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Adrienne Jensen

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by

Adrienne Jensen

A thesis submitted in partial fulfillment of the requirements
for graduation with Honors in the Psychology

Grazyna Kochanska
Thesis Mentor

Spring 2018

All requirements for graduation with Honors in the
Psychology have been completed.

J. Toby Mordkoff
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This thesis has been reviewed and approved.

Grazyna Kochanska
Thesis Advisor

Kathryn C. Goffin
Second Reader

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Abstract

Because of the critical importance of the child's early attachment security with the parents for future social-emotional development, research on factors that contribute to emerging security continues to flourish. Very few studies, however, have included mothers and fathers, and little is known about possible differences in determinants of security with each parent. We examined parental depression and mind-mindedness (MM) as predictors of children's attachment security with their mothers and fathers in a community sample of 102 families, followed longitudinally. When children were 7 months, mothers and fathers completed the Beck Depression Inventory and their MM was assessed by coding their spontaneous comments to the infant during a naturalistic situation (a snack). Comments referring to the child's internal states were classified as MM. When children were 25 months, trained observers assessed the child's security with each parent by completing the Attachment Q-Set (AQS), based on observations of lengthy interactions. For mother-child dyads, maternal depression, but not MM comments, predicted children's attachment security, whereas for father-child dyads, fathers' MM comments, but not depression scores, predicted security. The findings highlight potential differences in predictors of security emerging in mother- and father-child dyads.

Keywords: Mind-mindedness, depression, attachment security, longitudinal studies

Relations among Parents' Mind-Mindedness and Depression in Infancy, and Children's Attachment Security at Age 2

An early-emerging affectional bond between the parent and the young child has long been a main subject of interest for developmental psychologists. Scholars representing diverse theoretical perspectives – psychoanalytic, learning, cognitive – have all offered their accounts of young children's attachment. Attachment clearly coalesces around a preferred caregiver (the attachment figure) around age 1. Bowlby's ethological theory of attachment has revolutionized our understanding of that process and has since been a powerful source of countless studies (Ainsworth & Bowlby, 1991; Bowlby, 1969/1982, 1973).

The importance of a secure early relationship between the child and the caregiver is well established, and its implications are widespread and noteworthy. By developing a secure base with the preferred caregiver, the child, through the parent's demonstrated availability and protection, feels confident to learn and explore the world. The child becomes comfortable navigating the physical and social environment on his or her own, developing knowledge and skills and increasing their independence. As well, having a safe haven in the caregiver who reliably comforts and protects the child, the child becomes able to regulate stress and negative emotions (fear, distress) in an adaptive manner. Those developmental tasks are much more difficult for a child who has not developed a secure base and safe haven with their caregiver, ultimately hindering the child's ability to explore and learn from the world around them and undermining emotion regulation (Ainsworth & Bowlby, 1991).

As Bowlby's theory became broadly accepted, interest has grown in predictors of secure vs. insecure attachment. Multiple factors have been implicated in that process, associated both with the child and the parent, but the latter factors have been generally considered key. It is

generally believed that parents who provide sensitive, responsive care, accurately read the child's signals, and are affectively expressive and emotionally available are better able to promote the child's security. Consequently, scholars have become strongly interested in factors that contribute to differences in parents' capacity and willingness to be responsive, sensitive caregivers (Belsky & Jaffe, 2006; Pasco Fearon & Belsky, 2016; Thompson, 2006).

Whereas multiple such factors have been studied, parental depression during the child's infancy is one of the most clearly recognized risks for insecure attachment. A very large literature has supported such risks. Parents who experience depressive symptoms, such as pessimism, sense of failure, irritability, downcast mood, hopelessness, fatigue, exhaustion, and anhedonia have difficulty engaging in caregiving and parenting that promotes early security (Beck, Steer, & Garbin, 1988). Depressed parents have been found to be less responsive, less emotionally available, less sensitive, and less expressive than parents who are not depressed. Patterns of caregiving associated with depression influence the parent-child emerging bond, and further lead to an increased prevalence of insecure parent-child attachment (Cummings & Davies, 1994).

One substantial limitation of that literature is the fact that most of the studies on parental depression and children's security have been conducted with mothers. We know much less about fathers' depression and its effects on their caregiving and infants' and toddlers security. To examine the links between mothers' and fathers' self-reported depression when their children were infants and children's security at age 2 was the first goal of this study.

