁰⁾

Racism has been discussed as a determinant of health in the U.S. for decades. ^(54, 55) Among black women in the U.S., experiences of racism have been associated with asthma ⁽²¹⁾ and obesity ⁽²²⁾ and breast cancer. ⁽⁵⁶⁾ Poor birth outcomes for black women in the U.S. provide perhaps the strongest of evidence ⁽²⁰⁾ of how experiences of racism ⁽⁵⁷⁾ contribute to an alarming cycle of inequity across the lifespan. ⁽⁵⁸⁾ Poor birth outcomes may include premature birth as well as low and very low birth weights for infants as well as maternal mortality. For example, in 2011, the rate of pregnancy related deaths for white women was 12.5/100,000 deaths. In contrast, the rate was 42.8/100,000 for black women. ⁽⁵⁹⁾ Not all of these deaths can be directly attributed to experiences of racism but poor birth outcomes have been attributed to psychosocial stress triggered by experiences of racism. ⁽⁶⁰⁾ With regard to psychosocial stress, it has been hypothesized that black women experience a double jeopardy ⁽⁶¹⁾ by way of marginalization not only by race but also by gender. In turn, this stress requires a lifetime of high effort coping to overcome resulting in physical illness and disease. ⁽⁶⁰⁾

Despite that race may be regarded as a social construct in contrast to underlying genetic or biological constructs, race has also been hypothesized to become biological and “epigenetic” through various causal mechanisms that are rooted in oppression. ⁽⁶²⁾ Breastfeeding is a health promoting human behavior. As a primary level prevention strategy, breastfeeding has the potential to substantially reduce health care costs ^(63, 64) and build human capital through the transfer of health from one generation to the next. Although a body of research has identified links between racism and disease, this proposal aims to investigate how racism may influence a health promoting behavior, thus this proposal is innovative in its approach. ⁽⁶⁵⁾

Moreover, the identification of racism as a fundamental cause of inequities in breastfeeding rates opens the door for innovative policy interventions that in addition to

individual level interventions may be more effective in closing the gap.⁽⁶⁵⁾ Several mechanisms have been identified to explain the link between racism and health. Briefly, these may include restricted access to social resources, psychosocial stress, reduced adoption of healthy behaviors or adoption of unhealthy behaviors among others. Building on prior research regarding racism and health, a conceptual model can be organized around mechanisms between racism and what is currently known about breastfeeding among black women in the U.S.

Conceptual Framework

This proposed study is guided by a framework published by Williams and Mohammed⁽¹⁾ that emphasizes racism as one fundamental cause of health outcomes. It is modified for this proposal to conceptualize the mechanisms by which racism may influence breastfeeding initiation and duration among black women in the U.S. Williams and Mohammed argue that racism is a fundamental cause or determinant of health outcomes in the U.S. via multiple intervening mechanisms that change over time. Two specific forms of racism (institutional and cultural) are hypothesized to “adversely affect health through stigma, stereotypes, prejudice and racial discrimination.”⁽¹⁾ Importantly, Williams and Mohammed acknowledge that much of the current disease burden is linked to modifiable health behaviors. I argue that breastfeeding is one such modifiable health behavior that has been unjustly influenced by institutional and cultural transmission of racism.

According to this framework, (Appendix 1) racism is a distal meta-mechanism that determines social status. Social status includes flexible resources⁽⁶⁶⁾ such as income, education and wealth but also characteristics such as gender and age. Social status contributes to the more proximal mechanisms that influence behavioral, psychological and physiological responses, ultimately resulting in population level patterns of health and disease. Proximal mechanisms may

include health practices, stress, psychosocial resources, medical care and multiple others that change over time. This framework emphasizes that interventions that target proximal mechanisms may reduce health inequities temporarily but without interventions that target meta-mechanisms, inequities will persist. This is because mechanisms are dynamic and will adjust to retain the direction of the relationship between the social mechanisms and health outcomes.⁽⁶⁷⁾ Interrupting the cycle of inequities will require multi-level and innovative interventions.⁽⁶⁵⁾

This framework was selected for two reasons. First, a specific conceptual framework that highlights mechanisms by which racism may influence breastfeeding has not been previously described even though a substantial body of literature supports associations between racism and health.^(1, 17, 40) Second, whereas the theory of fundamental causes⁽⁶⁷⁾ highlights socioeconomic status as a fundamental cause of health inequities,⁽⁶⁶⁾ this model explicitly cites racism as a fundamental cause. The following will briefly highlight the core constructs of this model. First, racism is described as the meta-mechanism that influences health. Second, intervening mechanisms are identified. Intervening mechanisms are hypothesized to operate through institutional or cultural racism or both.

Meta-Mechanism

For the purposes of this proposal and consistent with the selected framework, racism is considered the meta-mechanism that theoretically influences persistent breastfeeding inequities. Williams and Mohammed outline two forms of racism, institutional and cultural.⁽¹⁾ Based on the breastfeeding literature, the following offers examples of intervening mechanisms by which institutional and cultural racism may influence breastfeeding behaviors among black women in the U.S.

Intervening Mechanisms

Institutional Racism

Institutional racism is associated with social structures and environments that systematically restrict social resources that are important to attainment of health and well-being. For example, in racially segregated communities, reduced access to quality education in turn reduces adequate preparation for higher education and ultimately opportunities for employment. The breastfeeding literature further provides multiple examples of possible intervening mechanisms that are also consistent with literature regarding racism as a fundamental cause of poor health.

Maternal Nativity

Although Williams and Mohammed cite geographic origin as a fundamental cause of health outcomes, in the context of breastfeeding, studies have reported mixed findings with regard to maternal nativity. For example, a study of first time mothers in Louisiana found no significant differences in breastfeeding practices for black women born in the U.S. compared with outside of the U.S. ⁽⁶⁸⁾ Yet, another study in New York reported significantly higher breastfeeding rates for foreign-born black women compared with U.S. born. ⁽⁶⁹⁾ This information supports the need for the examination of geographic factors for black women in the U.S. as exposure to racism may differ according to maternal nativity depending on the historical context of oppression.

U.S. Geographic Region

In the U.S., differences in breastfeeding rates have been observed by region. For example, in 13 states, the difference between black women and white women was > 20 percentage points, lower among black women. ⁽⁷⁰⁾ The largest differences were observed in

southeastern states. Additionally, the implementation of evidence based maternity care practices have been shown to improve breastfeeding rates for minority women. ⁽⁷¹⁾ Yet, hospitals with this designation are significantly less available in zip codes where there are higher percentages of black residents compared with other groups. ⁽⁷²⁾ This information demonstrates the importance of place in breastfeeding outcomes. ⁽⁷³⁾

Health Care Setting

Racial bias has been reported extensively in other areas of health as an underlying causal factor in inequalities. ⁽⁷⁴⁾ With regard to breastfeeding, several studies have reported that black low-income women receive less education and support from WIC counselors, ⁽⁷⁵⁾ nurses and physicians ⁽⁷⁶⁾ than their white counterparts. This is particularly troubling since health care professionals advice and support have been shown to positively influence breastfeeding among black women. ⁽¹⁹⁾ In addition, a lack of racial and ethnic diversity among lactation care professionals suggests that black women may not be receiving culturally congruent care, ⁽⁷⁷⁾ ultimately contributing to lower breastfeeding rates.

Employment Setting

The return to the workplace has been widely cited as a barrier to breastfeeding initiation and duration. ⁽⁷⁸⁻⁸⁰⁾ One study reported that black women who return to work < 12 weeks postpartum stopped breastfeeding sooner than black women who have > 12 weeks maternity leave ⁽⁸¹⁾ suggesting a socioeconomic link that restricts access to family leave policies. Although it has been reported that black women as an aggregate return to the workplace sooner than women in other racial and ethnic groups, ⁽⁴⁵⁾ the literature is limited.

Social institutions such as the employment sector also produce political resources that can either empower or restrict women to initiate and continue to breastfeed. For example, one study

examined breastfeeding practices according to state laws relative to the time the laws were enacted. Results indicated that compared with the white group, African Americans were half as likely to breastfeed for 6 months in areas with provisions to protect breastfeeding in the workplace. ⁽⁸²⁾ The authors hypothesized that although employers are required to offer breaks for milk expression, many are not required to pay women for the time they use. If black women in the U.S. are disproportionately represented in lower wage jobs, ⁽¹⁾ then they may not benefit from the law because the unpaid time may be unaffordable. This example highlights how policies enacted to empower women to breastfeed may actually restrict black women from benefiting from their provisions.

