

The Pennsylvania State University
The Graduate School
College of Health and Human Development

MOTHERS' AFFECT DYSREGULATION, DEPRESSIVE SYMPTOMS, AND
EMOTIONAL AVAILABILITY DURING MOTHER-INFANT INTERACTION

A Thesis in
Human Development and Family Studies

by
Bo-Ram Kim

© 2010 Bo-Ram Kim

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science

December 2010

The thesis of Bo-Ram Kim was reviewed and approved* by the following:

Douglas M. Teti
Professor of Human Development and Family Studies
Thesis Advisor

Pamela M. Cole
Professor of Psychology

Steven H. Zarit
Professor of Human Development and Family Studies
Head of the Department of Human Development and Family Studies

*Signatures are on file in the Graduate School

ACKNOWLEDGEMENTS

I would like to express my deep gratitude toward my advisor, Prof. Dr. Doug Teti. Thank you for taking me under your wing and guiding me through the entire process. Both you and Prof. Dr. Pamela Cole's support, patience, and knowledge have made this thesis possible.

A big thank you to Mom, Dad, Elis, and friends for listening, understanding, supporting, and praying for me.

Finally, thank you God for being with me from beginning to end.

ABSTRACT

Disturbances in affective regulatory processes have previously been linked to psychological difficulties and disorders, particularly those involving personality disorder symptoms (Briere & Runtz, 2002). The current study examines mothers' affect dysregulation and maternal depressive symptoms as predictors of maternal emotional availability (EA) during mother-infant interaction, as well as whether affect dysregulation is more important than depressive symptoms in predicting EA. Questionnaire measures and 30 minutes of free play were obtained from 46 mothers of 4-5-month-old children. Whereas mothers' self-reported affective dysregulatory processes correlated negatively with EA, mothers' depressive symptoms did not. More specifically, mothers' tendency to use unhealthy externalizing behavior to reduce tension and distress was particularly important in predicting EA. These results suggest that in relatively low-risk samples, mothers' self-reported affect dysregulation, particularly their tendencies to act out negatively in response to tension and distress, may be a more salient predictor of emotional availability than depressive symptoms.

TABLE OF CONTENTS

List of Tables	vi
INTRODUCTION.....	1
Affect dysregulation indicative of psychopathology.....	4
Affect dysregulation and parenting.....	6
Affect dysregulation in personality and mood disorders.....	7
Affect dysregulation involved in maternal depressive symptoms.....	8
Disordered self processes vs. depressive symptoms.....	10
Current Study.....	11
METHOD	14
Participants	14
Procedure	15
Measures	15
Data Analysis	18
RESULTS	19
Preliminary Analyses.....	19
Main Analyses.....	23
DISCUSSION	28
References	33

LIST OF TABLES

Table 1. Descriptive Statistics for Maternal Affect Dysregulation (Inventory of Altered Self-Capacities), Depressive Symptoms, and Emotional Availability.....	21
Table 2. Inter-correlations between Maternal Affect Dysregulation (IASC Scale), Tension Reduction Activities (IASC Scale), and Depressive Symptoms.....	22
Table 3. Bivariate Correlations between IASC Subscales, Depressive Symptoms, and Emotional Availability Composite and Individual Dimensions.....	25
Table 4. Multiple Regression Analyses of Affect Dysregulation and Depressive Symptoms as Predictors of Emotional Availability.....	26
Table 5. Post Hoc Multiple Regression Analyses of Tension Reduction Activities and Depressive Symptoms as Predictors of Emotional Availability.....	27

INTRODUCTION

Parents are the most important part of the child's environment and can largely determine the outcomes of the child (Harris, 1998, p.15). In addition to evidence from behavioral genetics research (McGue, Elikins, Walden, & Iacono, 2005; McGuire, 2003; Plomin, 1999; Reiss, 2005; Scarr, 1992; Ulbricht & Neiderhiser, 2009) and studies of peer influence (Harris, 1995, 1998; Walden, McGue, Iacono, Burt, & Elkins, 2004) that suggest that development is influenced by heritable characteristics or social relationships outside of the family, a solid body of parenting research indicates the important impact of parenting on parent-child relationships and child outcomes (Bornstein, 2006). Competent parents nurture and protect their children, guide their children in understanding and expressing emotions, and prepare their children for adaptation to various contexts (Bornstein, 2006). A secure and healthy parent-child relationship promotes children's psychosocial functioning including their self-perceptions, social relations, and capacities to regulate emotions (Briere & Jordan, 2009; Lyons-Ruth, 2006, 2008; Wachs, Black, & Engle, 2009). As incompetent parenting negatively impacts the parent-child relationship and puts children at risk for later psychosocial difficulties or disorders, we need to better understand the predictors of parenting.

Parents' psychological resources are suggested to be the most important determinant of parenting (Belsky, 1984). Maternal affect, in particular, seems to be a psychological resource that is primary to competent and effective parenting (Dix, 1991).

Deficits or problems in mothers' affect influence the emotions mothers experience with their children (Smith, 2004) and lead to difficulties in the activation, engagement, and regulation of emotions that are considered to organize parenting (Dix, 1991). An important distinction that needs to be made in studying maternal affect and its relation to parenting is the difference between emotion and emotion regulation. As delineated in Cole, Martin, and Dennis (2004), whereas emotions are "biologically prepared processes that help humans to appraise experience and prepare to act to sustain favorable conditions or deal with unfavorable situations" (p.319), emotion regulation encompasses "systematic changes either in the activated emotion or psychological processes and activities associated with activated emotions" (p.320). Emotion regulation is about how and why emotions organize psychological processes, and differs from emotion expression (Cole et al.). In other words, emotions are processes that help individuals maintain well-being in response to changing environmental conditions. Any modification of these emotional responses through attentional, cognitive, social and behavioral processes (such as attention shifting, memory recall, cognitive reappraisals, and instrumental action) are considered to be the regulation of emotional responses (Cole & Hall, 2008; Cole, Michel & Teti, 1994).

Basic emotion regulatory processes can become patterns that interfere with functioning, even developing into symptoms of psychological disorders. When this dysfunction extends to individuals' processing of information and events, integration of emotion with other processes, and affective experience and expression, emotion is said to be dysregulated. Emotional responses associated with emotion dysregulation are unpredictable, inappropriate, and maladaptive (Cole & Hall, 2008). Emotion

dysregulation involves (a) ineffective regulation of emotions that endure, (b) emotions that lead to inappropriate behavior, (c) context-inappropriate emotions, and (d) too slow or too abrupt changes in emotions. Emotion dysregulation is a common characteristic of psychopathologies and a defining feature of many (Cole & Hall, 2008; Cole et al., 1994).

The current study focuses on maternal affect dysregulation as a predictor of the emotional quality of parenting. Mothers with affective difficulties or disorders engage in less competent parenting, which is related to problems in the parent-child relationship and later child symptoms (Briere & Jordan, 2009; Hoffman, Crnic, & Baker, 2006; Johnson, Cohen, Kasen, & Brook, 2006; Smith, 2004). To better understand how parents' affective difficulties influence the parent-child relationship, this study examines whether mothers' affect dysregulation predicts the emotional quality of parenting in a non-clinical sample. The examination of affect dysregulatory processes in a non-clinical sample is valuable because it will allow a better understanding of how even subclinical levels of affect dysregulation disrupt normative parenting processes. In addition, a dimensional analysis of affect dysregulation may help detect subtler relations to parenting in comparison to a categorical (diagnostic) one. The review below focuses on affect dysregulation indicative of personality disorder, symptoms indicative of depressive mood disorder, and the hypothesized links between affect dysregulation and depressive symptoms and mothers' emotional availability during parent-child interaction.

Affect Dysregulation Indicative of Psychopathology

Varying levels of affect dysregulation are expected even in a non-clinical sample of parents. Although the mothers in the current study were not diagnosed with psychopathology, their levels of affect dysregulation indicative of psychopathology were assessed. One way to conceptualize affect dysregulation is in terms of “self-capacities,” which are abilities to experience one’s emotions but also regulate internal psychological experiences for oneself and in relating with others (Briere, 2000; Briere & Runtz, 2002). Evidence and clinical experience indicate that disturbances in these self-capacities are associated with problems in interpersonal relating, identity, and affect regulation (Briere & Jordan, 2009; Cole & Putnam, 1992; Pearlman, 1998). When affect dysregulation involves problematic self development (as in the case of Axis II disorders in the DSM diagnostic system), it often includes emotional instability, in addition to problems associated with negative moods, such as difficulty inhibiting the expression of strong affect and in ending dysphoric internal states that are associated with mood and anxiety disorders (Briere & Rickards, 2007; Gratz & Roemer, 2004).

