#### ORIGINAL ARTICLE





# Predictors of change in relationship satisfaction among Black postpartum mothers

Danielle M. Weber<sup>1</sup> | Chalandra M. Bryant<sup>2</sup> | Hannah C. Williamson<sup>3</sup> | Kadija Mussa<sup>2</sup> | Justin A. Lavner<sup>1</sup>

#### Correspondence

Danielle M. Weber, University of Georgia, Psychology Building, Athens, GA 30602, USA.

Email: danielle.weberl@uga.edu

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#### **Abstract**

The transition to parenthood can be a challenging time for the relationships of new parents and result in declines in relationship satisfaction. Although a robust literature has identified characteristics that predict changes in relationship satisfaction during this period, the relationships of Black mothers postpartum remain understudied. To address this gap, we examined a set of relational, individual, and external characteristics as predictors of relationship satisfaction trajectories over the first four months postpartum. First-time Black mothers (N=93, 22.6% married, 52.7% cohabiting, 24.7% not cohabiting) reported on relational, individual, and external characteristics at 1 week postpartum and their relationship satisfaction at 1, 8, and 16 weeks postpartum. Mothers who reported more commitment and partner support were higher in initial satisfaction, as were mothers who were married or cohabiting with a partner (relative to mothers who were not cohabiting with their partner). Mothers with clinically significant depressive symptoms at 1 week postpartum had lower initial relationship satisfaction than mothers without clinically significant depressive symptoms. Mothers' sleep difficulties and experiences of racial discrimination were associated with changes in relationship satisfaction over time; mothers experiencing more sleep difficulties and racial discrimination experienced larger declines in satisfaction. These findings offer new insights into risk and protective factors associated with relationship satisfaction among Black mothers during the early postpartum period and can inform multicomponent interventions to enhance their relationship functioning.

<sup>&</sup>lt;sup>1</sup>Department of Psychology, University of Georgia, Athens, Georgia, USA

<sup>&</sup>lt;sup>2</sup>Department of Family Social Science, University of Minnesota, Saint Paul, Minnesota, USA

<sup>&</sup>lt;sup>3</sup>Department of Human Development and Family Sciences, The University of Texas at Austin, Austin, Texas, USA

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#### KEYWORDS

Black mothers, relationship satisfaction, transition to parenthood

## INTRODUCTION

The transition to parenthood is a period of profound changes in multiple life domains, including changes to the new parents' romantic relationship. On the one hand, partners can share in the joys of welcoming a newborn, which can foster greater connection. On the other hand, caring for a newborn can lead to more conflict due to increased stress, and it can also reduce the amount of time and energy partners are able to dedicate to their romantic relationship. Accordingly, declines in relationship satisfaction are common in the early postpartum period (see Doss & Rhoades, 2017; Kluwer, 2010). However, these declines are not universal—some couples are able to maintain or even improve in relationship satisfaction across this transition (e.g., Belsky & Rovine, 1990; ter Kuile, der Lippe, et al., 2021). Indeed, there is a robust body of work examining a wide range of characteristics of (a) the relationship (e.g., levels of support), (b) each partner (e.g., individual mental health), and (c) the situation/external environment (e.g., finances) that positively or negatively shape trajectories of relationship functioning postpartum (for reviews, see Doss & Rhoades, 2017; Kluwer, 2010).

Despite this large literature, important questions remain. In particular, we know relatively little about changes in relationship satisfaction or predictors of those changes among racial and ethnic minority parents. Much of the research on changes in relationship functioning across the transition to parenthood has focused on married, middle-class, White parents (see Perry-Jenkins & Schoppe-Sullivan, 2019), despite racial and ethnic minority parents often being the recipients of large-scale programs to promote relationship health during the transition to parenthood (such as from the Administration for Children and Families; see Wood et al., 2010). This gap is also concerning given that racial and ethnic minority parents often enter the transition to parenthood with significant contextual challenges due to systemic racism, such as disproportionate financial strain, barriers to health care, and heightened experiences of discrimination (e.g., Perry-Jenkins & Schoppe-Sullivan, 2019). These stressors are likely to impact relationship functioning but remain understudied.

To address these gaps, the present study examined predictors of changes in relationship satisfaction over the first few months postpartum among a sample of first-time Black mothers in romantic relationships. To date, limited research has focused on changes in relationship satisfaction among Black parents across the transition to parenthood. In an early retrospective study of primarily married Black couples interviewed once between the first month postpartum and the end of the first year postpartum (Hobbs & Wimbish, 1977), the majority of Black parents described their marriages as happier since their child's birth. In contrast, Crohan (1996) observed declines in happiness among Black married couples over the first 3 years of the transition to parenthood; destructive conflict behavior was associated with lower marital happiness at year 3 among parents. Although informative, these studies were conducted decades ago, focused on married samples, and examined a limited set of predictors of relationship quality. Accordingly, the present study extended this work by including a recent cohort of Black mothers with different relationship statuses (e.g., married, cohabiting, non-cohabiting) and examining a broad set of relational, individual, and external characteristics as predictors of changes in mothers' relationship satisfaction over time. Understanding factors which confer risk or protection for Black mothers' relationships can provide novel insights regarding withingroup variability and inform targeted intervention efforts to enhance Black mothers' relational well-being postpartum.

# Predictors of changes in relationship functioning postpartum

Kluwer (2010) proposed an integrative model for understanding change in relationship satisfaction during the transition to parenthood that focused on pre- and post-birth resources and vulnerabilities. These resources and vulnerabilities include characteristics of the relationship (e.g., communication, support), each partner (e.g., attachment, depression), and situation (e.g., SES, work factors). Notably, this model was intended to capture the experiences of many couples experiencing the transition to parenthood and was not specific to Black parents. Focal to Black married couples but not specific to the transition to parenthood, Bryant et al. (2010) proposed a conceptual model of factors impacting the quality of Black marriages, including external stressors (e.g., financial strain, racial discrimination), individual characteristics (e.g., emotional distress), and couple characteristics (e.g., partner support). The present study draws from both of these frameworks to explore a set of relational, individual, and external characteristics that may predict changes in relationship satisfaction among Black mothers in the first few months postpartum.

