Journal of Affective Disorders 238 (2018) 465–471

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research paper

Maternal depressive symptoms, self-focus, and caregiving behavior

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ARTICLE INFO

Keywords:
Depression
Parent–child interactions
Self-focus
Psychological distancing

ABSTRACT

Background: Parent–child interactions set the stage for child mental health and development. Given that maternal depressive symptoms are associated with poorer observed caregiving behaviors, examining potential cognitive mediators is important for identifying mechanisms underlying the intergenerational transmission of risk and possible targets for intervention.

Methods: We assessed depressive symptoms and levels of self-focus and psychological distancing from infant-centered verbal narratives obtained from 54 mothers, and examined caregiving behaviors in a structured interaction with their six-month-old infants.

Results: Higher depressive symptoms were associated with pronoun use in narratives (i.e., greater "I" and reduced "we" use), reflecting increased self-focus and psychological distancing. Further, increased self-focus was associated with lower levels of caregiver warmth, and mediated the association between depressive symptoms and caregiving warmth.

Limitations: This observational study does not allow for causal interpretations.

Conclusion: These findings suggest that the cognitive styles associated with depression interfere with the caregiving relationship, affecting behavior in parent–child interactions that may increase the risk for the intergenerational transmission of depression.

1. Introduction

Major depressive disorder (MDD) is one of the most prevalent, recurrent, and burdensome of all psychiatric disorders, affecting 25% of women worldwide (Kessler et al., 2014). Depression has a significant intergenerational risk. Compared to children without a family history of depression, offspring of mothers who have experienced at least one depressive episode are three to six times more likely to develop depression themselves (Goodman et al., 2011; Goodman and Gotlib, 1999). In this context, researchers have found that 10–20% of new mothers experience clinically significant depression (Gavin et al., 2005; Wisner et al., 2013); many more experience subthreshold levels of the disorder. Given that depression can be measured along a continuum of symptoms, combined with the substantial evidence that depression in mothers is associated with less responsive caregiving (Goodman et al., 2017), high levels of depressive symptoms are likely to be associated with poorer caregiving even in unselected community samples.

Two forms of positive caregiving behaviors have been linked to child development outcomes: *sensitivity*, defined as contingent and appropriate responses to children's cues; and *warmth*, defined as positive and affectionate signals that are not necessarily contingent on children's cues (Lohaus et al., 2001). While these caregiver behaviors are typically correlated, there is evidence that each predicts unique developmental outcomes (Davidov and Grusec, 2006). Despite consistent findings that depression, including postnatal depression, is associated with negative cognitions (Gotlib and Joormann, 2010; Stein et al., 2012), there has been little work exploring maternal cognitions as a mediator between depression and the quality of caregiving behavior. The maladaptive cognitive styles that have been documented consistently in depressed adults, including increased self-focus and psychological distancing (i.e., individuation at the expense of a relational identity) (Grimm et al., 2009; Ingram and Smith, 1984; Ponizovsky et al., 2013), may reduce attunement to infant cues and/or caregivers' expressions of positive regard toward the infant. Indeed, one group of investigators found that inducing an internal focus among mothers reduced the quality of mother–infant interactions (Tester-Jones et al., 2016).

Although most researchers use self-report questionnaires to measure cognitive styles in depressed adults, it is not clear how best to assess self-focus and psychological distancing within the mother–infant dyad given social desirability demands and the potential inability of individuals to reflect accurately about these constructs generally, or specifically in their caregiving relationship. One alternative involves the use of narratives to obtain measures of self-focus and psychological distancing more implicitly. In this context, the Five Minute Speech

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https://doi.org/10.1016/j.jad.2018.05.072
Received 9 February 2018; Received in revised form 27 April 2018; Accepted 28 May 2018
Available online 08 June 2018