Individuals with affect dysregulation indicative of underdeveloped self-capacities are distressed and disorganized; and display poor impulse control, dissociation, self-loathing, and hopelessness (Pearlman & Courtois, 2005). They appear to lack the capacity to soothe themselves after negative experiences, remaining in an uncontrollable and dysregulated state (Sarkar & Adshead, 2006). Such difficulties in regulating negative affect leads to the avoidance of affect or engagement in external behaviors that may help to distract, soothe, or reduce the internal emotional distress (Briere & Spinazzola 2005;

Pearlman, 1998). Examples include substance abuse, eating disorders, and dissociation (Briere, 2006; Briere & Runtz, 2002; Cole & Putnam, 1992).

Affect dysregulation and limited access to healthy affect regulation strategies are found to be central to borderline personality disorder (Chapman, Leung, & Lynch, 2008; Conklin, Bradley, & Westen, 2006; Gardner & Qualter, 2009; Glenn & Klonsky, 2009; Lindenboim, Chapman, & Linehan, 2007; Marziali, Damianakis, & Trocme, 2003). Vulnerability to emotional arousal, emotional instability, intense and prolonged negative emotions, and impaired emotion identification are a few of the affect dysregulatory characteristics of borderline individuals (Glenn & Klonsky, 2009; Kuo & Linehan, 2009; Putnam & Silk, 2005; Wolff et al., 2007). Other criteria include unhealthy tension reduction behaviors such as substance use (drugs, food, or other substances), self-injury (through cutting or burning oneself), and suicide attempts that are enacted to obtain relief from overwhelming negative emotions (Glenn & Klonsky, 2009; Marziali et al., 2003; Putnam & Silk, 2005).

Inability to regulate negative emotional arousal that increases rapidly, is very intense, and persists over a long period of time often leads to behaviors that help to reduce the negative emotions. Affect regulatory strategies that are normally effective (e.g., cognitive appraisal) may not be distracting enough to reduce the intensity of negative affect (Selby & Joiner, 2009). Tension reduction behaviors such as drug use or self-cutting that produce physical stimuli such as pain help to distract individuals away from their negative affect. However, the consequences of some of these behaviors are dysregulating in and of themselves (Putnam & Silk, 2005), and the pattern of behavioral

distraction may extend to other forms of behavioral dysregulation including interpersonal behaviors (Selby & Joiner, 2009).

Affect Dysregulation and Parenting

Although less attention has been given to parents' affect dysregulatory processes as predictors of parenting quality, affect dysregulation and its link to personality and mood disorder symptoms (Briere & Runtz, 2002) may have negative implications for competent parenting (Johnson et al., 2006; Lizardi & Klein, 2000). Affectively dysregulated individuals, such as those who have symptoms of personality disorder, show lower levels of emotional awareness (Marziali et al., 2003), experience greater intensity of negative emotion and emotion instability (Pearlman & Courtois, 2005), are less willing to tolerate emotional distress (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2009), and have difficulty soothing themselves (Katz, Gottman, & Hooven, 1996; Sarkar & Adshead, 2006). They show greater disorganization and poor impulse control (Pearlman & Courtois, 2005), and use more dysregulating and less effective tension reduction behaviors to deal with emotional distress (Briere & Spinazzola 2005; Glenn & Klonsky, 2009; Pearlman, 1998; Putnam & Silk, 2005; Selby & Joiner, 2009).

Parents' affect dysregulation is expected to lead to difficulties in competent parenting characterized by an optimal emotional quality, one that can be defined in terms of emotional availability – engagement in sensitive, warm, and responsive behaviors that are not intrusive or hostile, and also appropriately structure the interaction (Biringen, 2000). For example, when an infant cries and seems to be inconsolable, the parent needs

to be aware of the child's emotion, appropriately interpret the emotion, and contingently and appropriately respond in order to soothe the child. The parent needs to be aware of her own affect as well as her own ability to respond in a sensitive way that does not intrude upon the child's autonomy or involve negative affect such as irritation or frustration. The parent also needs to structure the interaction in a way that consistently supports the child's learning and exploration. For affectively dysregulated parents, engaging in emotionally available parenting is expected to be difficult. Problems in emotional awareness have been associated with aversive internal tension (Wolff et al., 2007), suggesting that parents who have difficulty with understanding their own emotions will not only have difficulty understanding their children's but also experience more tension. They will less accurately perceive and interpret the infant's distressed emotions, engage in behaviors that are either intrusive or neglectful, and more often respond with frustration (Marziali et al., 2003).

Affect Dysregulation in Personality and Mood Disorders

Of the handful of studies that have examined both personality disorder (e.g., borderline) and mood disorder (e.g., depression) jointly, research indicates that there may or may not be overlap between the affect dysregulation implicated in these two axes of disorders. Both individuals with personality disorder and those with mood disorder have high levels of emotional distress and the ineffective regulation of such negative emotions. However, whereas both borderline and depressed individuals show high levels of negative affect and low levels of positive affect, affect dysregulatory processes found in

personality disorders could be distinguished from that of mood disorders (e.g., Conklin et al., 2006). First, the affective hyper-reactivity (characterized by intense emotional arousal and instability) that is experienced by individuals with borderline personality disorder was different from the affective changes typically found in individuals with mood disorders (Herpertz, Muhlbauer, Steinmeyer, & SaB, 1998). Second, the quality of depressive symptoms (if present) in borderline individuals involved more emptiness, loneliness, inconsistent self-esteem, fears of abandonment, and interpersonal concerns than that of individuals with non-borderline major depression (Westen et al., 1992). Finally, affect dysregulation is more commonly linked to unhealthy tension reduction behaviors in individuals with personality disorder than in individuals with mood disorder.

Affect Dysregulation Involved in Maternal Depressive Symptoms

A growing number of studies indicate the significance of mood disorders such as maternal depression in parenting. With approximately 80% of women experiencing depressed mood after giving birth (Scharfe, 2007), and point prevalence estimates of major and minor depression at 6.5% to 12.9% in the first postpartum year (Gavin et al., 2005; Lusskin et al., 2007), maternal depression has been significantly associated with lower mother-infant interaction quality in the first six months after birth (e.g., Coyl, Roggman, & Newland, 2002; Field, Diego, & Hernandez-Reif, 2006; Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Martins & Gaffan, 2000; Scharfe, 2007).

According to Beck's theory of depression (1967, 1976, 1987), thoughts with certain types of negative content increase vulnerability to depressed affect and other

symptoms of depression involving themes of inadequacy, failure, loss and worthlessness. A cognitively vulnerable person's self-schemas typically incorporate these negative themes that bias their interpretation and perception of life experiences including parenting (Alloy et al., 1999; Lara & Klein, 1999; Trapolini, Ungerer, & McMahon, 2008). Increasingly, depression is being conceptualized as a disorder of dysregulated affect (Rottenberg, Kasch, Gross, & Gotlib, 2002). Individuals with depression display problems in appropriately resolving negative emotions (Cole, Luby, & Sullivan, 2008), report reduced responsivity to positive emotional stimuli (Rottenberg, et al., 2002), and tend to avoid emotional experience and suppress behavioral expression of emotions (Kahn & Garrison, 2009). Indeed, the defining features of depression include affective dysregulatory processes such as the inability to regulate enduring depressed and irritable moods, diminished interest and pleasure, excessive and inappropriate guilt, and low self-esteem (Cole et al., 1994).