The second goal was to examine the role of parental mind-mindedness (MM). Recently, interests in MM have skyrocketed in clinical, social, and developmental psychology. MM is described as the parent's ability to treat an infant as a psychological being, and to understand and

appreciate the infant's internal states, such as emotions, likes and dislikes, cognitions, and motivations as factors underlying observable behaviors. In general, MM refers to the parent's willingness and ability to perceive the infant as a psychological agent with a mind of his or her own (Meins, 2013). Parents' MM has been found to be particularly important in infancy, as it helps parents to be in tune with their infant's mental states, promotes their capacity to read the child's signals accurately and provide responsive care, and consequently, promote security (McMahon & Bernier, 2017).

There are several strategies to study parents' MM, including observations, interviews, and questionnaires. In infancy, the coding of parents' spontaneous comments directed to the child is the methodological "gold standard." First transcribed verbatim, those comments are coded for the presence of references to the infant's mental states. Often they are further coded for their appropriateness, or degree of attunement with the child's emotions, internal states, or experience (McMahon & Bernier, 2017).

Parents' depressive symptoms, as well as their MM, have been studied individually as factors relating to attachment patterns parents form with their children. However, relatively little research has considered the two constructs together in the context of child attachment. The sparse extant research indicates that depression is associated with impairments in parental MM (McMahon & Bernier, 2017; Meins, 2017). In fact, almost all of the research on parental MM has been conducted with mothers.

In summary, in this study, we examined relations among parental depression, their MM comments during interactions with their infants, and children's attachment security at age 2. Parental depression was assessed using a well-established self-report questionnaire (Beck et al., 1988) and MM was observed during an 8-minute naturalistic interaction between the parent and

the child (the parent prepared and fed the infant a snack). Attachment security was measured using Attachment Q-Set (AQS, Waters, 1987). Trained observers performed the sort, given that observers' ratings are superior to those performed by parents (van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004).

We collected all data from mother-and father-child dyads. This is a strength of this study, given the dearth of information on fathers in research on social-emotional development. Scholars have continued to urge the scientific community to follow models of data collection in which parallel data are gathered from both parents, to the extent possible (Cabrera, Volling, & Barr, 2018).

Method

Participants

Two-parent community families with typically developing infants ($N= 102$, 51 girls) volunteered for a longitudinal study by responding to advertisements in a Midwestern college town and several surrounding counties. To be eligible, both biological parents had to be willing to participate, had to be living together, with no plans to move in the next five years, and able to speak English during observational sessions. The parents varied in education levels, with approximately 25% of mothers having a high school education or less, 54% having an associate or college degree, and 21% having a postgraduate education. Among fathers, the respective figures were 30%, 51%, and 20%. In terms of the annual family income, 8% earned less than \$20,000, 17% earned \$20,000-\$40,000, 26% earned \$40,000-\$60,000, and 49% of families earned over \$60,000. Regarding ethnicity, 90% of mothers and 84% of fathers were white; 3% of mothers and 8% of fathers were Hispanic; 2% of mothers and 3% of fathers were African

American; 1% of mothers and 3% of fathers were Asian; and 3% of mothers and 2% of fathers were listed as other non-white. In 20% of families, one or both parents were non-White.

The families participated in multiple waves of assessments, beginning when the child was 7 months. In this paper, data from the assessments at 7 and 25 months are reported. At each time, there were two lengthy (2-3-hour long) sessions, one for the mother-child dyad and one for the father-child dyad. The sessions at 7 months were at home, and at 25 months in the laboratory. All sessions were conducted by female experimenters and videotaped for future coding.

Measures

Parental Mind-Mindedness (MM) at 7 Months.

Observed context and coding. We observed each parent-child dyad in an 8-min context of snack. This context was defined in a standard manner to all families. To begin, the parent was asked to take the infant to the kitchen and feed him or her a snack. The goal of this paradigm was to provide a context of a natural activity for parents and children to engage in together.

The approach to coding was modeled after Meins and Fernyhough's (2015), with slight adaptations. Parental speech directed to the infant during the snack context was first transcribed verbatim. Coders transcribed every utterance made by the parent to the child. Each utterance was written in a single line. A new utterance was started after 1 sec elapsed or when the parent introduced a new content. Reliability on the parsing speech into utterances, intraclass correlation coefficients (ICCs), across several teams of coders, ranged from .74 to .96.

Next, each utterance was coded as either mind-minded, MM (one of 7 categories, e.g., desire and preferences, cognitions, emotions, talking on the infant's behalf), or not MM (e.g., command, comment about an object or event). Reliability for the judgment MM vs. non-MM,

kappas, across several teams, ranged from .96 to .99. To prevent coder drift, the coders realigned periodically. The tally of MM comments for each parent was used in the analyses.

Parental Depression at 7 months.