# Relational characteristics

Several relationship characteristics have been examined as predictors of relationship functioning postpartum (see Doss & Rhoades, 2017; Kluwer, 2010). Relationship commitment has been proposed as a relevant but underexamined construct across the transition to parenthood (see Kluwer, 2010). Limited research has demonstrated that commitment can decline across the transition to parenthood among married (Doss et al., 2009; ter Kuile, Finkenauer, et al., 2021) and unmarried cohabiting partners (Kamp Dush et al., 2014), but it is unclear if higher levels of commitment predict smaller declines in relationship satisfaction during this period as well (see Kluwer, 2010). Beyond commitment, another relationship characteristic of interest is partner support. Support levels can decline across the transition to parenthood (e.g., Rholes et al., 2001) and receiving overall low levels and inconsistent support predicted decreases in relationship satisfaction postpartum among a sample of primarily married, White couples (Eller et al., 2023). Thus, it is possible that relationship characteristics such as high commitment and partner support may be associated with smaller declines in relationship satisfaction among Black mothers.

Furthermore, some research has indicated that structural relationship characteristics such as cohabitation and the duration of the relationship at the time of the baby's birth are related to relationship functioning. Previous research has often compared married and unmarried cohabiting parents (e.g., Kamp Dush et al., 2014; O'Reilly Treter et al., 2021), but has rarely included comparisons with parents who are romantically involved but not cohabiting or married (for an exception, see Renegar et al., 2023). This issue may be particularly important to consider among Black mothers given that 70% of Black women giving birth are not married (Osterman et al., 2023) and many unmarried parents in relationships are not living with their partner at the time of their child's birth (e.g., 35% in Carlson et al., 2004). Additionally, some research has indicated that having a child earlier in a relationship predicts larger declines in relationship satisfaction among primarily White American married (Doss et al., 2009) or Danish married or unmarried cohabiting couples (Trillingsgaard et al., 2014), highlighting the potential relevance of relationship duration for subsequent satisfaction. In sum, multiple relationship characteristics merit exploration as predictors of changes in relationship satisfaction across the transition to parenthood among Black mothers.

# Individual characteristics

Individual vulnerabilities can also predict changes in relationship satisfaction postpartum (see Kluwer, 2010). For example, worse depressive symptoms have been found to predict

steeper declines in relationship satisfaction postpartum (Goldberg et al., 2010; Trillingsgaard et al., 2014). Importantly, many Black mothers experience clinical levels of postpartum depression (e.g., 29% of Black mothers in Ceballos et al., 2017; 24% of Black mothers in Doe et al., 2017) due to factors such as experiencing more stress and financial difficulties (see Cannon & Nasrallah, 2019), making this a particularly relevant factor to consider. Nonetheless, research has not examined if clinically elevated depressive symptoms increase Black mothers' vulnerability to postpartum declines in relationship satisfaction. Additionally, maternal sleep disturbances are common in the postpartum period and have been proposed as a likely contributor to declines in relationship satisfaction (Medina et al., 2009), yet limited empirical research has considered associations between sleep and relationship satisfaction postpartum. One study examining a sample of primarily White couples 3-8 weeks postpartum found that sleep difficulties were concurrently associated with lower relationship satisfaction (Insana et al., 2011). Such associations have not been tested among Black families postpartum, however, despite Black mothers experiencing disproportionately poor postpartum sleep (e.g., Doering et al., 2017). In light of these disparities in depression and sleep difficulties for Black Americans, it is important to consider how these characteristics may predict changes in relationship satisfaction among Black mothers postpartum.

## External characteristics

External situational characteristics have also been proposed as factors which can predict changes in relationship satisfaction postpartum (see Kluwer, 2010). Of the external characteristics examined in the literature, income has received some attention. This research, using primarily White samples, has yielded mixed findings. Some studies have shown that lower income relative to higher income is associated with greater declines in relationship functioning postpartum (Belsky & Rovine, 1990; Doss et al., 2009), whereas other work indicates no significant association (e.g., Trillingsgaard et al., 2014). Importantly, embedded racist institutions and policies have contributed to elevated rates of economic hardship and generated obstacles for economic advancement among Black Americans (e.g., Darity et al., 2018), which can create challenges for Black families (e.g., Bryant et al., 2010; McNeil Smith & Landor, 2018). Although elevated financial strain has been broadly associated with poorer relationship functioning (see Karney, 2021), including lower relationship satisfaction (e.g., Barton et al., 2015), research has not examined the impact of financial strain on Black mothers' relationship satisfaction postpartum. Given that the postpartum period is one when many Black mothers experience financial difficulties (e.g., Liu et al., 2016), a better understanding of associations between their level of financial strain and their relationship satisfaction across the transition to parenthood is needed.

Another external characteristic that warrants consideration as a predictor of relationship satisfaction postpartum among Black mothers is racial discrimination. Racial discrimination is a chronic and systemic stressor commonly experienced by Black Americans (e.g., Lee et al., 2019). In contrast to the large body of research documenting the negative impact of racial discrimination on mental and physical health (see Carter et al., 2019), the impact of racial discrimination on relationship functioning is less clear (Bryant et al., 2010). Although racial discrimination can strain couple relationships, Black families commonly have resources and coping strategies that can mitigate these strains (e.g., Bryant et al., 2010; McNeil Smith & Landor, 2018; Rice et al., 2023). Some studies have found that racial discrimination can have negative impacts on couples' relationship functioning (see Rice et al., 2023), including their relationship satisfaction (e.g., Kerr et al., 2018; Lincoln & Chae, 2010). However, other studies have found that more frequent racial discrimination was not associated with relationship satisfaction among Black couples (Clavél et al., 2017; Lavner et al., 2018). The latter patterns may reflect partners blaming stress from discrimination on the oppressive system rather than their partner (e.g., McNeil Smith

& Landor, 2018) and seeing discrimination as a shared stressor around which they can provide support (e.g., Rice, 2023), thus mitigating potential harm to the relationship. Importantly, this prior research on racial discrimination has not focused on the transition to parenthood, a period when Black mothers commonly encounter obstetric racism (Davis, 2019). It is possible that experiencing higher levels of racial discrimination may make new parents' relationships particularly vulnerable during a period when they are navigating other challenges.