Depressed mothers' negative cognitions and affect dysregulation have been found to extend to their parenting quality (Biringen, 2000; Burke 2003; Paulson, Dauber, & Leiferman, 2006; Rutter, 1990). They are more likely to have negative views of themselves as parents, perceive their children negatively, view themselves as having less control over their children's development, and encounter difficulties interacting with their children and meeting their children's socioemotional needs (Goodman & Gotlib, 1999; Leadbeater, Bishop, & Raver, 1996). During parent-child interactions depressed mothers have been found to show less positive and more negative affect (including irritation, intrusiveness, and aggression) toward their young children (Burke, 2003; Dietz, Jennings, Kelley, & Marshal, 2009; Gordon et al., 1989). They are also less sensitive and

responsive to the child's cues and emotional states (Berg-Nielsen, Vikan, & Dahl 2002; Cassidy, Zoccolillon, & Hughes 1996; Field et al., 1985; Gelfand & Teti, 1990; Lovejoy et al., 2000; Smith 2004). They are less able to sustain social interactions with their children, and engage in ineffective discipline practices marked by greater intrusiveness, criticism, and inconsistency (Burke, 2003; Cohn et al., 1990; Foster, Garber, & Durlak, 2008; Maughan, Cicchetti, Toth, & Rogosch, 2007). They also display more flat affect and disinterest, more rejection and hostility, and less affection and support toward their children (Dietz, Jennings, Kelley, & Marshal, 2009; Gordon et al., 1989; Maughan, Cicchetti, Toth, & Rogosch, 2007). Based on the literature linking maternal depressive symptoms with lower sensitivity, greater negative affect and behaviors, and inconsistent parenting, mothers' depressive symptoms are expected to predict poorer emotionally availability marked by behaviors that are less sensitive, more intrusive and hostile, and poorly structure the parent-child interaction.

Disordered Self Processes vs. Depressive Symptoms

Several researchers have suggested that parents' interpersonal functioning has a stronger influence on parenting than mood disturbances such as depressive symptoms (Berg-Nielsen et al., 2002). Mufson, Aidala, and Warner (1994) demonstrated that mothers' level of social ability, not maternal depressive symptoms per se, was related to the biggest problems in offspring. Indeed, more severe disturbances in inter- and intrapersonal functioning and affect dysregulation in the form of personality disorders (e.g., borderline personality disorder, Briere & Rickards, 2007) have previously been

shown to be a stronger determinant of parenting than mood disorders such as depression (Carter, Joyce, Mulder, Luty, & Sullivan, 1999; Johnson, Kasen, Ehrensaft, & Crawford et al., 2006; Lizardi & Klein, 2000; Miller et al., 2000). Johnson et al. (2006b) found that whereas parental personality disorders were significantly associated with problematic parenting behaviors such as inconsistent discipline and low praise and encouragement, these associations were not significant for depressive disorders. Other studies (in which co-morbid personality disorder was not measured) have also not found a link between maternal depression and the quality of the parent-child relationship. For example, Martins & Gaffan (2000)'s meta-analysis indicated the heterogeneous effects of early maternal depression on the infant's attachment relationship to the mother, with some studies not finding a link between maternal depression and more insecure attachment relationships with their infants (Cohen & Campbell, 1992; Seifer et al., 1996). Although few in number, studies of parental borderline personality disorder and parent-child attachment have shown a higher prevalence of disorganized attachment in infants of borderline mothers (e.g., Hobson, Patrick, Crandell, García-Pérez, & Lee, 2005).

Current Study

Few studies have included both affect dysregulation and depressive symptoms in the same study. Although there are a few studies that have looked at maternal borderline personality disorder in relation to parenting (Crandell, Patrick, & Hobson, 2003; Guttman & Laporte, 2004; Hobson et al., 2005; Newman & Stevenson, 2005; Newman, Stevenson, & Boyce, 2007), to date, no study has looked specifically at mothers' affect dysregulation

involving disordered self processes as a predictor of the emotional quality of parenting during parent-infant interactions. Also, how affective dysregulation indicative of personality disorders compare with mood disorder symptoms in predicting mothers' emotional availability during interactions with their infants has yet to be studied. The main purpose of this study is to examine, in a non-clinical sample, affectively dysregulated processes and maternal depressive symptoms as predictors of maternal emotional availability during mother-infant interaction. The following hypotheses are examined:

Hypothesis 1: Mothers' self-reported affective dysregulatory processes will predict mothers' emotional availability with their infants. As affect dysregulation is linked to low levels of emotional awareness, high levels of negative emotions, poor impulse control, and a tendency to use unhealthy tension reduction behaviors to deal with emotional distress, parents who are affectively dysregulated are expected to show lower emotional availability with their infants in terms of lower sensitivity, greater intrusive and hostile emotions and behaviors, and inconsistent structuring.

Hypothesis 2: Mothers' depressive symptoms will predict mothers' emotional availability with their infants. Based on the many published linkages between depressive symptoms and parenting quality in non-clinical samples (e.g., Campbell & Cohn, 1997; Coyl et al., 2002; Hart & McMahon, 2006; Moehler, Brunner, Wiebel, Reck, & Resch, 2003; Murray & Cooper, 1997; Scharfe, 2007), mothers' self-reported (not diagnosed) depressive symptoms in the current non-clinical sample are expected to predict the emotional quality of parenting.

Hypothesis 3: Mothers' affect dysregulation will be a stronger predictor of mothers' emotional availability with their infants than mothers' depressive symptoms. This hypothesis is based on previous research that has found that disturbances in parents' self processes had a stronger link with parenting than mood disturbances such as depressive symptoms (Berg-Nielsen et al., 2002; Carter et al., 1999; Johnson et al., 2006b; Miller et al., 2000). Mothers' affect dysregulation involving disordered self processes are thus expected to play a larger role in predicting the emotional quality of parenting than mothers' cognitive-affective symptoms indicative of depressive mood disorder.

METHOD

Participants

Participants in the Mind of Mothers (M.O.M.S) Study included 46 mothers and their 4- to 5-month-old children from the central Pennsylvania region, including Centre, Mifflin, Clearfield, Blair, and Huntingdon counties. Mothers were recruited through Penn State Child Study Center's FIRSt Families, a data base of families interested in volunteering for research studies in the central Pennsylvania region. Mothers were also recruited through local newspaper advertisements. All mothers who were 18 years of age or older, of any ethnicity, fluent in English, and living with their children as an independent family unit, were included in the study.

Of the 4-5 month olds in the study, 51% were female, and 20 were first-born and 26 later-born. The mothers' mean age was 31.04 years ($SD = 5.20$), and 93.5% were married and living with a partner (6.5% were single and living with a partner). Almost 7% of mothers were high-school graduates, 56.5% attended and/or graduated from college, and 34.8% attended some graduate school or obtained graduate degrees. 43.5% of mothers were employed, half of whom were employed part-time, and the other half full time. The mean family income was \$73,021, with a range of \$12,000 to \$300,000. The distribution of ethnicity was 89.1% White, 4.3% African American, 2.2% Asian, 2.2% Latino, and 2.2% bi-racial. The participants in the study are thus primarily representative of white, highly educated middle-class mothers and their healthy 4-5 month olds in the central Pennsylvania region.

Procedure

When the infants were between 4 and 5 months of age, two home visits were scheduled and conducted by four graduate students enrolled in doctoral programs for psychology and human development and family studies. During the first home visit, mothers provided informed consent and completed questionnaire measures of maternal depressive symptoms and affective regulatory processes. At the second home visit, which was conducted within a week of the first home visit, 30 minutes of mother-infant interactions were videotaped to assess emotional availability during free play. Families received payment for each home visit.

Measures

Depressive symptoms. The Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1994) depression subscale assesses the severity of depressive symptoms. The depression subscale contains 13 items including “crying easily,” “feeling lonely,” and “feeling hopeless about the future ” ($\alpha = .90$). Each item is rated on a 5-point scale (ranging from “not at all” to “extremely”) to the degree that each problem has distressed the respondent within the past 7 days. The SCL-90-R depression subscale has high internal and test-retest reliability, factorial validity, and convergent and discriminant validity.

Maternal affective dysregulatory processes. The Inventory of Altered Self-Capacities (IASC; Briere & Runtz, 2002) is a 63-item self-report measure of an individual’s psychological functioning in relation to self and others. The IASC taps into

the individuals' self processes which includes the ability to (a) maintain a sense of personal identity and self-awareness that is relatively stable across affects, situations, and interactions with other people; (b) tolerate and control strong emotions without resorting to avoidance strategies; and (c) form and maintain meaningful relationships with other people that are not disturbed by inappropriate projections and inordinate fear of abandonment (Briere & Runtz, 2002, p.230). Each item in the inventory is a self-related problem (e.g., "Hurting yourself in some way in order to calm yourself down," "Wishing you could calm down but not being able to," "Being very angry one minute and then feeling fine the next," and "Having many ups and downs in your feelings"), rated on a 5-point scale ranging from 1 (has never happened in the last 6 months) to 5 (has happened very often in the last 6 months). The seven scales of the IASC measure disturbances in relatedness, identity, and affect regulation: Interpersonal Conflicts (relatedness), Idealization-Disillusionment (relatedness), Abandonment Concerns (relatedness), Identity Impairment (identity), Susceptibility to Influence (identity), Affect Dysregulation (affect dysregulation), and Tension Reduction Activities (affect dysregulation). The IASC has been found to have internal reliability and validity in diverse samples (Briere & Runtz, 2002).

