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Children with Incarcerated Mothers: Relations among Risk Factors, Child Emotion Regulation, and Psychological Adjustment

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Abstract

Children who experience maternal incarceration are faced with many stressors and are at-risk for psychosocial maladaptation (Dallaire & Wilson, 2010). However, there is a dearth of research exploring the emotion regulation skills of this at-risk child population and how exposure to this unique risk factor (i.e., maternal incarceration) contributes to poor psychosocial and emotional outcomes. The present study compares the emotion regulation skills and symptoms of psychopathology in middle-childhood-age children (ages 7-12) with incarcerated mothers to those of a community sample of children not exposed to maternal incarceration. The high risk sample of children with incarcerated mothers (n = 74) and a community sample of children (n = 89) completed measures of emotion regulation, depressive symptoms, and anxious symptoms. The incarcerated mothers of the high risk sample (n = 82) and the mothers in the community sample (n = 92) completed measures of their child's externalizing symptoms and information regarding the mother-child relationship. Analyses reveal that older children in the high risk sample reported inhibiting their anger and sadness more than the community sample and incarcerated mothers reported more externalizing symptoms in their children than did mothers in the community sample. Across samples, anger coping negatively predicting externalizing symptoms for younger children and sadness dysregulation predicted externalizing symptoms for girls and older boys. Within the high risk sample, mother-child contact frequency of incarcerations and length of mother-child separation due to current incarceration was associated with adaptive and maladaptive emotion regulation skills, along with internalizing and externalizing symptoms. These findings provide valuable insight regarding the socioemotional adaptation of children experiencing maternal incarceration. Future research is needed to examine potential longitudinal effects of maternal incarceration on child emotional development.

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Research demonstrates that at-risk youth, who have been exposed to factors such as stress, trauma, family dysfunction, or low income, violent neighborhoods (Rutter, 1989) may employ maladaptive emotion regulation strategies that may lead to symptoms of psychopathology over time (Southam-Gerow & Kendall, 2002). Children who experience maternal incarceration are faced with the aforementioned risk factors but also must face the additional stressor of maternal separation that is associated with emotional, social, and academic difficulties, as well as increased risk for psychopathology (Dallaire & Wilson, 2010). Maternal absence has been shown to have deleterious effects on a child's emotional development (Poehlmann, Dallaire, Loper, & Shear, 2010) because mothers play an important role in the development of their child's emotion regulation skills (Gunnar, Broderson, Nachmias, Buss, & Rigatuso, 1996). There is a dearth of research exploring the emotion regulation skills of this at-risk child population and how exposure to this unique risk factor (i.e., maternal incarceration) contributes to poor psychosocial and emotional outcomes. Thus, the present study investigates the relation between emotion regulation skills and symptoms of psychopathology in middle-childhood-age children with incarcerated mothers, and compares their skills to a sample of children who are not exposed to this stressor. This comparison between groups will elucidate the specific ways in which child emotion regulation may be associated with having a mother in jail, perhaps adding information that can be used by future research when designing methods to promote healthy child development, especially in families with limited resources.

The following literature review will first discuss the stressors associated with at-risk child populations, followed by a brief overview of existing research on the risk factors

experienced by children with incarcerated mothers. A definition of emotion regulation follows, with an explanation of how child emotion regulation skills develop with respect to age and gender. Next, the relations between emotion dysregulation/inhibition and symptoms of internalizing and externalizing psychopathology are presented. Lastly, a brief overview of the goals and hypotheses of the current study are discussed.

At-Risk Youth

At-risk youth have been exposed to one or more risk factors, such as stress, trauma, family dysfunction, or living in low income, violent neighborhoods (Rutter, 1989). This population may be vulnerable to developing psychopathology, such that exposure to multiple stressors has a cumulative impact and is linked to developing a psychological disorder (Southam-Gerow & Kendall, 2002; Rutter, 1989; van der Kolk & McFarlane, 1996). Exposure to family dysfunction, such as lack of emotional support, maternal depression, family stressors, and abuse, in childhood can alter children's use of adaptive coping mechanisms and put them at risk for depressive symptoms (Rutter, 1989). Duggal and colleagues (2001) discovered that insufficient caregiving, such as being raised by a depressed caregiver, may lead to emotion regulation difficulties and subsequent mood disorder in children (Duggal, Carolson, Sroufe, & Egeland, 2001). Further, family dysfunction impacts boys and girls differently. Male developmental outcomes are affected more by the family emotional climate and functioning, whereas female developmental outcomes are affected more by the mother-daughter relationship (Sroufe & Egeland, 1991). Regarding community violence, research by Martinez and Richters (1993) demonstrates that exposure to community violence is linked to increased internalizing and externalizing symptoms in school age children, specifically depressive symptoms and antisocial behavior (Gorman-Smith & Tolan, 1998). Additionally, low family income is related to the

presence of depressive symptoms in children; however, this relation is explained by stressful life events and level of family dysfunction (Tracy, Zimmerman, Galea, McCauley, & Vander Stoep, 2008).

Risk factors and the emergence of child psychopathology depend on and must be understood within particular contexts (Sroufe, 1997). The impact of a risk factor depends on the child's susceptibility or vulnerability to particular forms of psychopathology (van der Kolk & McFarlane, 1996). That is, one type of stressor (i.e., low birth weight) may produce many different in outcomes in one child yet not have any apparent effects on another child (Zeman, Cassano, & Adrian, in press). Developmental transitions can be conceptualized as particularly vulnerable time periods for the development of psychopathology (Zeman et al., in press). Further, the impact of a stressor depends on how it is interpreted by the child, whether the stressor is perceived as an uncontrollable threat, and whether it induces a stress response (Gunnar & Barr, 1996). It is also important to examine the child's coping response (van der Kolk & McFarlane, 1996) because adaptive coping builds the foundation for future adaptive coping and promotes psychological well-being (Zeman et al., in press).

Taken together, risk factors manifest in multiple forms and have a cumulative impact on the development and emergence of psychopathology in children; however the individual's interpretation, coping responses, and developmental trajectory must be considered when determining the effect of such risk factors (Sroufe, 1997). The majority of risk research examines the link between risk factors and child psychopathology; however, there is a scarcity of research on the mechanisms to explain *how* risk factors may lead to psychopathology. For example, the presence of particular risk factors (i.e., having a depressed caregiver) could impact the development of child emotion regulation skills (Calkins & Fox, 1992) and manifest

symptoms of psychopathology (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Cicchetti, Ackerman, & Izard, 1995; Eisenberg, Spinrad, & Eggum, 2010). More empirical attention needs to be directed to understanding which emotion regulation skills may be particularly vulnerable to contextual and family stressors and how this stress could then relate to the development of psychopathology. Research should also investigate whether emotion regulation may actually moderate this relation between exposure to risk factors and psychological functioning. Thus, the present study examines the child's ability to regulate different emotions (e.g., sadness, anger, worry) in relation to his or her exposure to a particular risk factor, namely, having an incarcerated mother.

Children with Incarcerated Mothers

The number of incarcerated mothers has recently doubled, increasing from 29,500 in 1991 to 65,600 in 2007 (Schirmer, Nellis, & Mauer, 2009). The increase in incarcerated mothers is higher than that of incarcerated fathers, thus there is a growing population of children with mothers in jail (Schirmer et al., 2009). These children face different challenges than children of incarcerated fathers. In addition to increased family conflict and economic difficulties, they are likely to face a change in primary caregiver, increased risk for academic problems, and exposure to their parent's criminal behavior. All of these risk factors have unique impacts on child development (Dallaire & Wilson, 2010).

The majority of incarcerated mothers report serving as their child's primary caregiver prior to incarceration (Mumola, 2000). Upon incarceration, caregiving responsibilities usually shift to grandparents and the child experiences maternal separation. Conversely, children with incarcerated fathers often remain in the care of their mothers (Poehlmann, 2005a). Research by Coffino (2009) demonstrates that maternal separation predicts to an increased risk for depression

in children, particularly when separation occurs between 5-7 years of age. Maternal separation is also linked to the presence of generalized anxiety disorder in children (Kendler, Neale, Kessler, Heath, & Eaves, 1992). Children have the opportunity to maintain contact with their mother during her incarceration through phone calls, letters, and visits. However, the level of mother-child contact is influenced by the child's caregiver, such that a strained relationship between the caregiver and mother can lead to less contact between the mother and child (Poehlmann, 2005b).

Caregivers face personal difficulties and limited resources that can impact their ability to care for another child, particularly a child experiencing maternal incarceration. As discussed earlier, caregiving usually shifts to grandparents when the mother is incarcerated. The majority of these caregivers are single, working women, many of whom report having health problems (Mackintosh, Myers, & Kennon, 2006). Many caregivers also report depressive symptoms that can impair their relationship with the child (Poehlmann, 2005a). For example, research illustrates that depressed caregivers are more likely to less responsive, more negative and critical than nondepressed caregivers when interacting with their children. Compared to nondepressed caregivers, depressed caregivers demonstrate limited knowledge of emotion regulation strategies, which can impact the development of emotion regulation skills in their child (Garber, Braafladt, & Zeman, 1991).

The quality of the caregiver-child relationship, which is influenced by the behavior of both the caregiver and the child over time, is instrumental to child development. Research by Mackintosh and colleagues (2006) demonstrate that high child-perceived levels of caregiver warmth and acceptance were linked to fewer child-reported internalizing and externalizing symptoms. However, level of warmth and acceptance by caregiver was negatively impacted by difficult child behavior and parenting stress (Mackintosh et al., 2006). Thus, it seems that there

are aspects of caregiving that influence the caregiver-child relationship which, in turn, influences child development.