Sample (FMSS), in which caregivers provide an unstructured narrative about their child and their relationship with their child for five minutes without interruption, is commonly used to assess parents' expressed emotion (Sher-Censor, 2015). Importantly, however, FMSS narratives may also capture variation in child-relevant cognitions that cannot be measured using self-report. Specifically, using computerized text analysis of these narratives allows us to examine patterns in the use of particular pronouns that may reveal implicit depression-related cognitions that are associated with the appraisal of the child and with parent–child relational dynamics. Meta-analytic evidence indicates that depression is associated with first-person singular pronoun use (Edwards and Holtzman, 2017), and that both currently depressed and formerly depressed individuals use "I" more frequently than never-depressed individuals (Rude et al., 2004). Frequent usage of the first-person singular pronouns (i.e., "I") can index high levels of self-focus (Zimmermann et al., 2017); similarly, the use of third-person pronouns (i.e., "she" or "he") and first-person plural pronouns (i.e., "we") can signal greater or lesser psychological distancing, respectively (Fitzsimons and Kay, 2004). Case reports of speech patterns have provided insight about how low social integration, as indicated by less frequent use of first-person plural pronouns, may have contributed to suicide (Fernández-Cabana et al., 2013). In mothers of young infants, differences in the use of these pronouns in the context of talking about the infant may indicate broader difficulties with self-focus and psychological distancing that contribute to impaired behavior in the context of parent–child interactions.

We hypothesized that higher levels of depressive symptoms in mothers would be associated with increased self-focus, operationalized as a more frequent use of the pronoun "I" during the FMSS, and with higher levels of psychological distancing, operationalized as more frequent use of the pronouns "she/he" and less frequent use of the pronoun "we." We predicted further that levels of caregiver self-focus and psychological distancing would mediate the association between depressive symptoms and variation in observed caregiving behavior (i.e., lower sensitivity and warmth).

2. Methods

2.1. Participants

Participants were 54 mothers of six-month-old children recruited to take part in a study examining caregiving correlates of infant development. Participants ranged in age from 19.53 to 45.67 years (M = 34.86, SD = 4.52). With respect to ethnicity, 22% (n = 12) identified as Hispanic, 75% (n = 41) as non-Hispanic, and 2% (n = 1) did not provide a response. With respect to race, 65% (n = 35) identified as White, 20% (n = 11) as Asian, 13% (n = 7) as Other, and 2% (n = 1) as Native Hawaiian/Pacific Islander. Participants also reported on annual household income: 2% (n = 1) reported $15,000–$30,000, 11% (n = 6) reported $30,001–$60,000, 6% (n = 3) reported $60,001–$90,000, 20% (n = 11) reported $90,001–$150,000, 59% (n = 32) reported >$150,000, and 2% (n = 1) did not provide a response. Given that cost of living in Santa Clara county is among the highest in the nation (median gross income of $96,310; U.S. Census Bureau), an income to needs ratio (i.e., household income/Santa Clara county low income limit for the number of people in household) may better reflect socioeconomic status. Based on having an income-to-needs ratio <1, 21% of families in the sample were low-income.

The study was approved by the Stanford University Institutional Review Board; participants provided informed written consent for themselves and their infants. Participants were screened for initial inclusion/exclusion criteria through a telephone interview; potentially eligible individuals were then invited to the laboratory for in-person interviews and assessments. Participants were required to be fluent in English, to have an infant between the ages of 5–8 months, and to have no immediate plans to leave the geographical region. Exclusion criteria were bipolar disorder or psychosis, dyslexia or reading/visual processing problems, severe complications during infant delivery, premature birth (i.e., prior to 36 gestational weeks), infant injury/head trauma, and medical conditions.

2.2. Procedure

Participants visited the laboratory and completed a self-report measure of depressive symptoms, participated in the FMSS and in a dyadic interaction with their infant. Additional measures of infant functioning (e.g., stress reactivity and magnetic resonance imaging) are collected as part of the study protocol, but are not included in this manuscript. Participants were compensated for their time.

2.3. Measures

Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). This widely-used 20-item assessment of depressive symptoms was designed for use in a general population. Mothers were instructed to consider their past week and respond to items on a 4-point scale from 0 (*rarely or none of the time*) to 3 (*most or all of the time*), with higher scores representing greater symptoms of depression. Internal consistency of the CES-D in this sample was high (Cronbach's alpha = 0.91).

Five minute speech sample (FMSS; Magaña et al., 1986). The FMSS is frequently used to analyze expressed emotion of caregivers towards their child (e.g., Malla et al., 1991; Sher-Censor, 2015). In this study, the mother, her infant, and a research assistant were present in the room during the FMSS session. Mothers were instructed to speak for five minutes, without interruption, about their child, the kind of person their child is, and how the two of them get along. The mother was instructed to speak to the voice recorder. If the mother stopped speaking for a full 30 s before five minutes had elapsed, the research assistant prompted whether there was anything the mother wanted to add. If another 30 s elapsed in silence, the FMSS was ended early. Recordings were transcribed to text and reviewed for accuracy by a second rater.

