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## Maternal Attachment Style and Responses to Adolescents' Negative Emotions: The Mediating Role of Maternal Emotion Regulation

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### SYNOPSIS

**Objective**—Previous research has examined the developmental consequences, particularly in early childhood, of parents' supportive and unsupportive responses to children's negative emotions. Much less is known about factors that explain *why* parents respond in ways that may support or undermine their children's emotions, and even less is known about how these parenting processes unfold with adolescents. We examined the associations between mothers' attachment styles and their distress, harsh, and supportive responses to their adolescents' negative emotions two years later and whether these links were mediated by maternal emotion regulation difficulties.

**Design**—Mothers in a longitudinal study ( $n = 230$ ) reported on their attachment style, difficulties regulating their emotions, and their hypothetical responses to their adolescents' negative emotions, respectively, at consecutive laboratory visits one year apart.

**Results**—Mothers who reported greater attachment-related avoidance and anxiety reported having greater difficulties with emotion regulation one year later. Emotion dysregulation, in turn, predicted more distressed, harsher, and less supportive maternal responses to adolescents' negative emotions the following year. In addition, greater avoidance directly predicted harsher maternal responses two years later.

**Conclusions**—These findings extend previous research by identifying maternal attachment style as a predictor of responses to adolescent distress and by documenting the underlying role of emotion dysregulation in the link between adult attachment style and parenting.

## INTRODUCTION

On a daily basis, parents of children and adolescents face the task of responding to their children's expressions of emotions – both positive and negative. In recent years, researchers have devoted increasing attention to studying parents' responses to their children's emotional expressions, particularly children's negative emotions (e.g., Eisenberg, Cumberland, & Spinrad, 1998; Eisenberg, Fabes, & Murphy, 1996; Leerkes, 2010; Leerkes, Blankson, & O'Brien, 2009; Spinrad et al., 2007). The majority of research in this area has focused on identifying different types of parental responses to children's negative emotions and examining how the different types of responses relate to child socioemotional outcomes. The empirical evidence to date has revealed that parents vary substantially in how they respond to their children's negative emotions (ranging from sensitive and supportive to harsh and minimizing) and that the manner in which parents respond has significant implications for child outcomes. For example, insensitive and unsupportive parental responses to children's negative emotions are associated with lower social and emotional competence, less prosocial behavior, increased risk for insecure attachment, more difficulties with emotion regulation, more avoidant coping strategies, and more behavioral problems, whereas sensitive and supportive parental responses tend to be associated with more positive developmental outcomes (e.g., secure attachment and greater social and emotional competence; Ainsworth, Blehar, Waters, & Wall, 1978; Eisenberg et al., 1996, 1998; Leerkes, 2011; Leerkes et al., 2009; McElwain, Halberstadt, & Volling, 2007).

Although a substantial amount of research has focused on the developmental *consequences* of supportive and unsupportive responses to children's negative emotions, much less is known about factors that *predict* the manner in which parents respond to negative emotionality in their children (Gudmundson & Leerkes, 2012). Eisenberg et al. (1998) proposed that parents' personal characteristics (e.g., personality) likely influence how they respond to their children's negative emotions. Yet, in the last 15 years, few studies have attempted to identify specific parental characteristics that predict parents' responses to their children's negative emotions. Some maternal characteristics that have been found to be associated with mothers' insensitive responses to their young children's negative emotions include: a disengaged or avoidant coping style (Gudmundson & Leerkes, 2012), negative emotionality (Leerkes, 2010; Leerkes, Parade, & Gudmundson, 2011), low levels of empathy (Leerkes, 2010; Zeifman, 2003), negative attitudes toward infant crying (Zeifman, 2003), and more parent-centered goals related to child distress (e.g., a desire to stop the infant's crying because it interferes with one's own productivity; Leerkes, 2010).

### Maternal Attachment Style and Responses to Negative Emotion

We propose that one additional maternal characteristic that may predict mothers' responses to negative emotions is their own attachment style. Adult attachment styles are conceptualized as relatively stable patterns of thoughts, feelings, and behaviors in current

close relationships (Shaver & Mikulincer, 2002). Individual differences in adult attachment styles reflect differences along two dimensions: avoidance and anxiety (Brennan, Clark, & Shaver, 1998). Attachment-related avoidance is characterized by discomfort with closeness and intimacy in relationships. Individuals high in avoidance tend to minimize their distress, are uncomfortable depending on others or having others depend on them, and are reluctant to disclose feelings or information to relationship partners that might suggest vulnerability. Attachment anxiety is characterized by a strong desire for closeness in relationships and intense fears of rejection and abandonment. Individuals high on anxiety tend to exaggerate their distress and ruminate on problems (see Mikulincer & Shaver, 2007, and Shaver & Mikulincer, 2002, for reviews). In this two dimensional framework, individuals with high scores on avoidance, anxiety, or both are characterized as insecure, whereas individuals with low scores on both dimensions are characterized as secure.

A large body of empirical work demonstrates that adult attachment styles are related to caregiving in both parent–child and romantic relationships (see Collins, Guichard, Ford, & Feeney, 2006, and Jones, Cassidy, & Shaver, in press, for reviews). Most relevant to the current investigation, several studies with both romantic partners and parent–child dyads have found that insecure adult attachment styles are associated with less sensitive and supportive responses to the other person’s distress (Edelstein et al., 2004; Feeney & Collins, 2001; Goodman, Quas, Batterman-Faunce, Riddlesberger, & Kuhn, 1997; Rholes, Simpson, & Oriña, 1999; Simpson, Rholes, & Nelligan, 1992). For example, maternal insecurity was related to less sensitive and comforting responses to child distress following a medical procedure (Edelstein et al., 2004; Goodman et al., 1997). In addition, Leerkes and Siepak (2006) found that attachment insecurity, particularly avoidance, was associated with more negative responses to videos of infant distress in a sample of female undergraduates without children.

Notably, these three studies focused on how attachment styles relate to responses to negative emotions in infants or young children. In fact, the vast majority of research on parental responses to children’s negative emotions has focused on parents of infants, toddlers, or school-aged children. The lack of focus on parental emotion socialization in adolescence is surprising given the evidence for a substantial increase in negative emotions during this developmental period (Larson & Asmussen, 1991; Larson, Moneta, Richards, & Wilson, 2002) as well as evidence for the continuing importance of parents for adolescent development (Moretti & Peled, 2004; Rosenthal & Kobak, 2010). The few studies that have focused on parental emotion socialization in adolescence provide support for the importance of parental responses to negative emotions for adolescent adjustment. For example, several studies reported positive associations between unsupportive parental responses to adolescents’ negative emotions and adolescent internalizing and externalizing problems (Katz & Hunter, 2007; Klimes-Dougan et al., 2007; O’Neal & Magai, 2005; Shortt, Stoolmiller, Smith-Shine, Eddy, & Sheeber, 2010; Stocker, Richmond, Rhoades, & Kiang, 2007). In addition, for adolescents who showed difficulty in tolerating their negative emotions (as evidenced by poor performance on two distress tolerance tasks), harsh maternal responses to adolescents’ negative emotions were negatively associated with adolescent friendship quality (Ehrlich, Cassidy, Gorka, Lejuez, & Daughters, 2013). Relatedly, the suggestions mothers make to their adolescents regarding how to cope with stress were

related to adolescent stress responses and psychopathology (Abaied & Rudolph, 2010, 2011). Consistent with the literature on younger children, the studies on emotion socialization in adolescence have focused more on the consequences of parental responses to adolescent negative emotions rather than the predictors of these responses. Therefore, the present study aims to address this gap in the literature by testing whether maternal attachment style predicts how mothers respond to negative emotional expressions from their high school-aged children.

