

Close Relationships Predict Curvilinear Trajectories of Maternal Depressive Symptoms over the Transition to Parenthood

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Abstract:

Trajectories of change in maternal depressive symptoms were examined in a sample of 98 mothers across the transition to parenthood. Latent class growth modeling revealed two unique trajectories: one characterized by consistently low depressive symptoms, the other characterized by a curvilinear pattern with initially elevated symptoms that declined around the time of childbirth then returned to elevated levels by 24 weeks postpartum. Mothers who recalled less paternal care and acceptance in childhood and who reported that they engaged in more avoidance and aggression in their own romantic relationships were more likely to experience the curvilinear trajectory. Mothers who reported that their partners engaged in more avoidance in their romantic relationships were also more likely to experience the curvilinear trajectory, but especially when mothers recalled low maternal care and acceptance. Partner's aggression did not predict the trajectory of maternal depressive symptoms. Results have implications for screening for maternal postpartum depression.

Keywords: depressive symptoms | transition to parenthood | intimate relationships | parenting care and acceptance | longitudinal

Article:

Trajectories of change in maternal depressive symptoms over the transition to parenthood are not fully understood. Some studies report that mothers tend to experience increases in depressive symptoms over the transition to parenthood (Matthey, Barnett, Ungerer, & Waters, 2000), whereas others report that mothers tend to experience no change and even declines in depressive

symptoms during this transition (Hock, Schirtzinger, Lutz, & Widaman, 1995; Salmela-Aro, Aunola, Saisto, Halmesmäki, & Nurmi, 2006). More recent research suggests that mothers experience initial declines, followed by an increase in depressive symptoms as they undergo the transition to parenthood (Keeton, Perry-Jenkins, & Sayer, 2008), supporting the possibility that maternal depressive symptoms change in a curvilinear rather than linear pattern during this time. Results of these previous studies may be reconciled in light of the possibility that there are distinct trajectories of change in maternal depressive symptoms across the transition to parenthood. Understanding the various trajectories of change in maternal depressive symptoms across the transition to parenthood, and the factors that place mothers at risk for maladaptive trajectories of change in depressive symptoms over time, is critical to inform programs and policies that promote maternal and infant well-being.

The first weeks of parenthood have been historically regarded as a “honeymoon period” (Belsky, Spanier, & Rovine, 1983; Hobbs, 1968; Miller & Sollie, 1980). During this time, parents commonly experience excitement and delight in the newborn infant that temporarily overshadows postpartum stressors, yet by 3 to 6 months postpartum this period abates (Belsky et al., 1983). Empirical support for this honeymoon period is, however, limited and is inferred from review of multiple studies. Marital satisfaction appears to peak around 1 month postpartum (Wallace & Gotlib, 1990), and the sharpest declines in marital adjustment occur between 3 and 9 months (Belsky et al., 1983). Mothers' and fathers' personal well-being, conceptualized as their subjective evaluations of their current lives, tends to remain stable between the prenatal period and 1 month postpartum but significantly declines by 8 months (Miller & Sollie, 1980). Furthermore, maternal life satisfaction declines precipitously beginning at 6 months (Dyrdal, Røysamb, Nes, & Vittersø, 2011). Taken together, these studies provide support for the possibility that mothers with a history of depressive symptoms may experience a honeymoon period in the early postpartum as well. Mothers who experience a honeymoon period may experience initially high depressive symptoms, followed by temporary declines in depressive symptoms in the first month postpartum. In contrast, mothers who are not at risk for heightened depressive symptoms may experience consistently low depressive symptoms across the transition. If a curvilinear trajectory of change in maternal depressive symptoms indicative of a honeymoon period is identified, it will be important to understand factors that make some mothers more likely to follow a curvilinear trajectory than others. Therefore, the purpose of this study was to determine if there are distinct trajectories of change in maternal depressive symptoms across the transition to parenthood, and to determine if characteristics of mothers' close relationships with their own parents in childhood and their prenatally assessed romantic relationships predict trajectories of maternal depressive symptoms over time. To our knowledge this study is the first to empirically test these two distinct trajectories of change in depressive symptoms across the transition to parenthood, and to also consider the role of close relationships as they predict trajectories experienced by mothers in the first 24 weeks postpartum. Understanding unique trajectories of change in maternal depressive symptoms across the

transition to parenthood is critical to inform decisions regarding the timing at which clinicians screen for maternal postpartum depression.