Both parents completed the Beck Depression Inventory (BDI, Beck et al., 1988), comprised of 21 different symptoms often experienced during a depressed state. Parents were asked to rate themselves on each symptom, using a scale from 0 to 3, with a score of 3 being the most severe. The scores on all items were added. Mothers' scores were higher than fathers', $t(101) = 4.28, p < .001$, a typical finding, consistent with different rates of occurrence of depression in women and men.

Children's Attachment Organization with Parents at 25 Months.

Highly trained observers completed AQS (Waters, 1987), having observed the child throughout the entire session (with each parent) in the laboratory (Boldt, Kochanska, Yoon, & Koenig Nordling, 2014). They sorted 90 cards into three different piles (characteristic, somewhat characteristic, and uncharacteristic of the child), and then further into nine piles, comprised of 10 cards each, which ranged from the most uncharacteristic (a score of 1) to most characteristic of the child (a score of 9). The observer's sorting of the cards for each child was correlated with the sort that represented the "ideal secure child" and finally transformed, using r-to-z transformation. Reliability between the observers, ICC, was .85. Descriptive data for all measures are in Table 1.

Insert Table 1 about here

Results

Preliminary Analyses

First, we examined the potential differences in MM comments made by mothers and fathers, and received by girls vs. boys. A mixed-design ANOVA, with child Gender (2 levels, girls vs. boys) as the between-subject factor and Parent (2 levels, mother vs. father) as the within-subject factor was conducted. The main effect of child Gender was not significant, $F(1, 97) < 1$. There was, however, the main effect of Parent, $F(1, 97) = 10.08, p < .0025$. The interaction of Gender and Parent was not significant, $F(1,97) < 1$. We followed up on the significant effect of Parent to determine the direction of the differences. A paired samples t-test indicated that mothers produced more MM comments than fathers, $t(98) = 3.12, p < .0025$; mothers, $M = 9.05, SD = 5.7$, fathers, $M = 6.75, SD = 6.32$.

Next, we examined the correlations among the constructs. As seen in Table 2, the relations were not parallel for both parents. Mothers' depression scores were negatively related with the number of their MM comments and with the children's future security. Fathers' depression scores, however, were unrelated to their MM comments or the child's security. Mothers' MM comments were unrelated to the child's security, but fathers' MM comments were associated positively with security.

In terms of correlations across parents, the number of MM comments made by mothers and fathers were positively related. Children's security scores at age 2 with both parents were also positively related. Parents' depression scores were unrelated.

 Insert Table 2 about here

Main Analyses of Relations among Parental MM, BDI, and Children's Attachment

Security

We conducted hierarchical multiple regressions, separately for mother-child and father-child dyads. In the first step, child gender was entered; in the second step, the BDI and the MM scores were added, as shown in Table 3 (mother-child dyads) and Table 4 (father-child dyads).

Insert Tables 3 and 4 about here

Mother-child dyads. The analyses of the mother-child dyads show a significant main effect of child gender on attachment, which remained significant in the final equation. Girls had higher security scores, $M = .34$, $SD = .25$ than boys, $M = .24$, $SD = .22$. Furthermore, mothers' depression had a main effect on child attachment security at 25 months; children of more depressed mothers were less secure. Mothers' MM comments did not explain significant variance in child security. The overall equation was significant.

Father-child dyads. Child gender had a significant main effect, which remained significant in the final equation. Girls had higher security scores, $M = .34$, $SD = .22$ than boys, $M = .23$, $SD = .20$. Fathers' MM comments also had a main effect; children of fathers who produced more MM comments when addressing them at 7 months were more secure with the fathers at age 2. There was no effect of fathers' depression scores on child security. The final equation was significant.

Discussion

This study makes a contribution to the growing evidence and research that pertain to childhood developmental psychology, and even more specifically, to children's attachment

security. By examining parental MM, as well as parental depressive symptoms, we were able to study their influence on the unique and special bond between a child and their caregiver. Of note, we studied those effects over the span of almost two years, with depression and MM measured at 7 months and children's attachment security at age 2. MM and attachment were assessed using labor-intensive observational measures.

Whereas both parental depression and MM were predictive of children's attachment security, interestingly enough, the patterns of prediction and correlations among constructs were different for mother- and father-child dyads. We found significant relations between mothers' depressive symptoms and their MM, and between those symptoms and child security. These results dovetail with similar findings in the literature; the profound effects of maternal depression on attachment security are well established (Atkinson et al., 2000). Our relatively new contribution was to demonstrate a significant link between maternal depression and lower MM, shown in the interactions with the infants. Most likely, this is due to depression being associated with self-focus, withdrawal from social interaction, fatigue, reduced energy level, and other symptoms that undermine mothers' ability to engage with the baby. Somewhat surprisingly, maternal MM did not predict security.