### **Emotion Regulation as a Mediator of the Link between Maternal Attachment Style and Responses to Negative Emotion**

In addition to examining the direct effects of mothers' attachment styles on their responses to their adolescents' negative emotions, in the present study we also examine maternal emotion regulation as a potential mediator of this link (see Figure 1). Emotions are central to attachment theory, as indicated by the titles of the last two volumes of Bowlby's trilogy, *Separation: Anxiety and Anger* (1973) and *Loss: Sadness and Depression* (1980), and a considerable amount of research and theory has focused on the links between attachment and emotion regulation (see Cassidy, 1994; Calkins & Leerkes, 2011; and Mikulincer & Shaver, 2007, 2008, for reviews). According to theory, individual differences in attachment are associated with different emotion regulation strategies. Secure individuals, as a result of early experiences with caregivers in which their emotional expressions were acknowledged, accepted, and responded to in a sensitive and supportive manner, are thought to develop positive attitudes regarding the utility of emotional expression and support-seeking, openness to the experience and expression of a range of both positive and negative emotions, and the capacity to appropriately regulate their emotions. By contrast, insecure individuals are thought to develop different strategies for dealing with their emotions that reflect a lack of confidence in the availability of attachment figures in times of need. Specifically, avoidant individuals, whose emotional expressions were rebuffed by caregivers, may develop the tendency to suppress or minimize their emotions, whereas anxious individuals, whose emotional bids were responded to inconsistently by caregivers, may develop the tendency to exaggerate or maximize their emotions and ruminate on their problems.

These theoretical expectations have garnered substantial empirical support. For example, insecure adults (both avoidant and anxious) have been found to have difficulties with emotion regulation as evidenced by reports of greater psychological distress and less constructive coping strategies relative to their secure counterparts (e.g., Mickelson, Kessler, & Shaver, 1997; Mikulincer & Florian, 1998, 1999; see Mikulincer & Shaver, 2007, 2008 for reviews). Consistent with theory, attachment security is associated with support-seeking and problem-focused coping strategies, whereas attachment avoidance and anxiety are associated with distancing/avoidance and emotion-focused/ruminative coping strategies, respectively (e.g., Mikulincer & Florian, 1998, 1999; Mikulincer & Shaver, 2007). Specifically related to parenting, attachment insecurity is associated with greater parenting stress (Kor, Mikulincer, & Pirutinsky, 2012; Mills-Koonce et al., 2011), more psychological distress during pregnancy and the transition to parenthood (Mikulincer & Florian, 1998, 1999; Rhoads, Simpson, & Friedman, 2006), less constructive strategies for coping with

parenting stressors (Mikulincer & Florian, 1998, 1999), and greater perceptions of family responsibilities as overwhelming (Kohn et al., 2012).

The proposition that emotion regulation may mediate the link between parental attachment style and responses to child distress also rests on considerable theory about a link between parental emotion regulation and caregiving (e.g., Cassidy, 2006; Dix, 1991; Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002). A crucial component of effective and sensitive caregiving is the parents' ability to regulate his/her own emotions (Dix, 1991). In fact, according to Cassidy (2006; see also Cassidy, Jones, & Shaver, 2013), many instances of maternal insensitivity can be construed as failures of maternal emotion regulation. This idea stems from the notion that parents who struggle with regulating their emotions may experience strong, dysregulated affective responses to a variety of challenging events; a parenting challenge, such as dealing with a child's distress, may constitute such an event, and any resulting emotion dysregulation can lead to parent-focused responses, rather than to responses centered on the needs of the child (e.g., Fabes, Leonard, Kupanoff, & Martin, 2001; Fabes et al., 2002). That is, parents who become dysregulated may be more focused on relieving their own discomfort than that of their child and may use insensitive parenting strategies, such as minimization and punishment, to cut off the child's distress as quickly as possible (Fabes et al., 2002).

The results of several studies indicate links between parental emotion regulation and caregiving. These studies examined both global emotion regulation and parenting-specific emotion regulation in a variety of contexts (e.g., parents interacting with their own children; parents watching videos of unfamiliar crying infants). Studies examining parental discipline strategies have found that poorer global emotion regulation strategies (Lorber, 20012) and greater negative emotional arousal in parenting contexts (measured via self-report as well as with physiological measures) are associated with harsher and over-reactive discipline (Lorber & O'Leary, 2005; Lorber & Slep, 2005; Smith & O'Leary, 1995). Similar findings have emerged in studies focusing specifically on parents' responses to child distress or negative affect. For example, pregnant women who experienced heightened negative emotions in response to videotapes of unfamiliar infants' distress responded less sensitively to their own infant's distress when observed 6 months postpartum (Leerkes, 2010) and self-reported more negative responses to their infant's distress 16 months postpartum (Leerkes et al., 2011) relative to mothers who did not report heightened negative emotions. Studies employing physiological measures of parental emotion regulation in response to child distress have yielded similar results. For example, mothers who abuse their children have been found to have heightened physiological responses (e.g., higher peak heart rate and skin conductance) to videos of crying infants compared to non-abusing mothers (Frodi & Lamb, 1980).

In sum, the theory and empirical evidence reviewed above in relation to the associations among attachment styles, emotion regulation, and caregiving provide a solid foundation for the mediation model we propose in the present study (see Figure 1).

## The Present Study

The present study utilized data from an ongoing longitudinal study to examine the links among maternal attachment styles, maternal emotion regulation, and three types of maternal responses to adolescent negative emotions: distress, harsh, and supportive responses. Distress responses reflect the degree to which mothers become upset, uneasy, or anxious in response to adolescent negative emotions. Harsh responses reflect the degree to which mothers respond in a punitive or minimizing manner to adolescent negative emotions. Finally, supportive responses reflect the degree to which mothers encourage adolescent emotional expression, try to help the adolescent feel better, and try to help the adolescent solve the problem.