With a change in caregiver, children may experience instability in many areas of life such as moving to a new home and changing schools (Aaron & Dallaire, 2010). This disruption may be repeated when the mother is released (George & Lalonde, 2002). Some children may experience these disruptions even more frequently if their mother experiences multiple incarcerations (Greenfeld & Snell, 2000). At school, children with incarcerated mothers may be stigmatized. Research demonstrates that teachers may view these children as less competent, particularly male students (Dallaire, Ciccone, & Wilson, 2010). Children of incarcerated mothers are also more likely to have academic problems in school and experience difficulty making friends (Hanlon, Carswell, & Rose, 2007; Williams, 2008).

Families with incarcerated mothers are more likely to experience increased family conflict and economic problems (Aaron & Dallaire, 2010). Exposure to family conflict is associated with increased distress, aggression, and internalizing behaviors in children (Cummings, Iannotti, & Zahn-Waxler, 1985; Shaw, Keenan, Vondra, Delliquiadri, & Giovannelli, 1997). Family conflict is also linked to the presence of conduct disorder in children (Rutter, 1994) and may produce sustained heightened arousal in the child, which impairs social learning and alters brain development. This puts the child at a disadvantage with fewer cognitive resources than their peers to cope with stressors (Bradley, 2000). Regarding economic issues, families with an incarcerated parent face increased financial problems (Arditti, Lambert-Shute, & Joest, 2003) that are associated with an increased risk for anxiety and depressive disorders in children (Johnson, Bromley, & McGeoch, 2005).

Parental criminality is also linked to increased risk of psychopathology in their children (Guzder, Paris, Zelkowitz, & Marchessault, 1996). Dallaire and Wilson (2010) assert that children with incarcerated mothers are more likely to be exposed to the mother's criminal activity, arrest, and sentencing. Children exposed to these events report more externalizing and internalizing symptoms. Compared to children of incarcerated fathers, those with a mother in jail are exposed to these events more frequently and report more symptoms (Dallaire & Wilson, 2010).

Taken together, there are risk factors associated with having an incarcerated mother that are linked to emotional, social, and academic problems in the offspring. Considering the research on outcomes of at-risk children, children of incarcerated mothers may also develop symptoms of psychopathology and suffer a disruption in brain development (Bradley, 2000; Rutter, 1994). The risk experienced by these children, in consideration with limited resources of their new caregivers, paints troubling picture. Many problem behaviors in children may not be recognized by the caregiver, who serves as a "gatekeeper" to mental health services (Fabrega, Ulrich, & Loeber, 1996). Further research is needed on the emotional developmental of this unique child population and how exposure to these risk factors contribute to poor psychosocial and emotional outcomes. The emotion regulation skills of this child population are an important area of study, as emotion regulation can function as an adaptive coping response (Zeman, Shipman, & Suveg, 2002). Such research may clarify effective methods to promote healthy child development, especially in families with limited resources.

Emotion Regulation

Emotion regulation is defined from the functionalist perspective as "the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals" (Thompson, 1994,

pp. 27-28). Effective emotion regulation implies that an individual is capable of managing his or her emotions in accordance with the demands of the situation (Campos, Campos, & Barrett, 1989). Moreover, social goals are achieved more readily when emotions are properly regulated and channeled (Zeman & Shipman, 1997).

Emotion regulation encompasses a collection of behaviors and skills that reflect its biological, social, and cognitive components (Santostefano, 1978). Thompson (1994) conceptualizes emotion regulation as the integration of multiple skills. Cognitive aspects of emotion regulation processes include the ability to direct attention in adaptive ways in emotionally arousing situations. For example, children learn to direct their attention away from or think pleasant thoughts in the face of distressing emotional stimuli. Other related cognitive processes include reinterpreting aspects of an emotionally arousing situation and engaging in rationalization or denial to reconstruct the situation to reduce the emotional intensity and/or duration. Children also learn awareness and interpretation of physiological indicators of one's emotions, such as shortness of breath, perspiration, and increased heart rate. Anticipating and understanding these bodily cues facilitates adaptive functioning, as the cues are not viewed as a negative self reflection or incompetence.

Social aspects of emotion regulation involve the ability to seek sources of support and coping strategies when emotionally aroused, such as soliciting family, friends, or material items for comfort when feeling distressed. This set of socially focused strategies becomes strategic with age, as the child searches for whom or what has proven to be comforting in the past. Children also learn to select social environments in which the emotional arousal will not overwhelm their emotion regulation capabilities. For example, if playing competitive sports stimulates excessive emotional arousal, the child could engage in more peaceful play activities.

Further, emotion regulation entails the ability to display emotional responses that are consistent with personal socially-focused goals that lead to positive outcomes. A child exhibiting this skill might articulate his or her angry feelings rather than exploding into tantrum, knowing that the latter will not result in beneficial outcomes with certain caregivers or peers (Thompson, 1994).

Another component of emotion regulation is meta-emotion skills that involve knowing when and how to modulate emotional expression in response to the demands of the situation. This is also known in the emotion literature as cultural display rules or culturally acceptable ways to express emotion (Saarni, 1999; Zeman & Shipman, 1998). A child employing a display rule might mask frustration when receiving a disappointing gift and instead communicate the socially acceptable reaction of gratitude, which leads to positive social outcomes.

Basic emotion skills form the foundation of later more advanced emotion regulation skills. That is, in order to manage emotions effectively, individuals have to have: (a) an awareness of emotions, (b) an emotion vocabulary to express their feelings, (c) an awareness of how their emotions may affect others, (d) an understanding of others' emotions, and (e) physiological control over behaviors and facial expressions (Saarni, 1999). As children develop, they begin to use these skills in flexible, organized, and differentiated ways in accordance to the inter- and intra-personal demands of their environment (Santostefano, 1978).

Emotion regulation develops through early socialization experiences, such as interacting with parents, teachers, and other children (Campos et al., 1989). Parents play an especially influential role in that they help children learn to regulate affect and serve as a base in the development of child's emotion regulation. Children learn about emotions through mirroring and social referencing with parents (Field, 1994). Parents model what different emotional expressions look like, when expression is appropriate, and how to soothe when upset (Sroufe,

1991). Research illustrates that quality of maternal caregiving partially determines the child's emotion regulation skills (Gunnar et al., 1996).

The parent-child relationship is a bidirectional one such that child behavior shapes how parents respond to their child's emotion and vice versa (Klimes-Dougan et al., 2007). Further, parental reaction to their child's emotion provides the child with emotion knowledge, shaping future emotion displays and subsequent emotion regulation capabilities (Gottman, Katz, & Hooven, 1997; Thompson & Meyer, 2007). Thus, emotion regulation is an active process and transactional by nature; individuals affect their environment and create a unique experience (Santostefano, 1978). Given its developmental nature, emotion regulation is a skill that develops with age and is affected by gender

Age and Gender Considerations

The ability to express and regulate emotion in normative, culturally acceptable ways develops with age (Cassano, Perry-Parrish, & Zeman, 2007). Saarni (1999) asserts that older children (10 years and older) are more capable of coping with their emotions than younger children because with development, children are more able to accurately appraise their situation and employ cognitive emotion coping strategies such as reframing and distraction. Further, older children are more able to evaluate a stressful situation from multiple perspectives and generate solutions. Research illustrates that parents report more dysregulated sadness in younger children (first and second grade) than in older children (fourth and fifth grade) (Cassano et al., 2007). These findings are consistent with research by Zeman and Shipman (1998), which demonstrates that fifth grade children report using emotion regulation strategies more than second grade children. Further, older children (ages 10-12) mask anger more than younger children (ages 8-9) and are more able to use advanced emotion regulation strategies such as cultural display rules,

demonstrating the development of more complex emotion regulation skills over time (Fuchs & Thelen, 1988; Gullone, Hughes, King, & Tonge, 2010; Underwood, Coie, & Herbsman, 1992).

The child's age also influences the parental perceptions and expectations of their children's emotion expression and regulation. Research by Cassano and colleagues (2007) illustrates that parents report the desire for more change in how their younger children (first and second grade) express emotions than they do for their older children (fourth and fifth grade). Parents also report more distress to younger children's sadness expression than older children. Regarding older children, parents report taking their older child's emotional experiences more seriously than their younger child's experiences and are less likely to minimize the older child's emotions. These findings highlight the parents' assumption that an older child is more mature and has a more control over his or her emotions (Cassano et al., 2007; Klimes-Dougan et al., 2007). Further, parental views of children's emotion displays can impact how the parent responds to the child's emotion and influence the child's future emotion expression (Cassano et al., 2007). Given this bidirectional relationship, parental socialization and child age is an important topic to study as these experiences accumulate through the course of child development.

Similarly, child gender influences the normative development of emotion regulation (Zeman et al., in press). In particular, gender differences in emotion regulation strategies depend on the type of emotion experienced (Fuchs & Thelen, 1988; Gullone et al., 2010). Regarding anger, boys report being more emotionally expressive than girls, expressing intense and frequent displays of anger. Conversely, girls report inhibiting their anger more than boys. When girls do express their anger, they report covert expressions of anger, differing from the boys' overt expressions (Gnepp & Hess, 1986; Klimes-Dougan et al., 2007; Underwood et al., 1992).

Regarding sadness, research illustrates that boys report inhibiting sadness more than girls and expressing sadness less with age (Chaplin, Cole, & Zahn-Waxler, 2005; Gnepp & Hess, 1986). Girls report more overt sadness expression than boys, likely because it is more socially acceptable emotion for females to exhibit sadness through crying, pouting, and other expressive behaviors than males (Zeman, Shipman, & Penza-Clyve, 2001).