*Repeated Still-Face Paradigm (*SFP-R; Haley and Stansbury, 2003; Tronick et al., 1978). Caregiving behavior was assessed using observational coding of maternal behaviors during the SFP-R, a parent–child interaction that reliably elicits child distress at age six months (Mesman et al., 2009). The SFP-R consists of five two-minute face-to-face interaction episodes between mother and child: (1) a baseline normal play episode; (2) the still-face episode in which mothers become unresponsive and maintain a neutral expression without touching their child; (3) a reunion episode in which mothers resume normal interaction; (4) a second still-face episode; and (5) a final reunion episode. During the play episode, mothers and infants engage in non-distress interaction, whereas during the reunion episodes, mothers are challenged to soothe their infants' distress. Thus, the SFP-R facilitates measurement of caregiving behavior across contexts that may elicit variation in maternal responses. The SFP-R was recorded, with separate cameras recording mother and infant. Recordings were then time-locked and divided into 30-s intervals in Datavyu (Datavyu Team, 2014). Using the infant adaptation of the Parent–Child Interaction Rating Scales (PCIRS-IA) (Bosquet Enlow et al., 2014; Sosinsky et al., 2004), one of two trained coders rated mothers' behavior during each 30-s interval across the play and reunion episodes of the SFP-R. Although the PCIRS-IA includes scales for multiple domains of maternal, child, and dyadic behaviors, the scales of interest to the present study were maternal *sensitivity* and maternal *positive regard* [i.e., warmth], with possible scores from 1 (*not at all characteristic*) to 7 (*very characteristic*). For final analyses, we computed the mean ratings of sensitivity and warmth across all 12 30-s intervals. To ensure reliability, 10% of the videos were randomly selected to be rated by both coders. Reliability at the level of mean ratings for sensitivity and warmth was

excellent (ICC = 0.97 and 0.90, respectively), as was internal consistency across the 12 30-s intervals (Cronbach's alpha = 0.96 and 0.95, respectively). Three participants did not complete the SFP due to infant noncompliance and are omitted from analyses involving caregiving quality.

2.4. Pronoun use

Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2015; Tausczik & Pennebaker, 2010). All FMSS were transcribed speech to text, removing filler words (e.g., "um") and sentences or phrases directed towards the research assistant or infant, and read into LIWC2015, an automated text analysis program. The LIWC2015 software processes text files by identifying target words in its dictionary. LIWC generated a summary file for each participant, including values for pronoun use by category (i.e., "I", "she/he", and "we" use) expressing the percentage of times the pronoun appears with respect to the total word count in the transcribed file.

2.5. Data analysis

Ordinary least squares regression was used to examine the association between depressive symptoms and pronoun use, with total word count used as a covariate. To test whether self-focus (i.e., "I" use) or psychological distancing (i.e., "she/he" or "we" use) mediated the association between depressive symptoms and caregiving quality, we conducted single-step mediation analyses separately for sensitivity and warmth using the PROCESS macro (Hayes, 2013) in SPSS, with use of "I" "she/he", and "we" included simultaneously as potential mediators. To assess the significance of the indirect effect, we implemented a nonparametric bootstrap procedure using sampling with replacement (n = 1000) and 95% bias correction, and calculated accelerated confidence intervals (CI) for coefficients. If the CI does not include zero, the indirect effect is considered statistically significant.

3. Results

3.1. Descriptive statistics

Table 1 presents a correlation matrix and descriptive statistics for depressive symptoms, FMSS word count and pronoun use, and caregiving behaviors. Depressive symptoms were associated with significantly higher word count, and thus, total word count was used as a covariate in all subsequent analyses, though results are unchanged with this covariate excluded. Depressive symptoms were also associated with more frequent use of "I" and less frequent "we" use, but were unrelated to "she/he" use (see Fig. 1). Use of "she/he" and "we" were significantly inversely related, indicating that these are opposing markers of psychological distancing. Contrary to expectations, depressive symptoms were not significantly correlated with caregiving behaviors. Use of the pronoun "I" was associated with significantly lower observed caregiving warmth (see Fig. 2).

