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RESEARCH ARTICLE

The Association of Social Factors, Barriers to Care, and Stress Among Postpartum Women Within Racial Groups

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ABSTRACT

Background: The purpose of this study is to identify barriers to care associated with stress among postpartum women within racial groups.

Methods: Paper questionnaires were distributed to English-speaking postpartum women, aged 18 years or older. The questionnaire included demographic questions, a resiliency assessment, and a list of barriers to care. Participants marked which barriers were problematic, including feeling overwhelmed by stress.

Results: One hundred and nine completed questionnaires were returned. Participants were 61% White and 27% Black-identifying women. Participants reporting being overwhelmed by stress (SP-stress problem) were similar to participants who were not overwhelmed by stress (NSP-no stress problem) on education and marital status. Overall, the SP group reported more problems with other barriers to care than the NSP group. Within race, Black-identifying and White SP participants reported higher rates of not having enough money (Black-identifying: SP 45% vs NSP 0%; p=.03 and White: SP 31% vs NSP 7%; p=.02) and feeling too tired for everyday activities (Black-identifying: SP 50% vs NSP 0%; p=.01 and White: SP 50% vs NSP 10%; p<.001) than same race participants in the NSP group. Black-identifying SP participants reported higher rates for problems getting places than Black-identifying NSP participants (Black-identifying: SP 40% vs NSP 0%, p=.03). White SP participants had higher rates for problems finding childcare than white NSP participants (White: SP 36% vs NSP 3%; p<.001).

Conclusion: This study highlights the differential racial experience of barriers to care among stressed and nonstressed women. Addressing the systemic inequalities underlying psychological stress during the perinatal period is necessary for delivering equitable care.

Keywords: Stress; Barriers to care; Health disparities; Survey research

INTRODUCTION

Pregnant individuals frequently report high levels of stress related to barriers in accessing health care, including financial instability and a perceived lack of support from social networks.[1–3] Stress experienced during pregnancy significantly increases the risk of maternal mental health disorders and adverse maternal and birth outcomes such as hypertensive disorders of pregnancy, postpartum depression, preterm birth, and low birth weight. These outcomes are known to be disproportionally higher among Black women.[2,4–7] Despite its significance, the relationship between stress and barriers to care during pregnancy within racial groups remains inadequately explored.[6,8–14] In addition, current state level

assessments, eg, the Behavioral Risk Factor Surveillance System (BRFSS), the Pregnancy Risk Assessment Monitoring System (PRAMS), and the Ohio Medicaid Assessment Survey (OMAS), lack data on systemic barriers and do not typically include postpartum individuals in their target populations.[15–17]

Sources of stress during pregnancy, such as financial stress, dissatisfaction with relationships and lifetime experiences of discrimination, and protective factors, such as resilience and social support, have been reported among marginalized populations, including Black and Latinx women.[1,2,4,6–9,12,18–23] The biological consequences of chronic stressors—stemming from historical and ongoing racism, low education levels, and exposure to violence—have been well-documented and contribute to the racial disparities observed in pregnancy outcomes.[5,21,24] Reducing stress has been shown to increase resilience, emphasizing the importance of interventions that address social determinants of health (SDoH) for individuals facing such barriers to care.[6,25,26] Pregnant women with higher resilience tend to experience fewer depressive symptoms, lower perceived stress, and greater interpersonal support. In contrast, women with maladaptive coping skills are at increased risk for engaging in fewer positive health behaviors, such as exercise and stress management, during pregnancy.[3,4,8,9,19,23,27]

Similar levels of stress (none, low to moderate, and high) during pregnancy have been reported in the literature for Black and White women, with common stress sources including partner-related issues, excessive responsibilities, concerns about their baby and other children, and financial strain.[11] However, the primary source of stress differs between these groups, with financial concerns being the top stressor for Black women, compared to work-related stress for White women.[11] Studies focusing on Black and Latinx women highlight additional sources of stress that are not commonly reported in the literature, such as concerns about safety, raising Black children, being the head of the household, challenges with breastfeeding, difficulty with relaxation and sleep, and experiences of discrimination both over their lifetime and during prenatal care.[1,14,22]

Social factors, including societal structures, community-level systems, and interpersonal level stressors, affect historically marginalized groups in distinct ways. Black women often experience higher stress levels due to these compounded social factors, which can substantially amplify the experience and consequences of stress during pregnancy.[18,19,24] With maternal morbidity and mortality rates 3 times higher among Black women than among White women, further research is needed to explore the differential experiences and sources of stress among pregnant women across and within racial groups.[28] The purpose of this study is to identify social factors associated with stress levels among postpartum women within 3 racial groups.