The first goal of the present study was to examine the direct link between mothers' attachment styles and the three types of responses to their adolescents' negative emotions two years later. The second goal of the present study was to test whether maternal emotion regulation difficulties mediate the link between maternal attachment style and responses to adolescent negative emotions. We hypothesized that greater maternal insecurity (i.e., higher scores on the avoidance and/or anxiety dimensions) would predict more difficulties with emotion regulation, which in turn would predict more distressed, harsher, and less supportive maternal responses. We also predicted several direct associations between maternal attachment style and responses to adolescent distress. For distress responses to adolescent distress: Given evidence that attachment anxiety, but not avoidance, is associated with greater personal distress in response to others' distress (Mikulincer et al., 2001; Monin, Schulz, Feeney, & Cook, 2010), we expected that anxiety would directly predict distress responses whereas avoidance would only indirectly predict distress responses through maternal emotion regulation difficulties. For harsh responses to adolescent distress: Given evidence that attachment avoidance, but not anxiety, is associated with aloof, unaccepting, and angry responses to others' needs (Edelstein et al., 2004; Kunce & Shaver, 1994; Rholes et al., 1999), we expected avoidance would directly predict harsh response whereas anxiety would only indirectly predict harsh responses through maternal emotion regulation difficulties. For supportive responses to adolescent distress: Given evidence that both avoidance and anxiety are associated with less sensitive and supportive caregiving (Goodman et al., 1997; Kunce & Shaver, 1994), we predicted direct, as well as indirect, associations for both avoidance and anxiety.

## METHOD

### Participants and Procedures

Participants included mothers of adolescents who have been participating in an ongoing longitudinal study of adolescent development. The original community sample of 277 adolescents and their parent(s) was recruited from the Washington, DC, metropolitan area using media and print advertisements sent to community centers, schools, and libraries. Families with a child between the ages of 9 and 13 and who were proficient in English were eligible to participate in the initial (Time 1) laboratory assessment. Following the initial visit, families were invited back to the laboratory at annual intervals to complete a yearly assessment. The measure of maternal attachment style was added at the Time 3 assessment;



therefore, the present analyses utilize data collected from the Time 3, Time 4, and Time 5 assessments. Two hundred and thirty mothers participated at Time 3, 221 mothers at Time 4, and 197 mothers at Time 5. Sample demographics are presented in Table 1. At each time point, families participated in a laboratory visit that lasted approximately 2 hours. At Time 3 and Time 4, mothers received \$35 for participating, and adolescents received between \$25 and \$35 based on their performance on a task that is unrelated to the present study. At Time 5 mothers received \$40 for participating, and adolescents received between \$30 and \$40 (see MacPherson et al., 2010, for more details about the design and procedures of the larger longitudinal study).

## Measures

**Maternal attachment style**—At Time 3, mothers' attachment styles were assessed with the Experiences in Close Relationships Scale (ECR; Brennan et al., 1998). This 36-item self-report measure taps two dimensions of adult attachment: avoidance (18 items) and anxiety (18 items). Avoidance is characterized by a preference for distance in close relationships as well as discomfort with intimacy, emotional disclosure, and depending on close others (e.g., "I prefer not to show others how I feel deep down."). Anxiety is characterized by a strong desire for closeness in relationships and fears of rejection and abandonment (e.g., "I want to get very close to others, and this sometimes scares them away."). Mothers indicated on a 7-point Likert scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*) the extent to which they agree with each statement. Although the original ECR items asked specifically about experiences with romantic partners, recently researchers have used items that ask about experiences in close relationships more broadly (e.g., with "close relationship partners"; Mikulincer & Shaver, 2007). In the present study, parents completed the ECR in reference to close relationships, broadly construed. Also, the earliest research on self-reported adult attachment styles employed a measurement approach in which attachment styles were operationalized as categories or types (Hazan & Shaver, 1987). However, subsequent psychometric research revealed that individual differences in adult attachment are better captured by dimensions rather than categories (Brennan et al., 1998; Fraley & Waller, 1998). Following current recommendations (Mikulincer & Shaver, 2007), we used the two ECR dimensions. The ECR has demonstrated excellent psychometric properties including internal consistency, test-retest reliability, and construct validity (Brennan et al., 1998; Mikulincer & Shaver, 2007). In the present study, both attachment dimensions demonstrated high internal consistency ( $\alpha = .90$ , for avoidance;  $\alpha = .91$ , for anxiety).

Following prior research with the ECR (e.g., Mallinckrodt & Wei, 2005; Scott, Levy, & Pincus, 2009), and the procedures recommended by Russell, Kahn, Spoth, and Altmaier (1998), we created item parcels to serve as measured indicators of latent avoidance and anxiety variables. We performed two factor analyses (one with the 18 avoidance items and one with the 18 anxiety items) and then rank ordered the items within each subscale based on the magnitude of the factor loadings. We then successively assigned each item to one of three parcels for each attachment dimension (6 items per parcel) and summed the items within each parcel resulting in three measured indicators for the latent avoidance factor and three measured indicators for the latent anxiety factor. We aimed to evenly distribute the magnitude of item loadings across the parcels with the goal of creating groups of items (i.e.,

parcels) with approximately equal factor loadings on each latent variable. (See Coffman and MacCallum, 2005, for more information about item parceling procedures.)

**Maternal emotion regulation difficulties**—At Time 4, mothers' emotion regulation difficulties were assessed with the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). This 36-item measure assesses six dimensions of emotion regulation: (1) nonacceptance of emotional responses, (2) difficulties engaging in goal-directed behaviors when experiencing negative emotions, (3) difficulties with impulse control when experiencing negative emotions, (4) lack of emotional clarity, (5) lack of emotional awareness, and (6) limited access to strategies for regulating emotions. Mothers rated on a 5-point Likert-type scale from 1 (*almost never, 0–10%*) to 5 (*almost always, 91–100%*) how often each item applies to them. We note that the DERS was designed as a measure of general emotion regulation capacities; it was not designed to specifically assess the emotion regulation strategies associated with the different forms of attachment insecurity, nor was it designed to assess emotion regulation specifically in parenting situations.

Gratz and Roemer (2004) found that the DERS has good psychometric properties. In the present study, each of the DERS subscales demonstrated high internal consistency ( $\alpha$ s ranged from .78 to .90). However, recent psychometric research on the latent structure of the DERS suggests that the emotional awareness subscale should be excluded from the calculation of the overall emotion regulation factor (Bardeen, Fergus, & Orcutt, 2012). Consistent with the findings of Bardeen et al., a confirmatory factor analysis using the DERS data from the present sample revealed that the emotional awareness variable loaded most weakly onto the emotion regulation factor (standardized loading of .38), and removing the emotional awareness subscale significantly improved data-model fit,  $\chi^2(4) = 37.29, p < .001$ . Therefore, in the present study we excluded the emotional awareness subscale and used the five remaining subscales of the DERS as measured indicators of the latent variable reflecting mothers' difficulties with emotion regulation.

