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Exposures to structural racism and racial discrimination among pregnant and early post-partum Black women living in Oakland, California

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Abstract

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CONFLICT OF INTEREST

All authors have no conflict of interest to disclose.

DATA ACCESSIBILITY STATEMENT

We collect primary data for this study. Data will not be made available for public use.

Research supports that exposure to stressors (e.g., perceived stress and racism) during pregnancy can negatively impact the immune system, which may lead to infection and ultimately increases the risk for having a preterm or low-birthweight infant. It is well known that Black women report higher levels of stressors at multiple timepoints across pregnancy compared with women of all other racial and ethnic groups. This study addresses gaps in the literature by describing pregnant and early post-partum Black women's exposures to structural racism and self-reported experiences of racial discrimination, and the extent to which these factors are related. We used a cross-sectional study design to collect data related to exposures to racism from pregnant and early post-partum Black women residing in Oakland, California, from January 2016 to December 2017. Comparative analysis revealed that living in highly deprived race + income neighborhoods was associated with experiencing racial discrimination in three or more situational domains ($p = .01$). Findings show that Black women are exposed to high levels of racism that may have negative impacts on maternal health outcomes.

Keywords

Black women; pregnancy; racial discrimination; structural racism

1 | INTRODUCTION

Disparities in birth outcomes persist for Black women in the United States. Black women are two to three times more likely to experience infant mortality and have infants born preterm or at low birthweight compared with White women (Collins & David, 2009; James, 1993; Kleinman & Kessel, 2010; Martin, Hamilton, Osterman, Driscoll, & Drake, 2018). Research has consistently documented the Black– White disparity in preterm birth and low-birthweight infants, even after controlling for sociodemographic factors such as income, age, and insurance status (Braveman et al., 2015; Nuru-Jeter et al., 2018). Given that preterm birth and low birthweight are the leading causes of infant mortality and are associated with long-term cognitive developmental child and adult health issues, it is imperative to understand factors associated with these disparities (Farooqi, Adamsson, Serenius, & Hägglöf, 2016; Taylor & Clark, 2016).

Chronic stressors, such as racism, are strongly associated with preterm birth and low birthweight (Braveman et al., 2017; Dominguez, 2010; Dominguez, Dunkel-Schetter, Glynn, Hobel, & Sandman, 2008; Ertel et al., 2012; Gennaro & Hennessey, 2003; Gennaro, Shults, & Garry, 2008; Hudson, Puterman, Bibbins-Domingo, Matthews, & Adler, 2013; Lobel, Dunkel-Schetter, & Scrimshaw, 1992). Racism is defined as a perceived threat formed on an immutable characteristic often central to a person's identity, resulting in unfair treatment based on a person's physical attributes including skin colour (Dominguez, 2008; Jones, 2000; Nuru-Jeter et al., 2009). Racism constitutes a severe threat to a person's health and well-being through chronic stress and operates at the individual, interpersonal, and structural levels, systemically perpetuating health disparities (Dominguez, 2008; Jones, 2000; Nuru-Jeter et al., 2009). Racism-related stress involves psychosocial challenges such as internalized racism, worry, discrimination, and denigration experienced across the life course and in multiple domains including at school, work, home, and in community settings

(Braveman et al., 2017; Collins et al., 2000; Dominguez et al., 2008; Earnshaw et al., 2013; Ertel et al., 2012; Wallace, Mendola, Liu, & Grantz, 2015). Studies have found that 54% to 78% of Black pregnant women report experiencing racial discrimination, with the highest proportion of women experiencing racial discrimination at school, on the street, or in a public setting (Canady, Bullen, Holzman, Broman, & Tian, 2008; Ertel et al., 2012). Racism-related stress, as indexed by racial discrimination, is associated with the onset of early labour, resulting in shortened gestational age lengths and preterm birth (Braveman et al., 2017; Dominguez et al., 2008; Earnshaw et al., 2013; Ertel et al., 2012; Giscombé & Lobel, 2005; Nuru-Jeter et al., 2009).

