BREASTFEEDING MEDICINE Volume 16, Number 6, 2021 © Mary Ann Liebert, Inc. DOI: 10.1089/bfm.2020.0304

Reimagining Racial Trauma as a Barrier to Breastfeeding Versus Childhood Trauma and Depression Among African American Mothers

Angela Marie Johnson, Rena Menke, Jonathan Eliahu Handelzalts, Kiddada Green, and Maria Muzik^{2,5}

Abstract

Objective: Although breastfeeding provides benefits for mothers and infants, multiple factors prevent women from breastfeeding. This article aims to explore the role of mothers' personal and contextual risk factors to breastfeeding rates with a special emphasis on understanding breastfeeding among African American mothers at 6 months postpartum.

Design: This secondary analysis was capitalizing on previously collected postpartum data from a longitudinal cohort study on the consequences of maternal childhood trauma on mother and infant outcomes. Postpartum mothers (n=188) completed questionnaires on demographics, childhood trauma history, postpartum depression, social support, and breastfeeding status at 6 months postpartum.

Results: All risk factors (i.e., demographic and social support risk, childhood trauma history, and postpartum depression) were associated with lower breastfeeding at 6 months postpartum. When risk factors were examined in a single comprehensive model, only cumulative demographic risk emerged as significant. When partialing-out by race, being African American was the only variable associated with lower breastfeeding at 6 months postpartum.

Conclusions: Our study confirms that African American mothers report lower breastfeeding rates at 6 months postpartum than non-African American mothers. This association held even when controlling for demographic and social support risk, childhood trauma history, and postpartum depression. We discuss our findings from an intergenerational and historical trauma, racism, chronic discrimination perspective that considers the multifactorial nature of past and current impacts on breastfeeding among African American women in the United States.

Keywords: Black, breastfeeding, African American, racial trauma, health disparities, cumulative risk

Introduction

BREASTFEEDING PROVIDES TREMENDOUS physical, developmental, and psychological benefits for mothers and babies. The American Academy of Pediatrics and the Academy of Breastfeeding Medicine recommend exclusive breastfeeding through 6 months followed by 1 year or longer of continued breastfeeding as complimentary foods are introduced. Although the Academy recommends exclusively breastfeeding for 6 months, recent results indicate that only

14.8% of women breastfeed infants exclusively and only 44.3% of women complete any breastfeeding until 6 months.³

Many factors, both personal and societal, may prevent women from initiating or continuing to breastfeed as recommended.⁴ Among such factors are past or current personal life experiences that may shape attitudes and behavior toward breastfeeding (e.g., past childhood maltreatment or current postpartum depression) and/or current environmental contexts that either facilitate or hinder breastfeeding (e.g., current social support, life stressors, or demographic risk).

¹Program for Multicultural Health, Department Community Health Services, Michigan Medicine, Ann Arbor, Michigan, USA.

²Department of Psychiatry, Michigan Medicine, Ann Arbor, Michigan, USA.

³School of Behavioral Sciences, The Academic College of Tel-Aviv Yaffo, Tel-Aviv, Israel.

⁴Black Mothers' Breastfeeding Association, Detroit, Michigan, USA.

⁵Department of Obstetrics and Gynecology, Michigan Medicine, Ann Arbor, Michigan, USA.

Moreover, epidemiologic data show that breastfeeding rates are particularly low among African American mothers.* While breastfeeding rates rose overall over the past 25 years in the United States, African American mothers have persistently lagged behind, showing, by far, the lowest breastfeeding rates.⁵ This breastfeeding difference contributes to poor maternal-child outcomes in postpartum⁶ and across the lifetime.⁷ This is especially concerning given that black mothers and their babies are at higher risk for poor birth outcomes. Black maternal morbidity and mortality is disturbingly high and increasing. Black infant mortality rates are persistently high as well; Black babies are significantly more likely to die at birth or during their first year of life than white infants.⁸ Both facts constitute what we currently recognize as a Black maternal and child health crisis.

In this article, we aim to explore the role of personal and contextual risk factors to breastfeeding rates with a special emphasis on understanding breastfeeding rates among African American mothers. We utilize previously collected postpartum data on a cohort of mothers oversampled for childhood maltreatment histories (removed for blind review). We also use secondary data analyses to examine the contributions of mothers' demographic risk, childhood trauma, postpartum depression, social support, and being an African American mother on breastfeeding rates at 6 months postpartum.

Risks deterring from breastfeeding

Mothers' demographic risk, such as low income, not being partnered, lower education, and young age are commonly associated with health disparities in general⁹ and low breastfeeding rates in particular. ^{10,11} While individual demographic factors may impose risk, recent research has argued for greater impact through the cumulative effect of demographic risks. ¹² This suggests that economic disadvantage may limit opportunities and choices to breastfeed. ¹³

Childhood trauma exposure is not uncommon among perinatal women and impact on breastfeeding has been reported. 14,15 Some studies report greater breastfeeding intention and initiation among trauma survivors 16 and some report no effect. 17 A recent scoping review concluded that women with child maltreatment histories are less likely to initiate breastfeeding or breastfeed exclusively. 18 However, the review reported predominantly on women who were survivors of childhood sexual abuse. Thus, more research considering the role of childhood trauma exposure is warranted.