Cultural Racism

Cultural racism is described in the context of the transmission of negative stereotypes that can influence both dominant and stigmatized groups through complex emotional processes. Generally, emotions whether positive or negative, have been shown to strongly influence decision-making processes but may also be amendable to interventions. ⁽¹⁾ Stress, anxiety, depression and psychosocial resources have been reported as important indicators of breastfeeding initiation and duration in the literature and provide evidence for the investigation of intervening mechanisms in the psychosocial domain.

Psychosocial Processes

Despite that racism is cited as one fundamental cause of health outcomes, the authors ⁽¹⁾ importantly acknowledge that the harmful effects of exposure to racism and not racism itself contribute to poor outcomes through multiple mechanisms. For example, stress is cited as one mechanism by which racism affects health behaviors. Stress may be a response of discrimination or stereotype threat among other factors. ⁽¹⁾ Although psychosocial stress related to experiences

of racism has not been reported in the breastfeeding literature, psychosocial stress related to exposure to racism has been linked with poor birth outcomes among black women. ^(54, 60)

Breastfeeding, as previously discussed is inextricably linked to the neuroendocrine processes of birth. Anxiety,⁽³²⁾ stress and depression (31, 33, 34) have also been linked to breastfeeding discontinuation without the identification of more upstream factors. Additionally, it has been noted that stress caused by stereotype threat can influence self-esteem.⁽¹⁾ Similar to self esteem, lower levels of breastfeeding self-efficacy (BSE), closely linked to confidence, have been reported to negatively influence breastfeeding duration among black women of African descent.⁽⁸³⁾ In a related study, lower BSE scores were reported among U.S. born black women and the highest BSE scores were those of women born in Africa, supporting the heterogeneity of black women in breastfeeding decision-making processes. ⁽⁸⁴⁾

Psychosocial Resources

Decision-making processes regarding breastfeeding are complex and those in her social sphere influence a mother's decisions. For example, findings from two studies, ^(85, 86) reported that for African American women, the father of the baby, maternal grandmother, family, friends and the general public influenced the mother's infant feeding decisions. There is also evidence to suggest that events or exposures that affect the mother will also affect her network because her relationships with her network are interdependent. ⁽¹⁵⁾ Theoretically, those who may also be exposed to racism are also the people who may be most influential in her breastfeeding decisions ultimately either reducing uptake of breastfeeding or encouraging breastfeeding. ⁽¹⁾ For this reason, covariates that address the mother's social network were selected.

Methods

Human Subjects

The University of Massachusetts Institutional Review Board determined that this proposed research is not human subject research. (Appendix 2)

Methodology

The proposed study is a quantitative secondary data analysis of the Black Women's Health Study (BWHS).⁽²⁴⁾ The BWHS is a longitudinal cohort of approximately 59,000 women in the U.S. that began in 1995 and has been followed every two years with funding awarded through 2017. The follow up rate is 80% through the 2015 cycle. The development of the BWHS was prompted by the prevalence of increased morbidity and mortality for black women on a number of outcomes compared with white women. Examples at that time included invasive breast cancers as well as cardiovascular risk among others. U.S. Educators, government workers, nurses and women who subscribed to periodicals with high readership of black women were recruited to participate.⁽²⁴⁾ Broadly, surveys include demographic, medical history, reproductive health, health behavior and diet questions.

This data is deemed appropriate for the proposed analyses because the surveys include questions regarding exposure to racism and breastfeeding questions. (Appendix 3) To date, the BWHS has been used to analyze associations between exposure to racism and obesity, adult-onset asthma and breast cancer.^(21, 22, 56) Additionally, findings from recent studies support the association between longer lactation history and reduced incidence of estrogen negative receptor breast cancers.⁽⁹⁾ Closing the gap in breastfeeding inequities by race is a priority as highlighted by the recommendations of the aforementioned study authors. Thus, this proposed study aims in part to build on existing knowledge surrounding breastfeeding inequities among black women in

the U.S. The following describes the analytic cohort, the primary variables, covariates and analysis plan.

Analytic Cohort

The sample will include all participants who 1.) enrolled in the study in 1995 2.) responded to the racism assessment in 1997 3.) reported the birth of a first child following the racism assessment up to 2005.

Primary Variables

Racism

The primary predictor variable in this proposed study is experiences of racism. The questions regarding racism were included in the 1997 assessment, 2 years after participants enrolled. These questions were based on emerging hypotheses that highlighted exposure to racial discrimination as an underlying cause of poorer health for black people in the U.S. ⁽⁵⁵⁾ Three questions were included. The first was “how often do you think about race?” Responses included 7 categories from “never to “constantly.” The second question was concerning every day exposure in 5 categories such as “receiving poorer service, people act as if they think you are dishonest” and so forth, followed by responses ranging from “never” to “almost every day.” The third question addressed lifetime exposure with the question “have you ever been treated unfairly due to your race in any of the following circumstances? Responses included “yes/no” options in each of the following categories, “job, housing and police.” Two summary variables were created. The first averaged participant’s responses to the 5 questions about “everyday racism.” These were divided into quartiles. The second variable summed the positive responses for the “lifetime racism” questions. Responses ranged from 0 (none) to 3 (yes in all 3 categories). ⁽²²⁾

Associations between the racism variables and breastfeeding outcomes may be initially treated as categorical to assess for a linear relationship. If a linear trend is observed, then the association could be re-estimated treating the racism variable as continuous.

Health Care Racism

Three additional questions were asked in the 2003 assessment regarding racism specific to the health care setting. The first two asked “are you treated respectfully when obtaining health care?” and “does your health care provider offer you the full range of treatment options?” Responses were on a 3-point scale from usually to rarely. The third question asked whether respondents thought they received care that was different because of insurance or because of race with yes/no options for both. Because this question was asked in 2003, it does not precede the births but it may be useful in the analysis given that differential access to breastfeeding support and information in the health care setting has been reported. At this time it is unclear if these questions will be used in the proposed analysis or not. If so, one possibility may be to estimate the associations of the health care racism variables with the 1997 racism variables. If they are related, it may be reasonable to assume that exposure to racism is stable among women in the sample.

Breastfeeding Initiation

Measureable breastfeeding outcomes can be broadly categorized by “initiation” and “duration.” Initiation refers to whether or not a woman will initiate breastfeeding following the birth of her infant. Initiation of breastfeeding results from her intention or her plan for infant feeding as opposed to her subsequent breastfeeding behaviors. A mother could be said to have initiated breastfeeding even if she only breastfed her child one time following birth. This outcome is important in the present proposal because studies have demonstrated that although

the majority of women who give birth initiated breastfeeding, the majority also discontinued before they intended to due to external factors. ^(16, 79) The BWHS measured breastfeeding outcomes on 3 survey cycles that are relevant to the breastfeeding initiation outcome variable in this proposed analysis. The 1999, 20 01 and 2003 assessments ask about live births in the preceding 2 years and are followed by the question “the question “did you breastfeed the baby?” Options were dichotomous, either “yes” or “no.”

Breastfeeding Duration

Breastfeeding duration refers to how long after birth the child received breast milk or how old the child was when they stopped breastfeeding. Breastfeeding duration was measured on 3 survey cycles, 1999, 2001 and 2003. In 1999 and 2001, respondents who answered “yes” to the “did you breastfeed?” question were asked to report how long. Categorical choices were < 3 months, 3-5 months, 6 months or more. In 2003, following the questions “did you breastfeed?” participants were prompted to write in a numerical response. It is unclear at this point how that data was coded.

Covariates

The initial covariates for this proposal were selected because they have been associated in prior studies with the outcome variables (breastfeeding initiation and duration). The initial covariates include: socioeconomic status (SES), age, weight, medications, medical history, employment, education, marital status, family members in household, maternal nativity, regional setting, region of the U.S., neighborhood segregation, depression, prenatal care, pregnancy due date, pregnancy weight gain, race of father, infant birth weight, preterm birth and NICU stay for the infant.

The SES score variable was derived at BU. One study ⁽²²⁾ reported that the score was created using factor analysis of 29 census block group variables. Of the top loading variables, the 6 that were selected for the score included: “median household income; median housing value; percentage of households receiving interest, dividend or net rental income; percentage of adults aged 25 years or more who have completed college; percentage of employed persons aged 16 or more who are in occupations classified as managerial, executive or professional specialty; and percentage of families with children that are not headed by a single woman” (p 2).

