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

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Abstract

Background—Breastfeeding rates are lower for Black women in the U.S. compared with other groups. Breastfeeding and lactation are sensitive time points in the life-course, centering breastfeeding as a health equity issue. In the U.S., experiences of racism have been linked to poor health outcomes but racism relative to breastfeeding has not been extensively investigated.

Aims—To investigate the association between experiences of racism, neighborhood segregation, and nativity with breastfeeding initiation and duration.

Methods—A prospective secondary analysis of the Black Women's Health Study, based on data collected from 1995 through 2005. Daily and institutional (job, housing, police) racism, nativity and neighborhood segregation in relation to breastfeeding were examined. Odds ratios and 95% confidence intervals were calculated using binomial logistic regression for the initiation outcomes (N=2,705) and multinomial logistic regression for the duration outcomes (N=2,172).

Results—Racism in the job setting was associated with lower odds of breastfeeding duration at 3–5 months. Racism with the police was associated with higher odds of breastfeeding initiation and duration at 3–5 months and 6 months. Being born in the U.S. or having a parent born in the U.S. predicted lower odds of breastfeeding initiation and duration. Living in a segregated

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Conflict of Interest

Michele K. Griswold, Sybil L. Crawford, Donna J. Perry, Sharina D. Person, Lynn Rosenberg, Yvette C. Cozier, and Julie R. Palmer declare that they have no conflict of interest.

Ethics Statements

Ethical approval: "All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards."

2. "This article does not contain any studies with animals performed by any of the authors."

neighborhood (primarily Black residents) as a child was associated with decreased breastfeeding initiation and duration relative to growing up in a predominantly White neighborhood.

Conclusion—Experiences of institutionalized racism influenced breastfeeding initiation and duration. Structural level interventions are critical to close the gap of racial inequity in breastfeeding rates in the U.S.

Keywords

Breastfeeding; Initiation; Duration; Equity; Racism; Life-course

Background and Significance

Despite recommendations for 6 months of exclusive breastfeeding and continuation of breastfeeding for up to a minimum of 12 months, [1] rates are significantly lower than national targets for Black women in the U.S., compared with White women and other racial and ethnic groups [2]. For example, between 2010 and 2013, in 34 U.S. states with sufficient sample sizes to analyze data, breastfeeding rates for Black women were significantly lower than White women. The initiation rate, exclusive breastfeeding rate through 6 months and the 12 month duration rate for Black women was 64.3%, 14% and 17.1% respectively, compared with White women 81.5%, 22.5% and 30.8% respectively [2].

Underlying reasons for persistent breastfeeding inequities are unclear. What is clear, is that breastfeeding inequities reflect a pattern of unfavorable health differences for Black women compared with other groups, on outcomes for which breastfeeding may provide protection. For example, a longer duration of lactation has been associated with a reduction in obesity, hypertension, diabetes, and hyperlipidemia, all important risk factors for cardiovascular disease, a precursor to higher mortality rates for Black women [3–5]. Also, findings from recent studies reported that lactation reduces the risk of estrogen receptor negative breast cancer, a subtype that is more prevalent among and carries higher mortality rates for Black women compared with other groups [6, 7]. For children, a longer duration of exclusive breastfeeding is associated with reduced risk of acute and chronic illness, sudden infant death syndrome, obesity and diabetes [1]. Further, breastfeeding is associated with improved intelligence and immune function providing the foundation for life-long health and well-being [8].

Breastfeeding for children and lactation for women have also been cited as sensitive time periods in the human life-course [9]. This means that breastfeeding for children is an early life advantage but for women, the biological processes [10] involved with lactation also provide advantages for improved health in subsequent stages of life. The breastfeeding mother and child each rely on the other to establish this life course trajectory and there are potential lifelong consequences to missing this opportunity for both [8]. This centers breastfeeding as a critical opportunity for health equity [11].

Knowledge development that seeks to identify an underlying context for persistent racial and ethnic differences in breastfeeding rates is critical because, currently, interventions that aim to close the racial gap in breastfeeding are limited. 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” [12] p. 971 thus perpetuating the cycle of health inequities. Research that limits breastfeeding barriers to either structural causes or to biological causes, without attention to upstream factors, limits the scope of possible interventions but also effectively dismisses the rich context in which Black women live. For example, the explicit acknowledgement to a historical context of intersecting 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 [13, 14].

Exposure to racism, one manifestation of historical oppression, shaped by the legacy of slavery, has been cited as a determinant of health in the U.S. for decades [15]. Among Black women in the U.S., experiences of racism have been associated with asthma, [16] obesity [17] and breast cancer [18]. Poor birth outcomes for Black women in the U.S. also provide compelling evidence of how experiences of racism [15, 19] contribute to an alarming cycle of inequity across the lifespan [20]. 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. Examples of structural pathways include economic and social deprivation, inadequate medical care, laws and policies, among others [21]. Despite a growing body of research describing factors that influence breastfeeding initiation and duration among Black women, the explicit inquiry into experiences of racism has not been extensively investigated. Therefore, the overarching goal of this study was to develop context-specific knowledge that may partially explain persistent racial differences in breastfeeding.