# **Present study**

The present study aimed to advance understanding of predictors of changes in relationship satisfaction among Black mothers over the early postpartum period. Drawing from conceptual models highlighting factors that can influence relationship functioning among postpartum couples (Kluwer, 2010) and among Black marriages (Bryant et al., 2010), we considered a broad set of relational (commitment, partner support, cohabitation, relationship duration), individual (depression, sleep challenges), and external characteristics (financial strain, racial discrimination) as predictors of relationship satisfaction among Black mothers in married, cohabitating, and non-cohabitating relationships. This work addresses calls for more research on relationship functioning during the transition to parenthood among racial and ethnic minority families with diverse relationship structures (Perry-Jenkins & Schoppe-Sullivan, 2019) and allows for new insights into risk and protective factors that predict early changes in Black mothers' relationship quality to inform theory and intervention.

## **METHOD**

# **Participants**

Participants included mothers from a larger study of first-time Black mothers and their infants over the first 16 weeks postpartum. Mother—infant dyads were recruited between 2018 and 2021 from the newborn nursery of a hospital in the southeastern United States. Mothers were eligible if they were ≥ 17 years old, English speaking, identified as Black or African American, lived within 75 miles of the hospital, had a full-term (≥37 weeks gestational age) singleton pregnancy, had their first child, and had an infant weighing ≥2500 g at birth. Dyads were excluded if the mother or infant had a known medical condition that could impact postnatal care or infant feeding/growth¹ (given the broader study aims), if there was an adoption plan, or if the mother was planning to move out of the area. Mothers provided informed consent and parental permission for their infants in the hospital during enrollment. The study was approved by the Augusta University Institutional Review Board. Materials and analysis code are available by request from the corresponding author.

Of the 292 eligible families, 234 enrolled, and 212 provided data at 1 week postpartum (the first assessment session following enrollment in the hospital). Given our focus on predicting changes in relationship satisfaction over time, our analyzed sample included only those mothers who were in the same relationship across the study period (n=93). Among this analyzed

<sup>&</sup>lt;sup>1</sup>Medical conditions that would result in exclusion included infant congenital, physical, or metabolic conditions that would impact feeding or growth (e.g., cleft palate, complex congenital heart disease) or maternal conditions that would impact postpartum care (e.g., narcotic drug use, uncontrolled depression causing social service contact).

<sup>&</sup>lt;sup>2</sup>Of the remaining 119 mothers, 86 were single at baseline, 24 ended their relationship over the study period (11 of which had dissolved by 8 weeks postpartum), 8 provided no follow-up data at either Week 8 or Week 16, and 1 did not provide sufficient data to determine whether they were in the same relationship over the course of the study.

sample, mothers identified as Black (100%) and non-Hispanic (97.9%), and averaged 24.10 (SD = 5.23) years old. The modal educational attainment was completion of high school (44.1%); 8.6% had some high school education, 25.8% some college, 14.0% completed college, and 7.5% post-graduate training/degree. Approximately one-quarter (24.7%) reported an annual income <\$10 K, 16.1% between \$10 and 24 K, 17.2% between \$25 and 49 K, 6.5% between \$50 and 74 K, and 4.4% over \$75 K; other mothers reported that they did not know their annual income (26.9%), or declined to answer (4.3%). The majority of mothers were enrolled in Medicaid (80.6%) and many received WIC (75.3%) and/or SNAP benefits (43.0%). The majority of mothers (52.7%) were unmarried and living with their partner, 22.6% were married and living with their spouse, and 24.7% indicated that they were romantically involved on a steady basis but were not living with their partner. All mothers reported that their relationship was with the baby's father. Mean relationship length was 3.51 years (SD = 2.50).

## **Procedures**

Community Research Associates (local Black community members who received training in study procedures) conducted home visits when infants were approximately 1, 3, 8, and 16 weeks old. The larger study was an RCT testing the efficacy of a culturally adapted responsive parenting (RP) intervention compared to a child safety control intervention on infant weight, sleep, soothing, feeding, and play (for more details, see Lavner et al., 2019). At the 1-, 8-, and 16-week visits, mothers completed online Qualtrics questionnaires using iPads. The RP and safety control interventions were delivered at 3 and 8 weeks postpartum.

## Measures

# Relationship satisfaction

At weeks 1, 8, and 16 postpartum, mothers reported their relationship satisfaction using three items from the Couples Satisfaction Index (CSI; Funk & Rogge, 2007): "Please indicate the degree of happiness, all things considered, of your relationship" (on a Likert scale from 1 = Extremely unhappy to 7 = Perfect), "I have a warm and comfortable relationship with my partner" and "How rewarding is your relationship with your partner?" (on a Likert scale from 1 = Not at all to 6 = Completely). Responses were summed to create an index of overall relationship satisfaction ( $\alpha$ s ranged from 0.70 to 0.85).

# Relational characteristics

#### Relationship commitment

At week 1 postpartum, mothers rated their relationship commitment using four items from the Commitment Inventory (Stanley & Markman, 1992; sample item: "My relationship with my partner is clearly part of my future life plans") on a Likert scale ( $1 = Strongly\ disagree$  to  $7 = Strongly\ agree$ ). Items were averaged to create an index of relationship commitment ( $\alpha = 0.66$ ).