METHODS

Postpartum women aged 18 years or older who delivered at a large hospital in southwest Ohio between 2017 and 2019 and were able to read and understand English were eligible to participate in the study. Participants were asked to complete an anonymous 3-part questionnaire prior to hospital discharge after delivery. A member of the study team explained the purpose of the study and answered any questions. The survey took approximately 25 minutes to complete. Participants filled out the paper questionnaire and returned it to their nurse in a sealed envelope. The nursing staff then placed the envelope into a collection box for the research team to retrieve. A study team member entered responses from the questionnaires into REDCap.[29] The study was approved by the Wright State University institutional review board (#6114).

The questionnaire included a consent cover letter, demographic questions (eg, age, race, number of children, living situation), a resiliency assessment, and a list of barriers to care. These barriers included transportation, food insecurity, financial insecurities, feeling overwhelmed by stress, lack of support from family or friends, fatigue affecting daily activities, childcare availability, and insufficient time for doctor appointments. Participants were asked to indicate whether each barrier was a problem and how frequently it occurred. Barriers were coded into categories for No, not a problem and Yes, a problem at least some of the time. Resilience was measured using Snyder's cognitive model of hope questionnaire which generates scores for agency (confidence in one's ability to reach goals) and pathway (knowing what steps to take to reach goals). Scores are continuous variables ranging from 4 to 32, with higher scores indicating greater hope or resilience.[30]

Data were analyzed using descriptive statistics, including chi-square tests and Fisher exact tests, for categorical data, and analysis of variance (ANOVA) for continuous data. All statistical analyses were conducted using SPSS version 29.0 (IBM, Armonk, NY).

RESULTS

Of the 114 surveys collected, 5 were incomplete, resulting in 109 completed surveys available for analysis. The racial distribution of participants was Black-identifying (27%), White (61%) and Other race (12%), which included Hispanic/Latino, Asian, mixed race, or other racial identities. No significant differences were observed among racial groups in terms of age category ($p = .12$), parity ($p = .13$), number of children living at home ($p = .30$), or the presence of a mental health condition ($p = .53$; Table 1). However, significant differences were found in education level ($p = .005$), marital status ($p < .001$), living arrangement ($p = .002$), and type of medical insurance ($p < .001$).

Participants were categorized based on their response to the barrier "I feel overwhelmed by stress" into those who reported feeling overwhelmed by stress at least some of the time [stress problem (SP) group; 56%] and those who did not [no stress problem (NSP) group; 44%]. Overall, participants in the SP group did not differ from those in the NSP group regarding social factors such as marital status, education level, living arrangement, parity, or the

Table 1. Demographic Characteristics of Survey Participants by Race and Nationality

	Black-identifying (N=29)	White (N=67)	Other Race/ Ethnicity (N=13)	p
Age				.12
18-27	22 (76%)	31 (46%)	7 (54%)	
28-35	5 (17%)	29 (43%)	5 (38%)	
> 35	2 (7%)	7 (11%)	1 (8%)	
Highest education completed				.005
Some/Completed high school	20 (69%)	20 (30%)	8 (61%)	
Some college	6 (21%)	28 (42%)	4 (31%)	
Completed 4+ years college	3 (10%)	19 (28%)	1 (8%)	
Marital status				<.001
Single	25 (86%)	23 (34%)	8 (61%)	
Married	4 (14%)	42 (63%)	4 (31%)	
Divorced	0	2 (3%)	1 (8%)	
Living Arrangement				.002
Living alone	12 (41%)	7 (10%)	2 (15%)	
Living with partner	10 (35%)	54 (81%)	10 (77%)	
Living with family	5 (17%)	5 (8%)	1 (8%)	
Living with friends	2 (7%)	1 (1%)	0	
Parity				.13
Nulliparous	9 (31%)	24 (36%)	1 (8%)	
Multiparous	20 (69%)	43 (64%)	12 (92%)	
Children living at home				.30
1 child	9 (32%)	24 (37%)	2 (15%)	
2+ children	19 (68%)	40 (63%)	11 (85%)	
Type of insurance				<.001
Government	25 (86%)	29 (43%)	5 (38%)	
Private	4 (14%)	36 (54%)	4 (31%)	
Self-Pay	0	2 (3%)	4 (31%)	
Reported having a mental health condition	7 (24%)	20 (30%)	2 (15%)	.53
Reported being overwhelmed by stress	20 (69%)	36 (54%)	5 (39%)	.15