A growing body of literature has examined the relationship between structural racism and adverse birth outcomes (Ahern, Pickett, Selvin, & Abrams, 2003; Chambers, Baer, McLemore, & Jelliffe-Pawlowski, 2018; Chambers, Erausquin, Tanner, Nichols, & Brown-Jeffy, 2017; Farley et al., 2006; Huynh et al., 2017; Huynh, Parker, Harper, Pamuk, & Schoendorf, 2005; Kaufman, Dole, Savitz, & Herring, 2003; Krieger et al., 2017; Mendez, Hogan, & Culhane, 2011; Messer, Kaufman, Dole, Savitz, & Laraia, 2006; O'Campo et al., 2008; Woodward, 1995). Structural racism is defined as a systematic approach used to influence laws and process to unequally allocate access to goods, opportunities, and services in society by racial group (Bailey et al., 2017; Gee & Ford, 2011; Jones, 2001; Massey & Denton, 1988; Mehra, Boyd, & Ickovics, 2017; Ncube, Enquobahrie, Albert, Herrick, & Burke, 2016; White & Borrell, 2011). Structural racism in the U.S. context has been historically used to advantage Whites over Blacks in society through the implementation of discriminatory practices such as redlining, which have been proven to limit access to housing, quality education, wealth, employment, and disproportionate incarceration rates (Bailey et al., 2017; Gee & Ford, 2011; Jones, 2001; Massey & Denton, 1988; Mehra et al., 2017; Ncube et al., 2016; White & Borrell, 2011). Research consistently shows that higher exposures to structural racism is associated with adverse birth outcomes among Black women even after controlling for individual level characteristics (Chambers et al., 2018; Iceland & Wilkes, 2006; Mehra et al., 2017; Ncube et al., 2016; White & Borrell, 2011). However, it remains unknown if Black women's exposure to structural racism is related to racial discrimination experienced in specific situational domains. The objective of this study was to describe pregnant and early post-partum Black women's exposure to structural racism and self-reported experiences of racial discrimination, and the extent to which these factors are related.

2 | METHODS

2.1 | Participants

The Saving Our Ladies from Early Births and Reducing Stress (SOLARS) study aimed to describe pregnant and early post-partum Black women's experiences of stress, resilience, and coping in Oakland, California. The primary research question of the SOLARS study was: How does variation in stress, resilience, and coping among Black women influence their risk for preterm birth? A convenience sample of 62 women was recruited from health clinics and community organizations serving low-income women in Oakland, California, between January 2016 and December 2017. Of the 62 women recruited, 20 (32.3%) women

were excluded from this analysis due to incomplete data. Eligibility criteria for study participation included women who self-identified as Black, aged 18 to 44 years, lived or worked in Oakland, and who were currently pregnant or early post-partum (6 weeks) with a singleton birth.

Among the 42 Black women included in this analysis, the majority of women were between age 20 and 29 (n = 21, 52.5%), single and/or never married (n = 24, 60.0%), Christian (n = 25, 59.5%), and were in very good or excellent health (n = 20, 47.6%). Most women had three or more previous pregnancies (n = 22, 52.4%) and had one to three other children (n = 24, 57.1%; see Table 1). There were no statistical significant difference among demographic characteristics and neighbourhood race + income deprivation (see Table 1).

2.2 | Procedure

The cross-sectional survey was administered online via a secure electronic data collection program in addition to paper and pencil options for women who preferred written surveys. The University of California at San Francisco Institutional Review Board approved this study.

2.3 | Measures

2.3.1 | Structural racism—Krieger et al. (2016)) index of concentrations at the extremes (ICE) race + income measure was used to capture exposure to structural racism at the zip code level. ICE race + income captures spatial social polarizations of high and low race and income extremes in one measure (Krieger et al., 2016). Women in this study lived in 22 distinct zip codes within Oakland. ICE race + income measure was computed using the following formula:

$$\mathrm{ICE}_i = \frac{(A_i - P_i)}{T_i}.$$

A_i corresponds with the number of White individuals who made ≥ $100,000 a year, whereas P_i was the number of Black individuals who made <$25,000 a year in the ith zip code (Krieger et al., 2016). T_i represented the total population in the ith zip code (Krieger et al., 2016). ICE scores range from −1 (complete deprivation) to 1 (complete privilege; Krieger et al., 2016); however, for women in our study, scores ranged from −0.40 to 0.53. We dichotomized ICE race + income scores to most deprived (−0.40 to −0.05) and least deprived (0.02 to 0.53).

2.3.2 | Racial discrimination—Krieger, Smith, Naishadham, Hartman, and Barbeau (2005) modified version of the Experiences of Discrimination scale was used to measure racial discrimination (Ertel et al., 2012). The modified Experiences of Discrimination scale asks participants to respond “yes” or “no” to ever experiencing of discrimination based on their race/ethnicity in nine situational domains (see Table 1). Responses were summed to create a count of the number of situational domains women experienced racial discrimination and categorized as 0, 1–2, and 3 or more.

2.4 | Statistical analysis

Chi-square tests of independence were used to examine if living in deprived race + income extreme neighborhoods was independent of Black women's experiences of racial discrimination across nine situational domains. All analyses were conducted in IBM® SPSS® Statistics, Version 24.0 (Armonk, NY).