3.2. Hierarchical linear regression

Given the significant association between depressive symptoms and word count, we conducted a stepwise linear regression with word count on Step 1 and depressive symptoms on Step 2 to examine whether depression predicted self-focus over and above total word count. Word count was not related to "I" use (B = −0.001, 95% CI [−0.01, 0.004], β = −0.04, $t(52)$ = −0.26, p = .796, R^2 = 0.001), but depressive symptoms were significantly associated with greater "I" use (B = 0.10, 95% CI [0.03, 0.17], β = 0.43, $t(51)$ = 3.01, p = .004, ΔR^2 = 0.15). Neither word count (B = −0.003, 95% CI [−0.01, 0.003], β = −0.14, $t(52)$ = −1.30, p = .306, ΔR^2 = 0.02) nor depressive symptoms (B = 0.06, 95% CI [−0.05, 0.17], β = 0.29, $t(51)$ = 1.07, p = .291, ΔR^2 = 0.02) were associated with "she/he" use. "We" use in the FMSS was not significantly associated with word count (B < 0.001, 95% CI [−0.002, 0.002], β = −0.01, $t(52)$ = −0.10, p = .922, R^2 < 0.001), but was negatively associated with depressive symptoms (B = −0.05, 95% CI [−0.09, −0.01], β = −0.35, $t(51)$ = −2.39, p = .021, ΔR^2 = 0.10).

3.3. Mediation analyses

We tested the prediction that self-focus and psychological distancing mediated the association between depressive symptoms and caregiving quality. Given that "I" use predicted 11% of the variance in warmth over and above word count, B = −0.11, 95% CI [−0.20, −0.02], β = −0.36, $t(48)$ = −2.49, p = .016, the mediation model most likely to meet statistical significance involved depressive symptoms, "I" use, and warmth. Nevertheless, we conducted analyses for both sensitivity and warmth, including all potential mediators simultaneously.

First, we examined maternal sensitivity, using a single-step mediation with word count as a covariate and three potential mediators (i.e., "I", "she/he", and "we" use). There was no significant direct effect of depressive symptoms on sensitivity (B = 0.01, 95%CI [−0.03, 0.04], p = .776). None of the pronouns significantly mediated the association between depression and sensitivity (indirect effect = −0.02, 95% CI [−0.04, 0.01] for "I," −0.003, 95% CI [−0.02, 0.002] for "she/he," and 0.01, 95% CI [−0.002, 0.03] for "we"). For observed caregiver warmth, again using a single-step mediation with word count as a covariate, there was no significant direct effect of depressive symptoms (B = 0.001, 95%CI [−0.02, 0.02], p = .904). Pronoun use metrics were considered as potential mediators: whereas "I" use significantly mediated the association between depression and warmth (indirect effect = −0.02, 95% CI [−0.04, −0.005]), "she/he" (indirect effect = −0.004, 95% CI [−0.02, 0.002]) and "we" use did not (indirect effect = 0.007, 95% CI [−0.0004, 0.02]).

4. Discussion

We examined depressive symptoms, cognitive styles, and caregiving

Table 1
Correlation matrix and descriptive statistics for study variables.

	Depression symptoms	Word count	"I" use	"She/He" use	"We" use	Observed sensitivity	Observed warmth
Depression symptoms	1						
Word count	0.44***	1					
"I" use	0.33*	−0.04	1				
"She/He" use	0.07	−0.14	−0.10	1			
"We" use	−0.29*	−0.01	−0.24	−0.45***	1		
Observed sensitivity	−0.32	0.14	−0.22	0.01	−0.11	1	
Observed warmth	−0.12	−0.06	−0.34*	−0.11	−0.01	0.54***	1
Mean	10.03	575.26	4.12	9.44	1.92	4.13	5.39
SD	9.23	147.12	2.17	3.33	1.25	1.03	0.68
Range	0–34	165–993	0.38–9.71	0.15–16.59	0.00–6.31	1.83–5.92	3.04–6.55