Maternal depression in pregnancy or postpartum¹⁰ has also been associated with decreased breastfeeding initiation and/or duration. While this link between maternal depression and low breastfeeding appears solidified, many studies did not adequately disentangle mothers' depression from confounding sociodemographic and psychosocial covariates, thus, warranting more research.

The presence of social support, be it from family, friends, or health care professionals, has been related to better breastfeeding outcomes, ^{10,16} even in the face of other adversities, for example, postpartum depression. ¹⁹ Thus, ab-

sence of social support, both formal or informal, may constitute risk to breastfeeding success.

Breastfeeding among African American mothers

African American mothers are disproportionately more likely compared with white mothers to suffer from chronic psychosocial stress²⁰ and/or depression, ²¹ all known risk factors associated with lower breastfeeding rates. ²² African American mothers are disproportionately more likely to experience day to day stressors based on historical and current racial discrimination, biased treatments, inflexible work environments, and socioeconomic factors. ²³ African American mothers are also more likely to lack personal or professional breastfeeding support. ²⁴ Although some of these risk factors are not unique to African American women, they are prevalent among African American mothers and therefore may contribute to lower breastfeeding rates among African American women.

This article aims to examine associations between previously noted risk factors (history of childhood trauma, postpartum depression, demographic, and social support risk) and breastfeeding rates at 6 months postpartum in one comprehensive model. Given the high prevalence of childhood trauma exposure among women in the United States (1 in 5 reported physical abuse in recent study), ¹⁹ and the previously equivocal findings, ^{17,18} we were particularly interested in studying breastfeeding success among mothers' with a broader range of childhood trauma histories (both abuse and neglect).

To accomplish our aim, we conducted secondary analyses on data from a longitudinal study (removed for blind review), which had followed a cohort of postpartum mothers oversampled for childhood maltreatment histories and their children across the first 18 months postpartum. We used for our analyses a selection of variables tapping into mothers' demographics (including race/ethnicity), history of childhood trauma, postpartum depression symptoms, postpartum social support, and presence/absence of breastfeeding at 6 months postpartum. Given our special interest in breastfeeding success among African American mothers, we conducted subanalyses on breastfeeding by maternal race contrasting African American mothers to all other race/ethnicities.

We hypothesize that risk factors (such as maternal child-hood trauma, postpartum depression, demographic, and social support risks) will associate with lower breastfeeding rates at 6 months postpartum, yet, that being an African American mother—given its' cultural and historical associations based on shared and collective lived experiences—may confer additional risk on breastfeeding above and beyond all other factors.

Materials and Methods

Participants and procedures

Participants for the current project (n=188) were sampled from the (blinded) Maternal Anxiety during the Childbearing Years (MACY) study (total n=268), a research project examining the associations between mothers' history of child maltreatment, their adjustment to parenthood, parenting, and their infants' outcomes. Participants, English-speaking women, aged 18 years and older, were recruited in early postpartum (up to 4 months postbirth), either as follow-up to a parent study or through community advertisement, and

^{*}The terms African American and "Black" are both used to denote and refer to those individuals who self-define as either recognizing that both ascribe to racial membership of African ancestry with experience and culture tied to the U.S.

oversampled for presence of mothers' childhood maltreatment exposure. Exclusion criteria included maternal lifetime diagnoses of schizophrenia or bipolar disorder, active substance use (last 3 months), and mothers of infants with self-reported severe health/developmental problems or prematurity (<34 weeks gestation). Mothers provided oral consent at the 4 months' enrollment phone call and written consent at the 6month home visit. The study was approved by the Institutional Review Board and participants received monetary compensation for participation. Longitudinal data collection of parent study (blinded) occurred at 4, 6, 12, 15, and 18 months postpartum and included a range of maternal and infant characteristics (e.g., maternal psychosocial and mental health variables, observed and self-reported parenting, child attachment and behavior problems, and mother and infant biomarkers). We report here secondary analyses on maternal data collected at 4 and 6 months postpartum on the subsample of participants who provided information on infant feeding at the 6-month interview (n=188). The subsample did not differ significantly from the larger parent study sample (N=268) in maternal income, race, age, marital status, or education.

Measures

Demographic risk variables were self-reported by participants at 6-months postpartum, and include income, age, marital status, education, and minority status. These were dichotomously coded (0 = no, 1 = yes) to create demographic risk variables: low family income (i.e., <\$25,000), young maternal age (i.e., <22 years old), single parent (i.e., unmarried or unpartnered), low education (i.e., less than a high school diploma or General Education Diploma [GED]), and non-White minority (including all minorities regardless of ethnicity). These risk variables were summed (0 to 5) to create a cumulative demographic risk. 12 Demographic risk was also calculated without minority status (modified cumulative demographic risk; 0-4) to prevent shared variance between the cumulative risk variable and a dichotomous race variable (African American: 0 = no, 1 = yes). Participants self-selected in the race/ethnic categories: Caucasian, African American, Latina, and Asian.