Specifically, this study aimed to investigate the relationship between experiences of racism and breastfeeding initiation and duration among first time mothers who participated in the Black Women’s Health Study (BWHS) [22]. The specific aims of the current project were 1.) To investigate the relationship between experiences of racism and breastfeeding initiation. It was hypothesized that higher levels of exposure to racism would be inversely associated with breastfeeding initiation. 2.) To investigate the relationship between experiences of racism and breastfeeding duration. It was hypothesized that higher levels of exposure to racism would be inversely associated with breastfeeding duration. 3.) To investigate the relationship between selected life-course factors and breastfeeding initiation and duration. It was hypothesized that breastfeeding outcomes would vary by some or all factors.

Conceptual Framework

A framework by Williams and Mohammed [23] was adapted to conceptualize plausible pathways by which racism may influence breastfeeding. According to this framework, racism is a distal mechanism that determines social status. Social status contributes to the more proximal pathways that influence behavioral, psychological and physiological responses, ultimately resulting in population level patterns of health and disease. For this study, breastfeeding was conceptualized as a health behavior influenced by social status and other proximal mechanisms previously described in the literature. According to the

framework, two specific forms of racism (cultural and institutional) are hypothesized to adversely influence health through stigma, stereotypes, prejudice and racial discrimination.

Cultural racism is described in the context of the transmission of negative stereotypes that can influence marginalized groups through complex emotional processes such as psychosocial stress [23]. Although psychosocial stress related to experiences of racism has not been widely reported in the breastfeeding literature, anxiety, [24] stress and depression [25] have been linked to breastfeeding discontinuation. For this reason, we used a measure of "daily racism" consistent with experiences of frequent exposure that may influence breastfeeding decisions through psychosocial processes.

Institutional racism is associated with social structures and environments that systematically restrict social resources that are important to attainment of health and well-being. Previously identified differences in breastfeeding behaviors among racial groups provide plausible evidence of proximal pathways, without the identification of upstream factors. For example, racial differences have been reported by maternal nativity status, [26] U.S. geographic region, [27], regional and neighborhood context, [28–30] health care setting [31–34] and employment settings [35, 36]. Thus, variables of institutional racism included survey responses surrounding participant's experiences with racism in job and housing settings and with the police.

In addition to the explicit questions about racism, we considered other measures that are consistent with the theoretical framework and literature surrounding health inequities for marginalized populations [37, 38] but somewhat novel for breastfeeding outcomes. Specifically, the critical link between health equity and a life-course perspective in terms of how early life social factors represent risks and/or opportunities, thereby creating vulnerability and/or resilience later in life [37]. For example, Black women who may have similar education and income levels at the time of pregnancy may have had considerably different socioeconomic experiences early in life. Also, experiences during childhood, shaped by experiences of parents and grandparents illustrates potential transmission of disparities across generations. These were conceptualized as "life course" characteristics.

Methods

Design and Human Subjects

This study was a prospective secondary analysis of BWHS data. The BWHS is a prospective cohort of 59,001 U.S. women who enrolled in 1995 and have been followed every two years. Follow-up of the baseline cohort has been successful for approximately 88% of potential person-years. The Black Women's Health Study protocol was approved by Institution X and the Institutional Review Board XX (Ethics Review document submitted separately) determined that the present analyses were exempt from review because data were de-identified.

Setting

The BWHS was prompted by the prevalence of increased morbidity and mortality for Black women on a number of outcomes compared with other groups. Women who subscribed to

Essence magazine, a periodical targeted to Black women, were recruited to participate. Broadly, surveys included demographic, medical history, reproductive health, health behavior and nutrition questions. The majority of women born outside of the U.S. were from the Caribbean and Central and South America [39]. Recent findings from the surveys support the association between lactation history and reduced incidence of invasive breast cancers, [7] warranting inquiry into underlying reasons for racial disparities in breastfeeding.