Boys also violate cultural display rules more than girls. Davis (1995) explored gender differences in the use of display rules amongst first and third grade children, employing a disappointing gift task and a motivating game task. Boys expressed unhappiness more so than girls in the face of an undesirable gift in both tasks. This finding highlights the girls' enhanced ability to utilize display rules when compared to boys, regardless of motivation. Thus, display rules seem to be an acquired skill rather than a motivated behavior.

These gender differences in emotion regulation and expression correspond to gender roles and the socialization of gender-appropriate emotions in children (Chaplin et al., 2005). Parents socialize emotion in their children differently depending on child gender (Fuchs & Thelen, 1988). For example, research demonstrates that parents discuss emotions more with their daughters than sons (Brody & Hall, 1993; Cassano et al., 2007; Denham, 1998; Fivush, 1993). When parents discuss sadness with their children, they are more likely to provide encouragement to their daughters to express sadness and their sons to suppress sadness (Cassano et al., 2007; Chaplin et al., 2005). In addition, middle school age girls' sadness expression does not impair their peer relations as it does for boys indicating that gender differences in emotional expression persists well into adolescence (Perry-Parrish & Zeman, 2011). Consequently, as a result of the differing reactions to their emotional expressivity, boys and girls develop different perspectives on how their emotions will be received by others (Davis, 1995). Boys report

anticipating receiving parental disapproval for expressing sadness, whereas girls anticipate negative outcomes for expressing anger (Fuchs & Thelen, 1988).

Age and gender independently influence the development of emotion regulation, but there are also interactions between the two variables. Fuchs and Thelen (1988) found that fourth and sixth grade boys (ages 10-12) report employing display rules for their sadness more so than first grade boys. Similarly, fourth and sixth grade girls report more emotion expression than first grade girls. Taken together, emotion regulation undergoes complex development, influenced by multiple factors and relations among variables. Further, emotion regulation skills contribute to psychological functioning, such that emotion dysregulation is associated with symptoms of psychopathology (Santostefano, 1978).

Role of Emotion Regulation in Psychopathology

Emotion regulation is an integral aspect of psychological well being because the degree to which one can regulate emotion influences the individual's psychological adjustment (Bradley, 2000; Santostefano, 1978). The inability to manage emotions effectively manifests in two forms: emotion dysregulation and emotion inhibition. Emotion dysregulation can be conceptualized as under-control of emotions, or poor modulation of emotional experiences and expression, whereas, emotion inhibition is under-control of one's emotions (Kopp, 1989). Both reflect inflexible use of emotion regulation strategies or chronic failure of optimal emotion regulation, previously defined as channeling emotions in socially acceptable ways to attain goals (Garber & Dodge, 1991; Gross & John, 2003; Zeman et al., in press). Inflexible strategies are associated with psychological maladjustment (Jacques & Mash, 2004); therefore, patterns of emotion dysregulation and inhibition are considered risk factors and play a large role in the development and persistence of psychopathology in children (Aldao et al., 2010; Cicchetti et al.,

1995; Eisenberg et al., 2010). Differences exist between internalizing and externalizing disorders in regard to the types of emotion difficulties that underlie specific forms of psychopathology.

Internalizing disorders pertain to issues with depression and anxiety (Eisenberg et al., 2001) and are associated with difficulties in controlling attention, thoughts, and emotions (Garnefski & Kraaij, 2006). Accordingly, elementary-school-age children who exhibit internalizing symptoms report dysregulated anger, anxiety, and sadness along with more frequent and intense sadness (Eisenberg et al., 1996; Suveg & Zeman, 2004; Zeman et al., 2002). Children with internalizing behaviors also report lower self-efficacy in emotion regulation when compared to samples without internalizing symptoms (Aldao et al., 2010). Specifically, depressive symptoms are linked to sadness inhibition and dysregulation (Rudolph et al., 2000; Zeman et al., 2001). Regarding anxiety, children in grades 3-5 with anxiety disorders report higher levels of dysregulated anxiety, sadness, and anger (Suveg & Zeman, 2004). Research demonstrates that anxious youth exhibit poorer coping with emotional arousal and high emotion reactivity (Eisenberg et al., 1996; Southam-Gerow & Kendall, 2000) but do not exhibit difficulties in emotion awareness. Thus, it seems anxious youth have difficulties translating their emotional awareness to adaptive coping (Jacques & Mash, 2004).

Conversely, externalizing disorders are characterized by issues with anger, attention control, impulsivity, and irritability (Eisenberg et al., 2001). Children with externalizing problems demonstrate under-control of emotions such as anger and sadness (Eisenberg et al., 2001; Eisenberg et al., 1996). In regards to anger, Rydell and colleagues (2003) examined mother reports of child behavior and discovered that high levels of anger emotionality and low levels of anger regulation in children (ages 5-8) predicted to the presence of externalizing

disorders. Surprisingly, low control of positive emotions also predicted to externalizing problems (Rydell, Berlin, & Bohlin, 2003). Eisenberg and colleagues (2001) discovered similar findings when comparing parent reports of children (ages 5-8) with externalizing problems to a control group without symptoms. Based on parental report, children with externalizing problems exhibited more anger, impulsivity, and lower emotion regulation than control groups with no behavioral difficulties. In addition to high levels of negative emotionality, poor attention control appeared to function as a predisposition to externalizing problems (Eisenberg et al., 2001). Regarding ADHD, Walcott and Landau (2004) compared the behavior of boys (6-11 years old) with and without ADHD on a frustration task. They discovered that boys with ADHD displayed less emotion regulation and inhibitory control, along with more difficulty masking emotions when instructed to do so. Taken together, externalizing disorders and the presence of emotion regulation seem to be inversely related, with externalizing disorders linked to difficulties with controlling emotional expression (Eisenberg et al., 1996; Walcott & Landau, 2004).

However, "optimal" emotion regulation depends on the individual, the context in which they live, and developmental stage. In at-risk populations, maladaptive emotion regulation strategies might be functional for their environment in the short-term; however, these strategies may lead to symptoms of psychopathology over time (Southam-Gerow & Kendall, 2002). Lacking in this research base is an exploration of emotion dysregulation in the development of psychopathology as it occurs in at-risk child populations. The present study starts to address this gap by analyzing the dysregulation of anger and sadness in children experiencing maternal incarceration and how emotion dysregulation or inhibition may be related to symptoms of psychopathology in this unique population. Additionally, the severity of psychopathology is examined in relation to the child's emotion regulation skills

Present Study

The present study examines the emotion regulation skills and symptoms of psychopathology of children with incarcerated mothers in comparison to children whose mothers have not been incarcerated. As discussed earlier, mothers play an influential role in children's emotional development (Sroufe, 1990) and their absence due to incarceration is likely to impact their children's development, perhaps particularly within the socio-emotional domain (Poehlmann et al., 2010). Maternal incarceration is an understudied topic, as much of the research regarding incarcerated parents examines incarcerated fathers (Dallaire & Wilson, 2010). Further, existing literature regarding children with incarcerated mothers focus on the challenges these children face without comparing the child's outcomes to those of other child populations who do not have incarceration as part of their family context. The comparison made in this study will elucidate the specific ways in which child emotion regulation and psychological adjustment is associated with having a mother in jail.

Research demonstrates that children with an incarcerated mother are more likely to be exposed to risk factors such as poverty, family dysfunction, and maternal separation (Dallaire & Wilson, 2010) that in turn, place them at greater risk for the development for psychological disorders. Thus, the at-risk sample in this study will be comprised of children between the ages of 7-12 who have a mother currently incarcerated. This sample will be compared to children who have a long term maternal presence and who are not currently facing adversity such as maternal separation or maternal incarceration.

Regarding the specific variables of this research, emotion regulation will be measured by the Children's Emotion Management scales (Zeman, Cassano, Suveg, & Shipman, 2010; Zeman et al., 2001), which assesses the child's report of emotion regulation of anger and sadness.

Within each emotion, three facets of emotion regulation are assessed: emotion dysregulation, emotion inhibition, and constructive emotion coping. Mothers will also complete this measure, reporting on their child's emotion regulation with respect to these facets. Considering indices of psychopathology symptomatology, child behavior problems will be assessed by the Child Behavior Checklist (Achenbach & Rescorla, 2001), which will be completed by the mother. Clinical measures of anxiety and depression will be completed by children to examine their perceptions of their symptoms of psychopathology, including the Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings, & Connor, 1997) and the Child Depression Inventory (CDI; Kovacs, 1992). Incarcerated mother-child contact will be measured by the frequency with which the mother endorses letter writing, phone calls, and visits with the child. The length of mother-child separation will be measured, as well as how many times the mother has been incarcerated and whether the child lived with the mother prior to incarceration.

The present study will examine the period of middle childhood (ages 7-12), as children in this age group have developed a more sophisticated understanding of how and when to regulate their emotions (Saarni, 1999). Children also take on a more self directed role in regulating their emotions during middle childhood (Saarni, 1999). Gender differences will also be examined because the literature demonstrates that emotion socialization differs by gender and emotion regulation strategies develop with age (Cassano et al., 2007; Chaplin et al., 2005).

Hypotheses

Based on the available literature, several hypotheses are offered. First, children with incarcerated mothers will report more emotion dysregulation as indicated by the CEMS Dysregulation scales for Anger and Sadness than the normative sample. In particular, it is

expected that boys will report more dysregulated anger, whereas girls will report more dysregulated sadness.

