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Brief Report

Self-reported romantic attachment style predicts everyday maternal caregiving behavior at home

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ABSTRACT

Although numerous studies examined how individual differences in mothers' discourse about their early attachment experiences are associated with their caregiving behaviors toward their children, research examining how self-reported romantic attachment style is associated with maternal caregiving has been very limited. To help fill this gap, we examined whether self-reported romantic attachment style is associated with maternal caregiving behaviors observed in home settings. Mother–child interactions were observed for three hours and the mothers completed measures of attachment style and child temperament. Results indicated that attachment-related avoidance, but not attachment-related anxiety, was negatively associated with global maternal sensitivity, after controlling for the child's temperament. Consistent with the propositions of attachment theory, both attachment-related avoidance and anxiety were associated with specific caregiving themes.

1. Introduction

In his attachment theory, Bowlby (1988) argued that human infants are equipped with an attachment behavioral system regulating proximity seeking behaviors toward the parents. He proposed that parents' responses to the infant were also guided by a behavioral system—the caregiving system. Furthermore, according to Bowlby, the functioning of the parent's caregiving system is affected by the parent's own attachment experiences. Although Bowlby mainly focused on the attachment system, his ideas about interrelated behavioral systems inspired his successors. Research examining the relationship between adult attachment style and caregiving behavior evolved in two relatively distinct directions. In one direction, led primarily by developmental and clinical psychologists, the focus has been on understanding how adults' "state of mind with respect to attachment" assessed by the Adult Attachment Interview (AAI; Main, Kaplan, & Cassidy, 1985) relates to the quality of caregiving toward their children (e.g., Adam, Gunnar, & Tanaka, 2004; Crowell & Feldman, 1989). In the other direction, made up of social and personality psychologists, the focus has been on understanding how self-reported attachment style is related to caregiving behaviors toward romantic partners (e.g., Feeney & Collins, 2001). The question of whether measures traditionally used to study the nature of a particular type of attachment relationship (e.g., romantic) could predict outcomes in another type of attachment relationship (e.g., parent–child) has been hardly studied. To help fill this gap, the aim of the present study was to investigate whether self-reported adult romantic attachment predicts everyday maternal caregiving behaviors in the home context.

Studies examining whether parents' (usually mothers') attachment style predicts the quality of their caregiving behaviors toward their child mostly used the AAI. The AAI captures variation in the organization of adults' discourse when talking about their own early childhood experiences (Main et al., 1985). A *secure* state of mind is characterized by a coherent discourse, a *dismissing* state of mind is characterized by idealizing or derogating parents without being able to provide relevant memories, and a *preoccupied* state of mind is characterized by excessive emotional involvement and preoccupation about childhood experiences with parents. Studies found that in both laboratory and naturalistic contexts, mothers with a secure state of mind were more sensitive caregivers than mothers with a preoccupied or dismissing state of mind (e.g., Adam et al., 2004; Crowell & Feldman, 1989). In addition, preoccupied mothers were more likely to engage in angry, intrusive, and inconsistent caregiving (Adam et al., 2004; Crowell & Feldman, 1989) whereas dismissing mothers were more likely to engage in detached caregiving (Crowell & Feldman, 1989).

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To achieve an integration of the two traditions that investigate the link between adult attachment and caregiving, studies using the AAI need to be complemented by studies using self-report measures of adult attachment (see also Roisman, 2009). The kind of variation assessed by self-report measures is different from that assessed by the AAI. Self-report measures capture variation in adults' mental representations of romantic relationships in terms of how uncomfortable they feel about depending on partners, referred to as *attachment-related avoidance*, and how worried they are about abandonment, referred to as *attachment-related anxiety* (Fraley, Waller, & Brennan, 2000). Attachment-related avoidance and anxiety show a low to moderate degree of correspondence to the AAI's dismissing and preoccupied categories, respectively (Mikulincer & Shaver, 2007; Roisman, 2009). To our best knowledge, research examining whether parents' self-reported attachment style predicts *observed* parental caregiving behaviors has been limited to only a few studies (Edelstein et al., 2004; Rholes, Simpson, & Blakely, 1995). Rholes et al. (1995) found that mothers' attachment-related avoidance was associated with less positive regard and emotional support toward their child during a laboratory problem solving task. Edelstein et al. (2004) extended these findings by showing that parents' attachment avoidance was associated with less responsive caregiving as children were receiving inoculation (a stressful event likely to activate the attachment system of the child), especially when the children were highly distressed. Neither Rholes et al. (1995) nor Edelstein et al. (2004) found an association between parents' attachment-related anxiety and caregiving behavior toward their children.