In the current analyses, the affect dysregulation and tension reduction activities scales were included in the analyses. The nine items of the Affect Dysregulation scale assess problems in affect regulation and control, including mood swings, problems in inhibiting the expression of anger, and inability to easily regulate dysphoric states without externalization ($\alpha = .94$). There are two subscales of AD: Affect Instability (four items) taps the actual phenomenon of rapidly changing mood ($\alpha = .87$), whereas Affect

Skills Deficits (five items) assesses the underlying deficits in affect control thought to underlie some affect dysregulation ($\alpha = .94$). Finally, the nine items of the Tension Reduction Activities scale tap into the tendency to react to painful internal states with externalizing behaviors that reduce distress ($\alpha = .71$). The correlation between the IASC scales Affect Dysregulation and Tension Reduction Activities was .858 ($p < .001$). The two scales were thus combined to create the affect dysregulation variable, ($\alpha = .78$).

Emotional availability during mother-child interactions. The Emotional Availability Scales (EAS; Biringen, Robinson, & Emde, 1998) were used to score the emotional quality of the mother-child interaction. Maternal emotional availability is scored on four dimensions: sensitivity (9-point scale, assessing parental warmth and emotional connectedness with the infant), structuring (5-point scale, assessing the parent's ability to scaffold the infant's play and set appropriate limits), non-intrusiveness (5-point scale, assessing parental controlling behavior during interactions, and non-hostility (5-point scale, measuring covert and overt hostility during interactions). The four dimensions were combined to create a composite emotional availability score in which higher scores indicate higher emotional availability. The infant's emotional availability is scored on two dimensions: responsiveness (7-point scale, assessing the infant's enthusiasm and pleasure in interactions with the mother) and involvement (7-point scale, assessing the degree to which the infant attends to and directly engages the mother in interaction). As the focus of the current study was on the emotional quality of parenting, the child scales were not included in the analyses.

Two graduate students who were trained and certified to use the Emotional Availability Scales (EAS) system by the scales' developer, Z. Biringen, coded the

mother-child interactions. Coders were blind to the other variables in the study. Inter-rater reliability (intra-class correlations) for a randomly selected 13 (28.26%) tapes was .74 for sensitivity, .70 for structuring, .82 for non-intrusiveness, .41 for non-hostility, .67 for child responsiveness, and .77 for child involvement. Although the ICC for non-hostility was low, percent agreement (within half a scale-point) was 69% so was included in all analyses. The reliability for the composites of the maternal (sensitivity, structuring, non-intrusiveness, non-hostility; $\alpha = .72$) and child scales (responsiveness and involvement; $\alpha = .94$) were .73, and .76, respectively. As the focus of the current study was on the emotional quality of parenting, the child scales were not included in the analyses.

Data Analysis

Bivariate correlation analyses were conducted to test whether mothers' affect dysregulation in self processes predicted mothers' emotional availability (*Hypothesis 1*), and whether mothers' depressive symptoms predicted mothers' emotional availability (*Hypothesis 2*). To test *Hypothesis 3*, a multiple regression analysis with mothers' affect dysregulation and depressive symptoms as predictor variables and mothers' emotional availability as the dependent variable were run. All analyses were done using SPSS version 17.0.

RESULTS

Preliminary Analyses

Descriptive statistics of maternal depressive symptoms (SCL-90-R), affect dysregulation (IASC), and emotional availability variables are provided in Table 1. The mean depressive symptoms score of 6.86 is well below the clinical cut-off score of 13. Six out of the 44 (14%) mothers were above the clinical cut-off, and two (5%) mothers were in the borderline clinical range. Thus, as a whole, the current sample was low on depressive symptoms. Compared to the three samples studied in Briere and Runtz (2002), the mean scores for affect dysregulation and tension reduction activities in the current sample (with a mean age of 31, $SD = 5$) were (a) one to three points higher than the randomly selected standardization sample (with a mean age of 47, $SD = 17$), (b) one to two points lower than the university sample (with a mean age of 20, $SD = 3$), (c) and three to six points lower than the clinical sample (with a mean age of 31, $SD = 11$). This indicates that the current sample is low-risk with scores that are slightly elevated than in a randomly selected standardization sample but lower than in university or clinical samples.

The means for the emotional availability (EA) dimensions indicate that the mothers in the current sample were average to slightly above average. Sensitivity for the current sample was above average (which is 5), indicating that as a group the mothers were sensitive towards their infants during play interactions but may have at times

displayed subtle preoccupation with their thoughts or shown overall blandness of mood. Mean structuring was just below 4, which indicates that generally mothers structured and framed the play in accordance to the child's emotional cues but there were instances where mothers followed their own agenda and did not incorporate the child's signals in the play or structured too much or too little. The non-intrusiveness mean was also almost 4 indicating that mothers engaged in some but not many intrusive behaviors when interacting with their infants. Given the young age of the infants, only a few hostile behaviors were observed yielding a fairly high non-hostility score (i.e., low hostility). The mean EA dimensions of the current sample are similar to the "average parenting" group (sensitivity = 5.8, structuring = 3.7, non-intrusiveness = 3.9, non-hostility = 4.5) that Easterbrooks, Chaudhuri, & Gestsdottir (2005) found when they clustered their sample of mothers.

Table 1. Descriptive Statistics for Maternal Affect Dysregulation (Inventory of Altered Self-Capacities), Depressive Symptoms, and Emotional Availability (N=44).

	M	Range	SD	SE	α
Affect Dysregulation					
AD + TRA Composite	25.34	45	9.02	1.36	.78
Affect Dysregulation Scale	14.20	32	6.41	.97	.94
Instability Subscale	6.61	15	3.08	.46	.87
Skills Deficit Subscale	7.59	17	3.70	.56	.94
Tension Reduction Activities Scale	11.14	13	2.91	.44	.71
Depressive Symptoms	6.86	33	6.68	1.01	.90
Emotional Availability					
EA Composite	18.16	16	3.12	.47	.72
Sensitivity	6.04	6	1.55	.23	--
Structuring	3.85	3	0.73	.11	--
Non-intrusiveness	3.97	4	1.05	.16	--
Non-hostility	4.30	3	0.73	.11	--

Table 2 provides the inter-correlations between mothers' affect dysregulation (composite of affect dysregulation and tension reduction activities scales), affect dysregulation scale, tension reduction activities scale, and depressive symptoms. The positive correlation between affect dysregulation and depressive symptoms was significant suggesting that there is overlap between the two measures of affective difficulties that mothers may experience. The slightly lower correlation between tension reduction activities and depressive symptoms (as compared to that between affect

dysregulation and depressive symptoms) suggests that externalizing behaviors used to reduce distress are less related to depressive symptoms than they are to affect dysregulatory processes.

Correlations between mothers' sociodemographic measures (age, education level, income, marital status, number of children) and the predictor variables (affect dysregulation, depressive symptoms) were all non-significant except for a negative correlation between depressive symptoms and education level, $r(44) = -.39, p < .05$.

Table 2. Inter-correlations between Maternal Affect Dysregulation (IASC Scale), Tension Reduction Activities (IASC Scale), and Depressive Symptoms (SCL-90-R Subscale; N=44).

	<u>Affect Dysregulation Composite (AD, TRA)</u>	<u>Affect Dysregulation Scale (AD)</u>	<u>Tension Reduction Activities Scale (TRA)</u>
AD, TRA			
AD	.99**		
TRA	.93**	.86**	
Depressive symptoms	.85**	.85**	.76**

** $p < .01$

Main Analyses

Hypothesis 1: Mothers' self-reported affective dysregulatory processes will predict mothers' emotional availability with their infants.

Mothers' affect dysregulation (composite of IASC affect dysregulation and tension reduction activities scales) was significantly associated with emotional availability, $r(44) = -.34, p < .05$. The negative association indicates that greater affect dysregulation was predictive of lower emotional availability in mothers. Affect dysregulation also predicted the emotional availability dimensions of structuring, $r(44) = -.36, p < .05$ and non-intrusiveness, $r(44) = -.30, p < .05$. When mothers reported higher levels of affect dysregulation, they were observed to show lower levels of structuring and higher levels of intrusive behaviors when interacting with their infants. Mothers' sensitivity, $r(44) = -.20, n.s.$, and non-hostility, $r(44) = -.24, n.s.$, were not predicted by affect dysregulation.