Data on age, weight, medications and medical history were collected in each cycle from 1995 through 2003. Age and weight data was collected in an open response format to the question “what is your current age?” and “what is your current weight?” Medication data was collected with responses to the question “do you currently take any of the following medications at least 3 days/week?” For this proposed analysis, medication covariates will be limited to medication taken for hypertension, diabetes and depression medications. Medical history data will be limited to high blood pressure, diabetes and depression. Although medical history data was collected in each cycle, there were differences between cycles. For example, the 1995 assessment does not ask about high blood pressure and diabetes during pregnancy whereas the 1997 and 1999 assessment includes these responses. Additionally, the 2001 and 2003 survey includes a question about depression but the other cycles do not. One possibility may be to conduct secondary analyses to look at the association of medical factors among the survey responses that were inclusive of medical factors with breastfeeding in that assessment.

Other covariates include employment, education, marital status, family members in household, maternal nativity, regional setting, region of the U.S., neighborhood segregation, depression, prenatal care, pregnancy due date, pregnancy weight gain, race of father, infant birth

weight, preterm birth and NICU stay for the infant. The 1995 assessment included questions about employment, education, marital status and family members living in household. The marital status data was updated in 1999 and education data was updated in 2003. Maternal nativity was collected in 1997 and also asks where the mother's parents were born.

The regional data collected in 1997 ask what type of neighborhood the mother lived in up until the age of 18 e.g. urban, suburban, or rural. Additionally, the region of the U.S. is a variable derived at Boston University that will identify what region of the country the mother lives. Neighborhood segregation was assessed in 1997 with responses ranging from “predominately black, predominately white, mixed or other” to the question asking what kind of neighborhood the woman lived in until the age of 18. Depression was addressed in 1999 using the CES-D instrument. Boston University has reported that this variable is measured in quartiles. Whether or not the mother planned the pregnancy was asked in 1999. The 1999, 2001 and 2003 assessments included questions about prenatal care, pregnancy due date, infant birth weight and preterm births. Finally, race of the father was collected in 1999 and NICU stay was collected in 1999 and 2001.

Sample Size

The estimated sample size is 1500 participants per Boston University. The alpha level will be set at $p < .05$ and confidence level at 95%.

Analysis

SPSS V 22 will be used for data analysis. First, data will be screened for accuracy including missing, implausible values and outliers. Histograms and box plots will be used for continuous variables and cell counts for categorical variables. Decisions about transformations will be made with committee members based on considerations such as model assumptions,

biological plausibility and past literature. Model assumptions include linear associations between continuous predictors and outcomes. Descriptive statistics and frequencies will be used to describe the sample. Measures of central tendency, ranges and standard deviations will be used to check assumptions for multivariate analysis. Association statistics such as Pearson product moment, chi square and T-tests/analysis of variance will be used based on level of measurement of the primary variables. Bivariate correlations will be examined among the proposed independent variables or covariates to assess for multicollinearity before conducting the regression analyses.

Aim 1 will assess the association between exposure to racism and breastfeeding initiation (categorical) using logistic regression. If breastfeeding initiation is a common outcome, other procedures such as cumulative incidence ratio may need to be considered as odds ratios may overstate the relative risk when confounding is present.⁽⁸⁷⁾ (communication with BU)

Aim 2 will assess the association between exposure to racism and breastfeeding duration (assumed continuous) using linear regression/ANCOVA or logistic regression based on the observed distribution of the breastfeeding duration outcome and whether residuals from ANCOVA are normally distributed. Both models will be expanded to test effect modification of the association between racism and breastfeeding by adding selected factors (covariates) as main effects to assess their interaction with racism.

Procedures

Several steps have already been completed with regard to this proposal. A request for data was sent to Boston University with a brief aims page. Once approval was obtained from the PI of the BWHS, several phone calls were scheduled to finalize the request. A Data Use Agreement (DUA) between the University of Massachusetts (UMass) and Boston University

(BU) was signed in September 2015 and a final data variable request was submitted to Boston University on December 11, 2015. The DUA is available to this committee upon request. Finally, a UMass research drive has been requested and permission for access has been granted to this committee.

Once data is obtained from BU, it will be stored on an encrypted password protected computer (UMass research drive) that is backed up daily. As discussed with BU, this student will conduct the analyses using SPSS software and Dr. Crawford (committee member) will verify the analyses in SAS to be provided to BU. Any printed outputs resulting from the data analysis will be kept in a secure, locked cabinet. Because this proposed research is not considered human subject research, it is not subject to federal regulations however, consistent with the terms of the DUA, records will be kept for 3 years and then destroyed.

Potential challenges

One challenge with regard to the breastfeeding duration outcome (Aim 2) may be that duration was measured differently in 2003 than in 1999 and 2001. This will need to be addressed in the coding of the variable if it has not already been derived at BU. Also, since the survey cycle is over a two year period, women have been asked to recall breastfeeding experience that may have been as long as 2 years prior. A recent study found that reported breastfeeding duration and recalled breastfeeding duration to be strongly correlated with a moderate overestimation of approximately 2 weeks which is a reasonable bias given the aims of this proposed study. ⁽⁸⁸⁾

Also, because the survey cycles spanned a 2-year period of time, it is possible that women may have been breastfeeding at the time of the assessment. This is potentially problematic in the sense that breastfeeding duration would ideally capture the total amount of time the mother breastfed that one child. If not already recoded by BU, one possibility may be to

limit the analysis to 6 months of breastfeeding depending on how this may affect sample size. Also, if breastfeeding duration were treated as a continuous variable rather than ordinal/categorical then another strategy may be to use survival analysis. Survival analysis would measure breastfeeding to date of response.

Conclusion

In conclusion, this proposal aims to conduct a secondary analysis of the BWHS in order to investigate the association between experiences of racism and breastfeeding initiation and duration. The sample will be women who enrolled in 1995, responded to the racism assessment in 1997 and gave birth to their first child between 1999 and 2005. The persistent inequity in breastfeeding rates among black women compared with white women and other groups in the U.S. has prompted this investigation. Breastfeeding provides the foundation for optimal health and well-being and socially constructed barriers that either prevent women from breastfeeding or reduce the amount of time that they breastfeed may be considered unjust. A robust body of literature supports the association between exposure to racism and poorer health for black populations yet research examining the relationship between racism and breastfeeding is limited. A conceptual framework that defines racism as a fundamental cause of poor outcomes will aid in the study design, selection of variables and interpretation of the research.

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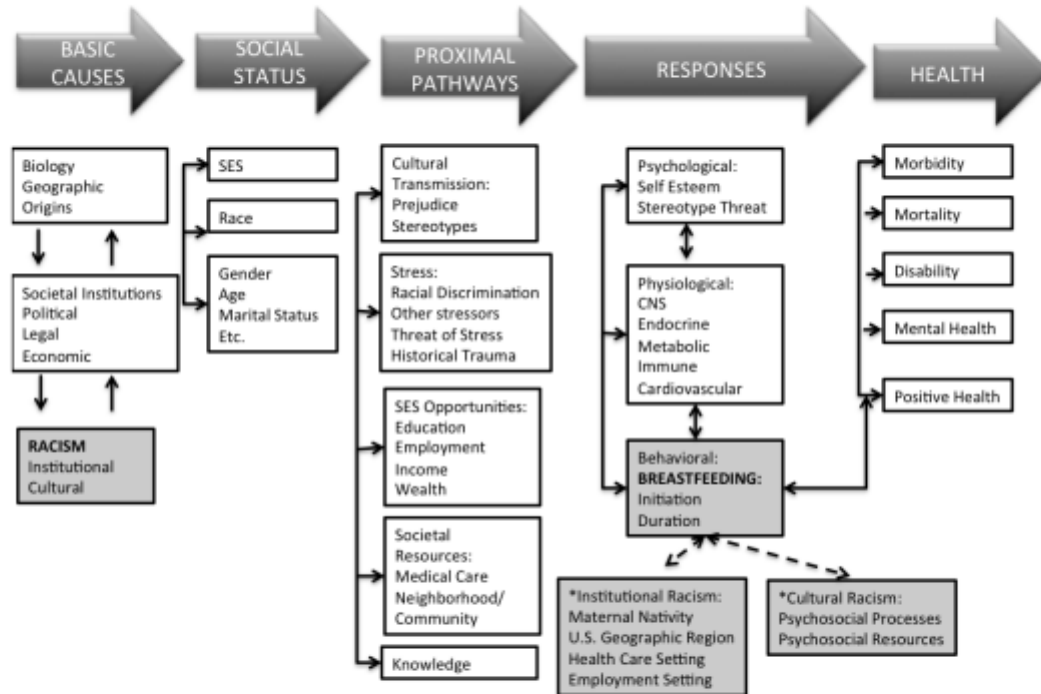
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Appendix 1



Adapted from Williams and Mohammed. (p. 19) (1) Shaded boxes indicate primary exposure and outcome variables as well as covariates that are the focus of the proposed inquiry. Dashed arrows indicate that the relationship between these variables is unknown.