Due to the restriction of the observation episode to a single type of event Rholes et al. (1995) or Edelstein et al. (2004) could capture only some but not all aspects of parental caregiving—e.g., accepting the child's attachment needs, perceiving and responding accurately to the child's signals, being in synch with the child while providing care, being accessible to the child when needed—which are central for shaping the attachment relationship between the child and the parent (Ainsworth, Blehar, Waters, & Wall, 1978). Prolonged observations are better suited to capturing these different aspects of caregiving behavior than short observations during a single episode (Pederson & Moran, 1995). Moreover, neither of these two studies examined caregiving behavior in a context where the attachment relationship is naturally being shaped—i.e., the home. Thus, in the current study, we attempted to extend Rholes et al. (1995) and Edelstein et al.'s (2004) findings by observing everyday maternal caregiving behavior for a longer time period (approximately three hours) in the home setting. We used the Maternal Behavior Q-Set (MBQS; Pederson & Moran, 1995) to assess the quality of maternal caregiving. The MBQS is based on Ainsworth et al.'s (1978) conceptualization of early maternal caregiving behaviors. The measure consists of 90 behavior-specific items assessing maternal caregiving (see the Section 2 for a more detailed description of the measure). We examined whether self-reported adult attachment style is associated with (i) the global maternal sensitivity score computed using all 90 MBQS items and (ii) specific caregiving themes represented by groups of individual MBQS items.

In line with previous findings (Edelstein et al., 2004; Rholes et al., 1995), we hypothesized that mother's attachment-related avoidance would be negatively related to global maternal sensitivity. Previous research showed that attachment-related avoidance was positively associated with preferring a psychological distance with relationship partners, experiencing discomfort with intimate interactions, devaluing the importance of attachment-related needs, and missing, or failing to accurately decode, relationship partners' signals (e.g., Collins, Guichard, Ford, & Feeney, 2004; Schachner, Shaver, & Mikulincer, 2005). Thus, we expected mothers' attachment-related avoidance to be negatively associated with items assessing the mother's accessibility to the child, the mother's comfort with affectionate exchanges with the child, and the mother's sensitivity to the child's signals both when interacting and not interacting with the child.

In line with Rholes et al. (1995) and Edelstein et al. (2004), we did not expect a relationship between attachment-related anxiety and global maternal sensitivity. However, we did expect some individual MBQS items to be associated with attachment-related anxiety. Anxious individuals generally desire extreme closeness with relationship partners (Collins et al., 2004). This tendency toward excessive closeness is likely to interfere with their ability to encourage the child's autonomy and provide a secure base for the child's exploration (Mikulincer & Shaver, 2007). Moreover, anxious mothers' chronic worries about caregiving performance (Snell, Overbey, & Brewer, 2005) may lead to frustration and anger when they fail to meet their own high expectations. This, in turn, may create conflict between the mother and their child. Thus, we expected attachment-related anxiety to be positively associated with the MBQS items assessing conflict between the mother and the child, and the mother's interference with the child's exploratory behavior.

Theory and research suggests that an important individual-difference factor influencing parental caregiving is the child's temperament (e.g., Wachs, 2006). Therefore, we controlled for this variable in the present study. We expected attachment-related avoidance to be related to global maternal sensitivity even after controlling for child temperament.