Sample

The sample included all participants who responded to the racism assessment in 1997 and reported the birth of a first child in 1997 up to 2005. The BWHS questionnaire did not ask detailed questions on births after the 2005 questionnaire. Breastfeeding initiation and duration has been shown to vary in the same woman according to her previous breastfeeding experiences with higher rates of both initiation and longer breastfeeding duration among mothers who have breastfed previous children [40]. Therefore, we limited the sample to women who reported a first birth following the racism assessment, to reduce confounding associated with breastfeeding previous children. We excluded those who did not complete the 1997 questionnaire (5,863); those who were already parous in 1997 (36,130); and those who did not give birth between 1997 and 2005 (13,972) for an eligible cohort of 3,036. We further excluded 41 women who did not provide information on whether or not they breastfed, and an additional 290 with missing covariate information, leaving 2,705 for the initiation analyses. For the breastfeeding duration analyses, we additionally excluded the 497 women who did not initiate breastfeeding. Of the remaining 2,208 eligible women, we excluded 36 who had either missing data on breastfeeding duration or discrepancies in their breastfeeding data, leaving 2,172 for the duration analyses.

Measurement

Racism—The primary predictor variables, experiences of racism were measured before the first births occurred at baseline questionnaire (1997) and were not repeated until the 2009 questionnaire. Therefore, these analyses only include baseline measures. 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. compared with White [41]. The first question assessed daily exposure in 5 categories with the questions “In your day to day life, how often have any of the following things happened to you? Responses included “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.” Responses ranged from “never” to “almost every day.” The second set of questions assessed institutional exposure to racism by asking “have you ever been treated unfairly due to your race in any of the following circumstances? Response options were “yes/no” in each of the following categories, “job, housing and police.” There were two summary variables. The first averaged participant’s responses to the 5 questions about daily racism and then divided by quartiles. The second summed the positive responses for the institutional racism questions. Responses ranged from 0 (none) to 3 (yes in all 3 categories).

Breastfeeding initiation—Breastfeeding initiation refers to whether a woman initiates breastfeeding upon the birth of her infant. Breastfeeding initiation and breastfeeding

duration are two separate but related constructs. Factors that influence a woman's intention to initiate breastfeeding upon birth [42] may be different than factors that influence her ability to continue breastfeeding [14]. Studies have demonstrated that although a majority of women who give birth initiated breastfeeding, a majority also discontinued before they intended [43]. The BWHS measured breastfeeding outcomes on each survey cycle. Participants were asked about live births in the preceding 2 years followed by the question "did you breastfeed the baby?" Responses were 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. A longer duration of breastfeeding, compared with shorter, is associated with improved health outcomes for both mother and child [1]. Breastfeeding duration was measured on each survey cycle. In 1999 and 2001, respondents who answered "yes" to "did you breastfeed?" were asked to report how long. Categorical choices were < 3 months, 3–5 months, 6 months or more. In 2003 and 2005, participants were prompted to write-in a numerical response to the duration question. The continuous responses were categorized to match the categories above. An open-ended question in 2011 was used to fill in missing data for initiation and duration in the cohort years 1999–2005 by matching participant's 2011 responses to the breastfeeding duration question. For example, if a participant in the 2003 cohort was missing breastfeeding data, but answered the 2011 duration question, the case was set to "yes" for initiation and duration was categorized according to the 2011 response.

Life-course characteristics—Life course characteristics were grouped by nativity and neighborhood racial segregation. Collected in 1997, three questions measured maternal nativity and each her parent's nativity status. Two neighborhood racial segregation questions were asked. The first, in 1997 asked ("up to age 18 what kind of neighborhood did you live in?") The second in 1999, asked "what kind of neighborhood do you live in?" Responses were "predominately Black, predominately White, mixed or other." This was conceptualized as "neighborhood segregation."

Covariates—Covariates were selected based on significant associations with both the predictor and outcome variables (i.e. confounders) and time-varying covariates were measured concurrently with the survey in which the breastfeeding outcomes were measured. Each survey cycle assessed age, weight, education, marital status and geographic region. Occupation was collected in 1995 and subsequently assigned to all births. We collapsed education, marital status and occupation due to small cell counts in some categories. An SES score was comprised of participant's geocoded residential addresses and U.S. census bureau data, representing measures of wealth and deprivation and then combined into a summary score variable, and categorized by quartiles.

Data Analysis

IBM SPSS version 23 and SAS 9.4 (SAS Institute, Cary, NC) were used for all analyses. We summarized the full sample using means and standard deviations for continuous variables and percentages for categorical variables. ANCOVA was used to calculate age-adjusted means according to the two summary racism variables. We estimated odds ratios and 95%

confidence intervals for categories of racism variables using binary logistic regression in relation to breastfeeding initiation and multinomial logistic regression in relation to breastfeeding duration. We used two identical models for each analysis. The first model adjusted for age. The multivariate (MV) model adjusted for age, BMI, years of education, marital status, geographic region, neighborhood SES index and occupation. A third model calculated odds ratios and 95% confidence intervals to estimate the associations between life-course characteristics in relation to breastfeeding using binomial logistic regression for the initiation outcome and multinomial logistic regression for the duration outcome. We adjusted for age in the first model and adjusted for the same characteristics described above in the MV estimates.