Breastfeeding status. At the 6 months' postpartum survey, mothers answered the following question "What are you currently feeding your baby?" and were asked to indicate all options that applied, including breast milk, formula, solids, and a combination. If combination was selected, the types of food (breast milk, formula, and solids) were indicated on the questionnaire. Based on responses to this multiple-choice question, we created a dichotomous variable "any breastfeeding" indicating whether the mother was breastfeeding (solely or mixed with formula/solids [1] or was not breastfeeding at all [0]). We based our decision to combine the groups solely and mixed with formula/solids given the benefits of even small amounts of breast milk for infants.³

Childhood trauma. At 4 months postpartum, mothers self-rated retrospectively their childhood exposure to abuse and neglect on the Childhood Trauma Questionnaire²⁶ a commonly used and validated²⁷ 28-item self-report questionnaire tapping into emotional and physical abuse and neglect, and sexual abuse. This measure has been previously used in postpartum populations.²⁸ Each item is rated on a

5-point Likert scale ranging from 1 (never true) to 5 (very often true). Item scores were totaled to create a cumulative total severity of childhood trauma score.

Social support. At 6 months postpartum, mothers rated their perceived social support from family, friends, and the spouse via the Family Adaptation, Partnership, Growth, Affection, and Resolve Scale (FAPGAR). The FAPGAR is a 5-item Likert Scale, with item responses ranging from 0 (Never) to 4 (Always). This measure has previously been used in postpartum populations. Item scores were totaled with higher scores indicating greater social support satisfaction. The FAPGAR was added after the study began resulting in 30% of the data being missing.

Postpartum depression was assessed using the Postpartum Depression Scale, ²⁷ a self-report, 35-item scale. Items are rated at 6 months postpartum on a scale from 1 (strongly disagree) to 5 (strongly agree), which yields total scores ranging from 35 to 175, with a cutoff score greater than 80 suggesting major depressive disorder.

Statistical methods

Data analyses were performed using SPSS version 24. Cumulative risk was positively skewed, whereas social support was negatively skewed. As this is consistent with expected distributions in the general population, scores were not transformed. To test associations between mothers' individual and cumulative risk factors and breastfeeding, we used chi-square (on dichotomous variables) or *t*-test analyses (on continuous variables). To further test for unique explanatory associations, above and beyond other variables, we conducted logistic regressions. Interpretation of all tests utilized two-tailed tests and 0.05 alpha to determine significance.

Results

The following variables were missing greater than 5% of data: race (6.6%) and FAPGAR scores (39.4%). Independent sample *t*-tests and chi-square tests were run to determine if systematic relationships existed between predictors and outcomes on missingness; results suggested that the data were missing at random. Missing data were handled using SPSS version 24.0 Expectation-Maximization and is the recommended analyses option when one data set is utilized.²⁷ We used this method because Graham indicates that imputation performs well with as much as 50% missing data.³¹

Women's age ranged from 18 to 45 years (mean = 28.77, standard deviation = 5.60), 76% were partnered, 30% had income lower than \$25,000 annually, 15% did not finish high school, and 39% selected nonwhite minority status (of those predominantly African American) (Table 1). Nearly three quarters of women in the sample experienced childhood trauma (75.5%), and over half of mothers breastfed exclusively or supplementary (54.7%) at 6 months postpartum. While 64.2% (68/114) of Caucasian mothers breastfed at 6 months postpartum, it was only 18.4% (7/45) of African Americans mothers who breastfed. Tables 2 and 3 display associations between main study variables and breastfeeding status.

To examine the hypothesis that risk factors (such as maternal childhood trauma, postpartum depression, demographic, and social support risks) were associated with lower breast-feeding rates, we conducted two separate logistic regression

TABLE 1. DESCRIPTIVE STATISTICS FOR DEMOGRAPHICS

| | Total sample $(n = 188)$ | | Breastfeeding (n = 94) | | Not breastfeeding $(n=78)$ | |
|---------------------------------|--------------------------|------|------------------------|------|----------------------------|------|
| | n | % | n | % | n | % |
| Age | | | | | | |
| >22 years old | 165 | 88.7 | 90 | 95.7 | 61 | 78.2 |
| <22 years old ^a | 21 | 11.3 | 4 | 4.3 | 17 | 21.8 |
| Partnered | | | | | | |
| Partnered | 142 | 76.3 | 82 | 87.2 | 50 | 64.1 |
| Not partnered | 44 | 23.7 | 12 | 12.8 | 28 | 35.9 |
| Racial | | | | | | |
| Caucasian | 114 | 61.6 | 68 | 73.9 | 38 | 48.7 |
| African American | 45 | 24.3 | 7 | 7.6 | 31 | 39.7 |
| Latino | 6 | 3.2 | 5 | 5.4 | 1 | 1.3 |
| Asian | 9 | 4.9 | 7 | 7.6 | 2 | 2.6 |
| Other | 11 | 2.7 | 5 | 5.4 | 6 | 7.7 |
| Minority ^a | 71 | 38.4 | 24 | 26.1 | 40 | 51.3 |
| Education | | | | | | |
| Less than High School' | 27 | 14.6 | 24 | 26.1 | 19 | 24.4 |
| High School or beyond | 158 | 85.4 | 68 | 73.9 | 59 | 75.6 |
| Income | | | | | | |
| Less than \$25,000 ^a | 58 | 31.1 | 15 | 16.1 | 34 | 44.7 |
| Greater than \$25,000 | 126 | 68.9 | 78 | 83.9 | 42 | 55.3 |

n's may not total 188 due to missing information.

