



Published in final edited form as:

Infant Ment Health J. 2011 May 1; 32(3): 277–285. doi:10.1002/imhj.20296.

Adult Attachment Style and Stress as Risk Factors for Early Maternal Sensitivity and Negativity

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Abstract

The current study examined the individual and joint effects of self-reported adult attachment style, psychological distress, and parenting stress on maternal caregiving behaviors at 6 and 12 months of child age. We proposed a diathesis-stress model to examine the potential deleterious effects of stress for mothers with insecure adult attachment styles. Data from 137 mothers were gathered by the longitudinal Durham Child Health and Development Study. Mothers provided self-reports using Hazan and Shaver's (1987) Adult Attachment Style measure, the Brief Symptom Inventory, and the Parent Stress Inventory; observations of parenting data were made from 10-minute free play interactions. Consistently avoidant mothers were less sensitive with their infants than consistently secure mothers; however, this effect was limited to avoidant mothers who experienced elevated levels of psychological distress. Results suggest that the association between insecure adult attachment style and insensitive parenting behavior is moderated by concurrent psychosocial stress. Clinical implications for these findings are discussed.

Attachment theory posits that experiences with significant others lead to the establishment of "internal working models" of the self and relationships, including cognitive representations about the self as worthy of love, expectations about the dependability of others, and the value of relationships (Bowlby, 1977). These experiences are thought to influence personality and social behavior, thus exerting influence on both adolescent and adult relationships as well as on parenting behaviors and parent-child attachments. To date, two distinct lines of research on adult attachments have emerged. The first approach emerged largely from social, personality, and clinical psychology, and utilizes a behavioral systems approach to the social-cognitive dynamics relating to conscious feelings and behaviors in close relationships using self-report measures (Shaver & Mikulincer, 2004). The second approach, rooted in developmental psychology, addresses the role of possibly unconscious internal working models and inter-generational patterns of attachment using narrative interview approaches such as the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985).

Both approaches have identified three similar patterns of individual differences in adult attachment, including a secure/autonomous pattern, an anxious and preoccupied pattern, and an avoidant and dismissing pattern (Crowell, Fraley, & Shaver, 1999), though concordance between the two approaches is low (Roisman et al., 2007). Although these measures appear to address distinct domains of individual attachment processes, each clearly taps core aspects of attachment and attachment-related behaviors and has been associated with theoretically expected outcomes in the domains of cognition and information processing, affect regulation, behavior, psychopathology, and psychophysiology (Shaver & Mikulincer, 2004). One of the domains of adult functioning that has not received comparable research attention across attachment measures is parenting. AAI classifications have been associated with caregiving behaviors across multiple studies (Cohn, Cowan, Cowan, & Pearson, 1992), whereas few studies have investigated associations between self-reports of adult attachment styles and parenting (for an exception, see Edelstein et al., 2004). Nevertheless, it is reasonable to predict that attachment styles would be associated with parenting given previous findings regarding the cognitive and behavioral correlates of attachment styles (e.g., poor affect regulation, discomfort with requests for care) that would certainly be expected to influence parenting behavior. As such, the current research examined both main effects and interaction effects linking attachment styles and early parenting.

Adult Attachment Style, Stress, and Parenting

The limited research on maternal stress and self-reported adult attachment style suggests that the experience of stress and its associated outcomes vary as a function of attachment style. Roisman et al. (2007) reported that, under stressful conditions, insecure individuals may engage in anxious/uncollaborative or avoidant/disengaged behaviors in accordance with their underlying working model. Rholes, Simpson, and Friedman (2006) reported that mothers who prenatally endorsed avoidant attachment styles reported greater parenting stress and lower perceptions of parental satisfaction as compared to secure mothers. Regarding observed parenting, Edelstein et al. (2004) reported that self-report of avoidant attachment was associated with greater maternal distress during infant inoculation, but lower levels of sensitivity in response to child distress.