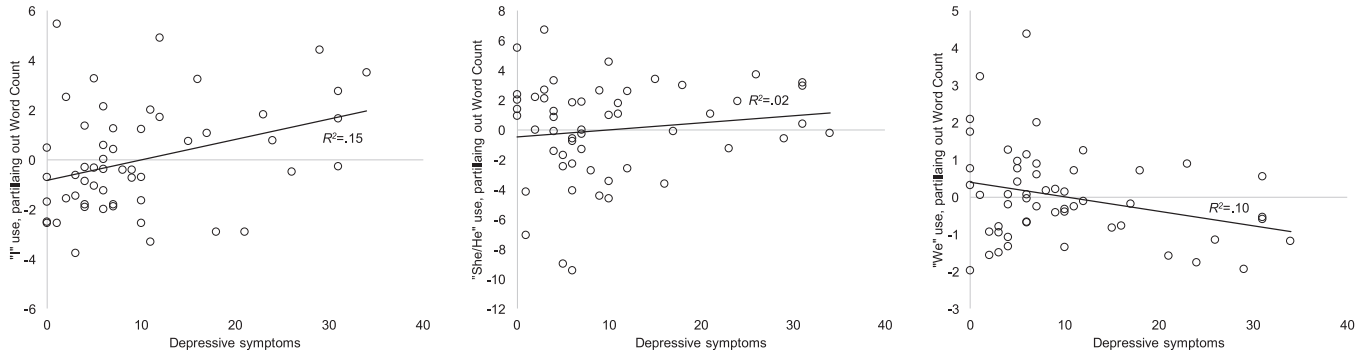

Fig. 1. Pronoun use (i.e., "I", "she/he", and "we"), partialling out the effect of total Word Count, by mother's depressive symptoms.

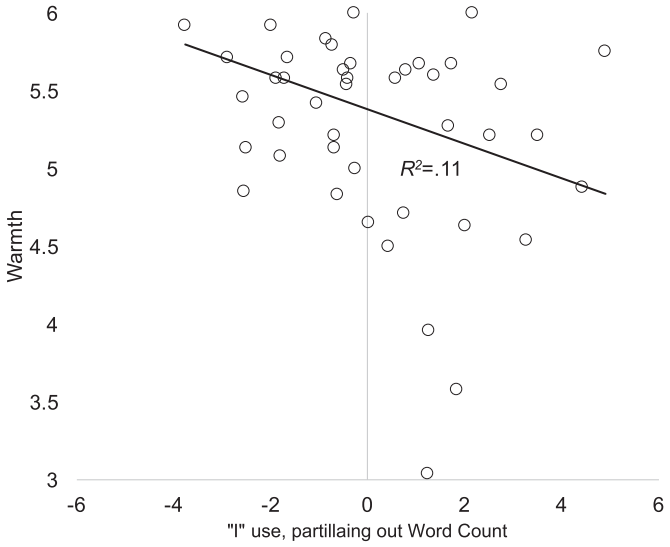

Fig. 2. Warmth as a function of "I" use, partialling out the effect of total Word Count.

behavior in a sample of 54 mothers of six-month-old infants. Our findings indicate that mothers' depressive symptoms are associated with greater self-focus and psychological distancing in narratives about infants and the mother–infant relationship. Further, mothers who were found to have higher levels of self-focus, as indexed by use of the pronoun "I", displayed lower levels of observed caregiver warmth in an interaction with infants, and this tendency mediated the association between depressive symptoms and caregiver warmth.

While meta-analytic evidence indicates that depression in the postnatal period is associated with more negative parent–child interactions (Beck, 1995), there is substantial variability among depressed individuals in the nature and quality of their caregiving behaviors (Field et al., 2001). This heterogeneity may be related to different symptom profiles that result in the same diagnosis or total symptom score. In particular, depressed mothers with maladaptive cognitive styles may be at especially high risk for engaging in maladaptive caregiving behaviors. Beck (1995) posited that depressed mother's cognitive styles interfere with reading positive cues from infants, which in turn limits their enjoyment of, and perhaps, their connection to their infant.