Appendix 2



NOT HUMAN RESEARCH DETERMINATION

December 10, 2015

Michele Griswold, MPH, RN, IBCLC
 University of Massachusetts
 Graduate School of Nursing

Dear Ms. Griswold:

The IRB reviewed the following:

Type of Submission:	Study
Review Type:	Non-Committee
Project Title:	Investigating the relationship between experiences of racism and breastfeeding initiation and duration among participants of the Black Womens Health Study
Investigator:	Michele Griswold, MPH, RN, IBCLC
IRB ID:	H00009721
Funding Agency:	Departmental
Grant Title:	None
Grant ID:	None
IND or IDE:	None
IRB Review Date:	12/10/2015
Documents Reviewed:	Data Use Agreement UMass Boston University Griswold Cover Letter

The IRB determined that the proposed activity is not human subject research as defined by DHHS and FDA regulations.

IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities are human subject research in which the organization is engaged, please submit a new request to the IRB for a determination.

Sincerely,

Allison Blodgett, PhD, CIP
 IRB Assistant Manager

cc: Perry, Donna J.

Appendix 3

Variable	Survey Year	Question	Responses
	1995		
Age		1. How old are you?	Numerical
Employment		2. Write in birth date.	Numerical
		3. What is your current occupation?	Professional/Technical Manager/Administrator Sales Worker Clerical Worker Service Worker Craftsperson Operative Farmer/Farm Laborer Never Employed or Self-Employed Other (write in)
		4. Do you also work at a second job?	Yes, < 10 hr/week Yes, 10-19 hr/week Yes, 20 or more hours a week No
Education		5. How many years of high school have you finished? (mark highest)	<12 12 (high school or GED) 13 14 15 16 (graduated college) 17(graduate or professional school)
Marital Status		6. What is your current marital status?	Married Living as married Separated Divorced Widowed Single
Medications		23. Do you currently take any of the following medications at least 3 days/week?	Water pills for high blood pressure Other blood pressure medication Insulin Pills for diabetes
Medical history		24. When was your last visit to a doctor, nurse practitioner, clinic or hospital for health care for yourself?	< 1 year ago 1-2 years 3-4 years 5-9 years 10 or more years ago
		30. Has a doctor ever told you that you have any of the following conditions? If yes, mark the condition and the age it was first diagnosed.	No/Yes If Yes, age 30, 30-39, 40-49, 50 or more High blood pressure Diabetes
Current Weight		38. What is your current weight?	Numerical
Family and Community		51. How many people live in your household	1-8 or more
		52. With whom do you live?	Alone With husband/partner

			With 1 or more children With 1 or more parents With other family With 1 or more friends
		53. Do you have childcare responsibilities?	Yes, my own children Yes, my grandchildren Yes, other family No
		54. Do you have responsibilities for the care of a parent or other relative?	Yes, parent Yes, other relative No
	1997		
Age		1. How old are you?	Numerical
Nativity		3. Please fill in the appropriate ovals below to indicate where you, your mother and your father were born.	You Your Mother Your Father Responses for each: United States Other Country Unknown
Regional Setting		4. Up to the age of 18, where did you live?	Urban setting Suburban setting Rural or small town Combination of these
Neighborhood Segregation		5. Up to age 18 what kind of neighborhood did you live in?	Predominately black Predominately white Mixed or other
Race		6. What is your race?	Black White Asian or Pacific Islander American Indian or Alaskan Native
Medications		19. Do you currently take any of the following medications or vitamins at least 3 days/week?	Diuretics for hbp Other blood pressure medication Injections for diabetes Pills for diabetes Medication for depression
Medical History		20. If a doctor has told you that you had any of the following conditions, please fill in the ovals indicating when it was first diagnosed.	High blood pressure not during pregnancy High blood pressure during pregnancy Diabetes not during pregnancy Diabetes during pregnancy
Current Weight		28. Please write in your current weight in pounds...	Numeric
Racism		24. How often do you think about race?	Never Once/year Once/month Once/week Once/day Once/hour Once minute Constantly

		25. In your day-to-day life, how often have any of the following things happened to you?	a. Receive poorer service b. People act as if they think you are not intelligent. c. People act as if they are afraid of you. d. People act as if they think you are dishonest. e. People act as if they are better than you. Responses for each: Never A few time/year Once/month Once/week Almost every day
		26. Have you ever been treated unfairly due to your race in any of the following circumstances?	A. Job B. Housing C. Police
	1999		
Age		1. How old are you?	Numeric
Marital status		3. What is your current marital status?	Married Living as married Separated Divorced Widowed Single never married
Current Weight		4. Please write in your current weight and fill in the circles.	
Regional Setting		6. Currently, where do you live?	Urban setting Suburban setting Rural or small town setting
Neighborhood Segregation		7. Currently, what kind of neighborhood do you live in?	Predominately black Predominately white Mixed or other
Medications		14. Do you take any of the following medications or vitamins at least 3 days/week.	Mark circle for yes/blank for no Injections for diabetes Pills for diabetes Diuretics for hbp Other blood pressure medication Antidepressants
Medical history		15. Between March 1997 and March 1999, if you were diagnosed with any of the following conditions, fill in circle and indicate year is was diagnosed.	Blank for no, mark circle for Yes Hbp pregnancy Hbp not in pregnancy Depression treated with med Diabetes not during pregnancy Diabetes during pregnancy
Depression		25. Please indicate which best describes how often you felt or behaved this way during the past week.	I was bothered by things that usually do not bother me I did not feel like eating; my appetite was poor I felt that I could not shake off the blues even for family/friends I felt that I was just as good as other people

			<p>I had trouble keeping my mind on what I was doing</p> <p>I felt depressed</p> <p>I felt that everything I did was an effort</p> <p>I felt hopeful about the future</p> <p>I thought my life had been a failure</p> <p>I felt fearful</p> <p>My sleep was restless</p> <p>I was happy</p> <p>I talked less than usual</p> <p>I felt lonely</p> <p>People were unfriendly</p> <p>I enjoyed life</p> <p>I had crying spells</p> <p>I felt sad</p> <p>I felt that people dislike me</p> <p>I could not get going</p>
Pregnancy		28. What was your due date?	Numeric –Fill in ovals
Weight Gain Pregnancy		31. How much weight did you gain during this pregnancy?	<p><10</p> <p>10-14</p> <p>1-19</p> <p>20-24</p> <p>25-29</p> <p>30-34</p> <p>35-39</p> <p>More than 39</p>
Breastfeeding		33. Did you breastfeed the baby? 33a. How long?	<p>Yes/No</p> <p>< 3 months</p> <p>3-5 months</p> <p>6 months or more</p> <p>none</p>
Planned Pregnancy		34. Did you plan to get pregnant when you conceived this baby?	<p>Yes planned</p> <p>No unplanned</p>
Father's Race		35. What is the race of the father?	<p>Black</p> <p>White</p> <p>Other race (write in)</p>
Prenatal Care		39. When did you first see a doctor or a nurse for prenatal care?	<p>During 1st Tri</p> <p>During 2nd Tri</p> <p>During 3rd Tri</p> <p>Never</p>
Birth		40. How much did this baby weight at birth?	Pounds/Ounces fill in ovals
		41. Did the doctor say this child was born at least 3 weeks early (Premature/preterm) 41a. How early?	<p>Yes/No</p> <p>3 weeks-10 weeks or more (ovals)</p> <p>Don't know</p>
		42. Did this child stay in a neonatal intensive care unit before going home?	<p>Yes < 1 day</p> <p>Yes, 1-4 days</p> <p>Yes, 5-9 days</p> <p>Yes, 10 or more days</p>