Additional analyses using the individual IASC scales of affective dysregulation and tension reduction activities showed that whereas the affect dysregulation scale (including the two subscales of affect instability and affect skills deficits) approached but did not reach significance in its relation with emotional availability, the tension reduction activities scale was significantly associated with emotional availability (see Table 3). Mothers who reported affect instability and deficits in controlling affect showed a trend in lower overall emotional availability while interacting with their infants. If mothers engaged in externalizing behaviors such as throwing things, self-harm, eating, fighting, or

sexual behaviors in order to regulate negative affect, they were less likely to be emotionally available.

A closer look at the affect dysregulation subscales and individual emotional availability dimensions indicates that affect instability was marginally predictive of non-intrusiveness and non-hostility, and deficits in affect regulation was a significant predictor of structuring (see Table 3). Mothers whose moods changed quickly and had many ups and downs in their feelings showed a trend towards showing greater negativity towards their infants. If they experienced difficulties calming themselves down and controlling their emotions they were less likely to structure the mother-infant play in an emotionally available way. In addition, unhealthy tension reduction activities were significantly associated with structuring and non-intrusiveness, and approached significance in relation to sensitivity (see Table 3). Mothers whose affect dysregulation manifested in unhealthy tension reduction behaviors showed greater difficulty in structuring the play interaction, higher levels of intrusive behaviors towards the infant, and a trend towards less sensitive behaviors.

When the affect dysregulation and tension reduction activities scales of the IASC were entered into a multiple regression as predictors of emotional availability, the final model was significant: $F(1, 43) = 8.498, p < .01$ -, Adjusted $R^2 = .148$. The Tension Reduction Activities scale of the IASC emerged as the significant predictor of emotional availability, $\beta = -.410, p < .01$. Again, the affect dysregulation scale approached but did not reach conventional levels of significance in predicting emotional availability.

Hypothesis 2: Mothers' depressive symptoms will predict mothers' emotional availability with their infants.

Contrary to expectations, mothers' depressive symptoms were not significantly predictive of mothers' overall emotional availability (see Table 3). Depressive symptoms were marginally predictive of the non-intrusiveness dimension of emotional availability. All other EA dimensions were not significantly associated with depressive symptoms.

Table 3. Bivariate Correlations between IASC Subscales, Depressive Symptoms, and Emotional Availability Composite and Individual Dimensions (N=44).

	<u>Emotional Availability</u>	<u>Sensitivity</u>	<u>Structuring</u>	<u>Non-intrusiveness</u>	<u>Non-hostility</u>
<u>IASC Subscales</u>					
Affect Dysregulation	-.29 ⁺	-.15	-.32*	-.28 ⁺	-.22
Instability	-.28 ⁺	-.12	-.25	-.29 ⁺	-.28 ⁺
Skills Deficits	-.27 ⁺	-.16	-.33*	-.24	-.15
Tension Reduction Activities	-.41**	-.29 ⁺	-.43**	-.32*	-.26
<u>Depressive Symptoms</u>	-.23	-.08	-.25	-.28 ⁺	-.16

⁺ $p \leq .07$, * $p < .05$, ** $p < .01$

Hypothesis 3: Mothers' affect dysregulation indicative of disordered self processes will be a stronger predictor of mothers' emotional availability with their infants than mothers' depressive symptoms.

Multiple regression analyses with mothers' affect dysregulation and depressive symptoms as predictors of mothers' emotional availability were conducted (see Table 4). The overall model approached significance, $F(2, 43) = 3.00$, $p = .06$, Adjusted $R^2 = .09$. Whereas depressive symptoms were not a significant predictor, affect dysregulation emerged as a marginal predictor of emotionally available parenting. Mothers' affect

dysregulation as measured by affect instability, deficits in affect control, and unhealthy tension reduction activities was marginally predictive of mothers' lower emotional availability during mother-infant interactions.

Table 4. Multiple Regression Analyses of Affect Dysregulation and Depressive Symptoms as Predictors of Emotional Availability (N=44).

Variable	Emotional Availability		
	<i>B</i>	<i>SE B</i>	β
Affect Dysregulation	-.18	.10	-.52 ⁺
Depressive symptoms	.10	.13	.21
<i>R</i> ²		.09	
<i>F</i>	3.00 ⁺		

⁺ $p < .07$, * $p < .05$

Given the significant associations between mothers' tension reduction activities and emotional availability, post hoc multiple regression analyses were conducted with tension reduction activities and depressive symptoms as predictors of emotional availability (see Table 5). The overall model was significant, $F(2, 43) = 4.67, p < .05$, Adjusted $R^2 = .15$. Tension reduction activities significantly predicted mothers' lower emotional availability during mother-infant interactions. As before, depressive symptoms did not predict emotionally available parenting.

Table 5. Post Hoc Multiple Regression Analyses of Tension Reduction Activities and Depressive Symptoms as Predictors of Emotional Availability (N=44).

Variable	Emotional Availability		
	<i>B</i>	<i>SE B</i>	β
Tension Reduction Activities	-.61	.24	-.57*
Depressive symptoms	.10	.10	.20
R^2		.15	
<i>F</i>	4.67*		

⁺ $p < .07$, * $p < .05$

DISCUSSION

The current study examined affect dysregulation indicative of disrupted self-capacities and depressive symptoms and their relations to maternal emotional availability during mother-infant interaction. The findings provide some support for the hypothesis that mothers' affective dysregulation predict the emotional quality of mothers' interactions with their infants. Mothers who reported greater affect dysregulation indicative of disordered self processes were found to be less emotionally available. Instability and deficits in affect regulation and control were marginally predictive of mothers' overall emotional availability, marginally predictive of non-intrusiveness and non-hostility, and significantly predictive of structuring. When mothers reported problems in regulating emotions, such as rapidly changing moods, having many emotional ups and downs, inability to maintain happy moods, and deficits in calming oneself down or inhibiting the expression of anger, they engaged in less emotionally available structuring and showed a trend of greater negative behaviors with their infants.

Of particular importance was mothers' engagement in unhealthy tension reduction activities, that is, their tendency to respond to internal emotional distress with externalizing behaviors that distract, soothe, or otherwise reduce the internal distress. Examples of these potentially dysfunctional emotion regulatory behaviors included throwing or hitting things during a fight to get one's anger out, hurting oneself to get rid of upsetting feelings or calm oneself down, eating more food than needed in order to feel better, using sex as a way to stop feeling bad and calm oneself down, and doing things to stop feeling pain inside. When negative affect reaches a level that is too intense or

prolonged to regulate in effective ways, mothers may engage in inappropriate behaviors that will provide relief or distract from the distress. However, these tension reduction behaviors are likely to provide only short-term relief, precluding mothers to get themselves out of dysregulated emotional states. Dysregulated emotional states can potentially extend to problematic information-processing, unpredictable and inappropriate emotional expression, and dysfunctional emotional processes during parenting. Not only will mothers be less aware of their infant's emotional cues, they will also be more negative towards their infant and not know how to respond in appropriate ways to emotional processes that occur during parent-infant interactions. Thus mothers who regulate their emotions in potentially maladaptive ways to reduce negative discomfort seem to be doing so at the expense of longer-term goals (Cole & Hall, 2008) such as emotionally available parenting. In the current study, mothers' unhealthy tension reduction activities were not only related to less sensitive parenting but also strongly related to poorer structuring and greater intrusiveness.