It is possible that insecurity in adult attachment relationships may be particularly problematic for mothers experiencing additional intrapersonal risks. For example, the stresses associated with parenting may heighten the need for interpersonal (specifically, attachment-related) resources, and as such, supportive relationships may provide unique sources of interpersonal support for mothers (George & Solomon, 2008). The need for interpersonal support may be particularly problematic for mothers with insecure attachment styles who are more likely than secure individuals to distance themselves from others when stressed and to reject social support as a possible coping mechanism (Ognibene & Collins, 1998), thus making them more vulnerable to the negative spillover of stress into caregiving behaviors.

The Current Study

To extend the current literature on self-reports of adult attachment style, stress and parenting research, we adopted a diathesis stress-model to examine differences in parenting that are associated with elevated levels of parental stress. Specifically, lower levels of inter-personal support and resources available to mothers with insecure attachment styles represent a diathesis that may be exacerbated by the experience of stress. Three hypotheses were proposed. First, insecure adult attachment style was expected to be associated with lower maternal sensitivity and higher negativity. Second, independent measures of maternal psychological distress and parenting stress were expected to be negatively associated with maternal sensitivity and positively associated with negativity. Third, we hypothesized an interaction between adult attachment style and each stressor such that the combination of insecure attachment and elevated stress would be associated with the lowest levels of sensitivity and highest levels of negativity.

Method

Participants

The participants in the current study were 137 biological mothers recruited by the Durham Child Health and Development Study and seen at 6 and 12 months of child age. The analysis sample included 52% African American and 48% European American participants; 42% were below 200% of the poverty level; 10% of mothers had no high school degree and 58% had some college or more; 53% of the mothers had male children.

Measures

Adult Attachment Quality—Adult attachment style at 6 and 12 months of child age was determined using Hazan and Shaver's (1987) Adult Attachment Style (AAS) measure. The AAS is a self-report instrument that asks respondents to identify which narrative vignette best describes their attachment style in the context of a romantic relationship. The respondent is given three answer options, each of which corresponds to a different adult attachment style (secure, insecure-avoidant, and insecure-ambivalent). The respondent is asked to reflect on her current or most recent romantic relationship and choose which vignette best described the way that she relates to her romantic partner. The measure has demonstrated high test-retest reliability (Kirkpatrick & Hazan, 1994) and convergent validity with the Adult Attachment Questionnaire (Bouthillier, Julien, Dube, Belanger, & Hamelin, 2002).

Psychological Distress—The Brief Symptom Inventory (BSI; Derogatis & Spencer, 1982) was administered to mothers at 6 and 12 months of child age. Previously reported measures of internal consistency and test-retest reliability were relatively high (Derogatis & Spencer, 1982). Alphas for items comprising the global severity index (psychological distress symptoms) in the current sample are .92 and .95, respectively, for mothers at 6 and 12 months of child age.

Parenting Stress—The Parenting Stress Index-Short Form (PSI; Abidin, 1995) was administered to mothers at 6 and 12 months of child age. A composite score of Total Parenting stress is derived by summing of the Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child subscales. Abidin (1995) has reported a high test-retest reliability of 0.91 for the Total Parenting stress composite. Alphas for items comprising the Total Parenting Stress score in the current sample are .96 and .91, respectively, for mothers at 6 and 12 months.

Parenting Behaviors—Mother-child dyads were videotaped in a 10-minute free play session at 6 and 12 months of child age. Independent coders rated the interactions along seven, 5-point subscales that were aggregated (as suggested by factor analyses) into two composite variables. The first composite, *maternal sensitivity*, was created as the mean of the global sensitivity, detachment (reversed), stimulation of development, positive regard, and animation (6-month factor loadings were .87, .88, .85, .89, and .71; 12-month factor loadings were .88, .86, .85, .89, and .70). The second composite, *negative intrusiveness*, was created as the mean of the intrusiveness and negative regard subscales (6-month factor loadings were .92, and .77; 12-month factor loadings were .89, and .76). Each subscale was double-coded and conferenced by trained and reliable coders. Reliabilities across each pair of coders were determined by maintaining intraclass correlation coefficients of .80 or greater on subscales and composite measures at each time point. Coders were blind to all other information within and across visits.