<sup>&</sup>lt;sup>3</sup>The fourth item of the 4-item CSI ("In general, how satisfied are you with your relationship?") was collected at Weeks 8 and 16 postpartum but was not included at Week 1 due to a programming error. To have a consistent outcome for the longitudinal modeling, the 3-item versions were used for analyses. The 3- and 4-item versions were highly correlated at Weeks 8 and 16 (*rs* = 0.98 and 0.99, respectively).

#### Partner support

At week 1 postpartum, mothers reported on three items assessing support received from the partner (Beach et al., 2019; Surjadi et al., 2011; sample item: "During the past month, how often did your partner...Act loving and affectionate toward you?") on a Likert scale (1 = Always to 4 = Never). Items were reverse scored and summed such that a higher score reflected more support ( $\alpha = 0.79$ ).

## Relationship status

At 1 week postpartum, mothers who responded "yes" to the item "Are you currently in a romantic relationship" were then asked "which of the following describes your current relationship status?," with five response options: (1) married and living together, (2) married but not living together, (3) living together, (4) romantically involved on a steady basis but not living together, and (5) involved in an on-again and off-again relationship. Given that no mothers in the focal sample endorsed options 2 or 5, relationship status consisted of three categories: married (response 1), cohabiting (response 3), and not cohabiting (response 4).

## Relationship duration

At 1 week postpartum, mothers were asked "How long have you been in a relationship with your current romantic partner?" in years and months.

#### Individual characteristics

#### Depressive symptoms

At week 1 postpartum, mothers reported on 20 items assessing depressive symptoms from the Center for Epidemiological Studies-Depression measure (CES-D; Radloff, 1977). Mothers rated the frequency of depressive symptoms (e.g., "I could not get 'going") on a 4-point Likert scale (from 0 = Rarely or none of the time to 3 = Most or all of the time). Given the clinical utility of screening mothers for elevated levels of depressive symptoms postpartum (e.g., Garapati et al., 2023), we sought to characterize mothers with clinically significant depressive symptoms. Accordingly, items were summed ( $\alpha = 0.82$ ) and then dichotomized based on previous cutoffs (Lewinsohn et al., 1997), such that mothers who scored  $\geq 16$  were coded as "1" (clinically significant symptoms; 22.8% of sample) and mothers who scored  $\leq 16$  were coded as "0" (not clinically significant symptoms; 77.2% of sample).

# Sleep problems

At week 1 postpartum, mothers reported on 13 items assessing sleep problems from the Insomnia Symptom Questionnaire (Okun et al., 2009). Mothers rated the frequency of five sleep complaints (e.g., "Difficulty falling asleep") on a Likert scale (1 = Never to 4 = 5 - 7 nights/ days in the past week) and then reported on eight items assessing the impact of these sleep complaints on their functioning ("Have your sleep difficulties made you feel fatigued?") on a Likert scale (1 = Not at all to 5 = Extremely). To create a composite which accounted for the frequency and impact of sleep problems, the individual subscale scores were standardized into z-scores and then summed such that a higher score reflected more frequent and impactful sleep problems (Total measure  $\alpha = 0.90$ ; Sleep complaints  $\alpha = 0.80$ ; Impact  $\alpha = 0.89$ ).

## External characteristics

## Financial strain

At week 1 postpartum, mothers reported on four items assessing financial difficulties (Conger et al., 1992). Mothers rated their agreement on a 4-point Likert scale (1 = Strongly agree to

 $4 = Strongly \ disagree$ ) on items such as "We have enough money to afford the kind of food we need." Items were averaged such that higher scores indicated greater financial strain ( $\alpha = 0.91$ ).

#### Racial discrimination

At week 1 postpartum, mothers reported on 17 items assessing racial discrimination from the Schedule of Racist Events (Landrine & Klonoff, 1993). Mothers rated the frequency of racist events (e.g., "treated unfairly by strangers because you are Black") in the past year on a Likert scale (1 = Never to 6 = All the time). Items were averaged such that higher scores reflected more frequent racial discrimination in the past year ( $\alpha = 0.92$ ).

# DATA ANALYTIC PLAN

Analyses were conducted in SAS 9.4 (SAS Institute Inc., 2013) using PROC MIXED, a multilevel modeling (MLM) approach that accounts for non-independence in the data (wave nested within person). The estimation approach (restricted Maximum Likelihood; REML) is robust to missing data (which ranged from 0–7.5% across measures of interest, see Table 1). A series of two-level growth curve models were conducted to test how each predictor was associated with the intercept and linear slope of relationship satisfaction over time (in separate models), using the following set of equations:

Level 1: Relationship satisfaction<sub>$$ti$$</sub> =  $\beta_{0i} + \beta_{1i}$ Time +  $r_{ti}$ 

Level 2: 
$$\beta_{0j} = \gamma_{00} + \gamma_{01} \text{Predictor} + u_{0j}$$
  
 $\beta_{1j} = \gamma_{10} + \gamma_{11} \text{Predictor} + u_{1j}$ 

where t indexes time in weeks and j indexes individuals. The three time points (Weeks 1, 8, and 16 postpartum) were coded as 0, 7, and 15, respectively, such that the intercept (when time=0) was equal to the score at the first assessment at 1 week postpartum.  $u_{0j}$  represents a random intercept,  $u_{1j}$  represents a random slope, and  $r_{tj}$  is the error term.  $\gamma_{01}$  represents the effect of the predictor on the intercept (i.e., starting value of relationship satisfaction at 1 week postpartum).  $\gamma_{11}$  represents the effect of the predictor on the slope of relationship satisfaction; this was tested as a moderator of the slope through inclusion of an interaction term with the slope parameter.