Contrary to previous literature (e.g., Biringen, 2000; Goodman & Gotlib, 1999; Murray & Cooper, 1997), maternal depressive symptoms did not predict mothers' emotional availability, only showing a marginal association with non-intrusiveness. Despite the high correlation between affect dysregulation and depressive symptoms, there was still a considerable amount of unshared variance between these two constructs in predicting parenting quality. Only affect dysregulatory processes significantly predicted the emotional processes of parenting, suggesting that the predictor variables are two different constructs. One possible reason that depressive symptoms did not predict EA could be that the sample was a low-risk (non-clinical) sample which varied along a

depression continuum but was comprised of relatively few mothers with elevated depressive symptom scores. Another reason may be that this finding provides further evidence that affect dysregulation related to personality disorder more strongly disrupt parenting quality than symptoms of mood disorder (Berg-Nielsen et al., 2002; Johnson et al., 2006b;). More specifically, in a non-clinical sample, depressive symptoms, including ineffective regulation of emotions that endure and context-inappropriate emotions as reflected in dysphoric and irritable mood, diminished interest and pleasure, excessive and inappropriate worry and guilt, and low self-esteem, are not as predictive of the emotional quality of parenting. Rather, ineffective regulation of emotions and too abrupt changes in emotions as reflected in affect dysregulation indicative of personality disorder and emotions that lead to inappropriate externalizing behaviors, in particular, may be the stronger predictors of parental emotional availability. Yet another explanation for the current findings is that they may reflect the difference between measures of affect regulatory processes and standard measures that tap parents' experience of dysfunctional affect in how they relate to parenting quality. Measures that more directly assess affect dysregulation, that is, ways in which negative affect organizes psychological processes and actions in interpersonal contexts may be stronger predictors of parenting quality than more standard measures of depressive symptoms. More studies that take comorbid personality disorders into account when relating depression with parenting are needed to further elucidate the relative roles of personality and mood disorder symptoms in parenting.

The findings of the current study seem to map onto a pathway in which parents' poor mental health leads to externalizing behaviors that is, in turn, linked to poor

parenting and disrupted parent-child relationships (e.g., Rinehart et al., 2005). The parent-child relationship is the first environment in which the infant learns about emotions and regulation of emotions. The emotionally available parent's regulation of infant emotional responses to various stimuli helps the infant to cope with distressing emotions and to restore positive internal states (Sarkar & Adshead, 2006). Through adaptive and appropriate emotional exchanges within the parent-child relationship, the infant develops the capacity to regulate various emotional states and maintain emotional security (Schoore, 1994, 2003b). It is therefore of interest whether the emotional unavailability of affectively dysregulated parents predicts subsequent problems in child socioemotional development. Do children with emotionally unavailable parents show poorer emotional regulatory capacities? Do such dysregulated emotions interfere with different aspects of children's functioning? Conversely, do mothers' emotional availability and effective regulation of her and her child's emotions promote emotional competence in children? And, what are the mechanisms that link these variables together? Could parental affective communication (Lyons-Ruth, 2006) and emotional responsiveness (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997) to the infant be possible mechanisms? Many questions still remain to be explored in future research.

Limitations of the current study include the relatively small sample size which may have resulted in the small number of significant findings. A study with a larger sample and more statistical power may further elucidate the relationships between affect dysregulatory processes and the emotional quality of parenting. Second, all analyses are correlational which do not warrant causal relationships between the variables under study. A third limitation is the low generalizability of the sample comprised of primarily

married, Caucasian, highly educated, and middle-class mothers. Studies examining the affective processes of a diverse sample of mothers are needed to better understand universal and culture-specific emotional processes. Fourth, the study focused only on mothers. Research on the role of fathers' emotional processes in parenting quality and on subsequent child emotion regulation is much needed. Finally, the current study did not include child characteristics in the analyses. The role of child temperamental characteristics in parents' emotional availability and whether temperamentally difficult children are particularly vulnerable to parents' affect dysregulation should be further explored.

In conclusion, parents' engagement in external behaviors that may help reduce internal emotional distress was the most pronounced predictor of the emotional quality of parent-child interactions. Problematic regulation of emotional processes that result in inappropriate externalizing behaviors may have higher costs to parenting quality than affective difficulties that do not necessarily connect to outwardly behavioral manifestations. This study suggests that studies of the inner determinants of parenting such as emotion dysregulation are important and need more attention.

References

- Alloy, L. B., Abramson, L. Y., Whitehouse, W. G., Hogan, M. E., Tashman, N. A., Steinberg, D. L., Rose, D. T., Donovan, P. (1999). Depressogenic cognitive styles: Predictive validity, information processing and personality characteristics, and developmental origins. *Behaviour Research and Therapy*, 37(6), 503-531. doi:10.1016/S0005-7967(98)00157-0
- Beck, A. T. (1967). *Depression: Clinical, experimental and theoretical aspects*. New York: Harper & Row.
- Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York: International Universities Press.
- Beck, A. T. (1987). Cognitive models of depression. *Journal of Cognitive Psychotherapy: An International Quarterly*, 1, 5-37.
- Belsky, J. (1984). The determinants of parenting: A process model. *Child Development*, 55(1), 83-96. doi:10.2307/1129836
- Berg-Nielsen, T. S., Vikan, A., & Dahl, A. A. (2002). Parenting related to child and parental psychopathology: A descriptive review of the literature. *Clinical Child Psychology and Psychiatry*, 7(4), 529–552. doi:10.1177/1359104502007004006
- Biringen, Z. (2000). Emotional availability: conceptualization and research findings. *American Journal of Orthopsychiatry*, 70(1), 104-114. doi:10.1037/h0087711
- Biringen, Z., Robinson, J., & Emde, R. N. (1998). Emotional availability scales (3rd ed.). Unpublished manual, Department of Human Development and Family Studies, Colorado State University, Fort Collins, CO.
- Bornstein, M. H., Gini, M., Suwalsky, J. T. D., Putnick, D. L. & Haynes, O. M. (2006). Emotional availability in mother-child dyads: Short-term stability and continuity from variable-centered and person-centered perspectives. *Merrill-Palmer Quarterly*, 52(3), 547-51. doi:10.1353/mpq.2006.0024
- Briere, J. (2000a). Inventory of Altered Self Capacities (IASC). Odessa, FL: Psychological Assessment Resources.

- Briere, J. (2006). Dissociative symptoms and trauma exposure: Specificity, affect dysregulation and posttraumatic stress. *The Journal of Nervous and Mental Disease, 194*(2), 78–82. doi:10.1097/01.nmd.0000198139.47371.54
- Briere, J., & Jordan, C.E. (2009). The relationship between childhood maltreatment, moderating variables, and adult psychological difficulties in women: An overview. *Trauma, Violence, and Abuse: A Review Journal, 10*(4), 375-388. doi:10.1177/1524838009339757
- Briere, J., & Rickards, S. (2007). Self-awareness, affect regulation, and relatedness: Differential sequels of childhood versus adult victimization experiences. *The Journal of Nervous and Mental Disease, 195*(6), 497-503. doi:10.1097/NMD.0b013e31803044e2
- Briere, J., & Runtz, M. (2002). The Inventory of Altered Self-Capacities (IASC): A standardized measure of identity, affect regulation, and relationship disturbance. *Assessment, 9*(3), 230-239. doi:10.1177/1073191102009003002
- Briere, J., & Spinazzola, J. (2005). Phenomenology and psychological assessment of complex posttraumatic states. *Journal of Traumatic Stress, 18*(5), 401-412. doi: 10.1002/jts.20048
- Burke, L. (2003). The impact of maternal depression on familial relationships. *International Review of Psychiatry, 15*(3), 243-255. doi:10.1080/0954026031000136866
- Campbell, S. B. & Cohn, J. F. (1991). Prevalence and correlates of postpartum depression in first-time mothers. *Journal of Abnormal Psychology, 100*, 594-599.
- Carter, J. D., Joyce, P. R., Mulder, R. T., Luty, S. E., & Sullivan, P. F. (1999). Early deficient parenting in depressed outpatients is associated with personality dysfunction and not with depression subtypes. *Journal of Affective Disorders, 54*(1-2), 29-37. doi:10.1016/S0165-0327(98)00132-3
- Cassidy, B., Zoccolillo, M., & Hughes, S. (1996). Psychopathology in adolescent mothers and its effects on mother-infant interactions: A pilot study. *The Canadian Journal of Psychiatry, 41*(6), 379–384.
- Cohn, J.F., Campbell, S.B., Matias, R., & Hopkins, J. (1990). Face-to-face interactions of postpartum depressed and nondepressed mother-infant pairs at 2 months. *Developmental Psychology, 26*, 15–23.