			No
	2001		
Age		1. How old are you?	Numeric –write in
Current Weight		3. Please write in your current weight.	Numeric- write in
Medical History		12. Between March 1999 and March 2001, if you were diagnosed for the first time with any of the following conditions, please fill in circle and write the year if was first diagnosed.	Yes-fill in circle Year-write in Diabetes Hypertension Depression (treated with medication)
Medications		13. Do you take any of the following medications or vitamins at least 3 days a week?	Fill in circle for Yes, leave blank for No Injections for diabetes Pills for diabetes Diuretics for hbp Other blood pressure medication Antidepressants
Pregnancy		21. Between March 1999 and March 2001, have you been pregnant?	Yes/No
		22. Mark the number of times between March 1999 and March 2001 that you had any of the following:	Birth of a single child Birth of twins or triplets Miscarriage Abortion Currently pregnant-
		23. What was your due date?	Numeric
Weight Gain Pregnancy		26. How much weight did you gain during this pregnancy?	< 10 lbs 10-14 15-19 20-24 25-29 30-34 35-39 more than 39
Breastfeeding		28. Did you breastfeed the baby? 28a. How long did you breastfeed?	Yes/No < 3months 3-5 months 6 months or more
Prenatal Care		32. When did you first see a doctor or nurse for prenatal care?	During 1 st Tri During 2 nd Tri During 3 rd Tri Never
Baby		33. How much did this baby weigh at birth?	Numeric Pounds/Oz
		34. Did the doctor say this child was born at least 3 weeks early (premature/preterm)? 34a. How early?	Yes/No 3 weeks through 9 weeks

			10 weeks or more Don't know
		35. Did this child stay in a neonatal intensive care unit before going home?	Yes, less than 1 day Yes, 1-4 days Yes, 5-9 days Yes, 10 or more days No
	2003		
Age		1. How old are you?	Numeric
Education		3. How many years of school have you finished?	Less than 12 12 (high school or GED) 13 14 15 16(college) 17 or more (graduate or professional)
Health care racism		4. Are you treated respectfully when obtaining health care?	Usually Sometimes Rarely
		5. Does your health care provider offer you the full range of treatment options?	Usually Sometimes Rarely
		6. Do you think you receive health care that is different from what others receive because of:	Type of insurance? y/n Race? y/n
Medical History		14. Since March 2001, if you were diagnosed for the first time with any of the following conditions, please fill in the circle for yes and write in the year it was first diagnosed.	Yes-fill in circle Year-write in Diabetes Hypertension Depression
Medications		15. Do you take any of the following medications or vitamins at least 3 days a week?	Fill in circle for Yes, leave blank for No Injections for diabetes Pills for diabetes Diuretics for hbp Other blood pressure medication Antidepressants
Current Weight		17. Please write in your current weight.	Numeric in pounds
Income		22. Last year, what was your total annual household income before taxes from all household members? Please include income from all sources such as social security, stocks, alimony and child support in the past year.	< 15, 000 15, 001 to 25, 000 25, 001 to 35, 000 35, 001 to 50, 000 50, 001 to 100, 000 more than 100, 000
		23. Last year, how many people, including yourself, were	Numeric

		supported by this household income?	
Pregnancy		24. Are you currently pregnant? Due Date?	Yes/No Write in
		25. Between March 2001 and March 2003, have you been pregnant?	Yes/No
		26. Mark the number of times between March 1999 and March 2001 that you had any of the following:	Birth of a single child Birth of twins or triplets Miscarriage Abortion
		27. What was your due date?	Numeric
Weight Gain During Pregnancy		29. How much weight did you gain during this pregnancy?	< 10 10-14 15-19 20-24 25-29 30-34 35-39 more than 39
Breastfeeding		30. Did you breastfeed the baby? How many months?	Yes/No Numeric
Prenatal Care		34. When did you first see a doctor or a nurse for prenatal care?	During 1 st Tri During 2nd Tri During 3rd Tri Never
Baby		35. How much did this baby weigh at birth?	Numeric
		36. Did the doctor say this child was born at least 3 weeks early (premature/preterm)? How early?	Yes/No 3 weeks through 9 weeks 10 weeks or more Don't know
	2005		
Breastfeeding		29. If you had a baby between March 2003 and March 2005, did you breastfeed the baby?	Yes/No How many months?
	2007		
		3. As far as you know, were you breastfed as an infant?	No Yes- number of months? Don't Know
Not on surveys but discussed with Dr. Palmer:			
		1. Pre-pregnancy BMI	
		2. Neighborhood SES score	
		3. Region of the U.S. (Northeast, West etc.)	

Executive Summary

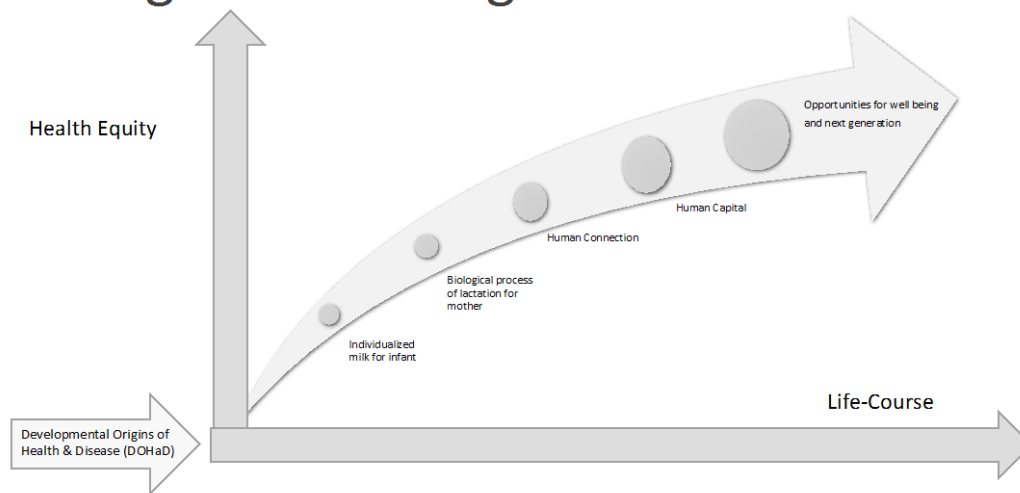
Original Proposal	Modification and Rationale
Specific Aims	
<p>Aim 3: To investigate the relationship between experiences of racism and breastfeeding initiation and duration according to selected factors.</p> <p>Hypothesis 3: It is hypothesized that there will be effect modification of some or all of the selected factors on the association between racism and breastfeeding initiation and duration.</p>	<p>Aim 3: To investigate the association between life-course factors and breastfeeding initiation and duration among participants of the BWHS.</p> <p>Hypothesis 3: It was expected that breastfeeding outcomes would vary by some of all factors.</p> <p>After initial screening of the data, we identified interesting and somewhat novel associations between nativity, racial segregation, regional setting and measures of social mobility and breastfeeding initiation and duration. To maintain a reasonable scope of inquiry and because these “life-course factors” were consistent with the conceptual framework, we decided to pursue further investigation of these factors rather than pursue effect modification of the original selected factors.</p>
Conceptual Framework (Appendix 1)	
The visual representation of the conceptual framework was slightly modified.	The figure was modified to simplify the visual representation of the pathways associated with racism and breastfeeding.