Table 2. Social Factors for Postpartum Women by Race and Stress

	All Races Combined (N=109)			Black-identifying (N=29)			White (N=67)			Other Race/Ethnicity (N=13)		
Social factors (% women in social categories)	**NSP (n=48)**	**SP (n=61)**	**p**	**NSP (n=9)**	**SP (n=20)**	**p**	**NSP (n=31)**	**SP (n=36)**	**p**	**NSP (n=8)**	**SP (n=5)**	**p**
Marital status			.50			.28			.17			.30
Single	22 (46%)	34 (56%)		9 (100%)	16 (80%)		7 (23%)	16 (44%)		6 (75%)	2 (40%)	
Married	25 (52%)	25 (41%)		0	4 (20%)		23 (74%)	19 (53%)		2 (25%)	2 (40%)	
Divorced	1 (2%)	2 (3%)		-	-		1 (3%)	1 (3%)		0	1 (20%)	
Highest education			.91			.26			.73			.65
Some/completed high school	21 (44%)	27 (44%)		8 (89%)	12 (60%)		8 (26%)	12 (33%)		5 (63%)	3 (60%)	
Some college				1 (11%)	5 (25%)		13 (42%)	15 (42%)		3 (25%)	2 (40%)	
Completed 4+ years college	16 (33%)	22 (36%)		0	3 (15%)		10 (32%)	9 (25%)		1 (12%)	0	
	11 (23%)	12 (20%)										
Type of insurance			.23			.57			.78			.77
Government	22 (46%)	37 (61%)		7 (78%)	18 (90%)		12 (39%)	17 (47%)		3 (37%)	2 (40%)	
Private	22 (46%)	22 (36%)		2 (22%)	2 (10%)		18 (58%)	18 (50%)		2 (25%)	2 (40%)	
Self-Pay	4 (8%)	2 (3%)					1 (3%)	1 3%)		3 (37%)	1 (20%)	
Living arrangement			.33			.38			.12			.37
Alone	7 (15%)	14 (23%)		3 (33%)	9 (45%)		3 (10%)	4 (11%)		1 (13%)	1 (20%)	
With partner	37 (77%)	37 (61%)		2 (22%)	8 (40%)		28 (90%)	26 (72%)		7 (87%)	3 (60%)	
With family	3 (6%)	8 (13%)		3 (33%)	2 (10%)		0	5 (14%)		0	1 (20%)	
With friends	1 (2%)	2 (3%)		1 (11%)	1 (5%)		0	1 (3%)		--	--	
Parity			.53			.40			.13			1.0
Nulliparous	13 (27%)	21 (34%)		4 (44%)	5 (25%)		8 (26%)	16 (44%)		1 (13%)	0	
Multiparous	35 (73%)	40 (66%)		5 (56%)	15 (75%)		23 (74%)	20 (56%)		7 (87%)	5 (100%)	
Children living at home			.30			1.0			.21			1.0
1 child												
2+ children	13 (28%)	22 (38%)		3 (37%)	6 (30%)		9 (29%)	15 (45%)		1 (13%)	1 (20%)	
	34 (72%)	36 (62%)		5 (63%)	14 (70%)		22 (71%)	18 (55%)		7 (87%)	4 (80%)	
Reported having a mental			.05			.38			.29			.13
health condition	8 (17%)	21 (34%)		1 (11%)	6 (30%)		7 (23%)	13 (36%)		0	2 (40%)	

number of children living at home (Table 2). However, participants in the SP group reported significantly higher rates of experiencing problems with all other barriers to care compared to the NSP group (Table 3), with the exception of feeling unsupported by friends (p = .06). Racial groups and groups compared by stress did not differ on resilience, although pathway scores were consistently lower than agency scores for all groups (Table 3).