3 | RESULTS

Table 2 shows comparative analysis of women's reported experiences of racial discrimination within nine situational domains by neighbourhood race + income deprivation groups. On average women lived in neighborhoods that had moderate ($\overline{M} = 0.01$, $SD = 0.24$) race + income extremes (data not shown). About half ($n = 22$, 52.4%) of women lived in the most racially and economically deprived neighborhoods, whereas 46.7% ($n = 20$) of women lived in least deprived neighborhoods. Approximately 93% of women reported ever experiencing racial discrimination in at least one situational domain. The majority ($n = 25$, 59.5%) of women reported experiencing racial discrimination in three or more situational domains. The three most common situational domains were at school ($n = 25$, 59.5%), on the street or public setting ($n = 25$, 59.5%), and getting service in a store or restaurant ($n = 23$, 54.8%; see Table 1).

There was a relationship between neighbourhood race + income extremes and women's experiences of racial discrimination (see Table 2). Higher percentages of women who lived in the most racially and economically deprived neighborhoods reported experiencing racial discrimination at school (77.3% vs. 40.0%), getting medical care(45.5% vs. 10.0%), getting service in a store or restaurant (77.3% vs. 30.0%), on the street or in a public setting (77.3% vs. 40.0%), and from the police or in the courts (59.1% vs. 25.0%) compared with women who lived in least deprived race + income neighborhoods. Additionally, women who lived in the most deprived race + income neighborhoods ($n = 18$, 81.8%) were more likely to report experiencing racial discrimination in three or more situational domains compared with women who lived in the least deprived race + income neighborhoods ($n = 7$, 35.0%).

4 | DISCUSSION

We found that approximately 52% of pregnant and early post-partum Black women lived in high race + income extreme neighborhoods within Oakland. The majority ($n = 39$, 92.9%) of women also reported experiencing racial discrimination in at least one situation domain across their lifetime. We found a relationship between high concentrations of race + income extremes and experiencing racial discrimination within several situational domains, indicating that women in this study were exposed to multidimensional chronic stressors.

Our finding that 92.9% of women ever experienced racial discrimination in at least one situational domain is a higher proportion than reported in previous studies (54–78%; Canady et al., 2008; Ertel et al., 2012). Similar to previous studies among Black pregnant women, women in the present study most frequently reported experiencing racial discrimination in public settings (e.g., school, on the streets; Canady et al., 2008; Ertel et al., 2012). We also found that there was no significant difference between neighbourhood race + income

extremes and experiencing racial discrimination getting hired or getting a job (54.5% vs. 25.0%), at work (50.0% vs. 35.0%), or getting credit, back loans, or a mortgage (45.5% vs. 20.0%). Previous research supports that regardless of socio-economic status, Black women experience racism that can be exacerbated when navigating institutions such as places of employment and banks (Cheng, Lin, & Liu, 2015; Nuru-Jeter et al., 2009; Truong, Museus, & McGuire, 2016). This was the first study to test if there is a relationship between Black women's reported experiences of racial discrimination with living in racially and economically deprived neighborhoods. A unique finding from this analysis is that women who live in neighborhoods with high race + income extremes experience higher percentages of racial discrimination within and across situational domains.

In comparison with research conducted by our team on ICE measures (race + income) and adverse outcomes among Black women in California (range: −0.36 to 0.63), Black women in this study who resided in Oakland, California, lived in neighborhoods with higher race + income extremes (range: −0.40 to 0.53; Chambers et al., 2018). We found that Black women who lived in neighborhoods with the most deprived race + income concentrations were more likely to have a preterm birth or experience an infant death in comparison with Black women who lived in neighborhoods with the most privileged race + income concentrations (Chambers et al., 2018). These data suggest that women in this study maybe at higher risk for adverse birth outcomes due to high exposures to both interpersonal and structural racism.

Strengths of the present study include measuring exposures to structural and interpersonal racism among pregnant and early post-partum Black women at risk for adverse birth outcomes. Limitations of this study include the lack of statistical power to examine relationships between structural racism and racial discrimination adjusting for key individual characteristics. We were also unable to track changes in exposures to structural racism and experiences of racial discrimination across a single pregnancy, and any association with adverse birth outcomes.

Findings show that Black women are exposed to high levels of racism that may have negative impacts on maternal health outcomes. Data from this study support the need to locally monitor and investigate the social determinants of health outcomes, such as structural racism. Local governments should be held accountable to distribute and track distribution of resources to increase equitable living neighborhoods for Black women.