Experiences of racism and breastfeeding initiation and duration among first-time mothers of the Black Women's Health Study

MICHELE K. GRISWOLD, MPH, RN, IBCLC
UNIVERSITY OF MASSACHUSETTS GRADUATE SCHOOL OF NURSING, WORCESTER
DISSERTATION DEFENSE
APRIL 27, 2017




Background and Significance

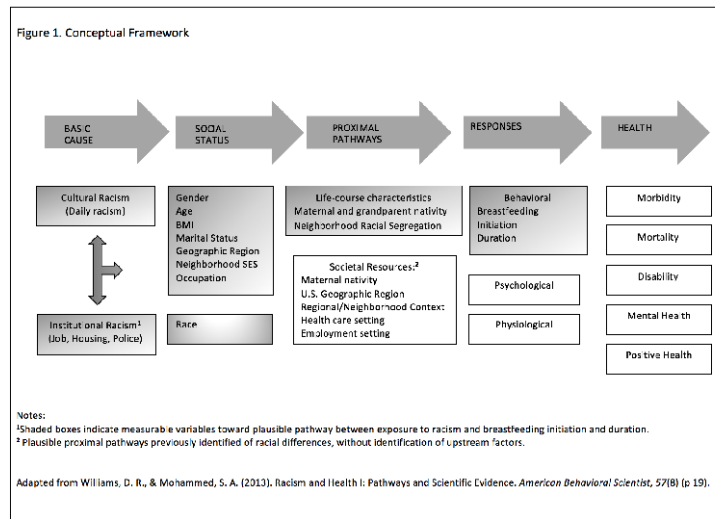


Griswold, M. K. (2017). "Reframing the Context of the Breastfeeding Narrative: A Critical Opportunity for Health Equity Through Evidence-Based Advocacy." *J Hum Lact* 33(2): 415-418.
Victoria, C. G., et al. (2016). "Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect." *Lancet* 387(10017): 475-490.

Specific Aims

1. To investigate the association between experiences of racism and breastfeeding **initiation** among the participants of the Black Women's Health Study. (BWHS)
 2. To investigate the association between experiences of racism and breastfeeding **duration** among participants of the BWHS.
 3. To investigate the relationship between selected life-course factors and breastfeeding **initiation** and **duration** among participants of the BWHS.
- 

Conceptual Framework



*Shaded boxes indicate primary exposure and outcome variables as well as covariates.

Methods

Methodology: Prospective secondary analysis of the BWHS

Human Subjects: Approved Boston University IRB; Exempt from review UMass Med IRB

Setting: Longitudinal cohort (N=59,001) enrolled in 1995; 2 Year Follow Up; 80% Follow Up Rate

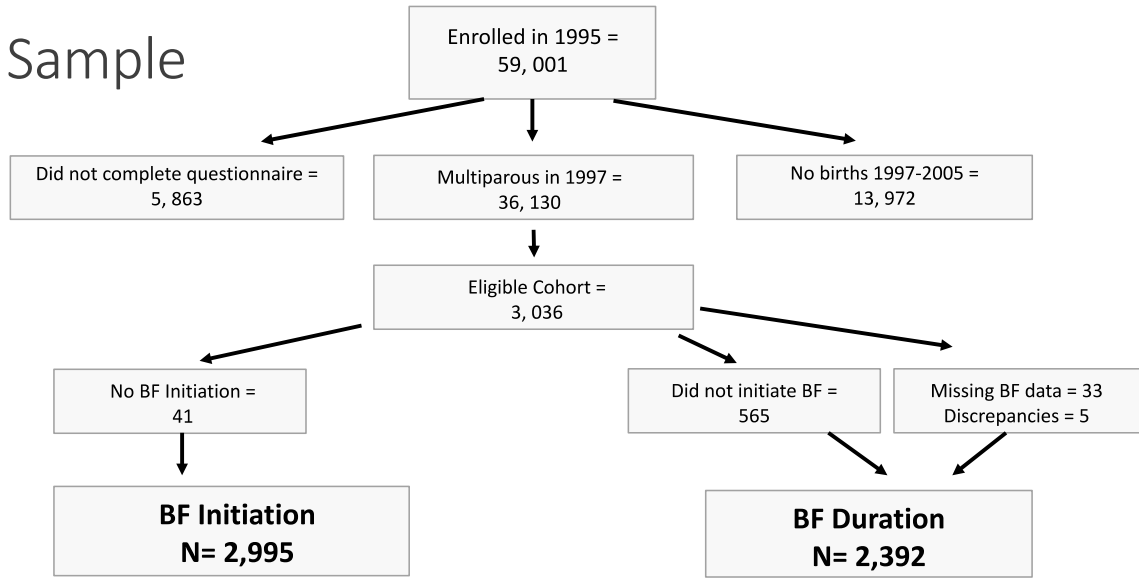
Analytic Cohort:

➤ **Sample included**

- All participants who enrolled in 1995
- Responded to the racism assessment in 1997
- Reported birth of 1st child following the racism assessment

Rosenberg, L., Adams-Campbell, L., & Palmer, J. R. (1995). The Black Women's Health Study: a follow-up study for causes and preventions of illness. *Journal of the American Women's Medical Association*, 50(2), 56-58.


Sample



Measurement

Racism

- **Daily exposure:** “in your day to day life, how often have you experienced the following?” (1-5 scale)
 - People act as if:
 - You are not intelligent
 - They are afraid of you
 - You are dishonest
 - They are better than you
 - You receive poorer service


 - **Institutional exposure:** “have you ever been treated unfairly in following circumstances?” (Yes/No)
 - Job
 - Housing
 - Police
- 

Measurement

➤ **Breastfeeding Initiation**

- Refers to whether or not a woman initiates breastfeeding upon the birth of her child.
- “Did you breastfeed?” (Yes or No)

➤ **Breastfeeding Duration**


- Refers to how long after birth, the child received breast milk or how old child was when stopped receiving breast milk.
 - 1999 and 2001 (< 3 months, 3-5 months and 6 months or more)
 - 2003 and 2005 (open ended question)
 - 2011 data used to fill in for breastfeeding initiation and duration
- 

Measurement

Aim 3: Life-Course Characteristics

- Nativity (U.S./other)
 - Participant
 - Her mother
 - Her father

 - Neighborhood Segregation
 - 1997 (“Up to age 18, what kind of neighborhood did you live in?”)
 - 1999 (“What kind of neighborhood do you live in?”)
 - Responses Predominately Black, White, mixed or other

 - Social Mobility
 - (9 categories- for example, Black to Black, Black to White, Black to Mixed)
- 

Analysis

- IBM SPSS version 23 and SAS 9.4
- Summarized full sample:
 - Means and Standard Deviation for continuous variables, percents for categorical variables, ANCOVA for age-adjusted means according to 2 summary racism variables



Analysis

➤ Aim 1

➤ **Breastfeeding Initiation:** ORs and 95% CIs (Binomial logistic regression)

➤ Model 1: Adjusted for age

➤ Model 2: Adjusted for age, BMI, years of education, marital status, geographic regions, NSES, occupation

➤ Aim 2

➤ **Breastfeeding Duration:** ORs and 95% CIs (Multinomial logistic regression)

➤ Model 1: Adjusted for age

➤ Model 2: Adjusted for age, BMI, years of education, marital status, geographic regions, NSES, occupation

➤ Aim 3

➤ Life-course characteristics in relation to breastfeeding **initiation** and **duration**

➤ Model 1: Age-adjusted

➤ Model 2: Adjusted for age, BMI, years of education, marital status, geographic regions, NSES, occupation



Results

Table 1. Age-Standardized Sample Characteristics

	Full Sample
	M(SD) or %(N)
Age	31.6(4.2)
BMI	26.8(6.5)
Years of Education	
<= HS	5.4 (162)
Some College	28(838)
College	36.1(1080)
Post College	30.5(912)
Marital Status	
Married	46.6(1395)
Living as Married	4.8(143)
Previously Married	6.4(193)
Single, Never Married	42.2(1264)
Geographic Region	
Northeast	28.6(856)
South	37.1(1112)
Midwest	18.2(544)
West	14.2(428)
Other	1.8(55)
Neighborhood SES Index	
1	25(702)
2	25(704)
3	25(699)
4	25(705)
Occupation	
Professional/Manager	59.8(1724)
Sales/Clerical	23.8(697)
Student	9.0(264)
Other/Unemployed	8.2(239)

- Adjusted for age

Results

DAILY RACISM¹ SUMMARY:

(NOT INTELLIGENT, AFRAID, DISHONEST,
BETTER THAN YOU, POORER SERVICE)

INSTITUTIONAL RACISM¹ SUMMARY :

(JOB, HOUSING, POLICE)


Quartile 1 (lowest exposure)

- Older
- Married
- Professional/managerial jobs

2 or more experiences: (highest exposure)

- Older
- Married
- Professional/managerial jobs

¹Full sample adjusted for age.



Results

AIM 1 Experiences of racism and breastfeeding initiation

- Experiences of racism in job setting associated with lower odds of breastfeeding initiation.
- Experiences of racism with the police associated with significantly higher odds of breastfeeding initiation.
- The summary racism variables were small and not statistically significant.