Data Reduction

There was a very low rate of endorsement at each time point for insecure-ambivalent attachment style (only 3% at 6 and 12 months). As such, analyses used only those participants who endorsed secure or insecure-avoidant attachment styles. It was decided not to collapse across insecure subtypes because of previous research differentiating distinct patterns of psychological functioning for insecure-avoidant versus insecure-ambivalent adults. Instead, a 3-way classification system based on mothers' endorsements of either secure or avoidant attachment styles at 6 and 12 months was created. Participants were considered *consistently secure* ($n = 102$) if they endorsed a secure style of attachment at both 6 and 12 months of child age. Participants were considered *consistently avoidant* ($n = 12$) if they endorsed avoidant at both time points. Participants were considered *inconsistently secure* ($n = 23$) if they endorsed different attachment styles across the two assessment points. Bivariate correlations across time for the other independent and dependent variables were highly significant and paired-sample t -tests revealed no significant differences between time points. As such, these measures were averaged across time to form composite variables for all analyses.

Results

Descriptive Statistics and Correlations among Covariates

African American mothers reported lower income-to-needs ratios ($t = -2.25, p < .05$), lower education ($t = -3.88, p < .001$), and were observed to be more negatively intrusive ($t = 6.43, p < .001$) and less positively engaged ($t = -4.15, p < .001$) as compared to European

American mothers. Maternal education was negatively associated with parenting stress ($r = -.20, p < .05$) and maternal negativity ($r = -.45, p < .001$), and positively associated with maternal sensitivity ($r = .46, p < .001$). Consistently secure mothers reported higher education [$F(2,134) = 4.19, p < .05$] than consistently avoidant mothers; however, there were no differences in distributions of adult attachment classifications across ethnicity. Consistently secure were observed to be less negatively intrusiveness [$F(2,134) = 3.54, p < .05$] than inconsistently secure mothers and reported less psychological distress [$F(2,134) = 14.85, p < .001$], less parenting stress [$F(2,134) = 14.45, p < .001$], and were observed to be more sensitive [$F(2,134) = 6.12, p < .01$] than consistently avoidant mothers. Psychological distress was positively associated with parenting stress ($r = .61, p < .01$) and negatively associated with sensitivity ($r = -.25, p < .01$). Parenting stress was positively associated with maternal negativity ($r = .19, p < .05$) and negatively associated with maternal sensitivity ($r = -.28, p < .01$).

Hierarchical Regression Analyses

Hierarchical regression analyses examined the unique and interactive effects of adult attachment, psychological distress, and parenting stress predictors of caregiving behavior while controlling for ethnicity and maternal education. As seen in Table 1, the introduction of adult attachment style (dummy coded such that the reference group is consistently secure [not shown in the table] and the comparison groups are consistently avoidant and inconsistently secure) accounted for a marginal increase in variance explained (Model 2). Consistently avoidant mothers were observed to be less sensitive than consistently secure mothers; inconsistently secure mothers were not observed to be less sensitive than consistently secure mothers. The inclusion of psychological distress and parenting stress in Model 3 did not significantly increase the variance accounted for in the model. As seen in Model 4, only the interaction between insecure-avoidant attachment and psychological distress significantly predicted maternal sensitivity and accounted for a significant increase in overall variance. Increases in psychological distress were associated with decreases in maternal sensitivity only for consistently avoidant mothers [$\beta = -.92 (SE = .33); t = -2.77, p < .05$]. The interaction was also probed to determine if differences between attachment styles would emerge at differing levels of psychological distress. Consistently avoidant mothers were significantly less sensitive than consistently secure mothers when psychological distress was greater than 1.4 SD above the sample mean.