Close Relationships and Maternal Depression

Remembered Care and Acceptance in Childhood

Theory and previous research highlight the importance of examining the experience of depressive symptoms within the context of interpersonal relationships (Joiner & Timmons, 2009), specifically in light of early relationships with primary caregivers (Bowlby, 1973; Parker, 1993) and current relationships with romantic partners (Gotlib & Beach, 1995). First, it is theorized that depression may be influenced by remembered parental care and acceptance, or an individual's recollection of the amount of affection and emotional warmth that she received from her parents during childhood through views of the self that develop within the context of early parent–child interaction (Parker, Barrett, & Hickie, 1992). Women who recall high levels of care and acceptance from their parents in childhood retrospectively report that their parents were warm, responsive, and affectionate. These parental characteristics contribute to the development of a healthy self-concept and higher self-esteem (Parker, 1993). On the other hand, mothers who recall low levels of care and acceptance from parents in childhood retrospectively report their parents as rejecting, emotionally cold, and unresponsive. These parental characteristics contribute to a poor self-concept and lower self-esteem (Parker, 1993). An individual's self-concept that stems from childhood experiences is thought to contribute to the lens through which adults make appraisals of everyday events such that individuals who recall low care and acceptance from parents in childhood are expected to appraise events and behaviors negatively. This negative attribution bias reinforces a negative and sometimes hostile worldview, as well as a negative sense of self, forming the basis for adult depression (Gotlib & Hammen, 1992).

Previous research supports links between adult children's recollections of their early relationships and experiences of depressive symptoms in adulthood such that individuals who recalled more care and acceptance from their parents during childhood tended to report fewer symptoms of depression (Bemporad & Romano, 1992; Enns, Cox, & Clara, 2002). This finding extends to the experience of depressive symptoms in the postpartum period (Crockenberg & Leerkes, 2003; McMahan, Barnett, Kowalenko, & Tennant, 2005). Primiparous mothers who recalled more acceptance from their parents during childhood tended to report fewer postpartum depressive symptoms than mothers who recalled less acceptance, even when controlling for prenatal depressive symptoms (Crockenberg & Leerkes, 2003). Despite prior research, it is still unclear if remembered parental care and acceptance influences trajectories of change in maternal depressive symptoms across the transition to parenthood. Women who experienced less care and acceptance from their parents during childhood may typically have heightened depressive symptoms as compared to women who experienced more care and acceptance, but they may experience temporary declines in depressive symptoms during a honeymoon period immediately

following childbirth. Elation with the newborn infant may initially contribute to more positive evaluations of everyday events than are typical for mothers' who experienced less care and acceptance from parents in childhood (Miller & Sollie, 1980), but in the later postpartum period stressors associated with changes in the family system may result in the reemergence of depressive symptoms among these women.

Relationship Avoidance and Aggression

Romantic relationships serve as a second interpersonal context in which experiences of depressive symptoms are embedded. Negative feelings that are experienced within the romantic relationship may spill over to a generally negative outlook on life (Beach, Sandeen, & O'Leary, 1990). Avoidance and aggression may be particularly salient to the experience of depressive symptoms over the transition to parenthood as mothers and fathers strive to integrate the newborn infant into their lives and must renegotiate family roles that may lead to heightened conflict (Cox & Paley, 2003; Feldman & Nash, 1984). Mothers who avoid conflict or exhibit aggression in response to relationship conflict may have lower levels of interpersonal self-efficacy (lower belief that they are able to be successful in their interpersonal relationships; Locke & Sadler, 2007), whereas mothers whose partners avoid conflict or exhibit aggression in response to conflict may feel as if they cannot rely on their partner as a source of support (Choi & Marks, 2008), factors that are associated with depressive symptoms (Smith & Betz, 2002; Stapleton et al., 2012; Wade & Kendler, 2000).

The link between more broadly conceptualized romantic relationship quality and depressive symptoms has been well established (Gotlib & Beach, 1995; Proulx, Helms, & Buehler, 2007), and observed and self-reported negative romantic interactions are positively associated with concurrent and prospective depressive symptoms among men and women (Laurent, Kim, & Capaldi, 2009; Whitton et al., 2007). With regard to the transition to parenthood, romantic relationship quality is regarded as one of the most robust predictors of postnatal depression (O'Hara & Swain, 1996) and studies consistently document that a more distressed romantic relationship is associated with a greater likelihood that one will experience depressive symptoms (Beck, 2001). Despite being associated with risk for depressive symptoms in the postpartum, mothers who engage in high levels of relationship avoidance or aggression, or who have partners who engage in high levels of avoidance or aggression, may experience temporary declines in depressive symptoms due to a honeymoon period immediately following childbirth. Excitement surrounding the newborn infant may temporarily overshadow stressors in the romantic relationship (Belsky et al., 1983), contributing to temporary declines in maternal depressive symptoms. However, beyond the first month postpartum mothers may begin to experience increases in depressive symptoms due to the reality of their strained romantic relationships as they encounter changes in family routines and shared couple time, contributing to greater stress and heightened conflict between partners as they attempt to maintain homeostasis in the face of these changes. In contrast, mothers whose romantic relationships are characterized by less avoidance and aggression may experience consistently low depressive symptoms. To our

knowledge this study is the first to examine avoidance and aggression as predictors of a curvilinear trajectory of change in maternal depressive symptoms across the transition to parenthood.