- Cole, P. M. & Hall, S. E. (2008). Emotion dysregulation as a risk factor for psychopathology. In T.P. Beauchaine & S.P. Hinshaw (Eds.), *Child and Adolescent Psychopathology* (pp. 265-298). Hoboken, NJ: John Wiley & Sons, Inc.
- Cole, P. M., Luby, J., & Sullivan, M. W. (2008). Emotions and the development of childhood depression: Bridging the gap. *Child Development Perspectives*, 2(3), 141-148.
- Cole, P. M., Martin, S. E., & Dennis, T. A. (2004). Emotion regulation as a scientific construct: Methodological challenges and directions for child development research. *Child Development*, 75(2), 317-333. doi:10.1111/j.1467-8624.2004.00673.x
- Cole, P. M., Michel, M. K., & Teti, L. (1994). The development of emotion regulation and dysregulation: A clinical perspective. *Monographs of the Society for Research in Child Development*, 59(2/3), 73-100. doi:10.2307/1166139
- Cole, P. M., & Putnam, F. W. (1992). Effect of incest on self and social functioning: A developmental psychopathology perspective. *Journal of Consulting and Clinical Psychology*, 60(2), 174-184. doi:10.1037/0022-006X.60.2.174
- Conklin, C. Z., Bradley, R., & Westen, D. (2006). Affect regulation in borderline personality disorder. *Journal of Nervous and Mental Disease*, 194(2), 69-77. doi:10.1097/01.nmd.0000198138.41709.4f
- Coyle, D.D., Roggman, L.A., & Newland, L.A. (2002). Stress, maternal depression, and negative mother-infant interactions in relation to infant attachment. *Infant Mental Health Journal*, 23(1-2), 145-163. doi:10.1002/imhj.10009
- Crandell, L.H., Patrick, M.P.H., & Hobson, R.P. (2003). Still face interactions between mothers with borderline personality disorder and their two-month-old infants. *British Journal of Psychiatry*, 183, 239-247.
- Denham, S. A., Mitchell-Copeland, J., Strandberg, K., Auerbach, S., & Blair, K. (1997). Parental contributions to preschoolers' emotional competence: Direct and indirect effects. *Motivation and Emotion*, 21(1), 65-86.
- Derogatis, L. R. (1994). SCL-90-R Symptom Checklist-90-R: Administration, scoring, and procedures manual. Minneapolis, MN: National Computer Systems.
- Dietz, L. J., Jennings, K. D., Kelley, S. A., & Marshall, M. (2009). Maternal depression, paternal psychopathology, and toddlers' behavior problems. *Journal of Clinical Child and Adolescent Psychology*, 38(1), 48-61. doi:10.1080/15374410802575362

- Dix, T. (1991). The affective organization of parenting: Adaptive and maladaptive processes. *Psychological Bulletin*, *110*(1), 3-25. doi:10.1037/0033-2909.110.1.3
- Easterbrooks, M. A., Chaudhuri, J. H., & Gestsdottir, S. (2005). Patterns of emotional availability among young mothers and their infants: A dyadic, contextual analysis. *Infant Mental Health Journal*, *26*(4), 309-326.
- Field, T., Diego, M., & Hernandez-Reif, M. (2006). Prenatal depression effects on the fetus and newborn: A review. *Infant Behavior and Development*, *29*(3), 445-455. doi:10.1016/j.infbeh.2006.03.003
- Field, T., Sandburg, S., Garcia, R., Vega-Lahr, N., Goldstein, S., & Guy, L. (1985). Pregnancy problems, postpartum depression, and early mother-infant interactions. *Developmental Psychology*, *21*, 1152-1156.
- Foster, C. J. E., Garber, J., & Durlak, J. A. (2008). Current and past maternal depression, maternal interaction behaviors, and children's externalizing and internalizing symptoms. *Journal of Abnormal Child Psychology: An Official Publication of the International Society for Research in Child and Adolescent Psychopathology*, *36*(4), 527-537. doi:10.1007/s10802-007-9197-1
- Gavin, N.I., Gaynes, B.N., Lohr, K.N., Meltzer-Brody, S., Gartlehner, G., & Swinson, T. (2005). Perinatal depression: a systematic review of prevalence and incidence. *Obstetrics and Gynecology*, *106*, 1071-1083.
- Gelfand, D., & Teti, D. (1990). The effects of maternal depression on children. *Clinical Psychology Review*, *10*(3), 329-353. doi:10.1016/0272-7358(90)90065-I
- Glenn, C. R., & Klonsky, E. D. (2009). Emotion dysregulation as a core feature of borderline personality disorder. *Journal of Personality Disorders*, *23*(1), 20-28. doi:10.1521/pedi.2009.23.1.20
- Goodman, S. H., & Gotlib, I. H. (1999). Risk for psychopathology in the children of depressed mothers: A developmental model for understanding mechanisms of transmission. *Psychological Review*, *106*(3), 458-490. doi:10.1037/0033-295X.106.3.458
- Gordon, D., Burge, D., Hammen, C., Adrian, C., Jaenicke, C., & Hiroto, D. (1989). Observations of interactions of depressed women with their children. *The American Journal of Psychiatry*, *146*(1), 50-55.

- Gratz, K. L. & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment*, 26, 41-54.
- Gratz, K. L., Rosenthal, M. Z., Tull, M. T., Lejuez, C. W., & Gunderson, J. G. (2009). An experimental investigation of emotion dysregulation in borderline personality disorder. *Personality Disorders: Theory, Research, and Treatment*, 5(1), 18-26. doi:10.1037/1949-2715.S.1.18
- Guttman, H. A., & Laporte, L. (2004). Empathy in families of women with borderline personality disorder, anorexia nervosa, and a control group. *Family Process*, 39(3), 345-358.
- Harris, J. R. (1995). Where is the child's environment? A group socialization theory of development. *Psychological Review*, 102, 458-489.
- Hart, R., & McMahon, C.A. (2006). Mood state and psychological adjustment to pregnancy. *Archives of Women's Mental Health*, 9, 329-337.
- Hobson, R. P., Patrick, M., Crandell, L., García-Pérez, R., & Lee, A. (2005). Personal relatedness and attachment in infants of mothers with borderline personality disorder. *Development and Psychopathology*, 17(2), 329-347. doi:10.1017/S0954579405050169
- Hoffman, C., Crnic, K. A., & Baker, J. K. (2006). Maternal Depression and Parenting: Implications for Children's Emergent Emotion Regulation and Behavioral Functioning. *Parenting*, 6(4), 271-295. doi:10.1207/s15327922par0604_1
- Johnson, J. G., Cohen, P., Kasen, S., Brook, J. S. (2006). Maternal psychiatric disorders, parenting, and maternal behavior in the home during the child rearing years. *Journal of Child and Family Studies*, 15(1), 97-114. doi: 10.1007/s10826-005-9003-z
- Johnson, J. G., Cohen, P., Kasen, S., Ehrensaft, M. K., & Crawford, T. N. (2006). Associations of parental personality disorders and axis I disorders with childrearing behavior. *Psychiatry*, 69(4), 336-350.
- Kahn, J. H., & Garrison, A. M. (2009). Emotional self-disclosure and emotional avoidance: Relations with symptoms of depression and anxiety. *Journal of Counseling Psychology*, 56(4), 573-584. doi: 10.1037/a0016574
- Katz, L. F., Gottman, J. M., & Hooven, C. (1996). Meta-emotion philosophy and family functioning: Reply to cowan (1996) and eisenberg (1996). *Journal of Family Psychology*, 10(3), 284-291. doi:10.1037/0893-3200.10.3.284

- Lara, M. E., & Klein, D. N. (1999). Psychosocial processes underlying the maintenance and persistence of depression: Implications for understanding chronic depression. *Clinical Psychology Review, 19*(5), 553-570. doi:10.1016/S0272-7358(98)00066-X
- Leadbeater, B. J., Bishop, S. J., & Raver, C. C. (1996). Quality of mother-toddler interactions, maternal depressive symptoms, and behavior problems in preschoolers of adolescent mothers. *Developmental Psychology, 32*(2), 280-288. doi:10.1037/0012-1649.32.2.280
- Lindenboim, N., Chapman, A. L., & Linehan, M. M. (2007). Borderline personality disorder. In N. Kazantzis, & L. L'Abate (Eds.), *Handbook of homework assignments in psychotherapy: Research, practice, prevention*. (pp. 227-245). New York, NY, US: Springer Science + Business Media.
- Lizardi, H., & Klein, D. N. (2000). Parental psychopathology and reports of the childhood home environment in adults with early-onset dysthymic disorder. *Journal of Nervous and Mental Disease, 188*, 63-70.
- Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review, 20*(5), 561-592. doi:10.1016/S0272-7358(98)00100-7
- Lusskin, S.I., Pundiak, T.M., & Habib, S.M. (2007). Perinatal depression: Hiding in plain sight. *Canadian Journal of Psychiatry, 52*, 479-488.
- Lyons-Ruth, K. (2006). The interface between attachment and intersubjectivity: Perspective from the longitudinal study of disorganized attachment. *Psychoanalytic Inquiry, 26*(4), 595-616. doi:10.1080/07351690701310656
- Lyons-Ruth, K. (2008). Contributions of the mother-infant relationship to dissociative, borderline, and conduct symptoms in young adulthood. *Infant Mental Health Journal. Special Issue: The Infant's Relational Worlds: Family, Community & Culture, 29*(3), 203-218. doi:10.1002/imhj.20173
- Martins, C., & Gaffan, E.A. (2000). Effects of early maternal depression on patterns of infant-mother attachment: A meta-analytic investigation. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 41*(6), 737-746. doi:10.1111/1469-7610.00661
- Marziali, E., Damianakis, T., & Trocmé, N. (2003). Nature and consequences of personality problems in maltreating caregivers. *Families in Society, 84*(4), 530-538.