In separate analyses, ethnicity [$\beta = -.77 (SE = .15); t = -5.1, p < .001$] and maternal education [$\beta = -.21 (SE = .05); t = -3.2, p < .001$] were independent predictors of maternal negativity (consistent with preliminary analyses). None of the possible main effects or interactions among adult attachment style, psychological distress, or parenting stress significantly contributed to the model above and beyond demographic associations.

Discussion

The findings support our hypothesis that insecure attachment styles would be associated with less sensitive parenting (although not greater negative parenting), particularly at elevated levels of stress. Mothers with insecure-avoidant attachment styles may be more

likely to disengage emotionally from romantic relationships, which is a behavioral tendency that may spill over into less warm and engaged styles of parent-child interaction. Likewise, avoidant tendencies such as negative attribution biases, overly self-reliant social behavior, and avoidance of emotional content and contexts may also foster less sensitive styles of caregiving. However, consistent with a diathesis-stress model, the current analyses suggest that a behavioral bias based on attachment style is only part of the story. Attachment-based differences in parenting were dependent on the mother experiencing elevated levels of psychological distress (although not parenting stress). Furthermore, the effect of distress was attenuated by mother's continuously secure attachment style.

Interestingly, although both psychological distress and parenting stress were both negatively associated with sensitivity in correlational analyses, only psychological distress independently predicted sensitivity for avoidant mothers once demographic factors were controlled. Given the strong correlation between psychological distress and parenting stress, it is possible that the negative influence of parenting stress on parenting behavior is subsumed by global psychological distress. Also, contrary to prediction, maternal negativity was not associated with any of the independent variables. This finding may be an artifact of the exclusion of insecure-ambivalent attachment style from analyses (based on the limited number of endorsements of this style). Previous research has indicated an association between insecure-ambivalent self-reports of adult attachment and negativity biases (Gentzler & Kearns, 2006). It is possible that insecure-avoidant mothers were more susceptible to risk factors for sensitive parenting while insecure-ambivalent mothers would be more susceptible to risk factors for over-controlling and negative parenting. Although we were unable to test this hypothesis in the current sample, future research should examine this possibility.

Finally, it is noteworthy that only mothers who reported consistently avoidant styles of attachment were at risk for less sensitive parenting behavior. Mothers who alternated between secure and avoidant styles across the 6 and 12 month assessments were not at risk and appeared comparable to consistently secure mothers in parenting style. Perhaps this suggests that having a secure attachment at one time may serve as a protective factor or buffer against the experience of stress. Alternatively, consistently avoidant attachment styles may represent a pervasive individual characteristic that imbues higher risk than intermittent avoidant tendencies (of course these two possibilities are not mutually exclusive). To test such hypotheses, a fixed-effects study is needed to evaluate attachment style instability and subsequent changes in parenting.

The current findings advance our knowledge about attachment processes, individual functioning, and early caregiving behaviors. Conceptually, this is important because it provides evidence that attachment insecurity in romantic relationships may be a source of risk for early parenting, especially in conjunction with parental psychological distress. These associations are of particular interest because they are consistent with previous findings examining attachment representations as related to caregiving histories (as measured by the AAI) and parenting, despite a lack of concordance between the two attachment measures. This suggests that although these measures may tap into different attachment processes, they each have significance for the mother in her role as a caregiver. Methodologically, this is important because it raises intriguing possibilities for both effectively and efficiently

classifying attachment styles in research and clinical settings. Nonetheless, there are some limitations to this study. The use of a single-item measure, for example, may have restricted the range or validity of responses (e.g., high rates of secure and low rates of ambivalent styles and consistently avoidant styles) perhaps due to social desirability biases. Future studies with lengthier, continuous self-report measures (such as the Experiences in Close Relationships Scale (Brennan, Clark, & Shaver, 1998)) with stronger psychometric properties would further support and extend this work. Although the predictive validity in the present research is persuasive, a demonstration of multi-measure reliability would be quite compelling in this regard. Despite these limitations, the current research provides an important extension of previous studies and identifies new directions for future research.