models. First, in model 1, all variables (maternal childhood trauma, postpartum depression, cumulative demographic, and social support risks) were entered in the logistic regression predicting breastfeeding status (any breastfeeding, even if supplemental, yes/no) at 6 months postpartum. We found that cumulative demographic risk was associated with lower likelihood to breastfeed (top, Table 4), no other risk factors were significantly related to breastfeeding status. To examine the hypothesis that being an African American mother may confer additional risk on breastfeeding, we reran the logistic regression (Model 2) separating being African American (yes/no) from the modified cumulative risk (0–4). We found that being African American solely predicted breastfeeding status at 6 months postpartum (bottom, Table 4).

Discussion

In the present study, we examined the relationship between several maternal risk factors such as cumulative demographic risk, history of childhood trauma, postpartum depression, and lack of social support and breastfeeding status at 6 months postpartum. The contribution of all risk factors was assessed simultaneously in one logistic regression model. Only cumulative demographic risk emerged as significant and negatively associated with breastfeeding. Moreover, given the preexisting data on low breastfeeding rates among African American mothers, 32 we were interested to further tease out how being an African American postpartum mother may confer risk relative to all the other risk factors in the model. We reanalyzed our regression models and separated mothers who had self-identified as African American from those who did not self-identify as African American. We found that African American mothers had reduced rates of breastfeeding at 6 months, above and beyond all the other risk factors in the model.

The results suggest that African American mothers in our study uniquely experience circumstances that contribute to lower breastfeeding rates, but are independent of factors we analyzed. The parent study did not examine variables that are potentially unique among African American mothers and may explain their low breastfeeding rates. Structural racism, interpersonal discrimination, and reported

TABLE 2. CORRELATIONS AND MEANS AND STANDARD DEVIATIONS OF MAIN VARIABLES

| | 1 | 2 | 3 | 4 | 5 | 6 |
|--|------------------------------------|-------------------------|-------------------------|-----------------------------------|-------------------------|---------------|
| (1) Mother Age (2) Cumulative demographic risk (3) Modified cumulative | 28.77 (5.60) -0.48** -0.53** | 1.18 (1.43) 0.95** | 0.80 (1.16) | | | |
| demographic risk (4) Childhood trauma (5) Total social support (6) Depression symptoms | 0.07 -0.04 -0.10 | 0.09 -0.19** 0.13 | 0.10 -0.16* 0.16* | 44.44 (18.18) -0.39** 0.33* | 15.90 (3.74) -0.50** | 63.86 (20.89) |

Means (standard deviations) are on the diagonal.

^aIndicates risk category.

^{*}p<0.05; **p<0.01 level.

| | | | | Breastfeeding | | | |
|--------------------------------------|-----|------------|----|---------------|---------------|---------|-----|
| | n | Chi-square | df | Yes | No | T | df |
| Cumulative demographic risk | | | | 0.63 (0.96) | 1.76 (1.64) | 5.67*** | 170 |
| Modified cumulative demographic risk | | | | 0.37 (0.79) | 1.26 (1.34) | 5.36*** | 170 |
| Not partnered | 172 | 12.78*** | 1 | , , | , | | |
| Young age | 172 | 12.24*** | 1 | | | | |
| Low income | 169 | 16.63*** | 1 | | | | |
| Less than High School Diploma | 171 | 14.66*** | 1 | | | | |
| Minority | 170 | 11.42** | 1 | | | | |
| African American | 170 | 25.12*** | 1 | | | | |
| Social support | | | | 16.34 (3.33) | 15.18 (4.18) | -2.04* | 170 |
| Childhood trauma | | | | 41.01 (15.17) | 48.26 (20.66) | 2.58** | 161 |
| Depression symptoms | | | | 60.89 (19.76) | 67.91 (22.74) | 2.16 | 170 |

TABLE 3. ASSOCIATIONS BETWEEN PREDICTOR VARIABLES AND BREASTFEEDING STATUS (YES/NO)

experiences of racism may explain low breastfeeding outcomes, but were not collected in this study.