**Maternal responses to adolescents' negative emotions**—At Time 5, mothers' responses to their adolescents' negative emotions were assessed with the Coping with Children's Negative Emotions Scale – Adolescent Version (CCNES-A; Fabes & Eisenberg, 1998). Mothers were presented with nine hypothetical scenarios in which their adolescent is expressing distress (e.g., "My teenager gets sad because his or her feelings were hurt by a friend."). Each scenario is accompanied by six ways of responding to the adolescent's distress in that particular situation and mothers were asked to indicate on a Likert-type scale from 1 (*very unlikely*) to 7 (*very likely*) how likely they would be to respond to each scenario in each of the six different ways. Although the mothers are presented with hypothetical scenarios, they are instructed to indicate how they would respond to their own participating adolescent in each of these scenarios. The CCNES-A yields scores for six types of responses: (1) punitive responses (e.g., "threaten to punish him/her"), (2) minimization responses (e.g., "tell him/her not to make such a big deal out of it"), (3) distress responses (e.g., "become nervous dealing with him/her and his/her feelings"), (4) problem-focused responses (e.g., "help him/her think of things to do to solve the problem"), (5) emotion-focused responses (e.g., "try to make him/her feel better by making him/her laugh"), and (6)



expressive encouragement (e.g., “encourage him/her to talk about what is making him/her so anxious”). The 12-item child version of the CCNES has demonstrated strong psychometric properties (e.g., Eisenberg et al., 1996; Fabes et al., 2002). Although the adolescent version of the CCNES has been used less frequently, multiple studies support the internal consistency reliability of the CCNES-A subscales (Daughters, Gorka, Rutherford, & Hayes, 2014; Ehrlich et al., 2013; Ehrlich, Cassidy, Lejuez, & Daughters, 2014). In addition, as noted earlier, Ehrlich et al. (2013) found that maternal responses on the CCNES-A were associated with adolescent friendship quality – but only for adolescents low on distress tolerance. In the present study, each of the CCNES-A subscales demonstrated high internal consistency ( $\alpha$ s ranged from .79 to .90).

We used the CCNES-A items to examine three latent factors representing three different types of responses to adolescent distress: (1) distress responses, (2) harsh responses, and (3) supportive responses (Fabes et al., 2002; Spinrad et al., 2007). We used the 9 items from the distress response subscale of the CCNES-A to create a latent distress response variable. We employed procedures identical to those described above for the ECR to create three item parcels (3 items per parcel) to serve as measured indicators of the latent distress response variable. We used items from the punitive responses and minimization responses subscales of the CCNES-A as measured indicators of a latent variable representing harsh responses to adolescents’ negative emotions. We created three item parcels from the punitive responses subscale and three item parcels from the minimization responses subscale, resulting in 6 measured indicators of the latent harsh responses variable. Finally, the three positive subscales of the CCNES-A (emotion-focused responses, problem-focused responses, and expressive encouragement) served as measured indicators for a latent variable reflecting supportive maternal responses.

## RESULTS

### Preliminary Analyses

**Attrition and missing data**—To examine participant attrition, we compared mothers who dropped out of the study after Time 3 to those mothers who continued to participate in at least one other time point (Time 4, Time 5, or both) on attachment style and various demographic variables. Mothers who dropped out after Time 3 did not differ from mothers who continued to participate on attachment style, age, household income, adolescent age, ethnicity, or education level. Furthermore, we examined missing data patterns among all key study variables using Little’s (1988) missing completely at random (MCAR) test. The results of this test revealed that the data are missing completely at random,  $\chi^2(142) = 130.20, p = .75$ . Therefore, we used full information maximum likelihood estimation (FIML) to deal with missing data.

**Descriptive statistics, correlations, and demographic covariates**—Descriptive statistics and correlations among study variables are presented in Table 2. Preliminary analyses aimed at identifying demographic covariates to include in the mediation models revealed that ethnicity was significantly associated with mothers’ distress and harsh responses, but unrelated to supportive responses to their adolescents’ negative emotions.

Specifically, compared to European American mothers, non-European American mothers reported lower distress responses and more harsh responses,  $t(191) = -2.78, p < .01$ , and  $t(192) = 2.08, p < .05$ , respectively. Therefore, ethnicity was included as a predictor of maternal responses to distress in the models for these two responses.

### Overview of Principal Analyses

In the present study, we used structural equation modeling (SEM) to test three latent variable mediation models: one model for each type of response to adolescents' negative emotions (distress, harsh, and supportive responses). Each of the SEM analyses proceeded in two stages: a measurement stage and a structural stage. In the measurement stage, we used confirmatory factor analysis (CFA) to assess the fit of a measurement model in which all the latent factors were allowed to covary and all the factor variances were set to 1 to give scale to each latent variable. Modification indices were examined to determine whether theoretically consistent improvements could be made to the measurement model. Once the final measurement model was determined, we proceeded to the structural stage. In the structural stage, we added the hypothesized paths among the latent variables to the measurement model. The initial structural models tested included direct, as well as indirect, paths from the two attachment style dimensions to maternal responses to distress (i.e., partial mediation models). After testing the initial structural models, we tested full mediation structural models in which the paths from the attachment dimensions to maternal responses to distress were removed, and assessed the data-model fit of the respecified models. We statistically compared the fit of the full versus partial mediation models to determine which model better captures the links between attachment style and responses to distress and to evaluate our hypotheses about the direct and indirect paths. If removing the direct paths does not result in a significant decrement in model fit, this suggests that the association between attachment style and maternal responses to adolescents' negative emotions is largely mediated by maternal emotion regulation difficulties. Following Hu and Bentler (1999), the following fit indices and criteria for adequate data-model fit were used in the present study: standardized root mean square residual ( $SRMR \approx .08$ ), comparative fit index ( $CFI \approx .95$ ), Tucker-Lewis Index ( $TLI \approx .95$ ), and root mean square error of approximation ( $RMSEA \approx .06$ ). For  $CFI$  and  $TLI$ , larger values indicate better model fit. For  $RMSEA$  and  $SRMR$ , smaller values indicate better model fit. We report the chi-square statistic and associated significance value for each model, but overall model fit was not evaluated based on the significance of the chi-square statistics due to the sensitivity of this index to sample size (Bentler, 1990).

To test the hypothesized indirect effects, we used bootstrapping to generate bias-corrected confidence intervals and then examined those confidence intervals to determine the significance of the indirect paths (MacKinnon, Lockwood, & Williams, 2004; Shrout & Bolger, 2002). In accord with current convention, we report the unstandardized path coefficients and bootstrapped confidence intervals for each of our models. All SEM analyses were performed with *Mplus* statistical software Version 7 (Muthén & Muthén, 1998–2012).

### Model of Maternal Distress Responses

The initial measurement model fit the data well; therefore, no modifications were made (see Table 3 for fit indices). The initial structural model reflecting partial mediation met the criteria for good data-model fit and revealed that greater maternal avoidance ( $b = .20$ ,  $SE = .10$ ,  $p < .05$ ) and anxiety ( $b = .47$ ,  $SE = .14$ ,  $p < .01$ ) at Time 3 predicted more difficulties with emotion regulation at Time 4. Furthermore, difficulties with emotion regulation at Time 4 were positively related to mothers' distress responses to their adolescents' negative emotions at Time 5 ( $b = .53$ ,  $SE = .17$ ,  $p < .01$ ). The direct paths from maternal avoidance and anxiety to distress responses were not significant.