Clinical Implications

Researchers have posited that attachment representations may be continuous not only within the individual across the lifespan, but also across generations (van IJzendoorn & Bakermans-Kranenburg, 1997). One mechanism for this transmission may be parenting behaviors. These findings speak to the potential of prevention and clinical interventions that aim to modify parental attachment styles and caregiving to facilitate secure attachment relationships and socioemotional outcomes for children. Our findings suggest that attachment security is a protective factor for mothers with elevated distress and parenting stress. Mothers with avoidant attachment styles and higher levels of stress, to the extent that they show reduced sensitivity, appear to have need of interventions designed to address their attachment representations and maladaptive parenting behaviors. Attachment-based interventions with high risk and maltreating mothers and their infants have shown promising results (Berlin, Ziv, Amaya-Jackson, Greenberg, 2005). It is possible that such programs may be more effective with some individuals than others, and moderating factors may guide examinations of “what works for whom.” For example, our findings may suggest that mothers with insecure attachment patterns and high psychological risk may be prime candidates for such interventions. Continued efforts are needed to establish the most effective theoretically-informed, evidence-based treatments for children and caregivers.

Acknowledgments

This study was supported by the North Carolina Child Development Research Collaborative, which is funded by the National Science Foundation through Children’s Research Initiative Grant BCS-0126475. The authors would like to thank all the parents and children who participated in the Durham Child Health and Development Study and the research assistants for their valuable efforts in collecting this data.

References

1. Abidin, RR. The Parenting Stress Index Professional Manual. Psychological Assessment Resources; Odessa, FL: 1995.
2. Adam E, Gunnar MR, Tanaka A. Adult attachment, parent emotion, and observed parenting behavior: Mediator and moderator models. *Child Development*. 2004; 75:110–122. [PubMed: 15015678]
3. Berlin, L.; Ziv, Y.; Amaya-Jackson, L.; Greenberg, M. *Enhancing early attachments: Theory, research, intervention, and policy*. Guilford Press; New York, NY US: 2005.
4. Bowlby J. The making and breaking of affectional bonds. *British Journal of Psychiatry*. 1977; 130:201–210. [PubMed: 843768]