While previous studies have shown that African American pregnant or postpartum women have higher levels of depressive symptoms than their counterparts²⁰ and that depression and breastfeeding are associated, ¹¹ we found that depression was unrelated to breastfeeding when taking cumulative risk or being African American into account. Similarly, we did not find mothers' history of childhood trauma related to breastfeeding, thus joining prior studies with negative results. ^{17,18} In contrast, we did confirm the negative impact of cumulative demographic risk on breastfeeding at 6 months. This is consistent with prior findings which also suggest the impact of cumulative risk and adversity. ¹² Our results suggest

Table 4. Summary of Two Logistic Regressions Analysis for Demographic Risk Variables Predicting Breastfeeding at 6 Months Postpartum

| Predictor | B | S.E. | Exp(B) |
|--------------------------------------|----------|------|--------|
| Model 1 | | | |
| Cumulative demographic risk | -0.56*** | 0.14 | 0.57 |
| Childhood trauma | -0.02 | 0.01 | 0.98 |
| Total social support | 0.04 | 0.05 | 1.04 |
| Depression symptoms | -0.01 | 0.01 | 1.00 |
| Constant | 1.07 | 1.25 | 2.92 |
| X2 | 30.07*** | | |
| Df | 4 | | |
| Nagelkerke's R2 | 0.23 | | |
| Model 2 | | | |
| Modified cumulative demographic risk | -0.33 | 0.20 | 0.72 |
| Childhood trauma | -0.02 | 0.01 | 0.98 |
| Total social support | 0.05 | 0.05 | 1.05 |
| Depression symptoms | -0.01 | 0.01 | 1.00 |
| African American status | -1.52** | 0.55 | 0.22 |
| Constant | 0.99 | 1.27 | 2.68 |
| X2 | 34.92*** | | |
| Df | 5 | | |
| Nagelkerke's R2 | 0.26 | | |

Exp(B) = exponentiated B.

that when factoring in African American mothers' social experiences (as described above), other risk factors, including cumulative demographic risk, may lose explanatory power vis-à-vis breastfeeding.

Our findings shed light on important issues around disparate and inequitable breastfeeding conditions and outcomes especially for African American women. A more comprehensive evaluation of multilevel system factors is needed. Factors that should be included are lactation and health care professionals' racist, biased, and discriminatory treatment,²³ shorter maternity leave, workplace racism, 33 occupational segregation,³⁴ inflexible work environments for women of color, 35 as well as a plethora of other daily life stressors mothers commonly experience before, during, and after birth. In addition, historical trauma in the form of intergenerational trauma³⁶ precipitated by an early pervasive legacy of slavery and exploitative practices may reinforce current aversion toward breastfeeding as "embodied experience of historical trauma"³⁷ and prevent the establishment of familial breastfeeding role models and network supports.³⁸

Moreover, past traumas remain perpetual and relevant as impactful because they are linked to current and ongoing structural racism, bias, and institutional discriminatory practices. These are critical considerations especially in light of the coronavirus disease 2019 (COVID-19) pandemic, which has had a devastating impact on the black community. The negative conditions for maternal and infant health that preexist the pandemic have only worsened in ways that illuminate long-standing social, economic, and political systemic conditions for African Americans.

Negative and impactful conditions include the greater risk for illness and death among Black families due to greater exposure to the virus. These impacts intensify when paired with other detrimental factors experienced through utilization of health care.³⁹ For example, Black mothers fear they may risk COVID infection if they access health care facilities, prompting many to forgo hospital births and opt for home births.^{40,41} This, in addition to COVID social distancing measures, leave mothers without critical doula or other birth support and can be particularly stressful for mothers.³⁹ Moreover, discriminatory and bias experiences that can compromise vital pregnancy and lactation care^{23,41} and manifest as chronic physical stress or "weathering,"⁴² also put

^{***}p < 0.000; **p < 0.01; *p < 0.05.

^{**}p<0.01; ***p<0.00.

Black mothers at greater risk of adverse maternal health outcomes, ⁴³ including death. ⁴¹ Economic fallout from COVID-19 has also affected communities of color more severely than other communities. Specifically, for black mothers who work a significant proportion of low-wage hourly frontline essential jobs, ⁴⁴ this has meant greater exposure to coronavirus infection, greater risk for death, and ongoing economic instability. ⁴⁴

Health care providers working with African American women must possess or build awareness and skill to understand and address the complexity of social, societal, and personal barriers that African American mothers encounter⁴⁵ prenatally and postpartum as they are preparing to or attempting to breastfeed. Clinical care needs to create space and opportunity for understanding culturally relevant multigenerational information unique to African American women's perspective and experience as well as that of their families. Use of assessment tools that help center the voice and needs of African American women and help clinicians develop critical understanding of the intersectional dynamic of family history, historical and current trauma, and oppression and discrimination should be considered.⁴⁵

Furthermore, sufficient evidence supports that engaging members of the mothers' interpersonal and broader community, including babies' fathers 47 and other social support figures, promote breastfeeding positively.⁴⁸ Culturally responsive family- and women-targeted programs that build breastfeeding self-efficacy⁴⁹ and provide critical psychosocial support are established in many black communities and considered essential support. For example, the Detroit-based Black Mothers Breastfeeding Club⁵⁰ and Brilliant Detroit⁵¹ represent effective models for culturally responsive community-based concrete support necessary for counteracting the effects of intergenerational trauma³⁶ and addressing inequities in breastfeeding outcomes.⁵⁰ Atlanta-based Reaching Our Sisters Everywhere (ROSE) similarly increases structural support by training prenatal health care providers on ways to enhance equitable care particularly for African American mothers and babies.⁵²

This study has several limitations. The main limitation of this study is that it represents a secondary analysis of previously collected data. These data were obtained from a longitudinal cohort study aimed to explore the consequences of maternal childhood trauma on mother and infant outcomes. Thus, the present sample size is relatively small and nonrepresentative, which limits generalizability. Epidemiological studies, using large and representational samples would provide more robust associations between risk factors and breastfeeding. Another limitation is the cross sectional nature. Associations, therefore, are not directional and are void of causation. Only longitudinal designs could address causality. We also are not aware of whether or not women received mental health services for their traumas.