Despite the absence of a significant direct association between maternal attachment style and distress responses, we proceeded with testing the indirect pathways (e.g., Shrout & Bolger, 2002). Examination of the bias corrected confidence intervals revealed two significant indirect paths (i.e., the 95% confidence intervals did not include 0). Greater avoidance and anxiety predicted more difficulties with emotion regulation, which in turn predicted higher maternal distress responses, indirect effect of avoidance = .11: 95% CI [.001, .28]; indirect effect of anxiety = .25: 99% CI [.06, .58]. The second structural model reflecting full mediation yielded good data-model fit (see Table 3). All significant path coefficients and indirect associations from the initial structural model remained significant. Removing the direct paths from attachment style to distress responses did not significantly worsen data-model fit,  $\chi^2(2) = 1.49$ ,  $p > .05$ .

### Model of Maternal Harsh Responses

The fit of the initial measurement model was promising, but did not meet the criteria for adequate data-model fit (see Table 3). Examination of the modification indices revealed that fit could be significantly improved by allowing the residuals of the three item parcels containing items from the minimization responses subscale of the CCNES-A to covary. Because the items included in these parcels are from the same subscale and are worded similarly, adding these covariances was justified. The respecified measurement model met the criteria for good data-model fit (see Table 3). No other modifications were made. The initial structural model reflecting partial mediation fit the data well and revealed that greater maternal avoidance ( $b = .20$ ,  $SE = .10$ ,  $p < .05$ ) and anxiety ( $b = .48$ ,  $SE = .14$ ,  $p < .01$ ) at Time 3 predicted more difficulties with emotion regulation at Time 4, and difficulties with emotion regulation predicted harsher responses at Time 5 ( $b = .32$ ,  $SE = .11$ ,  $p < .01$ ). The direct path from maternal attachment anxiety to harsh responses was not significant; however, the path from maternal avoidance to harsh responses was marginally significant ( $p = .086$ ).

Examination of the bias corrected confidence intervals revealed two significant indirect paths: greater avoidance and anxiety predicted more difficulties with emotion regulation, which in turn predicted harsher maternal responses, indirect effect of avoidance = .06: 95% CI [.004, .17]; indirect effect of anxiety = .15: 99% CI [.02, .37]. The second structural model reflecting full mediation yielded good data-model fit (see Table 3). All significant path coefficients and indirect associations from the initial structural model remained significant. Removing the direct paths from attachment style to harsh responses did not

significantly worsen data-model fit,  $\chi^2(2) = 5.11, p > .05$ . However, because we found a marginally significant direct link between avoidance and mothers' harsh responses in the initial structural model, we tested a third structural model that included both direct and indirect paths from avoidance to harsh responses, but only an indirect path from anxiety to harsh responses through mothers' difficulties with emotion regulation. This model fit the data significantly better than the full mediation model,  $\chi^2(1) = 4.32, p < .05$ , but did not differ in fit from the partial mediation model,  $\chi^2(1) = .79, p > .05$ . In this third model, avoidance both directly ( $b = .19, SE = .09, p < .05$ ) and indirectly, through emotion regulation difficulties, predicted harsher maternal responses, indirect effect = .07: 95% CI [.01, .19]. The indirect path from anxiety to mothers' harsh responses through emotion regulation difficulties remained significant, indirect effect = .17: 99% CI [.05, .38].

### Model of Supportive Responses

The initial measurement model adequately fit the data; therefore, no modifications were made (see Table 3 for fit indices). The initial structural model reflecting partial mediation revealed that greater avoidance ( $b = .20, SE = .10, p < .05$ ) and anxiety ( $b = .48, SE = .14, p < .01$ ) at Time 3 predicted more difficulties with emotion regulation at Time 4, and emotion regulation difficulties predicted less supportive maternal responses at Time 5 ( $b = -.25, SE = .10, p < .05$ ). The direct paths from maternal attachment style to supportive responses were not significant. Examination of the bias corrected confidence intervals revealed two significant indirect paths: greater avoidance and anxiety predicted more difficulties with emotion regulation, which in turn predicted less supportive maternal responses, indirect effect of avoidance =  $-.05$ : 95% CI  $[-.01, -.13]$ ; indirect effect of anxiety =  $-.12$ : 99% CI  $[-.003, -.35]$ . The second structural model reflecting full mediation yielded adequate data-model fit (see Table 3). All significant path coefficients and indirect associations from the initial structural model remained significant. The fit of the full mediation model was not significantly worse than the partial mediation model,  $\chi^2(2) = 3.88, p > .05$ .

## DISCUSSION

The goals of the present study were twofold. First, we examined the association between mothers' attachment styles and their responses to their adolescents' negative emotions two years later. Second, we examined maternal emotion regulation abilities as a potential mediator of this link. Specifically, we tested three separate mediation models that tap three types of maternal responses to adolescents' negative emotions: distress responses (e.g., become anxious or nervous), harsh responses (e.g., yell, invalidate adolescent's emotions), and supportive responses (e.g., help solve the problem, encourage emotional expression). The results were remarkably consistent across all three models: Mothers who reported greater attachment anxiety or avoidance at T3 also reported having greater difficulties with emotion regulation at T4 and, in turn, were more likely to endorse distress and harsh responses and less likely to endorse supportive responses to their adolescents' negative emotions at T5. In addition, we found that maternal avoidance directly predicted harsher maternal responses to adolescent distress (however, we note that, in the initial partial mediation model tested, the direct path from maternal avoidance to harsh responses was marginally significant). No other direct paths from attachment style to maternal responses

emerged. Removing the direct paths from attachment style to maternal response to distress did not result in a significant decrement in model fit in any of the models, suggesting that the links between maternal attachment style and responses to adolescents' negative emotions are largely mediated by difficulties with emotion regulation (see Figure 2 for a summary of the main findings). Overall, these findings are consistent with previous research with both parent-child dyads and romantic partners indicating that attachment insecurity is associated with less sensitive and responsive caregiving (e.g., Edelstein et al., 2004; Feeney & Collins, 2001; Goodman et al., 1997; Rholes, Simpson, & Blakely, 1995; Simpson et al., 1992) and that there are mediating factors that underlie this link (e.g., Feeney & Collins, 2001; Millings, Walsh, Hepper, & O'Brien, 2013).

### **Maternal Attachment Style and Responses to Adolescents' Negative Emotions**

One direct association emerged between maternal attachment and maternal self-reported responses to adolescents' negative emotions: maternal attachment-related avoidance was positively associated with harsh responses to adolescent distress two years later. This finding is congruent with our hypothesis and is consistent with previous literature. Prior research with both romantic partners and parent-child dyads indicates that avoidant individuals tend to be unresponsive, angry, and rejecting in response to expressions of negative emotion in others (Edelstein et al., 2004; Goodman et al., 1997; Rholes et al., 1999; Simpson et al., 1992). When children or adolescents become distressed, their parents are put in a position in which their role as a provider of care is made salient; avoidant mothers, who have endorsed their dislike of closeness and having others depend on them, may therefore react harshly with frustration and anger in response to such distress (see Rholes et al., 1999, for relevant evidence related to caregiving in romantic relationships).