- Maughan, A., Cicchetti, D., Toth, S. L., & Rogosch, F. A. (2007). Early-occurring maternal depression and maternal negativity in predicting young children's emotion regulation and socioemotional difficulties. *Journal of Abnormal Child Psychology: An Official Publication of the International Society for Research in Child and Adolescent Psychopathology*, 35(5), 685-703. doi:10.1007/s10802-007-9129-0
- McGue, M., Elkins, I., Walden, B., & Iacono, W. G. (2005). The essential role of behavioral genetics in developmental psychology: Reply to Partridge (2005) and Greenberg (2005). *Developmental Psychology*, 41(6), 993-997. doi:10.1037/0012-1649.41.6.993
- McGuire, S. (2003). The heritability of parenting. *Parenting: Science and Practice*, 3(1), 73-94. doi:10.1207/S15327922PAR0301_04
- Miller, I. W., McDermt, W., Gordon, K. C., Keitner, G. I., Ryan, C. E., & Norman, W. (2000). Personality and family functioning in families of depressed patients. *Journal of Abnormal Psychology*, 109, 539-545.
- Moehler, E., Brunner, R., Wiebel, A., Reck, C., & Resch, F. (2003). Maternal depressive symptoms in the postnatal period are associated with long-term impairment of mother-child bonding. *Archives of Women's Mental Health*, 9, 273-278.
- Mufson, L., Aidala, A., & Warner, V. (1994). Social dysfunction and psychiatric disorder in mothers and their children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 33(9), 1256-1264. doi:10.1097/00004583-199411000-00006
- Murray, L. & Cooper, P.J. (1997). The role of infant and maternal factors in postpartum depression, mother- infant interactions, and infant outcomes. In: *Postpartum Depression and Child Development*, Murray L, Cooper PJ, eds. New York: Guilford, pp. 111-135.
- Newman, L., Stevenson, C. L., & Boyce, P. (2007). Mothers with borderline personality disorder: Mother-infant interactions and parenting perceptions. *Australian and NewZealand Journal of Psychiatry*, 41(7), 598-605. DOI: 10.1177/1359104508096766
- Newman, L., & Stevenson, C. L. (2005). Parenting and borderline personality disorder: Ghosts in the nursery. *Clinical Child Psychology and Psychiatry*, 10(3). 385-394. DOI: 10.1177/1359104505053756
- Paulson, J., Dauber, S., & Leiferman, J. (2006). Individual and combined effects of postpartum depression in mothers and fathers on parenting behavior. *Pediatrics*, 118(2), 659-668. doi:10.1542/peds.2005-2948

- Pearlman, L. A. (1998). Trauma and the self: A theoretical and clinical perspective. *Journal of Emotional Abuse, 1*(1), 7–25. doi:10.1300/J135v01n01_02
- Pearlman, L. A., & Courtois, C. A. (2005). Clinical applications of the attachment framework: Relational treatment of complex trauma. *Journal of Traumatic Stress, 18*(5), 449–459. doi:10.1002/jts.20052
- Plomin, R. (1999). Behavioral genetics. In M. Bennett (Ed.), *Developmental psychology: Achievement and prospects* (pp. 231-252). Philadelphia: Psychological Press.
- Putnam, K. M., & Silk, K. R. (2005). Emotion dysregulation and the development of borderline personality disorder. *Development and Psychopathology, 17*(4), 899-925. doi:10.1017/S0954579405050431
- Radloff, L. S. (1977) The CES-D scale: A self report depression scale for research in the general population. *Applied Psychological Measurement, 1*(3), 385-401. doi: 10.1177/014662167700100306
- Reiss, D. (2005). The interplay between genotypes and family relationships: Reframing concepts of development and prevention. *Current Directions in Psychological Science, 14*(3), 139-143. doi:10.1111/j.0963-7214.2005.00352.x
- Rinehart, D. J., Becker, M. A., Buckley, P. R., Dailey, K., Reichardt, C. S., Graeber, C., VanDeMark, N. R., & Brown, E. (2005). The relationship between mothers' child abuse potential and current mental health symptoms. *Journal of Behavioral Health Services & Research, 32*(2), 155-166.
- Rottenberg, J., Kasch, K. L., Gross, J. J., & Gotlib, I. H. (2002). Sadness and amusement reactivity differentially predict concurrent and prospective functioning in major depressive disorder. *Emotion, 2*(2), 135-146. doi: 10.1037//1528-3542.2.2.135
- Rutter, M. (1990). Commentary: Some focus and process considerations regarding effects of parental depression on children. *Developmental Psychology, 26*(1), 60–67.
- Sarkar, J. & Adshead, G. (2006). Personality disorders as disorganization of attachment and affect regulation. *Advances in Psychiatric Treatment, 12*, 297-305.
- Scarr, S. (1992). Developmental theories for the 1990s: Development and individual differences. *Child Development, 63*, 1-19.
- Scharfe, E. (2007). Cause or consequence?: Exploring causal links between attachment and depression. *Journal of Social and Clinical Psychology, 26*(9), 1048-1064. doi:10.1521/jscp.2007.26.9.1048

- Schore, A. N. (1994). *Affect dysregulation and the origin of the self: The neurobiology of emotional development*. New Jersey: Lawrence Erlbaum Associates.
- Schore, A. N. (2003a). *Affect dysregulation and disorders of the self*. New York: W.W. Norton.
- Schore, A. N. (2003b). *Affect dysregulation and the repair of the self*. New York: W.W. Norton.
- Selby, E. A., & Joiner, T. E., Jr. (2009). Cascades of emotion: The emergence of borderline personality disorder from emotional and behavioral dysregulation. *Review of General Psychology, 13*(3), 219-229. doi:10.1037/a0015687
- Shipman, K. L., & Zeman, J. (2001). Socialization of children's emotion regulation in mother-child dyads: A developmental psychopathology perspective. *Development and Psychopathology, 13*(2), 317-336. doi:10.1017/S0954579401002073
- Smith, M. (2003). Parental mental health: Disruptions to parenting and outcomes for children. *Child and Family Social Work, 9*, 3-11.
- Trapolini, T., Ungerer, J. A., & McMahon, C. A. (2008). Maternal depression: Relations with maternal caregiving representations and emotional availability during the preschool years. *Attachment & Human Development, 10*(1), 73-90. doi:10.1080/14616730801900712
- Ulbricht, J. A., & Neiderhiser, J. M. (2009). Genotype-environment correlation and family relationships. In Y. Kim (Ed.), *Handbook of behavior genetics*. (pp. 209-221). New York, NY, US: Springer Science + Business Media.
- Wachs, T. D., Black, M. M., & Engle, P. L. (2009). Maternal depression: A global threat to children's health, development, and behavior and to human rights. *Child Development Perspectives, 3*(1), 51-59. doi:10.1111/j.1750-8606.2008.00077.x
- Walden, B., McGue, M., Iacono, W. G., Burt, S. A., & Elkins, I. (2004). Identifying shared environmental contributions to early substance use: The respective roles of peers and parents. *Developmental Psychology, 113*, 440-450.
- Westen, D., Moses, M. J., Silk, K. R., & Lohr, N. E. (1992). Quality of depressive experience in borderline personality disorder and major depression: When depression is not just depression. *Journal of Personality Disorders, 6*(4), 382-393.
- Wolff, S., Stiglmayr, C., Bretz, H. J., Lammers, C., & Auckenthaler, A. (2007). Emotion identification and tension in female patients with borderline personality disorder. *British Journal of Clinical Psychology, 46*(3), 347-360. doi:10.1348/014466507X173736