Second, given the demonstrated link between emotion regulation skills and behavior problems, it is anticipated that the children with incarcerated mothers will exhibit more symptoms of psychopathology than the normative children sample. In particular, it is expected that boys will present more symptoms of externalizing disorders as assessed on the CBCL, whereas girls will present more symptoms of internalizing disorders as assessed on the CDI, MASC, and CBCL. The literature demonstrates these gender differences in typically developing samples (Brody, 1999).

Third, it is expected that emotion regulation will be associated with psychological outcomes. Within the incarcerated mother sample, children with low levels of emotion dysregulation will present fewer symptoms of psychopathology, whereas children with high levels of emotion dysregulation will present more symptoms.

Fourth, within the sample of children with incarcerated mothers, the degree to which children report emotion dysregulation will be related to how incarceration interferes with the mother-child relationship. This will be measured through variables such as the frequency of mother-child contact, length of mother-child separation, frequency of incarceration. Children with more frequent mother contact or shorter length of mother-child separation will report less emotion dysregulation than those with less frequent of mother contact and longer mother-child separation. Children who experienced more instances of maternal incarceration will exhibit more emotion dysregulation than those who did not, as multiple incarcerations may be very disruptive and induce higher levels of emotionality in the child.

Method

Participants

Two independently collected samples were used in the present study; one that consisted of children with incarcerated mothers (high risk sample) and another that was a normative child sample (community sample). The high risk sample was collected as part of a research project funded by a NIH grant obtained by William & Mary faculty in the Psychology Department, and the community sample was collected as part of a master's thesis project conducted by two psychology graduate and numerous undergraduate students at William & Mary.

High risk sample. Participants were 101 children (55 boys, 7.0 - 12.9 years old, *M* = 9.88, *SD* = 1.58), their mothers (*N* = 82, 23-53 years old, *M* = 33.03, *SD* = 6.01), and the child's caregiver (*N* = 82, 27-70 years old, *M* = 50.13, *SD* = 10.44). Based on maternal report, 72% of mothers indicated that they served as the primary caregiver prior to incarceration and 78% of mothers lived with their child before incarceration. As the present study examines mother-child separation resulting from maternal incarceration, children who did not live with the mother prior to the incarceration were not included in the present analyses (*n* = 28). Thus, the final sample consisted of 74 children (39 boys, 7.00 - 12.9 years old, *M* = 9.84, *SD* = 1.76), their mothers (*N* = 74, 24-53 years old, *M* = 33.28, *SD* = 6.00), and the child's caregiver (*N* = 74, 28-70 years old, *M* = 49.76, *SD* = 10.33). Some families had multiple children participate (*n* = 18). The child participants identified as 67.1% African American, 23.3% Caucasian, and 9.6% mixed or multiple ethnicities. The caregivers consisted of 50 grandparents, 13 biological fathers, five aunts, two step-parents, two great-aunts, one uncle, and one long-term partner. Using the Hollingshead SES scale (Hollingshead, 1975), the sample ranged in SES scores from 14-55, (*M* = 22.90, *SD* = 9.63), which translate to five strata. Organized along these strata, the sample

consisted of 1.5% major business/professionals, 9.1% medium business/technical, 15.2% skilled craftsmen/clerical workers, 31.8% semiskilled workers, and 40.9% unskilled laborers. For a summary of demographic information, see Table 1.

In this subsample of families, 92.8% of mothers reported being in contact with her child during her incarceration, sometimes through multiple methods of contact. Writing letters was reported by 57.8% of mothers, 74.9% reported phone calls, and 31.3% reported visits. The mothers had been incarcerated one to seven times (M = 2.42, SD = 1.32) and been separated from their children from three to 334 days (M = 66.92, SD = 73.54). When examining type of criminal charge, 42.9% had theft-related offenses, 20.0% of mothers had driving-related offenses, 18.6% had drug-related offenses, 10.0% had probation violations, and 8.6% had assault-related offenses.

Community sample. Participants were 94 children (48 boys, 7.0 - 11.9 years old, M = 9.63, SD = 1.09), along with their mothers (N = 92, 26-66 years old, M = 40.41, SD = 7.75) and fathers (N = 64, 31-60 years old, M = 44.06, SD = 7.41). Some families had multiple children participate (n = 11). For the purpose of the present study, only mother-headed households were included in analyses, eliminating families with a single father or grandmother as the primary caregiver (n = 5). The resulting subsample was 89 children (47 boys, 7 - 11.9 years old, M = 9.62, SD = 1.08), along with their mothers (N = 89, 26-60 years old, M = 39.91, SD = 6.85) and fathers (N = 61, 31-60 years old, M = 44.06, SD = 7.41). The children identified as 78.9% Caucasian, 12.4% African American, 4.5% Asian, and 3.4% mixed or multiple ethnicities. The sample ranged in SES scores from 13-66, (M = 46.49, SD = 14.53). Across the five strata, the sample consisted of 33% major business/professionals, 36.4% medium business/technical, 17%

skilled craftsmen/clerical workers, 12.5% semiskilled workers, and 1.1% unskilled laborers. For a summary of demographic information, see Table 1.

The child and mother participants in this sample were currently living together. Regarding mother report of caregiving duties, 58% reported the mother as being responsible, 21.6% reported the mom and dad as being equally responsible, 17% reported that it depended on the task, and 3.4% reported the father as being responsible. Regarding the mother's involvement in the child's day-to-day activities, 54.5% of the mothers reported helping their children *very often*, 31.8% reported *often*, 6.8% reported *sometimes*, 5.7% reported *occasionally*, 1.1% reported *rarely/never*.

Measures

Only measures common to both samples were used in this study and are explained below. Both samples completed a brief demographic questionnaire. In the high risk sample, the mother provided background information regarding the previous and current mother-child relationship and the mother's criminal history. Mothers in the community sample provided similar information regarding the mother-child relationship and the mother's caregiving responsibilities. The mothers, caregivers, and children in the high risk sample, and the mothers, fathers, and children in the community sample completed several measures to assess the child's emotion regulation skills and symptoms of psychopathology. Only maternal and child data are used for this study.

Demographic questionnaire. The mothers, fathers, and caregivers answered questions pertaining to their age, race, gender, occupation, and educational background, along with the participant child's age, race, and gender. The Hollingshead SES scale (1975) was computed based on parents' occupation and level of education to yield a SES score that ranges from 13-81.

These scores are organized into ranges to produce five SES strata. For the high risk sample, the SES was calculated based on the occupation and education of the incarcerated mother. In the event that the maternal report was incomplete, the occupation and education of the child's current caregiver was used to calculate SES.

Mother-child background information. Incarcerated mothers in the high risk sample reported the nature of mother-child contact during her incarceration, such as phone calls, letter writing, and visits, and the frequency of such contact. The mother also reported how long she had served as the child's primary caregiver and whether the mother and child were living together prior to her incarceration. The mother's criminal history was obtained through the Virginia Courts Case Systems Database, specifically the types of crimes committed and the number of incarcerations. A comparable questionnaire regarding mother-child involvement was completed by mothers in the community sample, with items pertaining to who was primarily responsible for caregiving duties (1 = *primarily mom*, 2 = *primary dad*, 3 = *both equally*, 4 = *depends on the task*) and how often the mother helps the child with day-to-day activities (1 = *never/rarely*, 2 = *not often*, 3 = *sometimes*, 4 = *often*, 5 = *very often*).

Emotion regulation. The Children Emotion Management Scales (CEMS; Zeman et al., 2001) are self-report measures of the child's ability to regulate sadness (CSMS) and anger (CAMS). All child participants from both samples completed the CSMS and the CAMS. The CSMS has 12 items and the CAMS has 11 items, both of which are measured on a 3-point Likert scale (1 = *hardly ever*, 2 = *sometimes*, 3 = *almost all the time*). The scales each contain three subscales that assess adaptive and maladaptive methods to regulate emotions. Inhibition refers to whether the child suppresses his or her emotions (e.g., "I hide my anger," CAMS). Dysregulation refers to culturally inappropriate displays of anger and sadness (e.g., "I can't

control my crying and carrying on when I'm sad," CSMS), and coping refers to constructive coping responses to anger and sadness (e.g., "I try to calmly deal with what is making me feel mad," CAMS). Parallel versions of the CSMS and CAMS were also completed by the mothers (P-CSMS, P-CAMS) regarding their perception of their child's ability to regulate his or her emotions.

The CEMS have demonstrated moderate internal reliability, with alphas ranging from .63 - .83 for the subscales, along with strong test-retest reliability. The scales also demonstrate convergent and discriminant validity (Zeman et al., 2001). Both scales have been in used with elementary and middle school aged children of diverse ethnic backgrounds (McAuliffe, Hubbard, Rubin, Morrow, & Dearing, 2007; McLaughlin et al., 2009). In the current study, the child-reported scales demonstrated moderate reliability, ranging from .52 - .66 for each subscale, and the parent reported scales demonstrated moderate to strong reliability, ranging from α = .55 - .86 for each subscale (see Table 2).

Symptoms of psychopathology.

Multidimensional Anxiety Scale for Children (MASC). All children completed the MASC (March et al., 1997), a child self-report measure regarding symptoms of anxiety in the children ages 8-19. There are 39 items regarding various symptoms of anxiety measured on a 4-point Likert Scale (0 = *never true about me*, 1 = *rarely true about me*, 2 = *sometimes true about me*, 3 = *always true about me*). Items pertain to subscales of Physical Symptoms (e.g., "My heart races"), Harm Avoidance (e.g., "I check to make sure things are safe"), Social Anxiety (e.g., "I get nervous performing in public"), and Separation Anxiety (e.g., I try to stay near my mom or dad"). The total raw score and subscale raw scores were individually summed and converted to t-score that has a mean of 50 and standard deviation of 10. An Inconsistency Index

was also computed to identify potentially unreliable reporters. Only raw scores were used in analysis as there were participants under eight years old. See Table 3 for means and standard deviations.