Patterns of relations were different for fathers and children. In those dyads, paternal depression was unrelated to MM and security. Perhaps this was due to the generally lower levels of depression scores among fathers, compared to mothers. However, fathers' higher MM scores predicted children's higher security at age 2. This finding is a significant addition to the literature, as research on fathers' MM is extremely limited. Whereas potential importance of security in father-child dyads and the influence of MM on security are noted in the current literature, and specifically highlighted in some studies (Zeegers, Colonnese, Stam, & Meins,

2017), research is very sparse. Our results shed light on the need to continue to study fathers and children and the possibly distinct developmental paths to children's emerging attachment security with mothers and with fathers (Thompson, 2006).

This study has limitations. The fact that our design was correlational and not experimental constrains our ability to draw causal inferences. Consequently, the findings need to be interpreted with caution. Additionally, our sample included two-parent community families. The parents' depression levels were generally low, and their interactions with their children were overall highly engaged and positive. Although 20% of the families included a non-White parent, ethnic diversity was limited. Consequently, our ability to generalize our findings to other populations is limited. In future research, it would be highly desirable to recruit more diverse families, parents with clinical levels of psychopathology, and at-risk families, coping with multiple stresses, to elucidate the studied processes in less typical and more challenging circumstances.

Despite those limitations, however, we believe this study's contributions are noteworthy; in particular, the longitudinal design and labor-intensive observational data are the strengths. Perhaps most importantly, parallel data from mothers and fathers make this study unique. The quality of attachment between the mother and the child, as well as the father and the child is, undoubtedly, one of the most interesting and exciting topics in the field of developmental psychology. Understanding factors that promote or undermine those emerging bonds continues to be an important goal for developmental psychology.

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Table 1

Descriptive Data for All Measures.

Construct	<i>M</i>	<i>SD</i>	Range	N
<hr/>				
Mother-Child				
BDI	5.99	4.45	0-20	102
MM Utterances	9.21	5.73	0-25	101
AQS with Mother	.29	.24	-.46-.79	100
Father-Child				
BDI	3.77	3.28	0-16	102
MM Utterances	6.72	6.29	0-44	100
AQS with Father	.28	.22	-.25-.77	100

BDI= Beck Depression Inventory. MM= Mind-minded. AQS= Attachment Q-Set.

Table 2

Intercorrelations Among the Constructs.

	Mother-Child			Father-Child		
BDI	MM to C	C AQS with M	BDI	MM to C	C AQS with F	
<hr/>						
Mother-Child						
BDI	---	-.21*	-.32***	.11	-.17+	-.18+
MM to C		---	.10	.02	.28***	.19+
C AQS with M			---	-.05	.21*	.72*****
Father-Child						
BDI				---	-.05	.05
MM to C					---	.29***

+ $p < .10$. * $p < .05$. ** $p < .025$. *** $p < .01$. ***** $p < .001$.

BDI= Beck Depression Inventory. MM= Mind-minded utterances. AQS= Attachment Q-Set (security score). M=Mother. F= Father. C= Child.

Table 3

Maternal Depression and Mind-Minded Utterances at 7 Months as Predictors of Child Attachment Security with Mothers at 25 Months.

Step and Predictor (s)	Step 1		Step 2	
	<i>F</i>	<i>Beta</i>	<i>F</i>	<i>Beta</i>
1. Child Gender	4.50*	-.21	4.20*	-.20
	$R^2 = .04$	$F_{ch} = 4.50^*$		
2. BDI			10.04***	-.31
MM			.14	.04
			$R^2 = .15$	$F_{ch} = 5.57$
			$F(3,95) = 5.36^{***}$	

+ $p < .10$. * $p < .05$. ** $p < .025$. *** $p < .01$. **** $p < .001$.

BDI= Beck Depression Inventory. MM= Mind-minded utterances.

Table 4

*Paternal Depression and Mind-Minded Utterances at 7 Months as Predictors of Child**Attachment Security with Fathers at 25 Months.*

Step and Predictor (s)	Step 1		Step 2	
	<i>F</i>	<i>Beta</i>	<i>F</i>	<i>Beta</i>
1. Child Gender	6.97**	-.26	6.06**	-.24
	$R^2 = .07$	$F_{ch} = 6.97^{**}$		
2. BDI			<1	.06
MM			8.28***	.28
			$R^2 = .15$	$F_{ch} = 4.24^{**}$
			$F(3,94) = 5.39^{***}$	

+ $p < .10$. * $p < .05$. ** $p < .025$. *** $p < .01$. **** $p < .001$

BDI= Beck Depression Inventory. MM= Mind-minded utterances.