Mental health services may have mitigated the associations between trauma, as well as impacts of racism and discrimination on women's breastfeeding rates. An examination of these phenomena should be included in future studies. We used less than 34 weeks as the cutoff for preterm, which does not account for the potential impact of late preterm (34–36 full weeks) breastfeeding success. Future analyses should examine and account for associations between gestational age and breastfeeding rates. Two-thirds of women in our

sample had multiple childhood trauma exposures, precluding analyses by trauma type. We thus used a cumulative total trauma score when predicting breastfeeding rates. Given limited data on the unique effects of type of childhood trauma on breastfeeding, more research using larger group sizes for each trauma typology is needed. Moreover, the high missing rate of the FAPGAR (39.4%) scores is a limitation. Although the Expectation-Maximization procedure we used is deemed acceptable for up to 50% of missing data, ³¹ our conclusions regarding social support associations with breastfeeding should be considered cautiously.

Finally, the available breastfeeding variables were suboptimal. We were able to state whether participants were breastfeeding at all (any type of breastfeeding, that is, adding to cereal or mixing with solids or formula or breastfeeding) or not breastfeeding at the 6 months' postpartum mark. Although we believe that this is a good indicator for breastfeeding, future research should consider other variables not included in our study such as initiation and duration of breastfeeding. We feel confident that the data are useful despite this limitation, as any breastfeeding at 6 months postpartum is regarded as beneficial by the American Academy of Pediatrics and the Academy of Breastfeeding Medicine.²

Conclusions

Using previously collected postpartum data on a cohort of mothers oversampled for childhood maltreatment histories, this study explored the role of personal and contextual risk factors, including demographic risk, childhood trauma history, postpartum depression, and social support to breastfeeding rates at 6 months postpartum with a special emphasis on understanding breastfeeding among African American mothers. Study results indicate that African American mothers had reduced rates of breastfeeding at 6 months, above and beyond all the other risk factors in the model. Findings reflect pervasive impacts of long-standing social, economic, and other societal factors that operate as racial traumas discouraging breastfeeding.

Findings highlight the need for more comprehensive and culturally tailored intervention research on breastfeeding facilitators and barriers for African American postpartum women. Only comprehensive research that incorporates and translates African Americans' perspectives will provide the critical information needed for impactful interventions and policies. In addition, multilevel system measures such as provider antiracist education and training, support of community grassroots efforts, and familyfocused policy might help dismantle systemic inequities. These interventions must reflect an intergenerational and historical trauma lens that considers the multifactorial nature of past and current impacts, including long-standing racism and other social injustices as traumas, on breastfeeding among African American women to move in the right direction for ameliorating these traumatic effects on breastfeeding outcomes.

In sum, results from our study reinforce the need for continued efforts to address, through clinical training, practice and policy change, the historical, and social and structural conditions that prevent all women, especially African American women, from experiencing the health, social, and economic benefits of breastfeeding.

Acknowledgments

We thank the families who participated in this project. Additional thanks to LaTeesa James and Kathryn Vanderboll for expert support of citation and bibliography development.

Authors' Contributions

A.J. and R.M. conceived of the presented idea. A.J. developed the theory and R.M. performed the statistical computations. M.M. and J.H. verified the analytical methods. All authors wrote and edited drafts. A.J., K.G., and M.M. developed discussion and conclusion based on results. All authors discussed results and contributed to final article.

Disclosure Statement

A.M.J. declares that she has no conflict of interest. Rena Menke declares that she has no conflict of interest. J.E.H. declares that he has no conflict of interest. K.G. declares that she has no conflict of interest. M.M. declares that she has received research grants from the National Institutes of Health (NIH #s R01HD084813–01; R01HD085990; R03 HD096141), and Michigan Institute for Clinical & Health Research (MICHR) (UL1RR024986–2010), and the Robert Wood Johnson Health & Society Scholars Program (N012918–2010).

Funding Information

The research presented was supported through funds from National Institute of Health (PI: Muzik, NIMH MH080147); Michigan Institute for Clinical & Health Research (MICHR) (PI: Muzik, UL1RR024986–2010), and the Robert Wood Johnson Health & Society Scholars Program (PI: Muzik; N012918–2010).