None of the other three hypothesized direct links was significant. For instance, contrary to our expectations, and despite prior findings indicating that attachment anxiety is associated with greater personal distress in response to others' distress (Mikulincer et al., 2001; Monin, Schulz, Feeney, & Cook, 2010), there was no significant direct link between anxiety and maternal distress responses. One possibility for the lack of a direct association is that, when the distressed person is one's own child, anxious individuals may not perceive their adolescents' expressions of negative emotion as particularly distressing. In fact, adolescents' expressions of distress may actually promote the intimacy and closeness that anxious individuals strongly desire in relationships. Some empirical evidence supports this idea. In a daily diary study, Pietromonaco and Barrett (1997) found that self-reported preoccupied (i.e., high anxious) individuals reported more positive reactions to high-conflict social interactions relative to secure and dismissing/avoidant individuals (i.e., high-anxious individuals rated these conflict interactions as more satisfying and intimate). The authors proposed that intense, high-conflict interactions may provide an opportunity for attachment anxious people to satisfy their need for intimacy and personal disclosure in relationships. Such a phenomenon may be particularly likely to occur in situations where negative emotions are expressed in the context of the parent-child relationship.

We also did not find a direct link between either attachment anxiety or avoidance and supportive maternal responses to distress. It is worth noting that the two prior studies that

examined how maternal attachment relates to supportive responses to child distress obtained somewhat inconsistent results. Goodman et al. (1997) found direct links between maternal attachment insecurity and less supportive responses to child distress. In contrast, Edelstein et al. (2004) did not find main effects of attachment style on maternal responsiveness to child distress, but instead found that the level of child distress moderated this link. The present findings, indicating that there are also mediating mechanisms (i.e., emotion regulation capacities) that underlie the link between maternal attachment and supportive responses to child distress, add to this growing literature and further highlight the complexity of these links.

### **Emotion Regulation Difficulties as a Mediator of the Link between Maternal Attachment Style and Responses to Adolescents' Negative Emotions**

Our results indicate that both avoidance and anxiety indirectly relate to all three types of responses through maternal emotion regulation difficulties, suggesting that emotion regulation is an important mediating mechanism between attachment and caregiving responses. Taken as a whole, our findings are consistent with a substantial literature indicating that insecure individuals (both anxious and avoidant) struggle with regulating their emotions (e.g., Mikulincer & Florian, 1998; Mikulincer & Shaver, 2007, 2008) and that difficulties with emotion regulation can lead to less sensitive parental responses to child signals (e.g., Leerkes, 2010; Lorber, 2012; Lorber & O'Leary, 2005). Our results extend this knowledge base by demonstrating how attachment insecurity and emotion regulation difficulties relate to specific types of maternal responses (i.e., distress, harsh, and supportive responses, rather than global [in]sensitivity) under specific circumstances (i.e., in the context of adolescent distress).

Although both attachment avoidance and anxiety were associated with higher scores on the measure of emotion regulation difficulties used in the present study, these two dimensions of insecurity have been associated with different types of emotion regulation "strategies." Avoidance is associated with a minimizing strategy in which emotions are suppressed or denied, whereas anxiety is associated with a maximizing strategy in which emotions are ruminated on and exaggerated (Cassidy, 1994; Main, 1990; Mikulincer & Florian, 1998). Unfortunately, the measure of emotion regulation difficulties used in the present study was not designed to tease apart these specific emotion regulation strategies. Future work examining the associations among adult attachment, emotion regulation, and parenting should include measures that are designed to tap the specific emotion regulation strategies associated with avoidance and anxiety and should explore how these specific strategies relate to particular parental responses to negative adolescent emotions (see Wei, Vogel, Ku, & Zakalik, 2005, for a discussion of the benefits of teasing apart the specific affect regulation strategies associated with avoidance and anxiety).

Finally, although emotion regulation difficulties mediated the link between maternal attachment insecurity and all three types of responses to adolescent negative emotion, it is noteworthy that the amount of variance explained in supportive responses (5%) was much less than amount of variance explained in distress (30%) and harsh (22%) responses. It may be that emotion regulation capabilities play a much larger role in refraining from becoming



distressed or from acting harshly than in promoting supportive behavior. Mothers who are competent emotion regulators are not necessarily prompted to engage in supportive behaviors. That is, the ability to remain relatively calm and to not react impulsively with harsh behavior does not automatically lead to positive parenting practices, possibly explaining why our model explains much less of the variance in supportive responses. Future work should examine additional variables that may more strongly predict supportive parenting in the context of adolescent distress.

### Limitations and Future Directions

Although our findings are consistent with both theory and previous research, they must be interpreted in light of several study limitations. First, all variables included in the path models were based on mother self-reports, which may have contributed to shared method variance or reporting biases. Second, mothers' self-reports about emotion regulation and how they respond to their adolescents' negative emotions may not reflect the actual emotional and behavioral responses they engage in "in the moment" (and may also differ from how adolescents interpret their mothers' responses; Ehrlich et al., 2014). Other measures of emotion regulation, such as physiology or behavior, and behavioral observations of how mothers respond to their adolescents' negative emotions may yield new insight into how attachment and emotion regulation relate to maternal behavior. Third our study focused only on maternal responses to adolescents' negative emotions. Although fathers were included in the larger longitudinal study, the sample size of fathers was not sufficient for testing the latent variable models included in the present study. Fourth, in our models we did not control for prior levels of the dependent variable (i.e., responses to adolescents' negative emotions). As a result, it is possible that our path coefficients were over- or underestimated (Selig & Preacher, 2009).

Our results suggest several avenues for future research. The present study identified attachment style as one factor associated with maternal responses to adolescent negative emotions, and emotion regulation as a mediating mechanism underlying this link. It is likely, however, that other variables predict parental responses to adolescent distress (e.g., child characteristics, cultural norms, contextual factors; see Eisenberg et al., 1998, for a conceptual model). A key goal for future research is to gain a better understanding of how all of these factors interact to predict mothers' responses to adolescents' negative emotions and to identify potential risk and protective factors that could exacerbate or mitigate the links among attachment insecurity, emotion regulation difficulties, and problematic parenting found in the present study.

In addition, our measure of maternal emotion regulation assessed global emotion regulation capacities rather than emotion regulation in the context of parenting situations specifically. There is some evidence that global emotion regulation may better predict parenting behaviors (i.e., discipline practices) than parenting-specific emotion regulation (Lorber, 2012). Examining the nature of the relation between global emotion regulation and parenting-specific emotion regulation and testing which of these better predicts mothers' responses to adolescent distress are interesting and important directions for future research.

In the present study we focused on maternal responses to adolescents' negative emotions that were not directed specifically at the mother. Two additional directions for future work will be to examine how attachment and emotion regulation relate to maternal responses to adolescents' positive emotions and to maternal responses to negative emotions that are directed specifically at the mother.