2. Materials and methods

2.1. Participants

Eighty-five Turkish mothers and their children (47 boys, 38 girls) participated in the study. Mothers' age ranged from 20 to 45 years (*Mdn* = 30 years). The children's age ranged from 10 to 50 months (*Mdn* = 24 months; see Posada et al., 1999 for a study using the MBQS in a similar age range): Forty-six children were between 10 and 24 months old, 24 children were between 25 and 36 months old, and 15 children were between 37 and 50 months old. Forty-five dyads were from families with low socioeconomic background, 33 dyads were from families with middle socioeconomic background, and seven dyads were from families with high socioeconomic background. Mothers' education ranged from some elementary school education to college degree: two mothers did not complete elementary school, 24 mothers completed elementary school, nine mothers completed secondary school, 31 mothers had a high school degree, and 19 mothers had a college degree. Eighteen mothers were working full-time when the study was conducted. Eighty-two children were living with their biological mothers and fathers. Parents of three children were divorced and the children were living with their mother and stepfather. Majority of children were either first-born (37 children) or second-born (31 children). Median number of siblings was 1 (range = 0–3).

2.2. Measures and procedure

Two trained observers visited the mother–child dyad at home and observed their interactions for approximately 3 h. Home visits were scheduled to take place when the mother and the child were alone at home and the child was awake.[1] At the beginning of the visit, the observers got acquainted with the mother and encouraged

[1] Twenty-six observations started before noon (earliest 9 a.m.) and 59 observations started after noon (latest 3:00 pm). The starting time of observation was not associated with maternal sensitivity, nor did it moderate the effect of mothers' attachment style on sensitivity.

Table 1
Descriptive statistics and correlations.

	1	2	3	4	5	6	7	8	9	10
1. M sensitivity	–									
2. M anxiety	−.21*	–								
3. M avoidance	−.38***	.47***	–							
4. M age (years)	.02	−.13	.12	–						
5. C age (months)	−.22*	−.13	−.05	.25**	–					
6. C gender[a]	.01	.09	.23*	.05	.08	–				
7. C emotionality	−.21*	.17	.02	.04	.06	.03	–			
8. C activity	−.17	.07	.12	.10	.09	.19†	−.12	–		
9. C sociability	.22*	−.15	−.14	.21*	.12	−.02	−.34**	.38***	–	
10. C shyness	.03	.02	.11	−.13	−.09	−.04	.16	−.50***	−.53***	–
M	.54	2.41	1.87	30.04	26.29		2.34	2.97	2.99	2.10
SD	.25	.75	.78	5.10	10.69		.50	.59	.58	.65

† $p < .10$.
* $p \leqslant .05$.
** $p < .01$.
*** $p < .001$.
[a] −1 = female, 1 = male; M = mother, C = child.

her to go about her normal activities and to interact with her child as she normally does. During the visit, the observers did not initiate any interaction with the mother or the child. However, the observers were responsive to bids for interaction to make the mother and the child feel comfortable in their presence (Waters & Deane, 1985). For example, if the child showed an interest in playing with the observers, they played along until the child switched to a different activity. Similarly, if the mother had any questions, the observers responded.

The observations were conducted based on the MBQS (Pederson & Moran, 1995).[2] The MBQS has 90 items measuring maternal caregiving behavior. The items cover a wide range of maternal behaviors occurring whenever the mother interacts with the child (e.g., playing, feeding, soothing) as well as when the mother is not interacting with the child (e.g., monitoring the child's activities, structuring the environment for the child's activities). Despite the wide range of behaviors, items prompt observers to focus their attention on aspects of these behaviors that are critical to assess maternal sensitivity. These include the mother's ability to detect the child's distress- and non-distress-related signals that call for a response from the mother, to respond in a timely fashion to these signals, and to respond in a way that satisfies the needs of the child.

After the visit, observers independently described the mother's caregiving behaviors using the MBQS items. Each observer initially divided the 90 MBQS items into three roughly equal piles corresponding to *characteristic of mother*, *uncharacteristic of mother*, and *neither characteristic nor uncharacteristic of mother*. Observers further divided these piles into nine piles of 10 items. The piles ranged from 1 (*very uncharacteristic of mother*) to 9 (*very characteristic of mother*). The two observers' ratings were averaged (mean inter-observer reliability = .85, range = .62–.95) and the average item scores were correlated with expert-based prototypic scores for maternal sensitivity. The resulting correlation coefficient was used as the global maternal sensitivity score. Sensitivity scores ranged from −.33 to .84 ($M = .54$).