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TABLE 1

Demographic and reproductive health characteristics by race + income deprivation groups ($N = 42$)

	ICE race + income			
	Least deprived (*n* = 20)	**Most deprived (*n* = 22)**	**Total (*N* = 42)**	***p* value**
Age				.56
Under 20	1 (4.8)	2 (9.5)	3 (7.1)	
20 to 24 years	5 (23.8)	8 (38.1)	13 (31.0)	
25 to 29 years	5 (23.8)	4 (19.0)	9 (21.4)	
30 to 34 years	4 (19.0)	5 (23.8)	9 (21.4)	
35 to 39 years	1 (4.8)	1 (4.8)	2 (4.8)	
40 to 44 years	5 (23.8)	1 (4.8)	6 (14.3)	
Relationship				.46
Single, never married	12 (57.1)	12 (57.1)	24 (57.1)	
Married without children	1 (4.8)	2 (9.5)	3 (7.1)	
Married with children	4 (19.0)	1 (4.8)	5 (11.9)	
Divorced	0 (0)	1 (4.8)	1 (2.4)	
Separated	1 (4.8)	0 (0)	1 (2.4)	
Living w/ partner	3 (14.3)	5 (23.8)	8 (19.0)	
Religion				.53
Christian	13 (61.9)	12 (57.1)	25 (59.5)	
Spiritual	1 (4.8)	4 (19.0)	5 (11.9)	
Agnostic	1 (4.8)	0 (0)	1 (2.4)	
Atheist	2 (9.5)	1 (4.8)	3 (7.1)	
Other	4 (19.0)	4 (19.0)	8 (19.0)	
Health				.44
Poor	1 (4.8)	0 (0)	1 (2.4)	
Fair	3 (14.3)	1 (4.8)	4(9.5)	
Good	6 (28.6)	11 (52.4)	17 (40.5)	
Very good	8 (38.1)	7 (33.3)	15 (35.7)	
Excellent	3 (14.3)	2 (9.5)	5 (11.9)	
Number of pregnancies				.60
None	4 (19.0)	3 (14.3)	7 (16.7)	

ICE race + income				
	Least deprived (*n* = 20)	**Most deprived (*n* = 22)**	**Total (*N* = 42)**	***p* value**
1 to 2	5 (23.8)	8 (38.1)	13 (31.0)	
3+	12 (57.1)	10 (47.6)	22 (52.4)	
Number of children				.14
None	7 (33.3)	11 (52.4)	18 (42.9)	
1 to 2	11 (52.4)	10 (47.6)	21 (50.0)	
3+	3 (14.3)	0 (0)	3 (7.1)	

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TABLE 2

Experiences of racial discrimination within nine situational domains by race + income deprivation groups ($N = 42$)

	ICE race + income		Total (N = 42)	p value
	Least deprived (n = 20)	Most deprived (n = 22)		
At school				.01
No	12 (60.0)	5 (22.7)	17 (40.5)	
Yes	8 (40.0)	17 (77.3)	25 (59.5)	
Getting hired or getting a job				05
No	15 (75.0)	10 (45.5)	25 (59.5)	
Yes	5 (25.0)	12 (54.5)	17 (40.5)	
At work				.33
No	13 (65.0)	11 (50.0)	24 (57.1)	
Yes	7 (35.0)	11 (50.0)	18 (42.9)	
Getting housing				11
No	14 (70.0)	10 (45.5)	24 (57.1)	
Yes	6 (30.0)	12 (54.5)	18 (42.9)	
Getting medical care				.01
No	18 (90.0)	12 (54.5)	30 (71.4)	
Yes	2 (10.0)	10 (45.5)	12 (28.6)	
Getting service in a store or restaurant				00
No	14 (70.0)	5 (22.7)	19 (45.2)	
Yes	6 (30.0)	17 (77.3)	23 (54.8)	
Getting credit, bank loans, or a mortgage				.08
No	16 (80.0)	12 (54.5)	28 (66.7)	
Yes	4 (20.0)	10 (45.5)	14 (33.3)	
On the street or in a public setting				01
No	12 (60.0)	5 (22.7)	17 (40.5)	
Yes	8 (40.0)	17 (77.3)	25 (59.5)	
From the police or in the courts				.03
No	15 (75.0)	9 (40.9)	24 (57.1)	
Yes	5 (25.0)	13 (59.1)	18 (42.9)	
Number of situational domains				01

ICE race + income	Least deprived (n = 20)	Most deprived (n = 22)	Total (N = 42)	p value
None	3 (15.0)	0 (0)	3 (7.1)	
1 to 2	10 (50.0)	4 (18.2)	14 (33.3)	
3+	7 (35.0)	18 (81.8)	25 (59.5)	