Table 2. Age-adjusted Odds Ratios (OR) and 95% Confidence Intervals (95% CI) for Experiences of Institutional Racism/Daily Racism and Breastfeeding Initiation

	Breastfeeding Initiation (N=2995)		Age Adjusted OR (95% CI)	Multivariate ³ OR (95% CI)
	No N (%)	Yes N (%)		
Institutional Racism				
Job:				
No	260 (46.4)	1195 (50.1)	Reference	Reference
Yes	301 (53.7)	1191 (49.9)	0.86 [0.71, 1.03]	0.91 [0.74, 1.11]
Housing:				
No	428 (76.7)	1721 (72.3)	Reference	Reference
Yes	130 (23.3)	658 (27.7)	1.26 [1.01, 1.56]	1.14 [0.89, 1.45]
Police:				
No	438 (78.5)	1745 (73.0)	Reference	Reference
Yes	120 (21.5)	646 (27.0)	1.35 [1.08, 1.69]	1.41 [1.10, 1.80]
Institutional Racism Summary¹				
0	195 (35.1)	813 (34.5)	Reference	Reference
1	216 (38.9)	839 (35.6)	0.93 [0.75, 1.16]	0.97 [0.77, 1.23]
2+	144 (26.0)	705 (29.9)	1.18 [0.93, 1.49]	1.10 [0.85, 1.43]
Daily Racism Summary²				
1	153 (27.8)	610 (25.8)	Reference	Reference
2	166 (30.1)	712 (30.1)	1.08 [0.84, 1.37]	1.13 [0.86, 1.48]
3	115 (20.9)	536 (22.7)	1.17 [0.89, 1.53]	1.23 [0.91, 1.67]
4	117 (21.2)	507 (21.4)	1.09 [0.83, 1.32]	1.24 [0.92, 1.67]

Adjusted for age, BMI, years of education, marital status, geographic region, neighborhood SES, Occupation

Results

AIM 2: Experiences of racism and breastfeeding duration

- The odds of breastfeeding at 3-5 mos. vs. 3 months were significantly lower for women reporting racism in the job setting.
- Experiences of racism with police was associated with significantly higher odds of breastfeeding at 3-5 months and 6 months.
- The summary racism variables were small and not statistically significant.

Table 2. Age-adjusted Odds Ratios (OR) and 95% Confidence Intervals (95% CI) for Experiences of Institutional Racism/Daily Racism and Breastfeeding Duration

	Breastfeeding Duration (n = 1,595)						
	≤ 3 months N (%)	3-5 months N (%)	≥ 6 months N (%)	3-5 vs. ≤ 3, Age Adjusted OR (95% CI)	3-5 vs. ≤ 3, Multivariate ^a OR (95% CI)	≥ 6 vs. ≤ 3, Age Adjusted OR (95% CI)	≥ 6 vs. ≤ 3, Multivariate ^a OR (95% CI)
Institutional Racism							
Job:							
No	283 (47.5)	306 (55.2)	593 (49.5)	Reference	Reference	Reference	Reference
Yes	312 (52.4)	248 (44.8)	606 (50.5)	0.73 [0.58, 0.92]	0.77 [0.60, 0.98]	0.91 [0.74, 1.10]	1.02 [0.82, 1.27]
Housing:							
No	424 (71.7)	420 (75.8)	850 (71.0)	Reference	Reference	Reference	Reference
Yes	167 (28.3)	134 (24.2)	347 (29.0)	0.81 [0.62, 1.05]	0.86 [0.65, 1.14]	1.02 [0.82, 1.27]	0.97 [0.76, 1.24]
Police:							
No	455 (76.3)	397 (71.8)	864 (71.7)	Reference	Reference	Reference	Reference
Yes	141 (23.7)	156 (28.2)	341 (28.3)	1.27 [0.97, 1.65]	1.34 [1.01, 1.77]	1.27 [1.02, 1.60]	1.41 [1.10, 1.82]
Institutional Racism Summary							
0	198 (33.9)	214 (39.1)	390 (32.8)	Reference	Reference	Reference	Reference
1	212 (36.2)	183 (33.5)	429 (36.1)	0.80 [0.61, 1.05]	0.80 [0.61, 1.05]	1.03 [0.81, 1.30]	1.03 [0.81, 1.30]
2+	175 (29.9)	150 (27.4)	369 (31.1)	0.79 [0.59, 1.06]	0.79 [0.61, 1.05]	1.05 [0.82, 1.35]	1.05 [0.82, 1.35]
Daily Racism Summary^a							
1	158 (26.7)	138 (25.3)	305 (25.6)	Reference	Reference	Reference	Reference
2	172 (29.1)	169 (31.0)	360 (30.2)	1.13 [0.82, 1.54]	1.18 [0.84, 1.64]	1.08 [0.83, 1.41]	1.07 [0.80, 1.43]
3	137 (23.2)	126 (23.1)	261 (21.9)	1.06 [0.76, 1.47]	1.15 [0.81, 1.65]	1.00 [0.75, 1.33]	1.04 [0.76, 1.41]
4	124 (21.0)	113 (20.7)	265 (22.3)	1.05 [0.74, 1.47]	1.13 [0.78, 1.63]	1.12 [0.84, 1.50]	1.11 [0.81, 1.53]

Adjusted for age, BMI, years of education, marital status, geographic region, neighborhood SES, Occupation

Results

AIM 3: Life-course Characteristics and Breastfeeding Initiation

- Women whose mothers and fathers were born in the U.S. (vs. other) had significantly lower odds of initiating breastfeeding.
- Living in a Black neighborhood up to age 18, compared with a White neighborhood, was associated with lower odds of initiating breastfeeding. (Similar for 1999)
- Women who lived in a White neighborhood up to age 18 and had moved to a mixed race neighborhood in 1999 had significantly higher odds of initiating breastfeeding.

Table 3. Age Adjusted and Multivariate Odds Ratios (OR) and (95% CI) for Life-Course Characteristics by Breastfeeding Initiation

Life-Course Characteristics	Breastfeeding Initiation (N=2995)			
	No BF N (N)	Any BF N (N)	Age-Adjusted ¹ OR (95% CI)	Multivariate ² OR (95% CI)
Nativity Self				
US	527 (83.9)	2228 (92.3)	0.77 (0.55, 1.12)	0.69 (0.41, 1.08)
Other	34 (8.1)	287 (7.7)	Reference	Reference
Nativity Mother				
US	507 (80.4)	2058 (86.0)	0.65 (0.48, 0.88)	0.62 (0.41, 0.89)
Other	54 (9.6)	337 (14.0)	Reference	Reference
Nativity Father				
US	497 (90.2)	2054 (86.4)	0.69 (0.51, 0.93)	0.60 (0.41, 0.87)
Other	54 (9.8)	325 (13.6)	Reference	Reference
Neighborhood Racial Segregation up to age 18				
Predominately White	42 (7.5)	334 (13.8)	Reference	Reference
Predominately Black	366 (65.5)	1359 (56.3)	0.47 (0.35, 0.65)	0.69 (0.48, 1.00)
Mixed/Other	151 (27.0)	720 (29.8)	0.60 (0.42, 0.86)	0.87 (0.56, 1.38)
Neighborhood Racial Segregation as of 1999				
Predominately White	83 (15.0)	413 (17.7)	Reference	Reference
Predominately Black	198 (37.9)	610 (27.2)	0.58 (0.43, 0.78)	0.95 (0.68, 1.33)
Mixed/Other	211 (46.2)	1194 (53.1)	0.93 (0.71, 1.22)	1.25 (0.92, 1.70)
Social Mobility Racial Segregation				
Black 18 to Black 99	162 (31.4)	443 (19.9)	0.50 (0.30, 0.82)	1.04 (0.59, 1.83)
Black 18 to White 99	48 (7.8)	300 (18.6)	0.82 (0.52, 1.34)	1.37 (0.72, 2.59)
Black 18 to Mixed 99	139 (26.0)	27.6 (8.7)	0.82 (0.50, 1.34)	1.36 (0.77, 2.35)
White 18 to Black 99	7 (1.4)	49 (2.2)	1.29 (0.51, 3.23)	1.82 (0.69, 4.78)
White 18 to White 99	21 (4.1)	115 (5.2)	Reference	Reference
White 18 to Mixed 99	20 (3.9)	139 (6.2)	2.35 (1.15, 5.68)	3.63 (1.54, 8.58)
Mixed 18 to Black 99	28 (5.4)	111 (5.0)	0.73 (0.38, 1.35)	1.53 (0.76, 3.09)
Mixed 18 to White 99	20 (3.8)	128 (5.7)	1.17 (0.61, 2.28)	1.40 (0.70, 2.81)
Mixed 18 to Mixed 99	89 (17.3)	430 (19.3)	0.89 (0.53, 1.49)	1.05 (0.63, 2.92)

¹ Adjusted for age

² Adjusted for age, BMI, years of education, marital status, geographic region, neighborhood SES, Occupation

Results

AIM 3 Life-course Characteristics and Breastfeeding Duration

- Participants and their mothers born in the U.S. (vs. other) had significantly lower odds of breastfeeding at 3-5 mos.
- Living in a predominately Black neighborhood up to age 18 (vs. White) was associated with lower odds of breastfeeding at 6 months.
- Living in a mixed neighborhood in 1999 was associated with significantly lower odds of breastfeeding at 6 months.