In a session 1–3 weeks following the home visit, mothers completed measures of adult attachment style and child temperament (discussed below) as well as other questionnaires that are not a focus of the present report.

We used the Experiences in Close Relationships Inventory-Revised (ECR-R; Fraley et al., 2000) to measure mothers' attachment style. The ECR-R is a 36-item scale that assesses attachment-related anxiety and avoidance. Mothers responded to the items on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alphas were .85 for anxiety and .89 for avoidance.

Mothers also completed the EAS Temperament Survey (Buss & Plomin, 1984). The EAS assesses child temperament along four dimensions: emotionality, activity, sociability, and shyness. Each dimension is assessed with five items. Mothers responded to the items on a scale ranging from 1 (*never*) to 4 (*always*). Cronbach's alphas for the subscales were between .57 (sociability) and .76 (shyness).

3. Results

3.1. Attachment style and global maternal sensitivity

The correlations between variables of interest are provided in Table 1. As seen in the table mothers' attachment-related avoidance and anxiety were both negatively associated with their global sensitivity ($r = -.38$, $p < .001$ and $r = -.21$, $p = .05$, respectively). Among the four temperament characteristics, emotionality and sociability were associated with maternal sensitivity ($rs = -.21$ and .22, respectively $ps \leqslant .05$). Finally, there was a negative correlation between child's age and maternal sensitivity ($r = -.22$, $p < .05$). This correlation was comparable to a previous study (Posada et al., 1999) using the MBQS in a similar child age range ($r = -.22$ vs. $r = -.16$; $z = -.32$, *ns*).

We conducted a hierarchical regression analysis to examine the unique contributions of attachment dimensions in predicting maternal sensitivity while controlling for child's temperament. We entered child's emotionality, activity, sociability, and shyness in the first step. Given the significant relation of child age to mother's sensitivity and child gender to mother's avoidance, we also entered these variables in the first step. Next, we entered mother's attachment anxiety and avoidance in the second step.

The overall model was significant, $R^2 = .33$, $F(8, 76) = 4.63$, $p < .001$. Furthermore, the addition of attachment dimensions significantly increased the amount of variance explained by the model, $\Delta R^2 = .12$, $F(2, 76) = 7.02$, $p < .01$.

As predicted, mother's attachment-related avoidance was negatively related to maternal sensitivity, $\beta = -.37$, $p = .001$. Mother's attachment-related anxiety did not significantly predict maternal sensitivity. In the overall model, child's age was also negatively associated with maternal sensitivity, $\beta = -.22$, $p < .05$, and child's

[2] The items for each measure used in the present study were first translated into Turkish. Then, each item was translated back into English by a different translator and revised if the meaning of the item was not correct.

Table 2
MBQS item correlates of mothers' attachment avoidance.