Within racial groups, participants in the SP group were similar to their same-race counterparts in the NSP group regarding demographic and social factors (Table 2). Black-identifying participants in the SP group were significantly more likely to report problems with transportation (Black-identifying: SP 40% vs NSP 0%; p = .03), financial difficulties (Black-identifying: SP 45% vs NSP 0%; p = .03), and fatigue affecting daily activities (Black-identifying: SP 50% vs NSP 0%; p = .01) compared to Black-identifying participants in the NSP group (Table 3). White participants in the SP group were significantly more likely to report financial difficulties (White: SP 31% vs NSP 7%; p = .02), fatigue impacting daily activities (White: SP 50% vs NSP 10%; p < .001), and challenges in finding childcare when needed (White: SP 36% vs NSP 3%; p < .001) compared to White participants in the NSP group. Participants of Other race/Ethnicity in the SP group were significantly more likely to report problems with transportation (Other race/Ethnicity: SP 60% vs NSP 0%; p = .04) and financial difficulties (Other race/Ethnicity: SP 50% vs NSP 0%; p = .03) compared to their counterparts in the NSP group.

DISCUSSION

Our study reveals that postpartum individuals who reported feeling overwhelmed by stress were more likely to experience additional barriers to care compared to those who did not report being overwhelmed by stress. Further examination within racial groups showed that compared to their same-race counterparts without stress, Black-identifying, and Other-race women with stress were more likely to report transportation challenges. Additionally, Black-identifying and White participants with stress reported feeling too tired for everyday activities, while only White participants with stress reported difficulties in finding childcare. Within all 3 racial groups, women with stress were more likely to experience financial challenges compared to those without stress.

Our findings contribute to the existing literature and address data gaps in current state level assessments, including the BRFSS, PRAMS, and OMAS, by highlighting racial differences in the types of barriers to care faced by women overwhelmed by stress compared to their same-race counterparts who were not overwhelmed by stress.[15–17] While our overall results align with previous research identifying financial constraints and inadequate support systems as major stressors for pregnant individuals, our race-specific analyses provide new insights into the specific barriers experienced by women with stress within different racial groups.[1,2,6,11–13] These findings deepen our understanding of maternal stress in Ohio by illustrating how the experience of stress,

Table 3. Resiliency and Barriers to Care* for Postpartum Women by Race and Stress

	All Races Combined (N=109)			Black-identifying (N=29)			White (N=67)			Other Race/Ethnicity (N=13)		
	NSP (n=48)	SP (n=61)	p	NSP (n=9)	SP (n=20)	p	NSP (n=31)	SP (n=36)	p	NSP (n=8)	SP (n=5)	p
Resilience Scores												
Agency Score	28.3 ± 3.0	26.0 ± 4.2	.09	28.1 ± 3.3	27.2 ± 3.5		28.4 ± 2.8	25.2 ± 4.6		27.7 ± 3.6	27.2 ± 3.2	
Pathway Score	27.4 ± 3.7	25.3 ± 4.9		26.0 ± 5.4	24.7 ± 4.8		27.9 ± 3.3	25.3 ± 5.0		27.1 ± 3.2	28.2 ± 3.8	
Agency Scores – Stress main effect p=.09; Race main effect p=.58; Stress by Race interaction p=.25 Pathway Scores – Stress main effect p=.39; Race main effect p=.28; Stress by Race interaction p=.39												
Barriers to Care												
Getting places is difficult for me	3 (6%)	17 (28%)	.005	0	8 (40%)	.03	3 (10%)	6 (17%)	.49	0	3 (60%)	.04
I don't have enough to eat	1 (2%)	9 (15%)	.04	1 (11%)	6 (30%)	.38	0	2 (6%)	.49	0	1 (20%)	.39
I don't have enough money and I have to go without things I need	2 (4%)	23 (38%)	<.001	0	9 (45%)	.03	2 (7%)	11 (31%)	.02	0	3 (50%)	.03
I feel that my family doesn't support me	0	12 (20%)	.001	0	6 (30%)	.14	0	5 (14%)	.06	0	1 (20%)	.39
I feel that my friends don't support me	2 (4%)	10 (16%)	.06	2 (22%)	6 (30%)	1.0	0	2 (6%)	.50	0	2 (40%)	.13
I feel too tired for everyday activities	4 (8%)	30 (49%)	<.001	0	10 (50%)	.01	3 (10%)	18 (50%)	<.001	1 (13%)	2 (40%)	.51
I am able to get child-care when I need it	3 (6%)	21 (34%)	<.001	2 (22%)	6 (30%)	1.0	1 (3%)	13 (36%)	<.001	0	2 (40%)	.13
I don't have enough time to go to the doctor	0	13 (21%)	<.001	0	6 (30%)	.14	0	5 (14%)	.06	0	2 (40%)	.13