References

- 1. Victora CG, Bahl R, Barros AJD, et al. Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. *Lancet* 2016;387:475–490.
- Eidelman AI, Schandler RJ. Breastfeeding and the use of human milk. *Pediatrics* 2012;129:e827–e841.
- 3. Dieterich CM, Felice JP, O'Sullivan E, et al. Breastfeeding and health outcomes for the mother-infant dyad. *Pediatr Clin North Am* 2013;60:31–48.
- 4. Cohen SS, Alexander DD, Krebs NF, et al. Factors associated with breastfeeding initiation and continuation: A meta-analysis. *J Pediatr* 2018;203:190–196.e21.
- Center for Disease Control and Prevention (CDC). Breastfeeding Among U.S. Children Born 2002–2014: CDC National Immunization Survey. U.S. Department of Health and Human Services, 2017.
- Thulier D. Breastfeeding in America: A history of influencing factors. J Hum Lact 2009;25:85–94.
- Spencer BS, Grassley JS. African American women and breastfeeding: An integrative literature review. *Health Care Women Int* 2013;34:607–625.
- 8. Lister RL, Drake W, Scott BH, et al. Black maternal mortality-the elephant in the room. World J Gynecol Womens Health 2019;3.
- Fiscella K, Williams DR. Health disparities based on socioeconomic inequities: Implications for urban health care. Acad Med 2004;79:1139–1147.

- Meedya S, Fahy K, Kable A. Factors that positively influence breastfeeding duration to 6 months: A literature review. Women Birth 2010;23:135–145.
- 11. Dias CC, Figueiredo B. Breastfeeding and depression: A systematic review of the literature. *J Affect Disord* 2015; 171:142–154.
- 12. Sameroff A, Seifer R, Baldwin A, et al. Stability of intelligence from preschool to adolescence: The influence of social and family risk factors. *Wiley Behalf Soc Res Child Dev* 1993;64:80–97.
- 13. Duckett D. "Rethinking the Importance of social class: How Mass Market Magazines Portray Infant Feeding." In: Beyond Health, Beyond Choice: Breastfeeding Constraints and Realities, Smith PH, Hausman BL, Labbok MH, eds. New Brunswick, NJ: Rutgers University Press, 2012. p. 236–244. (Critical issues in health and medicine).
- 14. Muzik M, Ads M, Bonham C, et al. Perspectives on trauma-informed care from mothers with a history of childhood maltreatment: A qualitative study. *Child Abuse Neglect* 2013;37:1215–1224.
- Muzik M, McGinnis EW, Bocknek E, et al. PTSD symptoms across pregnancy and early postpartum among women with lifetime PTSD diagnosis: Research article: peripartum PTSD trajectories in women at-risk. *Depress Anxiety* 2016; 33:584–591.
- 16. Coles J. Qualitative study of breastfeeding after childhood sexual assault. *J Hum Lact* 2009;25:317–324.
- 17. Elfgen C, Hagenbuch N, Görres G, et al. Breastfeeding in women having experienced childhood sexual abuse. *J Hum Lact* 2017;33:119–127.
- Channell Doig A, Jasczynski M, Fleishman JL, et al. Breastfeeding among mothers who have experienced child-hood maltreatment: A review. J Hum Lact 2020;36:710–722.
- 19. Da Silva Tanganhito D, Bick D, Chang Y-S. Breastfeeding experiences and perspectives among women with postnatal depression: A qualitative evidence synthesis. *Women Birth* 2020;33:231–239.
- Canady RB, Bullen BL, Holzman C, et al. Discrimination and symptoms of depression in pregnancy among African American and White Women. Womens Health Issues 2008; 18:292–300.
- 21. Siefert K, Finlayson TL, Williams DR, et al. Modifiable risk and protective factors for depressive symptoms in low-income African American mothers. *Am J Orthopsychiatry* 2007;77:113–123.
- 22. Taveras EM, Capra AM, Braveman PA, et al. Clinician support and psychosocial risk factors associated with breastfeeding discontinuation. *Pediatrics* 2003;112:108–115.
- 23. Robinson K, Fial A, Hanson L. Racism, bias, and discrimination as modifiable barriers to breastfeeding for African American women: A scoping review of the literature. *J Midwifery Womens Health* 2019;64:734–742.
- 24. Johnson AM, Kirk R, Rooks AJ, et al. Enhancing breast-feeding through healthcare support: Results from a focus group study of African American mothers. *Mater Child Health J* 2016;20:92–102.
- 25. Muzik M, Bocknek EL, Broderick A, Richardson P, Rosenblum KL, Thelen K, Seng JS. Mother-infant bonding impairment across the first 6 months postpartum: the primacy of psychopathology in women with childhood abuse and neglect histories. *Arch Womens Ment Health* 2013;16:29–38.
- Bernstein DPFL, Fink L. "Childhood Trauma Questionnaire: A Retrospective Self-Report." San Antonio, TX: Harcourt Brace & Company, 1998.

27. Bernstein DP, Ahluvalia T, Pogge D, et al. Validity of the childhood trauma questionnaire in an adolescent psychiatric population. *J Am Acad Child Adolesc Psychiatry* 1997; 36:340–348.