We also conducted sensitivity analyses. We used binomial logistic regression for the initiation outcome and multinomial logistic regression for the duration outcome in each of the three sensitivity analyses. For analyses of racism in relation to breastfeeding initiation and duration, we conducted analyses restricted to women with full-term birth only and restricted to women who were born in the US to parents who were both born in the US. A second sensitivity analyses aimed to identify the greatest confounders in relation to breastfeeding initiation and duration and the 1999 racial segregation variable. This was explored by testing interactions of the 1999 racial segregation variable in relation to breastfeeding initiation and duration with each age-adjusted participant covariate one at a time, and no interaction terms were statistically significant. The third addressed racial segregation in relation to breastfeeding initiation and duration within strata of neighborhood SES (quartiles). There were no statistically significant interactions between racial segregation and neighborhood SES. (Not shown in tables)

Results

Overall the study participants (Table 1) were healthy, first-time mothers with a mean age 31.6 and mean BMI of 26.8. The vast majority had some college education and just under half were married. There were more women who reported being from the South than other regions of the U.S. Most women reported that their job position was professional or managerial followed by sales/clerical, student and other/unemployed. The overall breastfeeding initiation rate was 80% and of those women who initiated, duration rates were 25% (3 months), 24% (3–5 months) and 51% (6 months). (Not shown in tables)

Summary Institutional and Daily Racism Scores

Summary racism scores are presented in Table 1. For the daily summary score, women in quartile 1 (lowest exposure) were more likely to be older, married and have professional/managerial jobs. For the institutional summary scores, women who answered “yes” to 2 or more (highest exposure) areas of exposure were more likely to be older, married and have professional/managerial jobs.

Aim 1 Racism and Breastfeeding Initiation

Findings for the first aim, experiences of racism and breastfeeding initiation are presented in Table 2. About 53% of women in the sample reported experiences of racism on the job. In

multivariate analyses, the OR for experiences of racism on the job in relation to breastfeeding initiation was 0.91 (95% CI 0.74–1.11). Only about 23% and 21% reported experiences with racism in housing and with the police respectively. Contrary to our hypothesis, the OR for experience of racism in the housing setting was above rather than below 1.0. Women reporting experiences of racism with the police had significantly higher odds of initiating breastfeeding compared with women not reporting racism with the police. For the institutional summary variable and the daily summary variable, associations were small and not statistically significant.

Aim 2 Racism and Breastfeeding Duration

Findings for the second aim, experiences of racism and breastfeeding duration among women who initiated, are also presented in Table 2. For experiences of racism on the job, the OR for breastfeeding at 3–5 months relative to breastfeeding for less than or equal to 3 months was 0.77 (0.60–0.99). Women who reported experiences of racism in the housing setting also had lower odds of breastfeeding at 3–5 months, but the OR was not statistically significant. Contrary to our hypothesis, breastfeeding duration was positively associated with experiences of racism with police. Women who reported experiences of racism with police had significantly higher odds of breastfeeding at 3–5 months and 6 months or longer, compared with women who breastfed for less than or equal to 3 months. For the institutional summary variable, the daily summary variable, associations were small and not statistically significant.

Life-Course Characteristics and Breastfeeding Initiation

Findings for the associations of life-course characteristics and breastfeeding initiation are presented in Table 3. Women whose mothers and fathers were born within the U.S. had significantly lower odds of initiating breastfeeding compared with women whose parents were born outside of the U.S. For neighborhood racial segregation, the OR for living in a predominately Black neighborhood up to age 18 compared with a predominately white neighborhood was 0.69 (0.48–1.0). Neighborhood racial segregation in 1999 was not associated with breastfeeding initiation.

Life-Course Characteristics and Breastfeeding Duration

The life-course characteristics related to breastfeeding duration are presented in Table 4. Participants and their mothers born in the U.S., compared with “other” had significantly lower odds of breastfeeding at 3–5 vs. 3 months. For neighborhood racial segregation, living in a predominately black or mixed neighborhood up to age 18 (vs. White) was associated with lower odds of breastfeeding at 6 months. The MV OR for 6 or more months relative to less than 3 months was 0.71 (0.50, 1.0) for living in a predominantly Black neighborhood at age 18 and 0.83 (0.58, 1.20) for living in a predominantly Black neighborhood in 1999. The comparable ORs for living in a mixed neighborhood were 0.76 (0.52–1.11) up to age 18 and 0.71 (0.52–0.97) in 1999.

Discussion

Racism in the Job Setting

The results indicated that first-time mothers in this sample experienced institutional racism. Consistent with our hypothesis, one measure of institutional racism, racism on the job, was inversely associated with breastfeeding initiation and duration. In particular, women who reported racism on the job had significantly lower odds of breastfeeding for 3–5 months. We thought this finding interesting because 3–5 months after the birth is a common time for women to return to workplace. Mechanisms by which racism may operate in the employment setting, in turn, influencing breastfeeding are not well described. However, social institutions such as the employment sector produce political resources [23] through policies that can either empower or restrict women to continue to breastfeed.