In addition to main effects of remembered parental care and acceptance and relationship avoidance and aggression, the constructs may interact with one another to predict trajectories of maternal depressive symptoms over the transition to parenthood. Remembered parental care and acceptance may buffer mothers from the experience of depressive symptoms in the context of avoidance or aggression. Mothers who recall more care and acceptance may evaluate their own avoidance and aggression in a more positive light and may be more likely to perceive their partners' avoidance and aggression as temporary given that their early family experiences support a positive view of self and close relationships. Indeed, it is theorized that individuals interpret events and interpersonal interactions through a lens that supports their preconceived expectations and beliefs about close relationships (Bowlby, 1973). Therefore, mothers who experience avoidance or aggression in their romantic relationships, but who also recall more parental care and acceptance, may experience consistently low depressive symptoms across the transition to parenthood. In previous research utilizing the current sample of first-time parents, Crockenberg and Leerkes (2003) demonstrated that partners' marital aggression significantly predicted higher levels of maternal depressive symptoms at 6 months postpartum only when mothers recalled less acceptance from their fathers in childhood. This study builds on this prior work by also examining interactions between mothers' own conflict resolution strategies and remembered parental care and acceptance as predictors of trajectories of change in maternal depressive symptoms across four time points in the transition to parenthood.

We considered the following research questions:

1. Are there two unique trajectories of change in maternal depressive symptoms across the transition to parenthood? One trajectory characterized by a temporary decline in elevated depressive symptoms (characteristic of a honeymoon period) and one trajectory characterized by consistently low depressive symptoms?
2. Do remembered parental care and acceptance in childhood and aggression and avoidance in prenatal romantic relationships predict trajectories of change in depressive symptoms across the transition to parenthood?
3. Does remembered parental care and acceptance buffer mothers from the effect of avoidance and aggression on change in depressive symptoms over time?

Method

Participants

The sample was composed of 98 primiparous mothers and their partners who were recruited from childbirth education classes in the northeastern United States. Links between parental acceptance, marital aggression, and maternal depressive symptoms at 6 months postpartum were previously examined in this sample and are reported in Crockenberg and Leerkes (2003). This report examines trajectories of change in maternal depressive symptoms over four time points in the transition to parenthood. Mothers ranged in age from 20 to 41 years ($M = 29.00$), were predominantly White (94%), and their education level ranged from 11 to 20 years ($M = 15.36$ years). Partners ranged in age from 21 to 54 ($M = 31.65$), were predominantly White (94%), and their education level ranged from 11 to 20 years ($M = 15.52$ years). On average, participants were with their current romantic partner for 3.2 years ($SD = 2.5$ years); 86 participants were married, the rest were cohabiting. Family income ranged from \$8,000 to \$200,000 ($M = \$60,000$). Fifty-eight percent of infants were male.

Procedure

Eight weeks prior to their due date, women completed measures of depressive symptoms, remembered maternal and paternal care and acceptance in childhood, and perceptions of their own conflict resolution strategies in current romantic relationships, as well as a demographic questionnaire. Partners completed the same measure of perceptions of their own conflict resolution strategies and a demographic questionnaire. Two weeks prior to their due date, and 4 and 24 weeks following childbirth, women completed the same measure of depressive symptoms.

Measures

Depressive symptoms

The 20-item Center for Epidemiologic Studies–Depression Scale (CES-D; Radloff, 1977) was used to assess maternal depressive symptoms. Women were asked to indicate how often they felt a particular way (e.g., “I felt depressed”) during the previous week on 4-point scale. Convergent validity has been previously demonstrated with the Beck Depression Inventory and the Research Diagnostic Criteria (Spitzer, Endicott, & Robins, 1978). As recommended by Kalichman, Rompa, and Cage (2000) and consistent with previous work utilizing the CES-D with samples of pregnant and new mothers (Milan et al., 2007), five items that assess somatic symptoms of depression that are common in the perinatal period were removed (e.g., restless sleep). The remaining 15 items were summed to compute scores for maternal depressive symptoms 8 ($\alpha = .87$) and 2 ($\alpha = .82$) weeks prior to the infant's due date and 4 ($\alpha = .82$) and 24 ($\alpha = .88$) weeks postpartum.