We first ran an unconditional model equivalent to the Level 1 equation in which relationship satisfaction was regressed on time, without any additional variables, to describe the average trajectory of relationship satisfaction in the sample. We subsequently ran a series of models in which each specific predictor was examined as a predictor of the intercept and slope parameters. Continuous predictors were grand mean-centered. To visualize effects of continuous predictors on the intercept and slope of relationship satisfaction, we estimated patterns at 1 SD above, at, and below the mean. Depressive symptoms was a binary categorical predictor (clinically significant depressive symptoms, not clinically significant). Relationship status was a three-level categorical predictor (married, cohabiting, not cohabiting); accordingly, three dummy codes were created and the model was run twice with a different code excluded as the reference category for each iteration in order to test all possible contrasts.

Given that mothers were enrolled in a clinical trial, intervention condition was also added as a covariate in all models as a predictor of the intercept and slope parameters. Each of these effects was non-significant (ps>0.521) and did not change the pattern of effects of the primary predictors. Accordingly, the more parsimonious models without intervention condition are presented.

TABLE 1 Descriptive statistics for and correlations between continuous study variables.

Measure	1	2	8	4	w	9	7	∞	6	10	11	12	13
1. Relationship satisfaction (W1)													
<ol> <li>Relationship satisfaction (W8)</li> </ol>	0.53***												
3. Relationship satisfaction (W16)	0.33**	0.44***											
4. Commitment (W1)	0.46***	0.34**	0.20										
5. Partner support (W1)	0.37**	0.33**	0.25*	0.23*	-								
6. Married versus non-cohabiting (W1)	0.29	0.29	-0.03	0.59***	-0.18								
7. Cohabiting versus non-cohabiting (W1)	0.27*	0.07	0.02	0.28*	-0.03	N/A							
8. Married versus cohabiting (W1)	0.02	0.22	-0.05	0.33**	-0.11	N/A	N/A						
9. Relationship duration (W1)	-0.07	-0.17	0.04	60.0	-0.25*	0.28	0.05	0.21	1				
10. Depressive symptoms (W1)	-0.26*	-0.20	-0.15	-0.05	-0.25*	-0.07	-0.13	90.0	0.17				
11. Sleep problems (W1)	0.01	-0.12	-0.31**	0.03	-0.12	0.24	-0.10	0.35**	0.22*	0.29**			
12. Financial strain (W1)	-0.16	-0.22*	-0.22*	-0.08	-0.09	-0.13	60.0	-0.20	-0.07	0.19	0.16		
13. Racial discrimination (W1)	0.15	-0.01	-0.28**	0.13	0.02	90.0	-0.07	0.13	-0.10	0.17	0.30**	0.36**	
N	93	68	93	92	92				98	92	93	93	93
M	16.52	16.10	15.39	6.16	11.30	I			3.51		-0.11	1.81	1.35
SD	2.42	2.78	3.32	96.0	1.16	ı			2.50		1.49	89.0	0.51
Possible range	3.00 - 19.00	3.00 - 19.00	3.00-19.00 1.00-7.00	1.00 - 7.00	3.00 - 12.00				1			1.00-4.00 1.00-6.00	1.00 - 6.00
Observed range	6.00 - 19.00	7.00 - 19.00	6.00 - 19.00	2.50 - 7.00	8.00 - 12.00				0.50 - 11.58		-1.98-5.86 $1.00-3.75$	1.00 - 3.75	1.00 - 3.35

third group: row 6 compared married = 1 (n = 21) and non-cohabiting = 0 (n = 23; cohabiting coded as missing); row 7 compared cohabiting = 1 (n = 49) and non-cohabiting = 0 (n = 23; married coded symptoms (22.8% of the sample; CES-D ≥ 16) and 0 = not clinically significant symptoms (77.2% of the sample; CES-D < 16). Sleep problems scored by standardizing each subscale score and then as missing); and row 8 compared married = 1 (n = 21) and cohabiting = 0 (n = 49; non-cohabiting coded as missing). Relationship duration is in years. Depression scored 1 = clinically significant Note: W1 = Week 1 postpartum. W8 = Week 8 postpartum. W16 = Week 16 postpartum. Relationship status examined as separate dummy codes to compare two specific groups, excluding the summing each standardized score to create a total score, so a possible range is not applicable.

 $^*p < 0.05. *^*p < 0.01. *^*p < 0.001.$ 

#### RESULTS

Descriptive statistics and correlations among variables are presented in Table 1.

# **Unconditional growth model**

Results from the unconditional model indicated that relationship satisfaction significantly decreased over time, B=-0.08 (SE=0.02), t=-3.22, p=0.002, effect size r=0.23. Mothers significantly varied in their intercepts and slopes of relationship satisfaction (as indicated by significant random effects; ps < 0.003), supporting the examination of factors that predicted these parameters.

# Predicting the intercept and slope of relationship satisfaction

# Relational characteristics

Next, we examined how commitment, partner support, relationship status, and relationship duration predicted the intercept and slope of relationship satisfaction (see Table 2). The models examining commitment and partner support indicated significant positive effects on the intercept and non-significant effects on the slope. As shown in Figure 1a,b, this pattern was such that mothers reporting higher levels of commitment to their relationships and (separately) who received more support from partners reported higher initial levels of relationship satisfaction than mothers who reported less commitment and partner support, and these initial differences remained stable over time.

The model examining the effects for relationship status also revealed significant effects on the intercept (see Figure 1c), such that mothers who were married or cohabiting reported higher relationship satisfaction at baseline relative to mothers who were not cohabiting with their partners. Married and cohabiting mothers did not differ from each other in their intercepts. Relationship status effects on slope were not statistically significant (ps > 0.081). There were no significant effects of relationship duration on the intercept or slope of relationship satisfaction.