A positive association between increasing implementation of federal laws to protect breastfeeding in the workplace and increasing breastfeeding duration has been reported in the literature [44] and workplace policies to support breastfeeding women have become far more common in the U.S. than they were at the time of data collection for this study. Despite this, evidence suggests that the implementation of workplace support polices are no guarantee that all women will benefit from their provisions. Smith-Gagen and colleages [36] reported that African American women were half as likely to breastfeed for 6 months as White women in the same environment where there were policies in place to support breastfeeding. The authors suggest that policies that allow time off for milk expression but do not pay for time off, may disadvantage lower wage employees. Racial differences according to workplace laws and policies is an area that would benefit from further research so that culturally specific considerations of Black women in the workplace setting can be addressed [45].

Although we were not able to measure psychosocial responses to racism, it is plausible that this finding may also be partially explained by experiences of cultural racism. For example, negative racial stereotypes and microagressions have been described in the workplace setting leading to barriers to career development for Black women in corporate leadership postions [46]. These stereotypes, some related to breastfeeding, [47] may hold significant meanings reminiscent of historical trauma for some women [48]. Holder and colleagues also described the use of coping strategies in response to racist experiences that aim to keep home and family life separate from work [46]. Having to advocate for the provision of policies that bring breastfeeding into the workplace may represent a barrier that is not easily overcome.

Police Encounters

Next, it was surprising to us that women who reported experiences of racism with the police had significantly higher odds of both breastfeeding initiation and duration. We can offer two possible explanations for these findings. First, a robust body of literature highlights the multiple dimensions, roles and responsibilities of Black women falling under a framework that speaks to strength and resilience across historical contexts of oppression [49]. While we are not able to infer that women in our sample would describe their experiences in this way, there is evidence to suggest that infant feeding issues are deeply embedded in the historical

context of oppression for Black mothers in the U.S. [50] For Black women in the U.S. who may identify with constructs of cultural strength, resilience and resistance, breastfeeding likely occurs in spite of experiences of racism, not because of experiences of racism. Further research into how constructs of strength, resilience and resistance influence breastfeeding in light of oppressive environments or experiences is warranted.

Second, we are not able to infer under what conditions women in the present sample experienced racism with the police. However, research has highlighted increased stress, specifically related to fear of police encounters for mothers of Black sons [51] and for pregnant Black women [52]. Pregnancy and breastfeeding are inextricably linked. Therefore, it is critical that research focusing on experiences of racism with the police among pregnant Black women, also consider how these experiences may influence breastfeeding.

Life-course Characteristics

Life-course characteristics also influenced breastfeeding initiation and duration, with less breastfeeding initiation and shorter duration by women who were born in the U.S. or whose parents were born in the U.S. Overall, these findings support studies that report differences in the breastfeeding experiences of American born Black women compared with Black women born outside of the U.S. [26] In keeping with hypotheses surrounding life-course factors, recent qualitative research [53] identified differences in the significance of early life impressions of breastfeeding for African-American women (born in the U.S.) compared with Black women born outside the U.S. Specifically, Black women born outside of the U.S. expressed early life impressions of breastfeeding as normalized whereas among women born in the U.S., the opposite was expressed. We are not aware of other studies that reported maternal grandparent's nativity status in relation to breastfeeding, however, to some degree, these findings may reflect acculturalization processes. Future research may assist in elucidating what role the mother's foreign-born parents have in influencing breastfeeding decisions.

Although racial segregation did not quite reach statistical significance for breastfeeding initiation or breastfeeding duration, results trended toward lower odds of breastfeeding initiation and duration for women who grew up in a predominately Black neighborhood compared with predominately White. These findings are challenging to interpret as racial segregation is limited in the breastfeeding literature. However, these findings may reflect social exclusion from important resources in the attainment of health. For example, research demonstrates that hospitals providing the highest standard of care for breastfeeding are less available in zip codes where there are higher proportions of Black residents [33]. We attempted to control for these types of factors by including a term for the socioeconomic characteristics of the neighborhoods in which participants lived at the time of giving birth. Also, a lack of racial and ethnic diversity among lactation care professionals suggests that black women may not be receiving culturally congruent care [34, 54] ultimately, contributing to lower breastfeeding rates.

Implications for Policy and Practice

Job Setting

It may be beneficial for workplace lactation programs to focus efforts in the 3–5 month window by providing culturally congruent care and support for Black women. Importantly however, Williams & Mohammad [23] argue that interventions to target proximal mechanisms such as lactation support, may only temporarily reduce inequities. Without interventions to target the fundamental causes, such as racism, the mechanisms will adjust to maintain the direction of oppressive relationship. Therefore, despite that direct, individual care is needed and important, dismantling systems of oppression in the workplace is critical.