Table 4. Age Adjusted and Multivariate Odds Ratios (OR) and (95% CI) for Life-Course Characteristics by Breastfeeding Duration

Life-Course Characteristics	Breastfeeding Duration (months)			
	≤ 3 months No. (%)	3-5 months No. (%)	6 months No. (%)	≥ 6 months No. (%)
Nativity Self				
US	567 (94.5)	506 (90.0)	1120 (92.2)	0.52 [0.34, 0.82]
Other	33 (5.5)	56 (10.0)	95 (7.8)	Reference
Nativity Mother				
US	529 (88.6)	463 (82.8)	1046 (86.4)	0.61 [0.44, 0.89]
Other	68 (11.4)	96 (17.2)	165 (13.6)	Reference
Nativity Father				
US	522 (88.3)	463 (83.9)	1048 (86.8)	0.68 [0.49, 0.96]
Other	69 (11.7)	89 (16.1)	160 (13.3)	Reference
Neighborhood Racial Segregation up to age 18				
Predominately White	94 (10.6)	68 (12.2)	107 (10.2)	Reference
Predominately Black	362 (90.0)	330 (59.9)	646 (53.1)	0.90 [0.59, 1.25]
Mixed/Other	178 (29.5)	159 (28.6)	373 (30.7)	0.84 [0.56, 1.25]
Neighborhood Racial Segregation as of 1999				
Predominately White	90 (15.9)	79 (14.9)	264 (23.7)	Reference
Predominately Black	166 (29.4)	159 (30.0)	275 (24.6)	1.1 [0.79, 1.60]
Mixed/Other	309 (54.7)	292 (55.1)	577 (51.7)	1.08 [0.77, 1.52]
Social Mobility Racial Segregation				
Black 18 to Black 99	125 (22.2)	121 (3.1)	189 (7.0)	0.88 [0.46, 1.70]
Black 18 to White 99	49 (7.7)	99 (7.4)	113 (10.2)	0.81 [0.38, 1.71]
Black 18 to Mixed 99	169 (30.1)	151 (28.8)	388 (26.0)	0.80 [0.42, 1.53]
White 18 to Black 99	7 (1.3)	8 (1.5)	34 (3.1)	1.02 [0.31, 3.34]
White 18 to White 99	20 (3.6)	22 (4.2)	70 (6.3)	Reference
White 18 to Mixed 99	30 (5.3)	33 (6.3)	74 (6.7)	0.99 [0.45, 2.17]
Mixed 18 to Black 99	33 (5.9)	28 (5.3)	48 (4.3)	0.77 [0.35, 1.69]
Mixed 18 to White 99	27 (4.8)	18 (3.4)	81 (7.3)	0.80 [0.26, 1.40]
Mixed 18 to Mixed 99	108 (19.2)	104 (19.9)	213 (19.2)	0.87 [0.45, 1.68]


Adjusted for age, BMI, years of education, marital status, geographic region, neighborhood SES, Occupation



Discussion

- Experiences of racism in job setting did not predict initiation but did influence breastfeeding duration at 3-5 months.
- Social institutions produce political resources through policies.
- Cultural racism- negative stereotypes and micro-aggressions in the workplace.

Holder, A., et al. (2015). "Racial microaggression experiences and coping strategies of Black women in corporate leadership." *Qualitative Psychology* 2(2): 164.
Smith-Gagen, J., et al. (2014). "Breastfeeding laws and breastfeeding practices by race and ethnicity." *Womens Health Issues* 24(1): e11-19.




Discussion

- Women who reported experiences of racism with the police had significantly higher odds of breastfeeding initiation and duration.
- Strength and resilience hypotheses
- Fear of police encounters

Abrams, J. A., et al. (2014). "Carrying the world with the grace of a lady and the grit of a warrior deepening our understanding of the "strong black woman" schema." *Psychology of Women Quarterly* **38**(4): 503-518.

Jackson, F. M., et al. (2017). "Anticipated Negative Police-Youth Encounters and Depressive Symptoms among Pregnant African American Women: A Brief Report." *J Urban Health* **94**(2): 259-265.



Discussion

- Life-course characteristics influenced breastfeeding initiation and duration differently.
 - **Initiation** influenced by nativity of mother's parents but not by the mother.
 - **Duration** was influenced by nativity status of the participant and her mother but not her father.
 - Significance of early life impressions
 - **Racial segregation**
 - Limited availability of Baby-Friendly Hospitals
 - Limited availability of culturally congruent skilled lactation support

Fabiya, C., et al. (2016). "A Qualitative Study to Understand Nativity Differences in Breastfeeding Behaviors Among Middle-Class African American and African-Born Women." *Matern Child Health J* 20(10): 2100-2111.

Lind, J. N., et al. (2014). "Racial disparities in access to maternity care practices that support breastfeeding - United States, 2011." *MMWR Morb Mortal Wkly Rep* 63(33): 725-728.


Payne, S. L. (2014). "A call to action: lactation equity through professional diversification." *J Hum Lact* 30(4): 396-397.

Implications for Policy and Practice

Job Setting:

- Workplace lactation programs- beneficial to focus on the 3-5 month window by providing culturally congruent care and support for Black women in the workplace.
- Individual care is critical but equally critical to dismantle systems of oppression the workplace through policies.

Johnson, A. M., et al. (2015). "Overcoming Workplace Barriers: A Focus Group Study Exploring African American Mothers' Needs for Workplace Breastfeeding Support." *J Hum Lact* 31(3): 425-433.



Implications for Policy and Practice


- **Individual-level interventions:**
- Culturally-congruent lactation care
- Targeting stress for women
- Targeting health care professional biases
- **Structural-level interventions:**
- Health policy
 - Advocate for policies and funding at local, regional, state and national levels
 - To support neighborhood differences in breastfeeding outcomes and
 - Grassroots coalitions

Bugg, K. and G. Bugg, Jr. (2013). "Reaching Our Sisters Everywhere." *Breastfeed Med* 8(5): 453.


Johnson, A. M., et al. (2016). "Enhancing Breastfeeding Through Healthcare Support: Results from a Focus Group Study of African American Mothers." *Matern Child Health J* 20(Suppl 1): 92-102.

Woods-Giscombe, C. L. and A. R. Black (2010). "Mind-Body Interventions to Reduce Risk for Health Disparities Related to Stress and Strength Among African American Women: The Potential of Mindfulness-Based Stress Reduction, Loving-Kindness, and the NTU Therapeutic Framework." *Complement Health Pract Rev* 15(3): 115-131.


Strengths

- National sampling procedure
 - Sample size
 - Prospective design
 - First-time mothers
 - Recall bias reduced
 - Life-course factors
 - Racism related to health promotion vs. morbidity and mortality
- 

Limitations

- Racism measured at baseline.
 - Women in this sample, not nationally representative.
 - 1999 racial segregation measure not prospective.
 - Exposure to racism does not assess the harmful effects of racism.
 - Age of data
- 

Conclusion

- Investigated the association between experiences of racism and breastfeeding initiation and duration.
 - Experiences of racism in the employment setting was inversely associated with breastfeeding duration.
 - Breastfeeding initiation and duration varied by life-course characteristics.
 - Innovative interventions that address individual level factors related related to experiences of racism as well as interventions that address structural factors are warranted.
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“Experiences of Racism and Breastfeeding Initiation and Duration among First-Time Mothers of the Black Women's Health Study”

Dissertation Defense Presented by: Michele Griswold

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