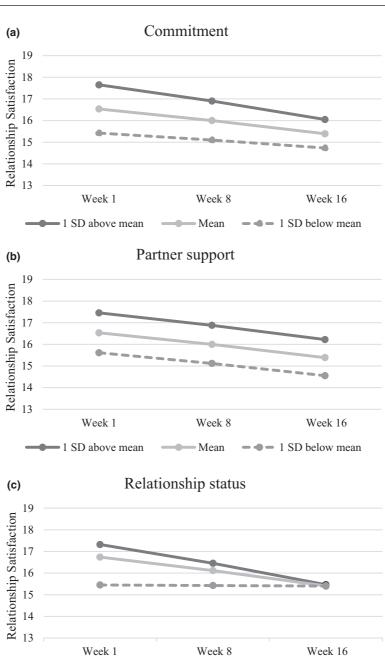
#### Individual characteristics

We then examined the effects of depressive symptoms and sleep problems (see Table 2). Depressive symptoms had a significant effect on the intercept and a non-significant effect on the slope (see Figure 2a), such that mothers with clinically significant depressive symptoms reported lower initial levels of relationship satisfaction than mothers without clinically significant symptoms and these initial differences remained stable over time. For sleep problems, there was a significant effect on the slope: as shown in Figure 2b, higher levels of sleep problems at baseline were associated with greater declines in relationship satisfaction over time. Specifically, whereas mothers reporting baseline levels of sleep problems one standard deviation below the sample mean did not show significant changes in relationship satisfaction over time  $[B=-0.004~(\mathrm{SE}=0.03), t=-0.14, p=0.892]$ , mothers reporting baseline levels of sleep problems at or one standard deviation above the sample mean showed significant declines in relationship satisfaction over time, with steeper declines observed among mothers with higher levels of baseline sleep problems [sleep problems at the sample mean:  $B=-0.08~(\mathrm{SE}=0.02), t=-3.34, p=0.001$ ; sleep problems 1 SD above the sample mean:  $B=-0.15~(\mathrm{SE}=0.03), t=-4.59, p<0.001$ ].

**TABLE 2** Predicting the intercept and slope of relationship satisfaction over time.

	Effects o	n relationshi	Effects on relationship satisfaction intercept	intercept		Effects o	n relationshi	Effects on relationship satisfaction slope	slope	
Variable	В	SE	t	d		В	SE	t	р	_
Relational characteristics										
Commitment	1.17	0.24	4.89	<0.001	0.46	-0.03	0.03	-1.27	0.205	0.09
Partner support	0.79	0.21	3.87	<0.001	0.38	-0.01	0.02	-0.24	0.809	0.02
Relationship status										
Married versus non-cohabitating	1.87	0.71	2.62	0.010	0.27	-0.12	0.07	-1.76	0.081	0.13
Cohabitating versus non-cohabitating	1.29	09.0	2.15	0.034	0.22	-0.09	90.0	-1.49	0.138	0.11
Married versus cohabitating	0.58	0.62	0.94	0.349	0.10	-0.03	90.0	-0.59	0.556	0.04
Relationship duration	-0.13	0.11	-1.24	0.219	0.13	0.01	0.01	0.89	0.376	0.07
Individual characteristics										
Depressive symptoms	-1.51	0.59	-2.56	0.012	0.26	0.02	90.0	0.41	0.680	0.03
Sleep problems	0.05	0.17	0.30	0.765	0.03	-0.05	0.02	-3.15	0.002	0.23
External characteristics										
Financial strain	-0.59	0.37	-1.59	0.115	0.16	-0.04	0.03	-1.01	0.315	80.0
Racial discrimination	0.85	0.50	1.70	0.093	0.18	-0.17	0.04	-3.81	<0.001	0.27

and non-cohabiting=0; in cohabiting versus non-cohabiting contrast, cohabiting=1 and non-cohabiting=0; and in married versus cohabiting contrast, married=1 and cohabiting=0. Depressive examined through inclusion of dummy codes and running the model twice with different reference groups to obtain all possible contrasts. In married versus non-cohabiting contrast, married=1 Note: Each variable in the first column was examined in a separate model which simultaneously tested effects on the intercept and slope of relationship satisfaction. Effect of relationship status symptoms was coded as  $1 = \text{Clinically significant symptoms and } 0 = \text{Not clinically significant symptoms. Effect size } r = \sqrt{|t^2/(t^2 + \text{df})|}$ .



**FIGURE 1** Relational characteristics associated with trajectories of relationship satisfaction. *Note*: For commitment, partner support, and relationship status, there was a significant effect on the intercept of relationship satisfaction but not the slope.

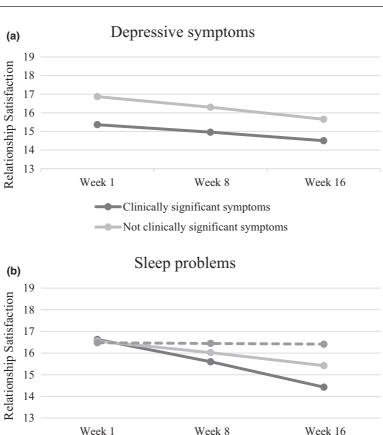
Cohabiting

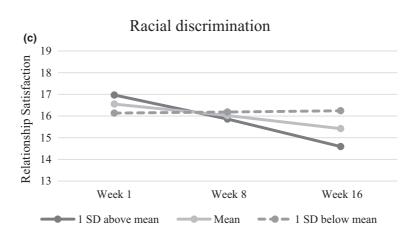
Married

■ Not cohabiting

## External characteristics

Finally, we examined the effects of financial strain and racial discrimination (see Table 2). Contrary to expectations, there were no significant effects of financial strain on the intercept or slope of relationship satisfaction. For racial discrimination, there was a significant effect on