Remembered parental care and acceptance

The 12-item Parental Bonding Instrument–Care Subscale (PBI-Care; Parker, Tupling, & Brown, 1979) was used to assess remembered care and acceptance from mothers and fathers

during childhood. Women were asked to indicate how well each item (e.g., “made me feel loved”) described their parents on a 4-point scale. Adult children's reports on the care subscale have been previously demonstrated to correlate with parents' reports of their own behavior (Parker, 1981). Participants completed this scale twice, once for their mothers and once for their fathers. The 12-items were averaged, with appropriate items reverse scored, to compute scores for remembered care and acceptance from mothers ($\alpha = .92$) and remembered care and acceptance from fathers ($\alpha = .94$).

Relationship conflict strategies

The 29-item Marital Conflict Questionnaire (MCQ; Rands, Levinger, & Mellinger, 1981) was completed by mothers and their partners to assess perceptions of conflict resolution strategies in their romantic relationships. MCQ scores have been previously demonstrated to correlate with marital satisfaction (Rands et al., 1981). Participants indicated how well each item (e.g., “yell” and “avoid talking about it”) described their own behavior in their current romantic relationship on a 4-point scale. A previous factor analysis (Crockenberg & Leerkes, 2003) identified three factors: verbal aggression (10 items), avoidance (4 items), and adaptive strategies (8 items). Avoidance and aggression factors were used in the current report to compute scores for mothers' and partners' avoidance ($\alpha = .69$ and $.60$, respectively) and mothers' and partners' aggression ($\alpha = .85$ and $.80$, respectively).

Results

Descriptive statistics and correlations between the variables of interest are displayed in Table 1. Maternal education, family income, romantic relationship length, and romantic relationship type were considered as covariates in hypothesis testing given the relevance of socioeconomic factors for the experience of depressive symptoms in the postpartum period (Beck, 2001). Maternal education and income were negatively correlated with maternal depressive symptoms 8 weeks prior to the mother's due date, $r(98) = -.31, p < .01$, and $r(98) = -.21, p < .05$, respectively. Cohabiting mothers reported more depressive symptoms at 24 weeks postpartum than married mothers, $t(96) = -2.45, p < .05$; $M = 7.06, SD = 7.06$ and $M = 4.13, SD = 4.13$, respectively. Romantic relationship length was not associated with any of the substantive variables of interest and therefore was considered no further. Missing values of the predictors were imputed using the NORM (Schafer, 1999) software program. NORM uses an expectation-maximization algorithm to replace missing values. Substantive variables and the socioeconomic covariates were included in the imputation model to maintain associations between the variables of interest. Less than 5% of the predictors were missing overall, therefore a single imputation was sufficient (Scheffer, 2002). All variables were log transformed prior to hypothesis testing to address skewness. There were no statistical outliers following log transformation.

Table 1. Descriptive Statistics and Correlations Among Major Variables

| | Correlations |
|--|--------------|
|--|--------------|

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------------------|-----------------------|-----------------------|------------------|-----------------------|------------------|-------------------|----------|----------|------------------|-----------|
| 1. Depression 8 weeks prepartum | — | | | | | | | | | |
| 2. Depression 2 weeks prepartum | .58 ^b | — | | | | | | | | |
| 3. Depression 4 weeks postpartum | .16 | .26 ^a | — | | | | | | | |
| 4. Depression 24 weeks postpartum | .51 ^b | .63 ^b | .32 ^b | — | | | | | | |
| 5. Remembered maternal care | — .23 ^a | -.19 | -.11 | — .38 ^b | — | | | | | |
| 6. Remembered paternal care | — .33 ^b | — .34 ^b | -.19 | — .54 ^b | .44 ^b | — | | | | |
| 7. Mother avoidance | .28 ^b | .23 ^a | .16 | .25 ^a | -.16 | -.22 ^a | — | | | |
| 8. Partner avoidance | .39 ^b | .34 ^b | .13 | .32 ^b | -.12 | -.14 | -.12 | — | | |
| 9. Mother aggression | .26 ^b | .37 ^b | .15 | .31 ^b | -.15 | -.39 ^b | .19 | .03 | — | |
| 10. Partner aggression | .10 | .34 ^b | .19 | .35 ^b | -.14 | -.35 ^b | .16 | .04 | .49 ^b | — |
| <i>M</i> | 5.61 | 4.61 | 4.89 | 4.61 | 3.31 | 3.08 | 1.36 | 1.13 | 1.11 | 1.00 |
| <i>SD</i> | 5.32 | 4.65 | 4.59 | 5.17 | .61 | .75 | .51 | .29 | .32 | .30 |

Note: ^a $p < .05$. ^b $p < .01$.