The MASC has demonstrated internal reliability with $\alpha = .88$ and test-retest reliability over three weeks to three months. This measure also demonstrates convergent validity (March et al, 1997). In the current study, the MASC total score had internal consistency of .81. The clinical range was set at a raw score of 59 or higher for boys and 66 or higher for girls, based on guidelines from the MASC instrument manual (March et al., 1997). There were seven boys and 12 girls in the high risk sample, along with 13 boys and 15 girls in the community sample, who had scores in the clinical range of anxious symptoms.

Child Depression Index (CDI). The CDI (Kovacs, 2003) is a child self-report measure of depressive symptoms in children ages 7-17. The measure contains 27 items, each with three sentences varying in severity of depressive symptoms: (e.g., *Things will work out for me O.K., I am not sure if things will work out for me, Nothing will ever work out for me*). Each sentence has a value from 0 to 2, with higher values corresponding to increased symptom severity. The child chooses which item best describes him or her over the past two weeks. For 13 items, the sentences are presented in reverse order to avoid inattentive responding. The CDI was scored into subscales of Negative Mood (e.g., "I am sad all the time"), Interpersonal Problems (e.g., "I am bad all the time"), Ineffectiveness (e.g., "I do everything wrong"), Anhedonia (e.g., "Nothing is fun at all"), and Negative Self Esteem (e.g., "Things will never work out for me"). The total raw score and subscale raw scores were converted into t-scores with a mean of 50 and standard deviation of five. See Table 3 for means and standard deviations.

The CDI has shown to be reliable, with alphas ranging from .71 to .89 (Kovacs, 1992). This measure has also demonstrated test-retest reliability over three weeks and convergent validity (Smucker, Craighead, & Green, 1986). Cronbach's alpha demonstrated adequate reliability for CDI total score in the current study ($\alpha = .84$). Based on the CDI instrument manual, the clinical cutoff score for the CDI is a raw score of 16 or higher (Kovacs, 1992). There were four boys and four girls in the high risk sample, along with four boys and three girls in the community sample, with t-scores in the clinical range for depression.

Child Behavior Checklist (CBCL). The CBCL (Achenbach & Rescorla, 2001) is a widely used measure to assess competencies and behavior problems in children ages 4-18. The measure was completed by the child's mother. The CBCL contains questions regarding the child's activities and academics, in addition to 113 items regarding the prevalence of various maladaptive behaviors. Items are measured on a 3-point Likert scale (0 = *never*, 1 = *sometimes*, 2 = *often*) and pertain to 8 syndrome subscales: Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, and Aggressive Behavior. The Withdrawn, Somatic Complaints, and Anxious/Depressed subscales are combined to create an Internalizing subscale, whereas the Delinquent Behavior and Aggressive Behavior subscales are combined to create an Externalizing subscale. The CBCL was scored using Assessment Data Manager (ADM; Achenbach & Rescorla, 2007) which converted raw scores to t-scores for competency and syndrome scales. See Table 3 for means and standard deviations.

The CBCL has demonstrated moderate internal reliability, with $\alpha = .72$ - .96, along with excellent test-retest reliability and criterion validity (Achenbach, 1991). In the current sample, the internalizing and externalizing subscales demonstrated strong internal reliability with $\alpha = .91$

and .92, respectively. The clinical ranges of both internalizing and externalizing problems were defined according the CBCL scoring procedure as a t-score of 62 and higher. There were 13 boys and seven girls from the high risk sample, along with 16 boys and 12 girls from the community sample, who had t-scores in the clinical range on the Internalizing subscale. There were 15 boys and six girls from the high risk sample, along with eight boys and three girls from the community sample, who had t-scores in the clinical range on the Externalizing subscale.

Procedure

High risk sample. Incarcerated mothers were recruited from Southeast Virginia jails, including Virginia Peninsula Regional Jail, Henrico West County Jail, Henrico East County Jail, Riverside Jail, and Newport News Jail. The following criteria were established to participate: the mothers had to have a child between 7-12 years of age, no history of child abuse or neglect, and a release date at least two weeks away from the mother interview. The last criterion was established to allow time for the child and caregiver to be interviewed before being reunited with the mother.

The mother provided written consent for researchers to contact the mother's child and the child's caregiver, which occurred after the mother interview. Mothers, caregivers, and children were individually interviewed by principal investigators, graduate students, project manager, or undergraduate research assistants. Undergraduate research assistants were not permitted to go into the jails for mother interviews. Caregiver and child interviews took place in a variety of locations according to the caregiver's preference, such as the caregiver's home, a local library, or the research lab space at the College of William & Mary. Written informed consent was obtained and participants were encouraged to provide accurate and honest information. The interviewer read the questionnaires aloud and recorded the participant's responses. The mothers,

caregivers, and children were debriefed after their respective interviews and contact information was provided in case of further questions. Caregivers received $50 for their participation; children received $10 along with a small toy for their participation.

Community sample. Families in the Williamsburg, VA area were recruited through interest fliers, which were posted in community businesses, and letters to parents that were distributed in seven local James City County elementary schools to third, fourth, and fifth grade classrooms. Families returned the consent forms back to the school with their contact information or contacted the project leader from the provided contact information, at which point they scheduled an interview.

Interviews took place in research lab space at the College of William and Mary or at the family's home in the event of family transportation difficulties (n = 3). The interview was conducted by a graduate student or an undergraduate research assistant. Written informed consent was obtained prior to the interview. In the child interview, the interviewer read the questionnaires aloud and recorded the child's responses; meanwhile, the parents read and completed the packet on their own. At the end of the study, families were debriefed and given contact information for further questions. Families received a $25 Target gift card for their participation and the child received a small toy amounting to $5. Single parent families received a $15 Target gift card.

Results

Data Analytic Strategy

First, two-way ANOVAs assessed the effects of race and socioeconomic strata (SES) on the primary dependent variables (i.e., CEMS emotion regulation strategies, symptoms of psychopathology) in order to determine whether these variables would need to serve as controls

in subsequent analyses. Second, MANOVAS, three-way ANOVAs, and independent samples t-tests were conducted to assess differences between the two samples on the primary dependent variables. Gender and age group differences were also examined for the primary dependent variables. Measures of effect size (i.e., eta squared) were obtained for appropriate analyses and were defined according to Cohen (1988): small (.01 - .05), medium (.06 - .13), and large (>.14). Third, step-wise regressions were conducted to examine the predictive value of emotion regulation strategies on symptoms of psychopathology and whether these relations differed between samples. Fourth, multiple regressions were conducted within the high risk sample to evaluate the predictive value of frequency and type of mother-child contact and various aspects of the maternal incarceration experience (i.e., exposure to mother's criminal activity, arrest, and sentencing, mother-child separation) on the primary dependent variables.

Preliminary Analyses

Child report of emotion regulation strategies. There were neither significant main effects nor an interaction of race and SES for child report of emotion regulation strategies for either anger or sadness.

Symptoms of psychopathology.

Child report of internalizing symptoms. There were neither significant main effects nor an interaction of race and SES for the child's report of internalizing symptoms on the CDI and MASC.

Mother report of child internalizing symptoms. There were neither significant main effects nor an interaction of race and SES for the mother's report of child internalizing symptoms on the CBCL.

Mother report of child externalizing symptoms. There were neither significant main effects nor an interaction of race and SES for mother's report of child externalizing symptoms on the CBCL.

As such, race and socioeconomic strata were not entered as control variables in the primary analyses.

Primary Analyses

Child report of emotion regulation strategies.

MANOVAS were used to test the hypothesis that the high-risk sample would exhibit more difficulties with emotion regulation (i.e., dysregulated anger and sadness) than the community sample. Within gender, it was expected that boys would report more dysregulated anger, whereas girls would report more dysregulated sadness. Age group differences were also examined.

Anger. A sample type x gender x age group MANOVA examining the three CAMS scales yielded a significant sample x age group interaction, $F(3, 148) = 4.00$, $p = .009$, $\lambda = .93$, $\eta^2 = .08$. Examination of the univariate effects revealed an interaction of sample and age group for the inhibition scale, $F(1, 158) = 3.82$, $p = .052$, $\eta^2 = .03$. The interaction was further explored by examining sample differences within each age group. An independent samples t-test indicated that older children in the high risk sample (10-12 years old) reported inhibiting their anger more than older children in the community sample. There were no significant sample differences among younger children (7-9 years old). See Table 4 for means and standard deviations.

Sadness. A sample type x gender x age group MANOVA examining the three CSMS scales yielded a significant sample x age group interaction, $F(3, 148) = 2.98$, $p = .035$, $\lambda = .99$,

$\eta^2 = .06$. Examination of the univariate effects revealed an interaction of sample and age group for the inhibition scale, $F(1, 158) = 4.57$, $p = .034$, $\eta^2 = .03$. The interaction was further explored by examining sample differences within each age group. An independent samples t-test indicated that older children in the high risk sample reported more inhibited sadness than older children in the community sample. There were no significant sample differences within the younger children. See Table 5 for means and standard deviations.

Symptoms of psychopathology.