MBQS item	*r*
Theme 1: non-synchronicity in interactions	
Positive correlates	
Content and pace of interaction set by M rather than according to B's responses	.30**
Interactions with B are incomplete	.28**
Non-synchronous interactions with B, i.e., the timing of M's behavior out of phase with B's behavior	.25*
Uses verbal prohibitions (e.g., "no or do not")	.24*
Provides B with little opportunity to contribute to the interaction	.23*
During ongoing interactions, misses slow down or back off signals from B	.21*
Annoyed by B's uncooperative behaviors	.20†
Anxious about B's exploration	.20†
Negative correlates	
Well resolved interaction with B – interaction ends when B is satisfied	−.36***
Builds on the focus of B's attention	−.33**
Slows pace down, waits for B's response during interactions	−.29**
Interactions revolve around B's tempo and current state	−.25*
Encourages independent exploration of the environment	−.19†
Theme 2: discomfort with contact	
Positive correlates	
Treats B as an inanimate object when moving her around or adjusting her posture	.34***
During interaction with visitor does not notice B	.27**
Terminates physical contact before B is satisfied	.27**
Is irritated by demands of B for physical contact or proximity	.25*
Awkward and ill at ease during intimate interactions with B	.23*
Redirects B's bids for proximity and/or contact without a transition period to facilitate smooth interactions	.23*
Ignores positive signals (vocalizations, smiles, reaches)	.19†
Negative correlates	
Notices when B smiles and vocalizes	−.29**
Interrupts activity that is likely to be dangerous	−.21*
Theme 3: inaccessibility	
Negative correlates	
Arranges her location so she can perceive B's signals	−.30**
Provides B with unrestricted access to her	−.27**
Monitors B's activities during visit	−.27**
Gives signal or explanation to B when leaving the room	−.26*
Considers B's needs when structuring environment	−.22**
Theme 4: missing the child's signals/failing to satisfy the child's needs	
Positive correlates	
Not skillful in dividing her attention between B and competing demands and therefore misses B's cues	.26*
Repeated series of interventions in search of best method to satisfy B, resorts to trial and error	.23*
Response delayed such that B cannot connect M's responses with the action that initiated it	.21*
Negative correlates	
Responds to B's distress and non-distress signals even when engaged in some other activity such as having a conversation with visitor	−.31**
Interprets cues correctly as evidenced by B's response	−.25*
Praises B	−.24*
Interventions satisfy B	−.21*

B = baby, M = mother.
† $p < .10$.
* $p \leqslant .05$.
** $p \leqslant .01$.
*** $p \leqslant .001$.

sociability was positively associated with maternal sensitivity, $\beta = .30$, $p = .01$. No other significant effects emerged.[3]

3.2. Attachment style and specific caregiving behaviors

Next we examined specific caregiving behaviors associated with attachment anxiety and avoidance. First, we correlated each MBQS item with mothers' anxiety and avoidance scores. Attachment-related avoidance was associated with 34 MBQS items and attachment-related anxiety was associated with 16 MBQS items (at $p < .10$). The large number of MBQS correlates makes it difficult to interpret the patterns of caregiving behavior associated with each style. We therefore wanted to organize the MBQS correlates into groups to facilitate interpretation. We grouped the MBQS correlates via separate principal components analyses (PCAs) to summarize the caregiving patterns associated with each attachment dimension (see Onishi, Gjerde, & Block, 2001, for a similar analysis of Q-set data). Given the high ratio of the MBQS correlates to the number of participants, the aim of this analysis was not to identify factors underlying these items but rather to help the reader interpret the patterns of caregiving behavior associated with each attachment style. Thus, following Onishi et al. (2001), we referred to the components that emerged from the PCAs as caregiving "*themes*" rather than factors.

The themes that emerged from the correlates of attachment avoidance were non-synchronicity in interactions, discomfort with

[3] We ran supplementary analyses to test whether child's gender, child's age, mother's age, or socioeconomic background interacted with attachment dimensions to predict maternal sensitivity. None of the interaction terms were significant.

Table 3
MBQS item correlates of mothers' attachment avoidance.

MBQS item	*r*
Theme 1: missing the child's signals	
Positive correlates	
Ignores positive signals (vocalizations, smiles, reaches)	.25*
Treats B as an inanimate object when moving her around or adjusting her posture	.25*
Response delayed such that B cannot connect M's responses with the action that initiated it	.20†
Display of affect does not match B's display of affect	.19†
Negative correlates	
Responds to B's distress and non-distress signals even when engaged in some other activity such as having a conversation with visitor	−.29**
Gives signal or explanation to B when leaving the room	−.25*
Responds to B's signals	−.23*
Notices when B smiles and vocalizes	−.19†
Spontaneously expresses positive feelings to B	−.19†
Theme 2: conflict in interactions	
Positive correlates	
Interactions with B are characterized by conflict	.27*
Punitive or retaliatory during interactions with B	.20†
Actively opposes B's wishes	.19†
Negative Correlates	
Respects B as an individual, i.e., able to accept B's behavior even if it is not consistent with her wishes	−.24*
Theme 3: interfering with exploration	
Positive correlates	
Physically restricts B's movements while in proximity	.24*
Anxious about B's exploration	.19†
Negative correlates	
Instructive during interactions with B	−.23*

B = baby, M = mother.
† $p < .10$.
* $p < .05$.
** $p < .01$.

contact, inaccessibility, and missing the child's signals/failing to satisfy child's needs (see Table 2). The themes that emerged from the correlates of attachment anxiety were missing the child's signals, conflict in interactions, and interfering with exploration (see Table 3).