Finally, although the data utilized in the present study were collected over a span of three years, these data were limited to a single developmental period (i.e., adolescence). Future work examining the developmental trajectories of maternal responses to child distress (from childhood into adolescence) will be important. Prior work showed that there is considerable stability in parents' reactions to their children's negative emotions over a six-year period (from 4–6 years to 10–12 years old; Eisenberg, Fabes, Shepard, Guthrie, Murphy, & Reiser, 1999). It is unclear whether continued stability would be observed as children develop into adolescents and young adults. Given the new challenges that parents of adolescents face and the changing dynamics in the parent-child relationship during adolescence, it is possible that reactions to adolescent distress will change as well.

## Conclusion

In sum, this work extends the literature on parents' responses to their children's negative emotions in a number of ways. First, although there is a large body of literature concerning the child outcomes associated with parental responses to child negative emotion, few studies have examined parental characteristics that predict parental responses to distress. Second, although research suggests that negative emotions increase in adolescence (Larson & Asmussen, 1991), previous work on parental responses to their children's distress has focused mostly on parents of infants and young children to the exclusion of parents of adolescents. This study also advances the literature on adult attachment and parenting. Although the literature suggests that self-reported attachment styles are linked to emotion regulation and that emotion regulation is related to parenting, to our knowledge no study has yet attempted to integrate and empirically test the mediational model as a whole.

## IMPLICATIONS FOR PRACTICE

Understanding the parental characteristics associated with maladaptive parental responses to adolescent distress can inform clinical practice and the development of interventions. Researchers and practitioners have called for parenting interventions that focus not only on changing undesirable parental behavior, but that also target the affective and cognitive factors that motivate the undesirable parenting behavior (e.g., Lorber & O'Leary, 2005). Our results suggest that maternal attachment insecurity and emotion regulation difficulties are two factors that predict maternal response to adolescent distress and, therefore, are prime targets for parenting interventions. One intervention for parents of younger children that has targeted parental emotion regulation has proven successful in promoting positive child outcomes (i.e., The Circle of Security intervention; Hoffman, Marvin, Cooper, & Powell, 2006), and it is likely that interventions that target parental emotion regulation would also be beneficial for parents of adolescents (see Moretti & Obsuth, 2009, for some initial support). Furthermore, the link between maternal insecure attachment and emotion regulation difficulties could inform clinical efforts to tailor individualized approaches to fostering

better emotion regulation capacities that take into account individuals' interpersonal proclivities and attachment-related affect regulation strategies.

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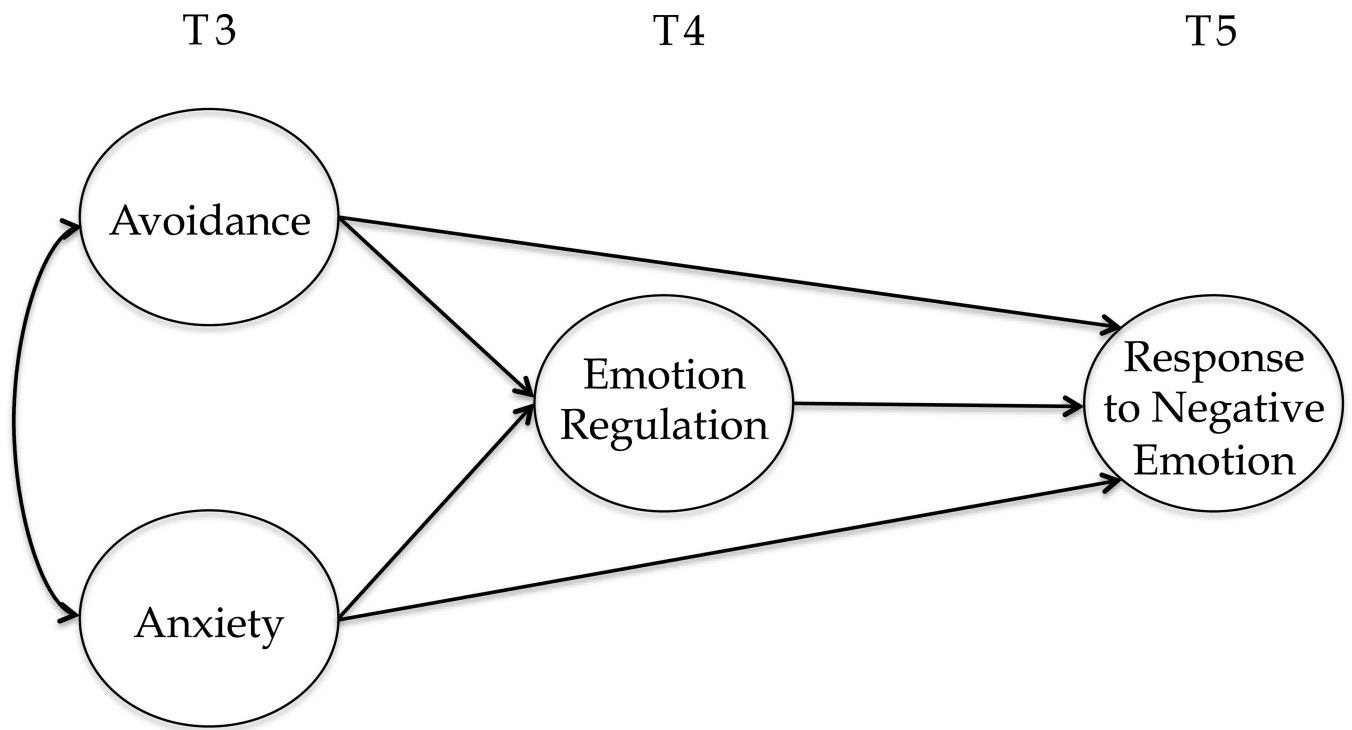
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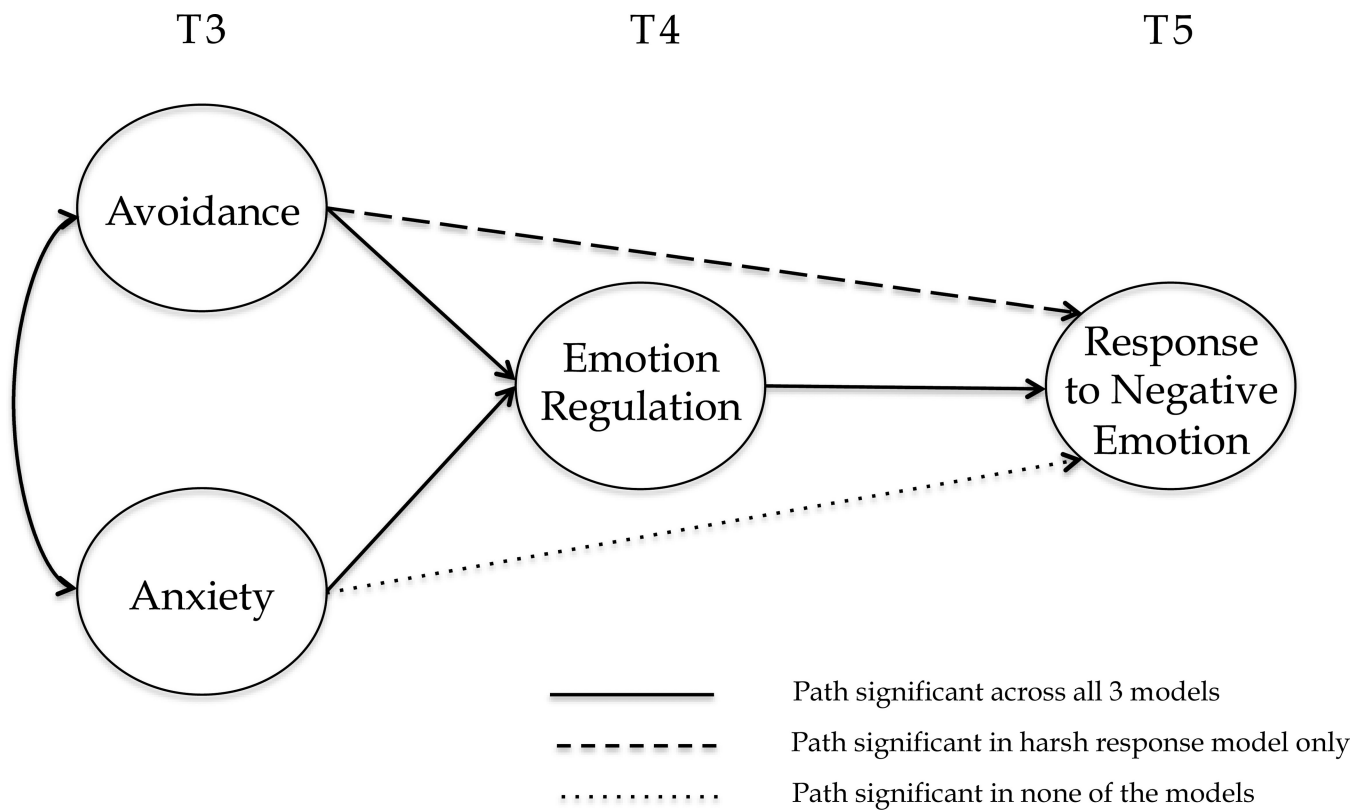