Findings of negative attentional biases in individuals with depression (Gotlib and Joormann, 2010), as well as depressed mothers' preferential allocation of attention toward mood-congruent stimuli (Stein et al., 2012) are consistent with this formulation. Thus, self-focused tendencies related to depression, including maternal preoccupation with negative mood, may result in a bias to miss positive infant cues, reducing dyadic patterns of shared warmth and reward (Stein et al., 2009). Personality traits, such as narcissism, have also been linked to pronoun use consistent with a self-focus. For example, Raskin and Shaw (1988) examined pronoun use among 48 adults who engaged in a 5-min narrative about any topic, and found that narcissism was associated with greater first-person pronoun use and reduced first-person plural pronoun use. Given that depression symptoms and narcissistic traits are moderately positively correlated (Dawood and Pincus, 2018), future work should consider the possible unique and interactive effects of parents' depression and narcissism and their impact on parent–child relationships.

Biased cognitions in the context of the parent–child relationship, including self-focus, are likely to affect caregivers' internal working models of children (i.e., cognitive framework comprising mental representations for understanding others; Bowlby, 1969). Mothers' mental representation of their child is an important predictor of attachment, even when assessed prenatally (Benoit et al., 1997a), suggesting that mothers do not simply respond to their infant's temperament, but bring problematic cognitive styles into the caregiving relationship. While we postulated that a relational frame, as indicated by first–personal plural pronouns, would be associated with caregiver sensitivity and warmth, it is important to consider how mind–mindedness (Meins, 1997) or caregivers' reflections on their child's mental states (Fonagy et al., 1991) may be relevant to this approach. Six-month-old infants whose caregivers indicated that they see their infant as a being with a mental life of their own, characterized by intentions that are separable from those of the caregiver, have greater attachment security as assessed prospectively by the Strange Situation Procedure at 12 months (Meins et al., 2001). Thus, sensitive caregiving may be characterized by a relational frame, but also by an explicit acknowledgment that the infant is an autonomous actor with thoughts, feelings, and capacities. Interestingly, Rosenblum et al. (2002) found that caregiver positive affect mediated the association between internal working models of their infants and the infant's own emotional expression, indicating that such maternal mental representations are associated not only with caregiving behavior, but also with infant behavior.

From the first months of life infants are sensitive to the quality of maternal care (Cohn and Tronick, 1983). Further, variations in quality of caregiving affect child outcomes. Indeed, compared to infants of nondepressed mothers, infants of depressed mothers are less social, have poorer regulation, and display greater negative emotionality on average (Feldman et al., 2009). The nature of transmission of dysfunction from mother to infant, however, is not well understood. One possibility is that one's emotional repertoire is learned by the emotional tone that is set in early dyadic interactions (Kogan and Carter, 1996). Depression in mothers has been found to be associated with more time in negative, and less time in positive, shared behavioral states, as well as with reduced emotional availability (Field, 1994). Reports of emotional neglect experienced during childhood, including perceptions of parental emotional availability and involvement, are more strongly

associated with depressive symptoms in adulthood than are other forms of child maltreatment (Humphreys et al., 2018; Infurna et al., 2016; Mandelli et al., 2015; Nelson et al., 2017). Compared to other forms of maltreatment (i.e., physical and sexual abuse), emotional neglect has been found to be uniquely associated with anhedonia (Van Veen et al., 2013), suggesting that low caregiver warmth sets into motion a cascade of experiences that contributes to offsprings' risk for depression, and may be one explanation for the strong intergenerational transmission of depression.

We examined two metrics of caregiving behavior: sensitivity and warmth. Ratings of warmth and sensitivity are often combined, along with other caregiving metrics, to create a single measure of caregiving quality (e.g., Conradt and Ablow, 2010). This practice prevents us from examining the potential differential associations between caregiver characteristics and diverse forms of positive caregiving behavior. Although correlated, the degree of association among caregiver characteristics appears to depend at least in part on infant mood (Lohaus et al., 2001). Our findings support other research indicating that sensitivity (particularly to infant distress) and warmth are not interchangeable (Davidov and Grusec, 2006). Sensitivity and warmth may affect different child behaviors (Grusec et al., 2000; MacDonald, 1992). Whereas sensitivity may be uniquely related to children's internalization of values, trusting of parents (Davidov and Grusec, 2006; Grusec et al., 2000), and empathy towards others (Humphreys et al., 2015), warmth has been linked to better regulation of children's positive affect and peer acceptance (Davidov and Grusec, 2006), which could affect risk for subsequent depression.