Individual and Structural Interventions

Interventions that target stress for individuals may mitigate harmful effects of experiences of racism. [55, 56] However, equally and critically important are interventions that target health care professional's biases so that differential care according to race is eliminated [57]. Health care professionals who are not members of marginalized groups may contribute to biased assumptions about Black women and breastfeeding. For example, an implicit bias might involve equating race with the choice to breastfeed or not, rather than understanding structural barriers that unfairly restrict Black women from reaching their own breastfeeding goals. From a structural standpoint, health policy advocates might target neighborhood differences in breastfeeding outcomes by advocating for funding at the local, regional, state and national levels to accelerate the highest standards of hospital care such as the Baby-Friendly Hospital Initiative. Advocating for funding to support grassroots coalitions [58] that not only provide Black women with culturally congruent care and social support [59] but also mobilize communities through advocacy is also warranted to close the racial breastfeeding gap.

Strengths and Limitations

The strengths of this study include its national sampling procedure, sample size and prospective design which measured racism prior to the first pregnancy. Also, we were able to reduce confounding associated with parity and recall bias by limiting the sample to first time mothers and using data that was measured within 2 years of birth. We also examined life-course factors that are otherwise limited in published research surrounding breastfeeding behaviors. These findings may support breastfeeding research among marginalized populations outside of the U.S. as multiple intersecting mechanisms of oppression behave similarly across geographic origins [22] Finally, unlike a majority of studies that focus on how racism influences morbidity and mortality, this study examined how exposure to racism may influence a health promoting behavior, capable of reducing risk in multiple domains across the lifespan.

There were a few limitations to this study. Experiences of racism were measured at baseline but not repeated until 2009, after the end date for these analyses. Theoretically, experiences of racism may change over time. We were unable to adjust for this but we did explore life-course characteristics as a way to conceptually link risk and resources within the same

individual over time. The sample of women were older at time of first birth, and had higher levels of education and SES than national averages; thus applying these findings to other populations is cautioned. The 1999 neighborhood segregation questions were measured in the same cycle as the 1999 births, thus, they are not prospective in relation to the outcome. We chose to include the 1999 births in the analyses because the settings are unlikely to be influenced by birth. We were not able to measure psychosocial responses to experiences of racism. Findings should be considered in this context. Finally, future studies should consider the inclusion of breastfeeding intention as an important predictor of breastfeeding initiation and duration as well as a measure of exclusive breastfeeding. Data for these measures were not available for the present study.

Conclusion

This prospective analysis of the BWHS investigated the association between experiences of racism and breastfeeding initiation and duration. Experiences of institutionalized racism in the employment setting were associated with shorter duration of breastfeeding. Living in a segregated neighborhood (primarily Black residents) as a child was associated with decreased breastfeeding initiation and duration. Breastfeeding contributes substantially to the trajectory of human potential for women and children across the lifespan. Therefore, socially constructed barriers that either prevent or restrict breastfeeding contribute to a cycle of health inequities for Black women and children in the U.S. In this sample, the overall rates of breastfeeding duration are higher than expected compared with current U.S. surveillance data. 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. Future research is needed to understand how different experiences of racism influence breastfeeding behaviors for Black women in the U.S. Innovative interventions that address individual level factors related to experiences of racism are warranted, but interventions that dismantle institutional racism are critical.

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Table 1.

Full Sample and Age Standardized Characteristics According to Summary Institutional and Daily Racism Scores

		Summary Institutionalized Racism[1] M(SD) or %			Summary Daily Racism[1,2] M(SD) or %	
	Full Sample	**0**	**1**	**2+**	**Quartile 1**	**Quartile 4**
	M(SD) or %(N)					
Age	31.6(4.2)	31.3 (0.1)	31.4 (0.1)	32.1 (0.2)	31.8 (0.2)	31.2 (0.2)
BMI	26.8(6.4)	26.8 (0.2)	26.9 (0.2)	26.7 (0.2)	26.1 (0.2)	27.5 (0.3)
Years of Education						
<= HS	5.2 (141)	6.7	4.8	3.8	7.0	5.1
Some College	27.3 (739)	25.1	25.0	28.7	26.9	26.4
College	36.4 (985)	36.5	39.9	36.7	36.4	36.9
Post College	31.1 (840)	31.6	30.3	30.8	29.8	31.6
Marital Status						
Married	47.3 (1280)	48.4	44.6	50.9	51.2	43.5
Living as Married	4.7 (128)	4.3	5.5	3.9	4.2	5.7
Previously Married	6.4 (172)	5.3	4.6	7.2	6.3	6.5
Single, Never Married	41.6 (1125)	42.0	45.3	38.0	38.3	44.2
Geographic Region						
Northeast	28.9 (782)	26.6	28.9	31.6	28.9	27.6
South	37.7 (1019)	39.0	39.2	33.5	39.9	36.5
Midwest	19.0 (514)	20.3	19.7	17.5	17.3	20.6
West	14.4 (390)	14.1	12.3	17.3	13.9	15.4
Neighborhood SES Index						
1	25.0 (676)	25.9	24.6	23.7	23.1	26.5
2	25.0 (676)	24.6	26.8	24.4	26.0	24.0
3	25.0 (677)	24.9	24.9	26.6	24.6	23.4
4	25.0 (676)	24.6	23.7	25.3	26.2	26.1
Occupation						
Professional/Manager	59.2 (1602)	59.9	58.9	63.5	60.8	58.7
Sales/Clerical	23.7 (641)	22.8	25.9	23.8	23.5	24.3