To determine whether different classes of depressive symptoms trajectories could be identified, we ran unconditional latent class growth models, increasing the number of classes from 1 to 4. Model estimation was conducted with Mplus 6.0 (Muthén & Muthén, 1998/2010). The Mplus syntax for the growth curve analyses is available from the second author. Latent class growth analyses test the hypothesis of whether different classes have different growth models.

Additionally, estimates of class probabilities and the individual's most likely class membership are provided (see Muthén & Muthén, 2000, for more details regarding latent growth curve analysis). We used the Bayesian information criterion (BIC), the bootstrap likelihood ratio test (BLRT), and theoretical considerations to make decisions about the optimal number of classes (Jung & Wickrama, 2008; Ramaswamy, Desarbo, Reibstein, & Robinson, 1993). The BIC and the BLRT demonstrated that the two-class solution had the best fit (BIC = 255.55, BLRT $p < .05$). The BIC values for the one-, three-, and four-class solutions were 273.17, 268.67, and 284.86, respectively. Additionally, the BLRT p value was not significant for the three- and four-class solutions, supporting the selection of the two-class solution as best. Mothers in Class 1 demonstrated initially elevated depressive symptoms followed by temporary declines in depressive symptoms prior to and shortly after childbirth followed by a return to elevated depressive symptoms at 6 months postpartum. Mothers in Class 2 demonstrated consistently low levels of depressive symptoms across childbirth.

Following identification of the two classes of change in depressive symptoms over time, we ran a set of conditional latent class growth models to predict class membership. Due to the small sample size and the number of predictors, we took an iterative model-building approach to these

analyses, guided by our specific hypotheses. In these analyses, maternal education was included as the only covariate because models including the other potential covariates did not converge (relationship type) or the covariate was not significant (income). First, we tested each main effect separately (including maternal education). All predictors that were significant at $p < .05$ were entered into a final main effects model. After identification of a final main effects model, we tested each interaction separately. When testing interactions of predictors that were not significant main effects, nonsignificant main effects were entered into the interaction model but fixed at zero. For example, to test the interaction between maternal care and father avoidance given a nonsignificant maternal care main effect, maternal care was added back in the model but fixed at zero. Results for the individual tests of predictors and interaction effects are shown in Table 2. The final effects model is shown in Table 3.

- Research Question 1: Are there two unique trajectories of change in maternal depressive symptoms across the transition to parenthood?

Table 2. Predicting Class Membership from Individual Close Relationship Predictors

| | β | SE (<i>b</i>) | Odds ratio |
|--|-------------------------|-----------------|---------------------------|
| Model 1: Maternal care and acceptance | -20.88 | 12.92 | 85.49 x 10 ⁻¹¹ |
| Model 2: Paternal care and acceptance | -12.82 ^b | 4.05 | 27.06 x 10 ⁻⁷ |
| Model 3: Mother avoidance | 10.19 ^b | 3.58 | 26.64 x 10 ³ |
| Model 4: Partner avoidance | 20.63 ^a | 8.98 | 91.10 x 10 ⁷ |
| Model 5: Mother aggression | 25.96 ^a | 10.27 | 18.81 x 10 ¹⁰ |
| Model 6: Partner aggression | 16.88 | 9.12 | 21.42 x 10 ⁶ |
| Model 7: Mother Avoidance × Paternal Care | Model estimation errors | | |
| Model 8: Mother Avoidance × Maternal Care | 14.81 | 8.85 | 27.03 x 10 ⁵ |
| Model 9: Partner Avoidance × Paternal Care | -13.50 | 19.47 | 13.71 x 10 ⁻⁷ |
| Model 10: Partner Avoidance × Maternal Care | -76.77 ^a | 29.89 | 45.63 x 10 ⁻³⁵ |
| Model 11: Mother Aggression × Paternal Care | 23.95 | 30.26 | 25.20 x 10 ⁹ |
| Model 12: Mother Aggression × Maternal Care | 25.36 | 17.91 | 10.32 x 10 ¹⁰ |
| Model 13: Partner Aggression × Paternal Care | 6.03 | 27.31 | 415.72 |
| Model 14: Partner Aggression × Maternal Care | 166.31 | 106.38 | 1.69 x 10 ⁷² |

Notes: Value of 1 = Class 1 (temporary declines in depressive symptoms). Value of 0 = Class 2 (consistently low depressive symptoms). Maternal education included as a covariate in all models. ^a $p < .05$, ^b $p < .01$.