4. Discussion

The purpose of this study was to examine whether self-reported adult attachment style predicts everyday maternal caregiving behavior at home. Overall, the findings suggested that in line with previous studies (Edelstein et al., 2004; Rholes et al., 1995), attachment-related avoidance was negatively associated with global maternal sensitivity. The negative association between avoidance and caregiving sensitivity remained significant even when we controlled for child's temperament, suggesting that the effect of attachment avoidance on maternal caregiving is above and beyond the effect evoked by the child's characteristics. Future studies should examine whether a similar finding would be obtained using an observational assessment of child temperament. Attachment anxiety was also negatively associated with global maternal sensitivity but this association became insignificant when we controlled for attachment avoidance and child's age, gender, and temperament.

When we examined the specific caregiving behaviors associated with each attachment style, we found that attachment-related avoidance was associated with non-synchronicity in interactions, discomfort with contact, inaccessibility, and missing the child's signals/failing to satisfy child's needs. Common to all these patterns of caregiving behavior is the presence of a psychological distance between the mother and the child during caregiving interactions. Avoidant individuals see attachment needs as unimportant and experience discomfort with intimacy and expressions of emotion (Collins et al., 2004; Schachner et al., 2005). These tendencies may cause avoidant mothers to devalue their child's attachment needs and to distance themselves from the child. As a result, they fail to respond accurately to the child's signals and their interactions with the child lack synchrony.

Although mothers' attachment-related anxiety did not significantly predict their global caregiving sensitivity after controlling for the child's characteristics, it was systematically correlated with various MBQS items. Attachment-related anxiety, like attachment-related avoidance, was associated with missing the child's signals. This finding might seem surprising given that anxious individuals prefer to maintain extreme closeness with relationship partners (Collins et al., 2004). However, this preference is usually due to anxious individuals' chronic worry to meet their own attachment needs rather than those of relationship partners (Mikulincer & Shaver, 2007). Together with their worries to meet unrealistically high caregiving standards (Snell et al., 2005) and their selfish motivations for caregiving (e.g., providing care to reduce their own anxiety; Feeney & Collins, 2001), this high self-focus may interfere with anxious mothers' ability to focus clearly and accurately on their child's needs although they maintain close contact with the child. Being unable to meet the child's needs may cause frustration and further exacerbate the anxious mothers' worries, which may in turn instill conflict with or anger toward the child. Indeed, we found that mothers' attachment anxiety was associated with items assessing conflict in interactions with the child. Finally, anxious mothers' desire for excessive closeness may interfere with providing a secure base for the child's exploratory activities (Mikulincer & Shaver, 2007). In line with this view, we found that mothers' attachment anxiety was negatively associated with items assessing enhancement of the child's exploratory behaviors.

To our knowledge, the present study is the first demonstrating that self-reported romantic attachment style is related to everyday

maternal caregiving in home settings. Our findings suggest that self-report measures of adult attachment taps an orientation not only toward specific romantic relationships but also toward close relationships in general. These findings are consistent with theory and evidence that mental representations of specific relationships (e.g., romantic relationships, parent–child relationships) are subsumed under a more global mental representation of attachment relationships (Collins et al., 2004). They are also consistent with the growing body of work showing that parent–infant relationships and adult pair bonds are mediated by the same neurobiological systems (Sbarra & Hazan, 2008). As the number of studies using adult attachment measures in different relationship domains increases we will have a better understanding of the interplay between adult attachment and caregiving behavior in particular, and the interrelated dynamics of adult behavioral systems in general.

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