		Summary Institutionalized Racism[1] M(SD) or %			Summary Daily Racism[1,2] M(SD) or %	
	Full Sample	0	1	2+	Quartile 1	Quartile 4
	M(SD) or %(N)					
Student	9.1 (247)	7.8	8.0	5.1	6.5	8.0
Other/Unemployed	8.0 (215)	9.5	7.2	7.6	9.1	9.0

[1] Adjusted for age

[2] Quartiles 2 and 3 not shown.

Table 2.

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

	Breastfeeding Initiation (N=2705)				Breastfeeding Duration (N=2172)						
	No N (%)	Yes N (%)	Age Adjusted OR (95% CI)	Multivariate[3] OR (95% CI)	≤ 3 months N (%)	3–5 months N (%)	≥6 months N (%)	3–5 vs. ≤ 3, Age Adjusted OR (95% CI)	3–5 vs. ≤ 3, Multivariate[3] OR (95% CI)	≥6 vs. ≤ 3, Age Adjusted OR (95% CI)	≥6 vs. ≤ 3, Multivariate[3] OR (95% CI)
Institutional Racism											
Job:											
No	232 (46.9)	1089 (50.1)	Reference	Reference	257 (48.0)	280 (55.0)	540 (49.4)	Reference	Reference	Reference	Reference
Yes	263 (53.1)	1084 (49.9)	0.88 [0.72, 1.07]	0.91 [0.74, 1.11]	278 (52.0)	229 (45.0)	553 (50.6)	0.75 [0.58, 0.95]	0.77 [0.60, 0.99]	0.92 [0.75, 1.14]	1.02 [0.82, 1.27]
Housing:											
No	380 (77.1)	1570 (72.5)	Reference	Reference	386 (72.8)	383 (75.1)	776 (71.1)	Reference	Reference	Reference	Reference
Yes	113 (22.9)	597 (27.6)	1.28 [1.02, 1.61]	1.14 [0.90, 1.45]	144 (27.2)	127 (24.9)	316 (28.9)	0.88 [0.67, 1.17]	0.86 [0.64, 1.14]	1.07 [0.85, 1.35]	0.97 [0.76, 1.24]
Police:											
No	389 (78.7)	1586 (72.9)	Reference	Reference	412 (77.0)	365 (71.9)	782 (71.3)	Reference	Reference	Reference	Reference
Yes	105 (21.3)	589 (27.1)	1.38 [1.09, 1.74]	1.41 [1.10, 1.80]	123 (23.0)	143 (28.2)	315 (28.7)	1.31 [0.99, 1.74]	1.34 [1.01, 1.77]	1.35 [1.06, 1.71]	1.41 [1.10, 1.82]
Institutional Racism Summary [1]											
0	176 (35.8)	739 (34.4)	Reference	Reference	180 (34.3)	194 (38.6)	355 (32.8)	Reference	Reference	Reference	Reference
1	187 (38.0)	766 (35.7)	0.98 [0.78, 1.23]	0.97 [0.77, 1.24]	195 (37.1)	169 (33.6)	388 (35.8)	0.80 [0.60, 1.07)	0.81 [0.61, 1.09]	1.01 (0.79, 1.29)	1.02 [0.79, 1.33]
2+	129 (26.2)	642 (29.9)	1.19 [0.92, 1.53]	1.13 [0.87, 1.47]	150 (28.6)	140 (27.8)	341 (31.5)	0.86 (0.63, 1.17)	0.87 [0.63, 1.18]	1.12 (0.86, 1.46)	1.15 [0.88, 1.52]
Daily Racism Summary [2]											
1	138 (28.3)	557 (25.9)	Reference	Reference	141 (26.6)	122 (24.3)	286 (26.3)	Reference	Reference	Reference	Reference
2	148 (30.4)	661 (30.7)	1.11 [0.86, 1.43]	1.13 [0.87, 1.48]	157 (29.6)	159 (31.7)	334 (30.8)	1.17 [0.84, 1.63]	1.18 [0.85, 1.65]	1.05 [0.80, 1.39]	1.07 [0.80, 1.43]
3	101 (20.7)	480 (22.3)	1.18 [0.89, 1.56]	1.23 [0.91, 1.65]	122 (23.0)	117 (23.3)	229 (21.1)	1.23 [0.79, 1.59]	1.16 [0.81, 1.65]	0.95 [0.70, 1.28]	1.03 [0.75, 1.41]
4	100 (20.5)	455 (21.1)	1.13 [0.85, 1.50]	1.23 [0.91, 1.66]	110 (20.8)	104 (20.7)	237 (21.8)	1.10 [0.77, 1.58]	1.13 [0.78, 1.63]	1.08 [0.80, 1.46]	1.11 [0.81, 1.53]