Table 3. Final Conditional Latent Class Growth Model Predicting Class Membership

| | β | SE (<i>b</i>) | Odds ratio |
|------------------------------|---------------------|-----------------|---------------------------|
| Maternal education | -43.51 ^b | 13.26 | 12.70 x 10 ⁻²⁰ |
| Paternal care and acceptance | -31.52 ^b | 9.04 | 20.47 x 10 ⁻¹⁵ |
| Mother avoidance | 53.38 ^b | 15.36 | 15.23 x 10 ²² |
| Partner avoidance | 86.32 ^b | 28.30 | 30.78 x 10 ³⁶ |
| Mother aggression | 69.46 ^b | 21.91 | 14.66 x 10 ²⁹ |

| | | | |
|-----------------------------------|---------------------|-------|---------------------------|
| Partner Avoidance × Maternal Care | -76.77 ^a | 29.89 | 45.63 x 10 ⁻³⁵ |
| Bayesian information criterion | -61.68 | | |
| Intercept | -3.30 | | |

Notes: Value of 1 = Class 1 (temporary declines in depressive symptoms). Value of 0 = Class 2 (consistently low depressive symptoms). Maternal care and acceptance was included in model but fixed at zero. ^a $p < .05$, ^b $p < .01$.

The two unique trajectories of change in maternal depressive symptoms are displayed in Figure 1. Forty-two mothers were in temporary declines in depressive symptoms group (Class 1) whereas 56 mothers were in the consistently low depressive symptoms group (Class 2). The intercept (.94, $p < .01$), linear (-.01, $p < .01$), and curvilinear parameters (.001, $p < .01$) were all significant for Class 1 (temporary declines in depressive symptoms). In contrast, only the intercept (.76, $p < .01$) and curvilinear parameters (-2.84×10^{-4} , $p < .05$) were significant for Class 2 (consistently low symptoms).

- Research Question 2: Do remembered parental care and acceptance in childhood and aggression and avoidance in prenatal romantic relationships predict trajectories of change in depressive symptoms across the transition to parenthood?

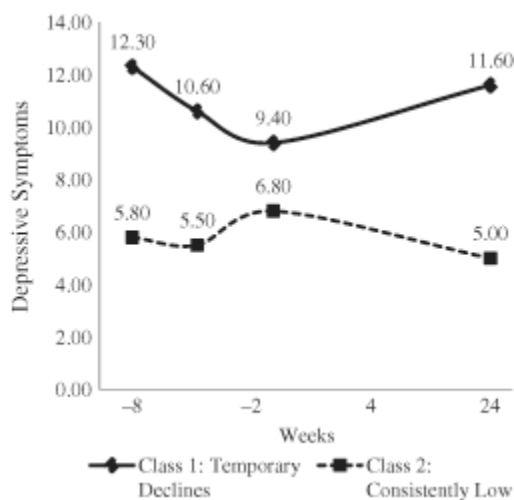


Figure 1. Trajectories of Change in Maternal Depressive Symptoms Across the Transition to Parenthood.

Note: Mean differences in maternal depressive symptoms at each time point are significantly different between Class 1 and Class 2 at $p < .01$.

As can be seen in Table 3, maternal education, remembered paternal care and acceptance, mother's avoidance, partner's avoidance, and mother's aggression predicted class membership. Odds of being in the temporary declines group (Class 1) were greater as education and remembered paternal care decreased and as mother's avoidance, partners' avoidance, and mother aggression increased.

- Research Question 3: Does remembered parental care and acceptance buffer mothers from the effect of avoidance and aggression on change in depressive symptoms over time?

As illustrated in Table 3, there was a significant interaction between partners' avoidance and remembered maternal care and acceptance. Simple slopes were calculated at 1 *SD* above and below the mean for remembered maternal care using procedures outlined by Aiken and West (1991). Partners' avoidant behavior predicted class membership more strongly when remembered maternal care and acceptance was low ($\beta = 415.34$, odds ratio [OR] = 2.39×10^{180} , $p < .01$) than when remembered maternal care and acceptance was high ($\beta = 302.18$, OR = 1.72×10^{131} , $p < .01$). Odds of being in the temporary declines group (Class 1) were greater as partner's avoidance increased, but especially when remembered maternal care and acceptance was low versus when maternal care and acceptance was high.