MANOVAs and three-way ANOVAs tested the hypothesis that there would be more symptoms of psychopathology present in the high risk sample than in the community sample, with boys being higher in externalizing symptoms and girls higher in internalizing symptoms. .

Child report of internalizing symptoms. There were neither significant main effects nor interactions of sample type, gender, or age group for the CDI.

A 2 (sample type) x 2 (gender) x 2 (age group) ANOVA yielded a main effect of gender for the MASC total raw score, $F(1, 151) = 15.74$, $p = .001$, $\eta^2 = .10$. Girls ($M = 57.58$, $SD = 17.28$) reported more anxious symptoms than did boys ($M = 46.93$, $SD = 16.49$).

Mother report of child internalizing symptoms. A 2 (sample type) x 2 (gender) x 2 (age group) ANOVA revealed a significant main effect of age group, $F(1, 157) = 4.49$, $p = .036$, $\eta^2 = .03$. Regardless of sample type, mothers reported more internalizing symptoms in younger children ($M = 9.47$, $SD = 7.68$) than in older children ($M = 7.22$, $SD = 5.12$).

Mother report of child externalizing symptoms. A 2 (sample type) x 2 (gender) x 2 (age group) ANOVA yielded three significant main effects for the CBCL externalizing subscale. A main effect of sample type, $F(1, 157) = 13.59$, $p = .001$, $\eta^2 = .08$, demonstrated that mothers in

the high risk sample (M = 11.37, SD = 9.36) reported significantly more child externalizing symptoms than did mothers in the community sample (M = 6.84, SD = 6.65).

A main effect of gender, $F(1, 157) = 5.19$, $p = .024$, $\eta^2 = .03$, indicated that mothers reported significantly more externalizing symptoms for boys (M = 10.49, SD = 8.89) than for girls (M = 7.21, SD = 7.26).

Lastly, there was a main effect of age group, $F(1, 157) = 5.28$, $p = .023$, $\eta^2 = .03$, such that mothers reported significantly more externalizing symptoms for younger children (M = 10.41, SD = 9.69) than for older children (M = 7.42, SD = 6.29).

Emotion regulation strategies predicting to symptoms of psychopathology.

Step-wise regressions tested the hypothesis that emotion regulation strategies would predict symptoms of psychopathology and that this relation would differ by sample type. The sample type and the subscales of both the CAMS and CSMS were transformed into standardized variables and interaction terms were computed for each subscale, using the standardized subscale and the standardized sample type. In each regression, the standardized subscale and the standardized sample type were entered into the first step, and the corresponding interaction term was entered into the second step. There were no significant interactions of sample type and CEMS subscale on symptoms of psychopathology.

As such, subsequent step-wise regressions examined gender and age group differences using a three-way interaction term. First, the gender and age group were transformed into standardized variables and an age group x gender interaction term was computed using these variables. Next, two-way interaction terms were created for each subscale, first using the standardized subscale and the standardized gender variable, and next using the standardized subscale and the standardized age group variable. Lastly, a three-way interaction term was

computed for each subscale, consisting of the standardized subscale, standardized gender variable, and the standardized age group variable. In each regression, the standardized subscale, standardized gender variable, and standardized age group variable were entered in the first step, the corresponding two-way interaction terms were entered in the second step, and the corresponding three-way interaction term was entered in the third step. As anxiety and depression are highly comorbid disorders (O'Neil, Podell, Benjamin, & Kendall, 2010), the child's anxiety score was entered in the first step for regressions predicting child depressive symptoms as a control variable. The child's depression score was entered in the first step for regressions predicting child anxiety symptoms as a control variable.

Child report of internalizing symptoms. There were neither significant main effects nor interactions for the child report of internalizing symptoms.

Mother report of child internalizing symptoms. There were neither significant main effects nor interactions for the maternal report of child internalizing symptoms.

Mother report of child externalizing symptoms. The model significantly predicted externalizing symptoms, R^2 = .21, $F(7, 155) = 5.56$, p = .001, such that there was a significant two-way interaction of anger coping and age group (β = .21). Main effects were explored within each age group using a linear regression of anger coping predicting externalizing symptoms. The model was significant for younger children, R^2 = .20, $F(1, 77) = 19.51$, p = .001, such that anger coping negatively predicted externalizing symptoms (β = -.08). See Table 6 for R^2 and β values.

The model significantly predicted externalizing symptoms, R^2= .18, $F(7, 155) = 4.76$, p = .001, such that there was a three-way interaction of sadness dysregulation, gender, and age group (β = -.22). Within each age group, a stepwise regression with a two-way interaction term of

gender and sadness dysregulation explored effects of gender. The model was significant for younger girls, R^2 = .22, F(1, 33) = 9.03, p = .005, such that sadness dysregulation predicted externalizing symptoms (β = .47). The model was significant for older girls, R^2 = .15, F(1, 40) = 7.01, p = .012, such that sadness dysregulation predicted externalizing symptoms (β = .39). The model approached significance for older boys, R^2 = .10, F(1, 36) = 3.93, p = .055, such that sadness dysregulation predicted externalizing symptoms (β = .32). See Table 6 for R^2 and β values.

Child's experience of maternal incarceration.

Multiple regressions tested the hypothesis that mother-child contact, exposure to aspects of the maternal incarceration, and mother-child separation would predict children's difficulties with emotion regulation (i.e., dysregulation and inhibition of anger and sadness). It was hypothesized that decreased mother-child contact exposure to aspects of the mother's incarceration such as criminal activity, arrest, or criminal sentencing, and length of mother-child separation would predict difficulties with emotion regulation.

These predictors were also examined with respect to symptoms of psychopathology. Given the gender and age group differences in the symptoms of psychopathology, regressions involving the MASC and CDI subscales were examined within gender and those involving the CEMS and CBCL were examined separately by each age group.

A maternal incarceration composite (MIC) variable was created as a sum composed of whether the child had witnessed the mother's crime, arrest, and/or sentencing (0 = *no*, 1 = *yes*). This allowed for a comparison between children in regards to how much the child was exposed to a spectrum of risk factors associated with maternal incarceration.

The mother-child contact variables regarding frequency of writing letters, talking on the phone, and jail visits were entered as a group for all regressions (Model 1). The number of incarcerations in the child's life, the length of mother-child separation, and the MIC variable were also entered as a separate group for all regressions (Model 2).

Emotion regulation strategies.

Anger. Model 1 significantly predicted anger dysregulation in older children, R^2 = .27, $F(3, 30) = 3.51$, $p = .028$, and anger inhibition in older children, R^2 = .24, $F(3, 30) = 2.97$, $p = .049$. Frequency of writing letters negatively predicted anger dysregulation (β = -.42) and frequency of visiting jail visits were predicted anger inhibition (β = .38).

Model 2 significantly predicted anger coping in older children, R^2 = .27, $F(3, 31) = 3.82$, $p = .019$, and anger dysregulation in older children, R^2 = .31, $F(3, 31) = 4.57$, $p = .009$. The number of times the mother was incarcerated in the child's lifetime negatively predicted anger coping (β = -.57) and predicted of anger dysregulation (β = .48).

Sadness. Model 1 approached significance for older children, R^2 = .22, $F(3, 30) = 2.69$, $p = .065$, such that frequency of writing letters negatively predicted sadness inhibition (β = -.40).

Model 2 significantly predicted sadness coping in young children, R^2 = .28, $F(3, 29) = 3.80$, $p = .021$, and approached significance in predicting sadness dysregulation in younger children, R^2 = .23, $F(3, 29) = 2.80$, $p = .057$. The number of times the mother was incarcerated in the child's lifetime predicted sadness coping (β = .58) and the length of mother-child separation due to current incarceration negatively predicted sadness dysregulation (β = -.40).

Symptoms of psychopathology.

Child report of internalizing symptoms. Neither Model 1 nor Model 2 significantly predicted child-reported depressive symptoms.

Model 1 approached significance in predicting girls' general anxiety symptoms, R^2 = .24, $F(3, 29) = 2.71$, $p = .065$, and significantly predicted girls' separation anxiety symptoms, R^2 = .27, $F(3, 29) = 3.33$, $p = .034$. Frequency of writing letters negatively predicted general anxiety symptoms (β = -.43) and separation anxiety symptoms (β = -.53).

Mother report of child internalizing symptoms. Model 1 approached significance for older children, R^2 = .33, $F(3, 30) = 4.47$, $p = .011$, such that frequency of visiting mom in jail predicted (β = .44) internalizing symptoms.

Mother report of child externalizing symptoms. Model 2 was significant for older children, R^2 = .25, $F(3, 30) = 3.28$, $p = .034$, such that the number of times the mother was incarcerated in the child's lifetime predicted externalizing symptoms (β = .46).

Discussion

The primary goal of the present study was to compare two samples of children who differ on the residential status of their mother on psychological constructs that are influenced by maternal socialization. Specifically, a high risk sample of children with incarcerated mothers was compared to a community sample of children whose mothers lived with them, to determine if differences in emotion regulation skills and symptoms of psychopathology were present. A secondary goal was to explore aspects of the maternal incarceration experience for the child (i.e., mother-child contact, length of mother-child separation, and number of incarcerations) in order to better understand how these experiences may be associated with children's emotion regulation strategies and symptoms of psychopathology.

In the next sections, findings regarding racial and socioeconomic differences between samples will be presented and discussed. Next, findings comparing the emotion regulation strategies and symptoms of psychopathology between samples, age groups, and gender are

explicated. Then, the relations between emotion regulation strategies and symptoms of psychopathology are further examined, followed by findings regarding the child's experience of maternal incarceration in relation to emotion regulation strategies and symptoms of psychopathology. Lastly, limitations, directions for future research, and implications of the findings are outlined.