[1] # times respondents answered “yes.” (2+ indicates highest level of exposure to institutional racism)

[2] Responses to the 5 daily questions were averaged for each participant and then divided by quartiles. (4 indicates highest level of exposure to daily racism)

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

Table 3.

Age Adjusted and Multivariate Odds Ratios (OR) and (95% CI) for Life-Course Characteristics in Relation to Breastfeeding Initiation

Life-Course Characteristics	No BF N (%)	Any BF N (%)	Multivariate[1] OR (95% CI)
Nativity Self			
US	468 (94.9)	2025 (92.3)	0.69 [0.44, 1.08]
Other	25 (5.1)	169 (7.7)	Reference
Nativity Mother			
US	450 (91.3)	1875 (85.8)	0.62 [0.43, 0.89]
Other	43 (8.7)	310 (14.2)	Reference
Nativity Father			
US	444 (91.7)	1873 (86.3)	0.60 [0.41, 0.87]
Other	40 (8.3)	298 (13.7)	Reference
Neighborhood Racial Segregation up to age 18			
Predominately White	39 (7.9)	298 (13.6)	Reference
Predominately Black	320 (65.2)	1236 (56.4)	0.69 [0.48, 1.00]
Mixed/Other	132 (26.9)	659 (30.1)	0.87 [0.58, 1.29]
Neighborhood Racial Segregation as of 1999			
Predominately White	74 (15.9)	409 (19.7)	Reference
Predominately Black	176 (37.8)	563 (27.1)	0.95 [0.68, 1.32]
Mixed/Other	216 (46.4)	1103 (53.2)	1.25 [0.92, 1.70]

[1]Adjusted for age, BMI, years of education, marital status, geographic region, neighborhood SES index, occupation

Table 4.

Age Adjusted and Multivariate Odds Ratios (OR) and (95% CI) for Life-Course Characteristics in Relation to Breastfeeding Duration

Life-Course Characteristics	≤ 3 months No. (%)	3–5 months No. (%)	≥6 months No. (%)	3–5 vs. ≤3, Multivariate[2] OR (95% CI)	≥6 vs. ≤3, Multivariate[2] OR (95% CI)
Nativity Self					
US	509 (94.8)	465 (89.9)	1018 (92.2)	0.55 [0.33, 0.90]	0.66 [0.42, 1.05]
Other	28 (5.2)	52 (10.1)	86 (7.8)	Reference	Reference
Nativity Mother					
US	474 (88.6)	423 (82.3)	950 (86.4)	0.66 [0.45, 0.97]	0.84 [0.60, 1.20]
Other	61 (11.4)	91 (17.7)	150 (13.6)	Reference	Reference
Nativity Father					
US	470 (88.5)	423 (83.4)	951 (86.7)	0.72 [0.49, 1.06]	0.84 [0.59, 1.20]
Other	61 (11.5)	84 (16.6)	146 (13.3)	Reference	Reference
Neighborhood Racial Segregation up to age 18					
Predominately White	53 (9.8)	58 (11.3)	183 (16.6)	Reference	Reference
Predominately Black	324 (60.0)	308 (60.2)	583 (52.7)	0.97 [0.64, 1.47]	0.71 [0.50, 1.00]
Mixed/Other	163 (30.2)	146 (28.5)	340 (30.7)	0.91 [0.58, 1.41]	0.76 [0.52, 1.11]
Neighborhood Racial Segregation as of 1999					
Predominately White	78 (15.2)	74 (15.0)	248 (24.0)	Reference	Reference
Predominately Black	148 (28.9)	150 (30.3)	255 (24.7)	1.26 [0.82, 1.93]	0.84 [0.58, 1.20]
Mixed/Other	288 (56.0)	271 (54.8)	529 (51.3)	1.07 [0.74, 1.55]	0.71 [0.52, 0.97]

[1]Adjusted for age, BMI, years of education, marital status, geographic region, neighborhood SES index, occupation