Discussion

The purpose of this study was to examine trajectories of change in maternal depressive symptoms across the transition to parenthood, and to examine whether characteristics of mothers' close relationships with their own parents in childhood, and their prenatally assessed romantic relationships, predict trajectories of maternal depressive symptoms over time. Consistent with prediction, latent class growth modeling detected two unique trajectories of maternal depressive symptoms through the first 24 weeks of parenthood. One trajectory was characterized by a curvilinear pattern of depressive symptoms with initially high depressive symptoms, a temporary decline in symptoms in the early postpartum period, and a return to the initially high symptoms by 24 weeks postpartum. The second trajectory was characterized by consistently low depressive symptoms. Examination of predictors of the two trajectories of change in maternal depressive symptoms demonstrated that remembered paternal care and acceptance predicted trajectories of maternal depressive symptoms, remembered maternal care and acceptance predicted the impact of partner's relationship avoidance on trajectories of maternal depressive symptoms, and mothers' own relationship avoidance and aggression predicted trajectories of maternal depressive symptoms independent of remembered parental care and acceptance. Partner's aggression did not predict trajectories of maternal depressive symptoms across the transition.

That two unique trajectories of maternal depressive symptoms across the transition to parenthood were detected was not surprising given seemingly contradictory findings in the literature with regard to the average trajectory of change in maternal depressive symptoms over this transition (e.g., Hock et al., 1995; Matthey et al., 2000; Salmela-Aro et al., 2006). The curvilinear pattern of change in depressive symptoms among mothers at risk for depressive symptoms in the postpartum supports the proposition that for some mothers there is a “honeymoon period” immediately prior to and initially following childbirth (Belsky et al., 1983; Miller & Sollie, 1980), but by 24 weeks postpartum this period abates. However, this study was the first to provide support for the honeymoon period with regard to maternal depressive symptoms, as

previous research has focused on the honeymoon period as it relates to marital relations and mothers' evaluations of life circumstance (Belsky et al., 1983; Dyrdal et al., 2011; Miller & Sollie, 1980; Wallace & Gotlib, 1990). Furthermore, this study builds on prior research by demonstrating that the honeymoon period is unique to mothers at risk for elevated depressive symptoms in the postpartum. That some mothers experienced temporary declines in depressive symptoms in the first month postpartum has important implications for the timing at which clinicians screen for maternal postpartum depression. Results suggest that in addition to screening mothers in the first few weeks postpartum as is commonly recommended (Santoro & Peabody, 2010), mothers should be screened in the later postpartum period as well.

Consistent with the perspective that early family relationships influence adult personal well-being (Bowlby, 1973), mothers who recalled less paternal care and acceptance were more likely to experience a curvilinear pattern of depressive symptoms across the transition to parenthood than mothers who recalled more paternal care and acceptance. Mothers who recall less care and acceptance from their fathers in childhood may experience an initial decline in depressive symptoms as the excitement of the newborn infant overshadows their negative expectations and beliefs about close relationships, but by 24 weeks postpartum they may perceive themselves as less capable of establishing an emotional bond with their newborn infant due to a history of low care and acceptance, contributing to more depressive symptoms. In contrast, remembered maternal care and acceptance did not independently predict trajectories of maternal depressive symptoms across the transition to parenthood. It appears that mothers' recollections of their relationships with their fathers in childhood play a unique role in their personal well-being during this time. The unique role of fathers for children's development has been documented, and relationship quality with fathers but not mothers has been linked with coping styles in adolescence lending support to the idea that fathers may be particularly influential for personal well-being (Grossmann, Grossmann, Kindler, & Zimmermann, 2008). However, that remembered maternal care and acceptance partially buffered mothers from effects of their partner's avoidance demonstrates that childhood relationships with mothers do exert some influence on maternal depression across the transition, albeit in a different way.

Mother's own and her partner's avoidance of conflict predicted trajectories of maternal depressive symptoms across the transition to parenthood. Mothers who engaged in more avoidant behavior, or who had partners who engaged in more avoidant behavior, were more likely to experience a curvilinear trajectory of depressive symptoms characterized by temporary decline than mothers who experienced less avoidant behavior. Among mothers who experienced more avoidant behavior, the birth of the first child may have served as a temporary distraction from distress in their romantic relationship, yet by 24 weeks postpartum preexisting relationship difficulties may have reemerged and contributed to depressive symptoms among those spouses who did not resolve conflict in the prenatal period. Furthermore, mothers who attempted to negotiate change in the family system with their avoidant husband may have felt a heightened lack of support from their partner, contributing to depressive symptoms. Supporting this

possibility, social support is one of the most robust predictors of maternal postpartum depression (O'Hara & Swain, 1996).