5. Bouthillier D, Julien D, Dube M, Belanger I, Hamelin M. Predictive validity of adult attachment measures in relation to emotion regulation behaviors in marital interactions. *Journal of Adult Development*. 2002; 9(4):291–305.
6. Brennan, KA.; Clark, CL.; Shaver, P. Self-report measures of adult romantic attachment. In: Simpson, JA.; Rholes, WS., editors. *Attachment Theory and Close Relationships*. Guilford Press; New York: 1998. p. 46-76.
7. Cohn DA, Cowan PA, Cowan CP, Pearson J. Mothers' and fathers' working models of childhood attachment relationships, parenting styles, and child behavior. *Development and Psychopathology*. 1992; 4:417–431.
8. Crowell, J.; Fraley, R.; Shaver, P. *Handbook of attachment: Theory, research, and clinical applications*. Guilford Press; 1999. Measurement of individual differences in adolescent and adult attachment; p. 434-465.
9. Derogatis, LR.; Spencer, PM. *Administration and Procedures: BSI Manual-I, Clinical Psychometric Research*. Johns Hopkins University School of Medicine; 1982.
10. Edelstein RS, Alexander EW, Shaver PR, Schaaf JM, Quas JA, Lovas GS, Goodman GS. Adult attachment style and parental responsiveness during a stressful event. *Attachment & Human Development*. 2004; 6(1):31–52. [PubMed: 14982678]
11. Gentzler AL, Kerns KA. Adult attachment and memory of emotional reactions to negative and positive events. *Cognition and Emotion*. 2006; 29(1):20–42.
12. George, C.; Kaplan, N.; Main, M. *Adult Attachment Interview*. University of California; Berkeley: 1985. Unpublished manuscript
13. George, C.; Solomon, J. *Handbook of attachment: Theory, research, and clinical applications*. 2nd Ed.. Guilford Press; New York: 2008. The caregiving system: A Behavioral Systems Approach to Parenting; p. 833-856.
14. Hazan C, Shaver P. Romantic lover conceptualized as an attachment process. *Journal of Personality and Social Psychology*. 1987; 52I:511–524. [PubMed: 3572722]
15. Kirkpatrick LA, Hazan C. Attachment styles and close relationships: A four year prospective study. *Personal Relationships*. 1994; 1:123–142.
16. Ognibene T, Collins NL. Adult attachment styles, perceived social support and coping strategies. *Journal of Social and Personal Relationships*. 1998; 15(3):323–345.
17. Rholes WS, Simpson JA, Friedman M. Avoidant attachment and the experience of parenting. *Personality and Social Psychology Bulletin*. 2006; 32(3):275–285. [PubMed: 16455856]
18. Roisman GI, Holland A, Fortuna K, Fraley RC, Clausell E, Clarke A. The Adult Attachment Interview and self-reports of attachment style: An empirical rapprochement. *Journal of Personality and Social Psychology*. 2007; 92(4):678–697. [PubMed: 17469952]
19. Shaver, P.; Mikulincer, M. *Adult attachment: Theory, research, and clinical implications*. Guilford Press; NY: 2004. What do self-report attachment measures assess?; p. 17-54.
20. Van IJzendoorn, MI.; Bakermans-Kranenburg, MJ. Intergenerational transmission of attachment: A more contextual level. In: Atkinson, L.; Zucker, KJ., editors. *Attachment and psychopathology*. Guilford Press; New York: 1997. p. 135-170.

Table 1

Hierarchical regression models for maternal sensitivity

	Model 1		Model 2		Model 3		Model 4		Final Model					
	<i>B</i>	<i>SE(B)</i>	<i>B</i>	<i>SE(B)</i>	<i>B</i>	<i>SE(B)</i>	<i>B</i>	<i>SE(B)</i>	<i>B</i>	<i>SE(B)</i>				
Ethnicity	.43**	.16	.22	.40**	.16	.41**	.22	.45**	.15	.46**	.15	.24		
Education	.23***	.05	.35	.20***	.05	.20***	.31	.17***	.05	.20***	.05	.31		
Consistently Avoidant			-.60*	.26	-.18	.38	-.11	.21	.46	.06	.41	.44	.12	
Inconsistently Secure			-.26	.20	-.10	.10	-.04	.22	.00	.22	.00	.00	.14	
Psych. Distress					-.11	.10	-.12	.05	.11	.11	-.06	-.14 [†]	.08	-.14
Parent Stress					-.08	.10	-.09	.01	.13	.01				
Consistently Avoidant × Psych. Distress									-.91*	.36	-.36	-.71*	.34	-.28
Consistently Avoidant × Parenting Stress									.42	.44	.11			
Inconsistently Secure × Psych. Distress									-.04	.25	-.02			
Inconsistently Secure × Parenting Stress									-.30	.20	-.20			
<i>R</i> ²	.21		.24		.25		.29		.28					
<i>F</i> for <i>R</i> ²	19.11**		3.0 [†]		2.31		2.70*		11.11**					
<i>df</i>	(2,132)		(3,131)		(5,129)		(7,127)		(5,129)					

Note: Inconsistently secure and consistently avoidant attachment styles are represented as two dummy coded variables with consistently secure as the reference group.

[†] *p* < .1

* *p* < .05

** *p* < .01

*** *p* < .001.