- 28. Choi KW, Sikkema KJ, Vythilingum B, et al. Maternal childhood trauma, postpartum depression, and infant outcomes: Avoidant affective processing as a potential mechanism. *J Affect Disord* 2017;211:107–115.
- 29. Smilkstein G, Ashworth C, Montano D. Validity and reliability of the family APGAR as a test of family function. *J Fam Pract* 1982;15:9.
- 30. Britton JR. Maternal anxiety: Course and antecedents during the early postpartum period. *Depress Anxiety* 2008; 25:793–800.
- 31. Graham JW. Missing data analysis: Making it work in the real world. *Ann Rev Psychol* 2009;60:549–576.
- 32. Feinberg T, Wych S, Bugg K, et al. Disparities in Breast-feeding Outcomes among African-American Women in the U.S., 2009–2015. Philadelphia, PA, *InAPHA's 2019 Annual Meeting and Expo (Nov. 2–Nov. 6) 2019 Nov 5. American Public Health Association.*
- 33. Griswold MK, Crawford SL, Perry DJ, et al. Experiences of racism and breastfeeding initiation and duration among first-time mothers of the Black women's health study. *J Racial Ethn Health Disparities* 2018;5:1180–1191.
- 34. Alonso-Villar O, del Río C. The occupational segregation of African American women: Its evolution from 1940 to 2010. *Feminist Econ* 2017;23:108–134.
- 35. Johnson A, Kirk R, Rosenblum KL, et al. Enhancing breastfeeding rates among African American women: A systematic review of current psychosocial interventions. *Breastfeed Med* 2015;10:45–62.
- Barlow JN. Restoring optimal Black mental health and reversing intergenerational trauma in an era of Black lives matter. *Biography* 2018;41:895–908.
- 37. DeVane-Johnson S, Woods-Giscombé C, Thoyre S, et al. Integrative literature review of factors related to breast-feeding in African American women: Evidence for a potential paradigm shift. *J Hum Lact* 2017;33:435–447.
- Hinson TD, Skinner AC, Lich KH, et al. Factors that influence breastfeeding initiation Among African American women. J Obstet Gynecol Neonatal Nurs 2018;47:290–300.
- 39. Harrison E, Megibow E. Three Ways COVID-19 is Further Jeopardizing Black Maternal Health. Washington, D.C., Urban Institute 2020. https://www.urban.org/urban-wire/three-ways-covid-19-further-jeopardizing-black-maternal-health
- 40. Fearing Coronavirus, Many Rural Black Women Avoid Hospitals to Give Birth at Home. https://pew.org/3cqx7GY (accessed December 14, 2020).
- 41. North A. America is failing Black moms during the pandemic. Vox. August 10, 2020. https://www.vox.com/2020/

- 8/10/21336312/covid-19-pregnancy-birth-black-maternal-mortality (accessed December 15, 2020).
- 42. Forde AT, Crookes DM, Suglia SF, et al. The weathering hypothesis as an explanation for racial disparities in health: A systematic review. *Ann Epidemiol* 2019;33:1–18.e3.
- 43. Death of Black mother after birth of child highlights racial disparities in maternal mortality. NBC News. https://www.nbcnews.com/news/us-news/death-black-mother-after-birth-first-child-highlights-racial-disparities-n1246841 (accessed December 15, 2020).
- 44. Cooper LA, Williams DR. Excess deaths from COVID-19, community bereavement, and restorative justice for communities of color. *JAMA* 2020;324:1491–1492.
- 45. Nair N. Exclusive breastfeeding: Dream to achieve, hurdles to overcome. *Int J Stud Nurs* 2019;4:27.
- 46. Jani J, Okundaye J. The culturagram: An educational tool to enhance practice competence with diverse populations. *J Baccalaureate Soc Work* 2014;19:53–63.
- 47. Dayton CJ, Johnson A, Hicks LM, et al. Sex differences in the social ecology of breastfeeding: A mixed methods analysis of the breastfeeding views of expectant mothers and fathers in the U.S. exposed to adversity. *J Biosoc Sci* 2019;51:374–393.
- Furman L, Killpack S, Matthews L, et al. Engaging innercity fathers in breastfeeding support. *Breastfeed Med* 2016; 11:15–20.
- 49. Reno R. A pilot study of a culturally grounded breast-feeding intervention for pregnant, low-income African American women. *J Hum Lact* 2018;34:478–484.
- Green KE. Black mothers' breastfeeding club: Community outreach and active support. *Breastfeed Med* 2010;5:221– 222
- Smith A. Breastfeeding Hubs Open at Brilliant Detroit. Blac. 2019 Nov 6. https://www.blac.media/people-places/breastfeeding-hubs-open-at-brilliant-detroit (accessed January 16, 2021).
- 52. Bugg K, Bugg G. Reaching our sisters everywhere. *Breastfeed Med* 2013;8:453–453.

Address correspondence to:
Maria Muzik, MD, MSc
Department of Psychiatry
Michigan Medicine
Rachel Upjohn Building
4250 Plymouth Rd
Ann Arbor, MI 48109
USA

E-mail: muzik@med.umich.edu