*Values for barriers to care represent the percentage of women reporting that the barrier is a problem for them at least some of the time.

and the resulting barriers to care, differ across racial groups in the postpartum period. Our results build on recent Ohio-based studies that document racial disparities in maternal outcomes, offering a more detailed look into how stress uniquely shapes the postpartum experiences of new mothers within this regional context.[31,32] These differences emphasize the need for targeted interventions to address the unique stressors faced by each racial and ethnic group.[3,11,14,18,22,24]

However, our study has several limitations. The list of barriers to care did not fully capture some of the specific stressors experienced by Black-identifying and Other-race women. Further research is needed to explore the impact of discrimination on stress in these populations. Additionally, the small sample size and unequal group distribution, particularly for the Other Race/Ethnicity group, limit the generalizability of our findings. The inclusion criteria, which required participants to read and understand English, further limited the conclusions. Future research should incorporate more diverse racial and ethnic categories to better understand the unique stressors faced by different pregnant populations, including the role of discrimination in stress and maternal health outcomes.

PUBLIC HEALTH IMPLICATIONS

Our findings emphasize the relationship between barriers to care and stress among postpartum women, highlighting the differential experience of these barriers across racial groups. Public health initiatives and policy reforms must address barriers that limit access to community support and resources for pregnant and postpartum women. Efforts to reduce stress levels should be tailored to specific racial groups to improve equitable access to both medical and psychological care. Stress management programs should be tailored to the unique needs of pregnant individuals and made accessible through community centers, online platforms, and mobile health units. However, further investigation into the root causes of stress among pregnant and postpartum women is essential. Public health strategies should focus on establishing robust community support networks and enhancing connections to available resources that meet the distinct needs of different patient populations.

Addressing financial barriers requires expanding financial assistance programs, such as subsidies for transportation, childcare, and other essential services. Advocacy efforts should push for policy reforms that promote financial stability, including paid maternity leave and affordable childcare, to alleviate financial burdens on new mothers. Health care systems, providers, and communities must recognize the diversity of the populations they serve and adapt their approaches accordingly. Public health and community-wide efforts should encourage and support healthy behaviors such as stress management strategies, financial literacy education, and social support networks to meet the varied needs of pregnant and postpartum women in Ohio.

CONFLICTS OF INTEREST

The authors have no relevant financial or non-financial interests to disclose.

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AUTHOR CONTRIBUTION

Araam E. Abboud: formal analysis, visualization, writing-original draft, writing-review and editing ; Katie M. Whitehead: formal analysis, visualization, writing-original draft, writing-review and editing; Katherine E. Wilcher: formal analysis, data curation, visualization, writing-original draft, writing-review and editing; Laura A. Bute: formal analysis, visualization, writing-original draft, writing-review and editing; David N. Dhanraj: investigation, formal analysis, writing-review and editing; G. Theodore Talbot: conceptualization, methodological development, data collection, investigation, supervision, writing-review and editing; Rose A. Maxwell: conceptualization, methodological development, data collection, formal analysis, investigation, data curation, project administration, supervision, writing-original draft, writing-review and editing.

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