Mean

1 SD below mean

1 SD above mean

**FIGURE 2** Individual and external characteristics associated with trajectories of relationship satisfaction. *Note*: For sleep problems and racial discrimination, there was a significant effect on the slope of relationship satisfaction but not the intercept. For depression, there was a significant effect on the intercept of relationship satisfaction but not the slope.

the slope. As shown in Figure 2c, higher levels of racial discrimination over the previous year (reported at baseline) were associated with greater declines in relationship satisfaction over time. Specifically, mothers who had experienced levels of racial discrimination one standard deviation below the sample mean did not show significant changes in relationship satisfaction

over time [B=0.01 (SE=0.03), t=0.29, p=0.776], whereas mothers who had experienced levels of racial discrimination at or above the sample mean underwent significant declines in relationship satisfaction over time, with steeper declines among mothers who had experienced higher levels of racial discrimination [levels of racial discrimination at the sample mean: B=-0.08 (SE=0.02), t=-3.39, p<0.001; levels of racial discrimination one standard deviation above the sample mean: B=-0.16 (SE=0.03), t=-5.09, t=0.001].

# **DISCUSSION**

This study examined predictors of relationship satisfaction from 1 to 16 weeks postpartum among a sample of first-time Black mothers in married, cohabiting, and non-cohabiting relationships. Our findings highlighted that relational (commitment, partner support, relationship status), individual (depressive symptoms, sleep difficulties), and external (racial discrimination) characteristics were significantly associated with relationship satisfaction during this early postpartum period. These findings offer important insights into early risk and protective factors for the relationships of Black mothers across the transition to parenthood.

Our findings indicated that several relational characteristics were significantly associated with relationship satisfaction at 1 week postpartum. Perceived and structural commitment predicted satisfaction at 1 week postpartum: higher self-reported commitment and being married or cohabiting (relative to not cohabiting) were associated with higher initial satisfaction. Although commitment has received some attention in the literature, this research has focused on changes in perceived commitment over the transition to parenthood rather than commitment as a predictor of other types of functioning during this period (see Kluwer, 2010). Moreover, this research on perceived commitment has focused primarily on White couples who are married or cohabiting. Research on structural commitment among primarily White samples has revealed that cohabiting parents declined in functioning relative to married parents (Kamp Dush et al., 2014) and mothers with non-residential partners began lower in relationship quality and decreased over time relative to married mothers (Renegar et al., 2023), suggesting some potential benefits from greater structural commitment. In the present study, married mothers and cohabiting mothers did not differ in their initial levels of, or changes, in relationship satisfaction over time, but both had significantly higher initial satisfaction levels than mothers who were not cohabiting with their romantic partner. It will be important for future research on the transition to parenthood to include parents with a range of relationship structures (married, cohabiting, not cohabiting) to advance understanding of how couples with varying levels of structural commitment experience the transition to parenthood.

Along with commitment, partner support also predicted higher satisfaction at 1 week post-partum. There is some evidence that overall low levels of support can be problematic for relationship functioning across the postpartum period among samples of primarily married, White couples (Eller et al., 2023). Importantly, the lack of significant slope effects for partner support as well as perceived commitment highlight that these relational characteristics have enduring effects over time (i.e., the initial effects did not weaken across the 16 weeks postpartum). Thus, among this sample of first-time Black mothers, relatively more commitment and partner support shortly after the child's birth may have potentially offered some benefits for their overall level of satisfaction, even as they experienced some declines across the first months postpartum.

The two individual characteristics of interest—depressive symptoms and sleep difficulties—were also significantly associated with relationship satisfaction during this postpartum period. Mothers with clinically significant depressive symptoms (22.8% of the sample, similar to rates of depression among other samples of Black mothers' postpartum; see Ceballos et al., 2017

and Doe et al., 2017) were less satisfied in their relationships at 1 week postpartum relative to mothers below this clinical threshold, consistent with a large body of research demonstrating a robust concurrent association between depression and poorer relationship quality (see Weber et al., in press). These findings suggest that Black mothers with clinically significant depressive symptoms are at risk for reporting less satisfying relationships during the early postpartum period. Regarding sleep difficulties, sleep difficulties at 1 week postpartum predicted change in relationship satisfaction over time. Specifically, mothers with sleep difficulties at or above the sample average at 1 week postpartum decreased in relationship satisfaction over time, whereas mothers with lower-than-average sleep difficulties were able to maintain stable levels of satisfaction across time. Sleep difficulties have been posited theoretically as an important driver of changes in relationship functioning across the transition to parenthood (Medina et al., 2009), but surprisingly little empirical research has explored the interplay between sleep and relationship functioning postpartum. The current findings address this gap and suggest that worse sleep in the early postpartum period portends higher risk of relationship declines across the first few months postpartum for Black mothers. Both of these patterns are concerning given that many Black mothers experience clinically significant depressive symptoms (e.g., Ceballos et al., 2017) and sleep difficulties (Spaeth et al., 2021) postpartum.

Considering external characteristics, our findings indicated that racial discrimination predicted changes in relationship satisfaction over time. Specifically, mothers who had experienced levels of past-year racial discrimination at or above the sample average experienced steeper declines in relationship satisfaction across the subsequent 15 weeks, whereas mothers who had experienced levels of racial discrimination below the sample average had stable satisfaction over time. Racial discrimination is a common experience for Black Americans (e.g., Lee et al., 2019) and particularly during the perinatal period while navigating racist health systems (e.g., Geronimus, 2023). These findings indicate that more frequent, recent racist encounters may also predict relationship difficulties in the first months postpartum. Although research on the impact of racial discrimination on Black couples' relationship satisfaction is mixed (see Rice et al., 2023), this is the first study to our knowledge to examine associations between racial discrimination and relationship satisfaction during the transition to parenthood, a time when parents are navigating other challenges that can result in relationship declines. Therefore, it is understandable that heightened experiences of racial discrimination could enhance vulnerability to declines in satisfaction. It will be important for further research to examine the effects of racial discrimination on relationship satisfaction among other samples of racial and ethnic minority parents and to consider other forms of discrimination experienced by new parents as well, including but not limited to heterosexism, cissexism, sexism, and intersectional forms of discrimination (e.g., gendered racial microaggressions; Lewis & Neville, 2015). More broadly, this finding underscores the harmful effects of racial discrimination and the urgent need for systemic change to eliminate these exposures and resulting impacts on relational health.