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**Figure 1.**

Latent variable path model of associations among maternal attachment style, emotion regulation, and responses to adolescents' negative emotions. T3-T5 represent three assessments separated by one year.

**Figure 2.**

Summary of findings across all 3 models.

*Note.* Indirect paths from avoidance and anxiety to responses to negative emotion through emotion regulation difficulties are significant across all 3 models.

**TABLE 1**

## Sample Demographics

	Time 3	Time 4	Time 5
Mothers			
Age ( <i>M,SD</i> )	44.09 (6.07)	45.13 (6.08)	46.65 (6.19)
Education (%)			
Less than high school	1	1	2
High school degree/GED	8	6	4
Technical or trade school	1	1	1
Some college	21	21	19
Associates degree	5	8	6
College degree	30	30	32
Graduate school degree	34	34	36
Household income	\$103,187 (\$55,832)	\$104,603 (\$59,597)	\$109,510 (\$62,010)
Currently married (%)	Not assessed	74	72
Adolescents			
Age ( <i>M,SD</i> )	13.06 (0.89)	14.02 (0.90)	15.04 (0.95)
Ethnicity (%)			
European American	48	50	50
African American	36	35	35
Latin American	4	4	4
Other	12	11	11
Sex (%)			
Male	54	55	54
Female	46	45	46

TABLE 2

Correlation Matrix of Key Study Variables

	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Avo	2.54 (1.04)	-												
2. Anx	2.60 (1.09)	.35**	-											
3. DERS Non-accept	1.67 (0.73)	.18*	.31**	-										
4. DERS goal-direct	2.30 (0.82)	.19**	.26**	.41**	-									
5. DERS impulse	1.53 (0.58)	.23**	.32**	.47**	.56**	-								
6. DERS strategies	1.52 (0.55)	.29**	.39**	.63**	.59**	.60**	-							
7. DERS clarity	1.62 (0.57)	.25**	.38**	.33**	.36**	.42**	.48**	-						
8. DR	2.02 (1.03)	.17*	.25**	.36**	.27**	.31**	.42**	.36**	-					
9. PR	1.90 (0.79)	.25**	.26**	.31**	.17*	.27**	.30**	.25**	.53**	-				
10. MR	3.05 (1.42)	.24**	.13	.13	.11	.19*	.14	-.00	.18*	.62**	-			
11. EFR	5.49 (0.95)	.00	.06	.09	-.05	-.04	.01	-.20**	-.12	.07	.40**	-		
12. PFR	6.12 (0.78)	-.17*	-.02	.00	-.15*	-.20**	-.14	-.29**	-.29**	-.17*	.16*	.65**	-	
13. EE	5.77 (0.94)	-.11	-.08	-.01	-.22**	-.23**	-.14	-.32**	-.25**	-.25**	.01	.57**	.69**	-

Note. Avo = attachment avoidance, Anx = attachment anxiety, DR = Distress Responses, PR = Punitive Responses, MR = Minimizing Responses, EFR = Emotion-Focused Responses, PFR = Problem-Focused Responses, EE = Expressive Encouragement.

\*  $p < .05$ .

\*\*  $p < .01$ .

TABLE 3

Fit Indices and Variance Explained for Each Model

Model	$\chi^2$	Df	p	SRMR	CFI	TLI	RMSEA [90% CI]	R <sup>2</sup> Emo Reg	R <sup>2</sup> Response
Distress responses									
Initial measurement model	132.67	71	<.001	.05	.97	.96	.06 [.04, .08]		
Initial structural model (partial)	168.31	84	<.001	.06	.95	.94	.06 [.05, .08]	.25	.31
Second structural model (full)	169.80	86	<.001	.06	.96	.94	.06 [.05, .08]	.25	.30
Harsh responses									
Initial measurement model	292.71	113	<.001	.08	.92	.90	.08 [.07, .09]		
Final measurement model	191.54	110	<.001	.05	.96	.96	.06 [.04, .07]		
Initial structural model (partial)	235.33	126	<.001	.06	.95	.94	.06 [.05, .07]	.25	.22
Second structural model (full)	240.44	128	<.001	.07	.95	.94	.06 [.05, .07]	.26	.21
Third structural model	236.12	127	<.001	.06	.95	.94	.06 [.05, .07]	.26	.22
Supportive responses									
Initial measurement model	161.27	71	<.001	.07	.95	.93	.07 [.06, .09]		
Initial structural model (partial)	161.27	71	<.001	.07	.95	.93	.07 [.06, .09]	.26	.08
Second structural model (full)	165.15	73	<.001	.07	.95	.93	.07 [.06, .09]	.25	.05