Race and Socioeconomic Status

Although the two samples were dissimilar in racial and SES distribution, there were no significant effects of race or SES for either emotion regulation strategies or symptoms of psychopathology. These findings were unexpected, as past literature illustrates that children of lower SES present more difficulties regulating their emotions (Raver, 2004). However, there are few documented differences in emotion regulation skills across racial/ethnic groups (Mash & Barkley, 2003; Perry-Parrish & Zeman, 2011), although this has been an under-studied area with little research investigating emotion regulation in non-Caucasian samples. Further, existing research demonstrates externalizing symptoms to be more prevalent in African American children; however, this may be a residual effect of SES, as African Americans, Hispanics, and Native Americans were less likely to display internalizing or externalizing psychopathology after controlling for SES (Samaan, 2000). Children of a lower SES also displayed more anxiety, depression and antisocial behavior problems (Samaan, 2000). Within each racial group and social strata, there was relatively low prevalence of psychopathology symptoms in the clinical range; therefore it may be the case that both samples were relatively psychologically healthy. Although discordant with past research, the present findings demonstrate that emotion regulation skills and prevalence of psychopathology symptoms may cut across racial groups and SES strata.

Emotion Regulation Strategies

We hypothesized that children with incarcerated mothers would report more emotion dysregulation than the community sample, specifically that boys would report more dysregulated anger and girls would report more dysregulated sadness in the high risk sample. The results provided mixed support for our hypotheses such that older children (i.e., ages 10 to 12) in the high risk sample reported more inhibited or suppression of sadness expression than older children in the community sample. This is not altogether surprising since inhibiting sadness becomes more normative with age (Zeman & Shipman, 1998). Although the experience of maternal incarceration likely produces many occasions for intense emotional reactions, the display of dysregulated sadness may not serve an adaptive function for these children and may instead be a risk for stigmatization or a sign of vulnerability, leading these pre-adolescents to over-control their sadness.

Additionally, older children in the high risk sample reported inhibiting their anger more than older children in the community sample. This sample difference was not in the expected direction according to past research, which demonstrates that children experiencing parental incarceration exhibit more aggressive behaviors (Gabel & Johnston, 1995). However, the literature on normative samples indicates that older children mask their anger more than younger children (Fuchs & Thelen, 1988; Gullone et al., 2010; Underwood et al., 1992). It may be the case that the high risk children are motivated to be especially well-behaved in efforts to avoid causing troubles in their family during this challenging situation and as a result, increasingly inhibit their anger. Efforts to appear well-behaved may also have led to an under-reporting of emotion dysregulation by the children in the high risk sample.

It was surprising that there were no gender x sample interactions in regulation of anger, given that children are socialized to express emotions in gender-specific ways (Fuchs & Thelen, 1988)

and children with incarcerated mothers experience more problems with anger (Gabel & Johnston, 1995). As mentioned earlier, these children may act to avoid contributing to family tension, which may also override gender norms in emotion expression.

Surprisingly, there were no sample differences in emotion regulation strategies between the younger child samples, nor were there significant differences between the younger and older high risk children. Previous literature asserts that experiencing maternal incarceration is an intense emotional experience for children (Poehlmann et al., 2010), thus it was expected that emotion inhibition or dysregulation may be especially prevalent among younger high risk children who may not have yet acquired adaptive emotion coping strategies (Saarni, 1999). Maladaptive emotion regulation strategies may be more functional in high-risk environments (Southam-Gerow & Kendall, 2002), thus with age and increasing exposure to such environments, perhaps these children employ more maladaptive emotion regulation strategies. Additionally, there were no gender differences across samples, which was surprising given that existing literature demonstrates boys inhibit their sadness more than girls and girls inhibit their anger more than boys (Gnepp & Hess, 1986; Klimes-Dougan et al., 2007; Perry-Parrish & Zeman, 2011; Underwood et al., 1992). This surprising finding could reflect socially desirable responding.

Symptoms of Psychopathology

It was expected that the high risk sample would present more symptoms of psychopathology than the community sample, with boys being higher in externalizing symptoms and girls being higher in internalizing symptoms. Across age groups, mothers in the high risk sample reported more externalizing symptoms in their children than did mothers in the community sample. These differences were in the expected direction, as children with incarcerated parents display

more externalizing behaviors than comparison groups (Gabel & Johnston, 1995; Murray, Farrington, Sekol, & Olsen, 2009). However, there were no gender x sample type interactions, as the literature indicates that boys with incarcerated mothers display increased externalizing symptoms (Lotze, Ravindran, & Myers, 2010). As the present study relied on maternal report of child externalizing symptoms, there may be a reporter bias in that mothers in jail may not have accurate or up-to-date knowledge of their child's behavior problems, particularly if the mothers have been incarcerated for several months. Further, under reporting their child's behavior problems may a coping strategy for these mothers, who are faced with incarceration and separation from her child. Perhaps this is particularly prevalent for incarcerated mothers with children who display more behavior problems, such as boys. Further, the present study did not replicate past findings that children with incarcerated mothers also exhibit more internalizing problems (Hanlon et al., 2007). Existing literature indicates that parental separation during childhood is linked to depression in adulthood; therefore, these sample differences may manifest over time (Coffino, 2009).

There were several findings that cut across samples. First, girls reported more anxious symptoms than boys. Additionally, mothers reported more externalizing symptoms for boys than for girls. These findings are in line with previous research that indicates internalizing symptoms such as anxiety are more prevalent in girls and externalizing symptoms are more prevalent in boys (Hartung & Widiger, 1998). Lastly, mothers reported more internalizing and externalizing symptoms in younger children than in older children, consistent with previous research that indicates behavior problems in children decrease with age (Brody, 1999; Mash & Barkley, 2003).

Emotion Regulation Strategies Predicting to Symptoms of Psychopathology

It was expected that the relation between emotion regulation strategies and symptoms of psychopathology would differ by sample type. There were no sample differences in emotion regulation strategies predicting to symptoms of psychopathology. This was unexpected, as past research indicates that poor emotion regulation skills predicts to externalizing symptoms in children with incarcerated mothers (Lotze et al., 2010). However, what is considered "optimal" emotion regulation depends on the individual, the context in which they live, and developmental stage (Shipman & Zeman, 1999; Southam-Gerow & Kendall, 2002). Although older children in the high risk sample reported more inhibited sadness and anger than did older children in the community sample, this sample difference may not lead to psychopathology because inhibiting sadness and anger may be more adaptive for their high risk environment.

Across samples, the relation between emotion regulation skills and symptoms of psychopathology differed by gender and age, such that sadness dysregulation predicted externalizing symptoms for younger girls, older girls, and older boys. This finding was in the expected direction, as past research demonstrates that dysregulation of negative emotions is related to externalizing symptoms (Eisenberg et al., 2010). It is uncertain why this relation was not significant for younger boys. Among all four groups, the younger boys reported the least amount of sadness dysregulation but had the highest level of mother-reported externalizing symptoms. Given that emotion dysregulation typically decreases with age (Cassano et al., 2007), it was expected that younger boys would report higher levels of dysregulation. Perhaps the younger boys lack sufficient emotional awareness, particularly of internalizing types of emotions, because they are younger and thus their report may not reflect their actual use of sadness regulation strategies.

Anger coping negatively predicted externalizing symptoms for younger children. These findings are consistent with existing research that links poor anger coping with externalizing disorders (Zeman et al., 2002). Perhaps this relation was only significant with younger children because externalizing behaviors are more prevalent in younger children (Brody, 1999; Mash & Barkley, 2003), who are still developing emotion coping skills (Cassano et al., 2007; Klimes-Dougan et al., 2007). Perhaps younger children who engage in more frequent attempts at coping constructively with anger are at less risk for externalizing symptoms because this is a skill that is advanced for their developmental stage. Emotion regulation strategies failed to predict internalizing symptoms, in contrast to existing literature which demonstrates that over-control and poor coping with anger is associated with internalizing disorders (Plutchik, 1993; Zeman et al., 2000). Children are typically the most reliable reporters of their internalizing symptoms (Achenbach, McConaughy, & Howell, 1987); therefore, it might be expected that the child report of emotion regulation strategies would not predict to the maternal report of child internalizing symptoms. However, it is puzzling that this relation was not significant with the child report of anxiety and depression. Perhaps this relation was not significant because both samples were relatively healthy with respect to the presence of internalizing symptoms.

Child's Experience of Maternal Incarceration

It was hypothesized that the child's experiences relevant to maternal incarceration, such as decreased mother-child contact, exposure to criminal activity, arrest, or criminal sentencing, and length of mother-child separation would predict difficulties with emotion regulation. Regarding mother-child contact, frequency of writing letters negatively predicted anger dysregulation and sadness inhibition in older children. This relation was in the expected direction, given that existing research demonstrates letters to be a more positive method of mother-child contact while

the mother is incarcerated. Letters do not have the negative environment present in jail visitations and the mother can control the content and tone of her letter (Poehlmann et al., 2010). As such, letters may not produce difficulties in the child's emotion regulation strategies and instead serve an adaptive function to the child's emotional adjustment while the mother is incarcerated. As older children may have more experience with and understanding of incarceration (Gabel & Johnson, 1995), perhaps letters from the mother while she is incarcerated are more beneficial to their emotional adjustment than for younger children.