Although partner's avoidance predicted the curvilinear trajectory of maternal depressive symptoms, this was moderated by remembered maternal care and acceptance that exerted a partial buffering effect. Partners' avoidance predicted the curvilinear trajectory of change in maternal depressive symptoms less strongly, albeit still significantly, when remembered maternal care and acceptance was high. Mothers who felt unsupported by their avoidant partners in the postpartum period but recalled high maternal care and acceptance may have relied on their own mother as a source of support across the transition, lessening effects of their partner's avoidance. Supporting this possibility, mothers are among the most common sources of social support in the postpartum period (Leahy-Warren, McCarthy, & Corcoran, 2012). Mothers who recalled high maternal care and acceptance may have also been less likely to internalize their partner's behavior as a negative reflection of themselves given that high maternal care and acceptance is associated with greater self-esteem, which is linked with fewer depressive symptoms (Crockenberg & Leerkes, 2003).

Mother's own aggression in her romantic relationship, but not partners' aggression, predicted the curvilinear trajectory of maternal depressive symptoms across the transition to parenthood. Previous research outside the transition to parenthood has demonstrated that women's aggression but not her partner's aggression is associated with increased depressive symptoms (Vaeth, Ramisetty-Mikler, & Caetano, 2010). It is possible that mothers' own aggression predicted the curvilinear trajectory because her inability to resolve conflict with her romantic partner in an amicable manner lead to lower levels of interpersonal self-efficacy, or the belief that she is able to be successful in her interpersonal relationships (Locke & Sadler, 2007), which is linked with depressive symptomology (Smith & Betz, 2002). That partner's avoidance, but not aggression, predicted the curvilinear trajectory is consistent with the perspective that husband's avoidance and withdrawal is particularly salient for wives' depressive symptoms (Koerner, Prince, & Jacobson, 1994).

This study addressed an important gap in the literature by identifying two trajectories of change in maternal depressive symptoms across the transition to parenthood and by identifying remembered parental care and acceptance and avoidance and aggression in romantic relationships as factors that predict differential trajectories of depressive symptoms over this transition. Despite its contribution, there are a number of important limitations. First, shared method variance may have inflated associations between the variables of interest. Future research should utilize a prospective longitudinal design and observational assessments of parental behavior rather than adult children's recollections; however, these types of longitudinal studies from childhood to adulthood are rare and difficult. Future research should also utilize observational assessments of romantic conflict resolution strategies and independent clinical ratings of depressive symptoms. The examination of adult attachment security would be advantageous as well because mothers who recall low parental care and acceptance may

experience a unique trajectory of change in depressive symptoms when they are secure in their representations of parental figures. Second, the relatively low-risk sample and small sample size are limitations. The most avoidant partners and distressed romantic relationships may not have been sampled. Future research should reexamine trajectories of change in maternal depressive symptoms utilizing a larger and more diverse sample. Third, given that only maternal depressive symptoms were considered in this study, future research should examine trajectories of change in paternal depressive symptoms in an effort to build on recent research demonstrating the relevance of close relationships for fathers' depressive symptoms (Don & Mickelson, 2012). It is possible that fluctuations in fathers' depressive symptoms across the transition to parenthood influence mothers' depressive symptoms and vice versa. Fourth, that the sociodemographic factors were not consistent predictors of trajectories of maternal depressive symptoms suggest that future research should examine the role of socioeconomic stress as it relates to trajectories of maternal depression given that previous research has demonstrated links between socioeconomic stress and maternal postpartum depression at single time points in the postpartum period (Beck, 2001). Finally, future research should utilize additional assessments of depressive symptoms between 1 and 6 months postpartum to better understand when in the first 6 months postpartum the honeymoon period typically abates.

Despite limitations, this study has important applied implications. First, results have implications about the timing of screening for maternal postpartum depression. Given that a group of mothers experienced temporary declines in depressive symptoms immediately following childbirth, it is important to assess depressive symptoms at multiple points in the postpartum period. Screening for maternal depression several months following childbirth may be critically important for those mothers who experience a temporary honeymoon period in the early postpartum period. Second, results may contribute to the development of screening tools that identify mothers in the prenatal period who may be at risk for heightened depressive symptoms at childbirth, and who may experience a honeymoon period in the early postpartum period. Such screening tools would allow practitioners to recognize mothers who would benefit from therapeutic intervention in preparation for the arrival of their first child. Assessing childhood experiences with parents and romantic conflict resolution styles in the prenatal period would aid in the identification of mothers who would benefit most from individual therapy to overcome family-of-origin experiences, as well as communication training and marital therapy, which has important implications for the experience of depression in the postpartum period (Shapiro & Gottman, 2005).

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