Two characteristics of interest were not significantly associated with relationship satisfaction: relationship duration and financial strain. Regarding relationship duration, although having a child earlier in a relationship has been shown to predict larger declines in satisfaction (Doss et al., 2009; Trillingsgaard et al., 2014), this evidence was found among samples consisting primarily of White, married (with some unmarried and cohabiting) couples. As such, it may not generalize to other populations. Additionally, financial strain was not related to satisfaction. Outside of the transition to parenthood, research has emphasized the challenges that financial difficulties can create for couples (see Karney, 2021), including Black families (e.g., Bryant et al., 2010; McNeil Smith & Landor, 2018), and thus this non-significant association was unexpected. More research is needed to determine whether this finding is specific to this sample or whether similar patterns emerge in other samples of postpartum Black mothers.

Limitations of this study should be considered when interpreting findings. First, the sample consisted of a subset of mothers enrolled in a clinical trial examining two parenting

interventions (a responsive parenting intervention and a child safety control intervention). As expected, treatment condition was unrelated to relationship satisfaction in the present investigation and controlling for condition did not change the pattern of results. Nonetheless, given that all mothers received services which (although unrelated to their romantic relationships) provided them with some support during this stressful time, it is possible that different patterns might have been observed among parents not enrolled in a clinical trial. As such, this study warrants replication among first-time Black mothers not receiving any intervention. Second, the sample size limited power to detect smaller effects; thus, further research is needed to replicate these findings among larger samples. Third, the study included first-time Black mothers and their infants living in the southeastern United States recruited from a single hospital; findings may not generalize to Black mothers in other areas or who already have at least one child. Moreover, this study focused on mothers who were in the same relationship across time; thus, findings may not generalize to mothers whose relationships dissolved. Fourth, the data for this study consisted of mothers' self-reports of relationship satisfaction at weeks 1, 8, and 16 weeks postpartum, and relational, individual, and external characteristics at week 1 postpartum.

Other forms of data could enrich these assessments, such as observations of relationship processes, interview data, or the inclusion of data from fathers, as would a longer timeline that assesses characteristics during pregnancy and later in the postpartum period. Additional measures of the included variables could also highlight important nuances in these constructs; in particular, a racial discrimination measure that assesses impacts of discriminatory experiences or discriminatory experiences focal to pregnancy and postpartum (e.g., White VanGompel et al., 2022) would be valuable. Additionally, given when measures were collected, we do not know how these relational, individual, and external characteristics themselves changed across the subsequent 16 weeks, precluding tests of bidirectional associations. Moreover, there are other relational, individual, and external characteristics beyond those examined in the present investigation that could be meaningfully associated with relationship satisfaction across the postpartum period. For instance, individual characteristics such as the mother's physical health and birth experiences, relational characteristics such as different types of partner support (e.g., instrumental support in caring for the infant, emotional support of mothers), and external characteristics such as support from extended family or community might meaningfully predict relationship satisfaction postpartum. Future research could consider these and other variables as predictors of relationship satisfaction postpartum.

Notwithstanding these limitations, these findings regarding factors that predict relationship satisfaction among Black mothers in the early postpartum period address significant gaps in existing research and have several important practical implications. First, given that mothers with certain initial characteristics were particularly vulnerable to experiencing low and/or declining relationship satisfaction, these results suggest that it may be possible to conduct screenings to identify those mothers at greatest risk for low relationship satisfaction. Such screenings could be integrated into standard prenatal and postpartum health visits, increasing their accessibility. Identifying mothers at greater risk of relationship difficulties could then promote referrals to relationship-focused interventions if desired. Second, these findings can inform the content of those interventions. Existing interventions focused on relationships across the transition to parenthood typically focus on promoting relationship processes such as better couple communication and partner support, with some including parenting education components as well (see Pinquart & Teubert, 2010). These types of interventions have been shown to benefit relationships, but their effects are often modest (see Pinquart & Teubert, 2010). It is possible that expanding the scope of these interventions to address individual (e.g., sleep difficulties, depression) and external factors (e.g., racial discrimination) that affect relationship functioning could enhance intervention effectiveness. For example, interventions that target postpartum individual challenges such as depression (see Garapati et al., 2023) and sleep difficulties (e.g., Verma et al., 2023) might

be considered as a supplemental intervention or integrated within relational interventions as a benefit to both individual and relationship health. Additionally, interventions could guide partners in discussing their support needs after experiencing external stressors such as racial discrimination. Importantly, these enhanced family-focused interventions should occur alongside larger systemic interventions that work to dismantle systems of oppression broadly and in healthcare specifically (e.g., Green et al., 2021) that create such pervasive discrimination and result in health inequities for Black mothers.

## CONCLUSION

The present study demonstrated that a wide range of relational, individual, and external characteristics were associated with the relationship satisfaction of first-time Black mothers during the first few months postpartum. Importantly, the characteristics examined in the present study are merely some of a broad set of factors that have been identified as influencing Black families' functioning, including broader social networks, religiosity, racial identity, and coping strategies (see Bryant et al., 2010; see McNeil Smith & Landor, 2018). Future research examining these and other factors can further our understanding of early characteristics that affect Black parents' relationships over the transition to parenthood and inform interventions aimed at enhancing their relationship well-being across this transition and beyond.

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#### DATA AVAILABILITY STATEMENT

Materials and analysis code for this study are available by emailing the corresponding author.

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