While the present study provides evidence of an association between first-person pronoun use and caregiver warmth, the associations between pronoun use and caregiver sensitivity were not supported. It is possible that metrics that are most predictive of caregiver sensitivity, including maternal insightfulness or mind-mindedness (Koren-Karie et al., 2002; Meins, 1997; Oppenheim and Koren-Karie, 2009), are not captured using the simplistic marker of pronoun use. Higher-order representations that infants have their own thoughts and feelings may require a balance of third-person and first-person plural pronouns (e.g., "she especially likes it when we sing together"). Both first-person plural and third-person pronouns may provide useful metrics for the parent-child relationship: the former may indicate "joining" with the child, whereas the latter may be a marker of seeing the child as separate with needs that are not the same as those of the mother. Engaging in perspective-taking and, further, developing an empathic understanding of the child, requires a degree of psychological distance; yet, the intensity of caregiver involvement (e.g., being "engrossed in the relationship with the infant;" see working model of the child interview; Benoit et al., 1997b) is associated with balanced representations of infants and subsequent secure attachments with children (Benoit et al., 1997a). Although being engrossed is an important feature of the caregiver's approach to the relationship with the infant, mothers' mental representations of caregiving that include a flexible integration of the self, child, *and* relationship are characterized as high on the "secure base" scale, and also predict attachment (George and Solomon, 1996; Solomon and George, 2008).

We should note three limitations of this study. First, as we indicated above, we attempted to select a sample that varied in depressive symptomatology; as a result, this is not a high-risk psychiatric sample. As a related point, the socioeconomic status of participants was high, on average, limiting generalizability. Second, given the cross-sectional nature of the data, we are not able to make causal determinations. Thus, it will be important to extend this research by studying higher-risk samples, including participants who are selected on the basis of a diagnosis of MDD and following them prospectively from pregnancy. Text analyses of posts from Twitter have already been used both to examine individual differences in mood change across the peripartum period (De Choudhury et al., 2013), and to classify MDD (with approximately 70% accuracy; De Choudhury and Gamon, 2013). By prospectively following women from pregnancy, we can investigate how the child's behavioral development from birth influences parent behavior; indeed, the bidirectional relations among mother and infant cues must be considered in understanding the longer-term behavioral implications of observed caregiving behaviors, as children may be more or less likely to elicit specific parenting behaviors based on their temperament (Dunn, 2010). Finally, although we have conceptualized self-focus as negative, particularly in the context of a narrative prompt that is designed to elicit responses about the child and the parent–child relationship, it is possible that thoughtful, ruminative self-focus could reduce negative mood (Huffziger and Kuehner, 2009). Outside of the use of pronouns, metrics that disentangle helpful from unhelpful self-focus tendencies, as well as a broader consideration of depression-related speech patterns (see Resnik et al., 2015), may be useful for clarifying targets for intervention.

In conclusion, our results provide preliminary support that maternal cognitive styles, particularly self-focus and psychological distancing are associated with depressive symptoms. Moreover, self-focus tendencies are associated with less positive observed caregiving behavior, specifically with lower caregiving warmth during interactions between mothers and their six-month-old infants. Interventions that target improving caregivers' relational focus, such as infant–parent psychotherapy (Lieberman et al., 2000), may reduce self-focus and improve the caregiving experiences of infants and young children, particularly those at high risk for depression and other negative outcomes by virtue of the negative cognitive styles of their caregivers.

Conflict of interest

All authors declare that they have no conflicts of interest.

Contributors

K.L.H., L.S.K., and I.H.G. developed the study concept and design. K.L.H. performed the data analysis and interpretation under the supervision of I.H.G. K.L.H. and P.C. drafted the paper, and L.S.K. and I.H.G. provided critical revisions. All authors approved the final version of the paper for submission.

Funding

Funding for this study was provided by the National Institutes of Health (IHG, R21 MH111978; IHG, and F32 MH107129; KLH); the Brain and Behavior Research Foundation (Young Investigator Award 23819; KLH); the National Science Foundation (LSK); and Klingenstein Third Generation Foundation (KLH). These funding sources had no role in the design of this study or during its execution, analyses, interpretation of the data, or decision to submit results for publication.

Acknowledgments

The authors thank study participants. In addition, the authors thank Maanasa Gade, Mia Letterie, Olivia Mitchel, Marissa Roth, Megan Strickland, and Vivian Vu for their assistance in data collection and processing.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jad.2018.05.072.

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