Further, frequency of writing letters negatively predicted general anxiety symptoms and separation anxiety in girls. This relation is consistent with existing research, illustrating that mail correspondence with the mother is related to fewer internalizing symptoms (Dallaire et al., 2010) and female developmental outcomes are affected more by the mother-daughter relationship, whereas boys are more affected by the family climate (Sroufe & Egeland, 1991).

Regarding visits, frequency of visiting mom in jail predicted anger inhibition and internalizing symptoms in older children. Previous research indicates that visitation with the mother may incite feelings of anxiety and distress in the child, closely followed by maternal separation post-visit without the opportunity to work through the emotions (Poehlmann et al., 2010). With visits, the child experience intense emotional reactions, loss, and sadness that exceed the child's ability to cope adaptively with the resultant feelings, resulting in emotion regulation difficulties and internalizing problems. As such, jail visits may be a damaging form of contact with respect to the child's emotional and psychological adjustment. Whereas it would be expected that a jail visit may be more traumatic for a younger than older child and thus predict anger inhibition and internalizing symptoms, perhaps these visits are more problematic for older

children because they comprehend the negative environment of a jail more clearly than would younger children.

The number of times the mother was incarcerated negatively predicted anger coping and positively predicted anger dysregulation and sadness coping in older children. These findings are mixed, as they indicate that with more incarcerations, children report poorer anger coping and higher anger dysregulation, yet better sadness coping. Past research demonstrates that repeated mother-child separations due to maternal incarceration are very traumatic for children, produce high levels of emotionality, and may affect their coping skills (Gabel & Johnston, 1995). As such, it was expected that number of incarcerations would be related to poor anger coping and anger dysregulation, but it was not expected to be related to sadness coping. Earlier analyses in the present study indicated that older children in the high risk sample inhibited their sadness more than older children in the community sample. It may be that these children have learned to cope with the loss through expressing it in anger rather than sadness, and in a surprising way, perceive themselves to be adept at coping with sadness experience.

The number of incarcerations also negatively predicted externalizing symptoms in older children, which was not in the expected direction. According to existing literature, multiple incidences of trauma such as mother-child separation due to incarceration negatively affects the child's ability to cope and most commonly manifests in aggressive behaviors (Gabel & Johnston, 1995). Thus, it was expected that number of incarcerations would predict externalizing symptoms. Perhaps with repeated experiences of mother-child separation, the child adjusts to the disruption of the mother-child bond and presents with fewer externalizing behaviors. This relation may only be present in older children because they may have more experience with maternal incarceration and may have seemingly adjusted. Given that the study relied on the

maternal report of child externalizing symptoms, it could also be that, as a result of multiple incarcerations or longer imprisonment sentences, the mother does not have accurate information on the child's behavior problems. Taken together, the occurrence of maternal incarcerations seems to have a mixed impact on child development that warrants considerably more research to untangle this complex set of findings.

Lastly, length of mother-child separation negatively predicted sadness dysregulation in younger children. This relation was not in the expected direction, given that existing literature illustrates that mothers play a particularly important role in the child's development of adaptive emotion regulation skills (Fields, 1994). As such, it was expected that with increased maternal absence, the child would experience more dysregulated emotions. Perhaps with increased maternal absence, children adjust to the separation and experience a decrease in dysregulated anger, particularly if they are being raised in a more stable home environment than previously experienced, which may especially impact younger children who are still acquiring emotion regulation skills. Aspects of maternal incarceration such as exposure to the mother's criminal activity, arrest, and sentencing did not predict to emotion regulation strategies or symptoms of psychopathology. This contradicts previous research by Dallaire and Wilson (2010) which indicates that children exposed to these events report more internalizing and externalizing symptoms. The present study examined middle childhood, during which children are less likely to witness these events (Gabel & Johnson, 1995); therefore such exposure may not have occurred frequently enough for a significant relation to be present.

Limitations

Although this study represents a novel addition to the literature, there are several limitations that deserve mention. First, the present study relied on self-report measures;

therefore, a social desirability bias is a possibility. As mentioned earlier, research demonstrates that children are the best reporters of their internalizing symptoms and mothers are the best reporters of their child's externalizing symptoms (Achenbach et al., 1987), which provides some measure of confidence in these particular findings because we utilized child self-report of internalizing symptoms and maternal report of the child's internalizing and externalizing symptoms.

Second, the majority of the respondents in the high risk sample were low-income, Black families who were interviewed by White, college-educated females. Thus, respondents may have responded to the questions in socially desirable ways or did not share complete information as they have felt uncomfortable with the interviewers. Further, some of the measures (i.e., CEMS) have not been validated using Black samples and although the internal consistency was moderate, the interpretation of some of the items may have differed between races.

Third, the samples may not be representative of their populations because in order to participate in these studies, the participants needed to be highly motivated to engage in the research study. Participating in the study required a significant amount of time and effort on the participant's behalf and, in the community sample, required them to travel to the research site. Further, participants had to adopt a particular mindset to be interested in divulging considerable private information about themselves and their families to strangers. Thus, it is likely that the families in both samples represent a unique cohort within their population and perhaps are higher functioning within psychological domains than others in their population.

Fourth, in the high risk sample, the maternal report of mother-child contact may not be comprehensive, as there are structures in the jail that may impede mother-child contact, such as restrictive visitation policies and phone cards. Additionally, the mother's report of letter writing

does not reflect whether this is a reciprocated relationship. That is, it could be that the mother writes many letters but receives none from the child or an occasional note only. Therefore, the measurement of contact may not reveal a complete story of mother-child contact.

Future Research

Because this is one of the few studies to compare samples of children with an incarcerated mother to a typical developing community sample, it is clear that much more research in this area needs to be conducted. Of utmost importance is the need for longitudinal research. For example, when comparing this high risk sample to a community sample, the emotional and psychological distress associated with having a mother in jail may manifest later in the child's life. It may be that different outcomes would emerge when children make the transition to adolescence and then again to early adulthood. The challenges of attaining the developmental milestones at that juncture may stress their coping resources in conjunction with a lack of appropriate role models for successful management of these adult responsibilities. Lastly, the prevalence of other stressful life events in families, such as divorce or unemployment, deserves consideration. Perhaps the presence of other stressors influences the degree to which these two samples differ in emotional and psychological adjustment, as those in a community sample may be at risk similar to the high risk sample, but in ways that were not examined in this study.

Implications

The present study expanded on knowledge regarding the emotional and psychological adjustment of children with incarcerated mothers, which may be valuable to caregivers, teachers, and mental health service providers, along with school-based and community-based interventions relevant to this high risk population. For those caring for children with

incarcerated mothers, it is important to note that these children do not seem to display higher levels of dysregulated affect or internalizing symptoms, rather they experience higher levels of emotion inhibition and externalizing symptoms. These differences are informative when considering how to promote adaptive emotion regulation skills and reduce behavior problems in this high risk population. Further, the ramifications of mother-child contact depend on the type of contact and the child's age and gender. Families experiencing maternal incarceration may want to consider selectively implementing particular types of mother-child contact to foster emotional and psychological well-being in the child. Aspects of maternal incarceration, such as frequency and length of incarceration, impact the child's ability to regulate emotions and the presence of externalizing symptoms, which is helpful for families in understanding the child's emotional and psychological adjustment. Taken together, it seems that children adjust to maternal incarceration in unique ways that differ by age and gender.

References

Aaron, L., & Dallaire, D. H. (2010). Parental incarceration and multiple risk experiences: Effects on family dynamics and children's delinquency. *Journal of Youth and Adolescence, 39*(12), 1471-1484. doi:10.1007/s10964-009-9458-0

Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child and adolescent behavioral and emotional problems: Implications of cross-informant correlations for situation specificity. *Psychological Bulletin, 101*, 213-232.

Achenbach, T. M., & Rescorla, L. (2001). *Manual for the ASEBA School-Age Forms & Profiles.* Burlington: University of Vermont, Department, Research Center for Children, Youth, and Families.

Achenbach, T. M., & Rescorla, L. (2007). *Multicultural supplement for the manual for the ASEBA School-Age Forms & Profiles.* Burlington: University of Vermont, Research Center for Children, Youth, and Families.

Achenbach, T. M. (1991). *Manual for the Child Behavior Checklist/4-18 and 1991 Profile.* Burlington: University of Vermont, Department of Psychiatry.

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30*, 217-237. doi: 10.1016/j.cpr.2009.11.004

Amlund-Hagen, K., Myers, B. J., & Mackintosh, V. H. (2005) Hope, social support, and behavior problems in at-risk children. *American Journal of Orthopsychiatry, 75,* 211-219

Arditti, J. A., Lambert-Shute, J., & Joest, K. (2003). Saturday morning at the jail: Implications of incarceration for families and children. *Family Relations, 52,* 195–204. doi: 10.1111/j.1741-3729.2003.00195.x

Block, K. J., & Potthast, M. J. (1998). Girl scouts beyond bars: Facilitating parenting-child contact in correctional settings. *Child Welfare, 77,* 561−578.

Bradley, S. (2000). *Affect regulation and the development of psychopathology*. New York, NY: Guilford Press.

Brody, L. R. (1999). *Gender, emotion, and the family*. Cambridge, MA: Harvard University Press.

Brody, L. R., & Hall, J. A. (1993). Gender and emotion. In M. Lewis, & J. M. Haviland (Eds.), *Handbook of emotion.* (pp. 447-460). New York, NY: Guilford Press.

Campos, J. J., Campos, R. G., & Barrett, K. C. (1989). Emergent themes in the study of emotional development and emotion regulation. *Developmental Psychology, 25*(3), 394-402. doi:10.1037/0012-1649.25.3.394

Cassano, M., Perry-Parrish, C., & Zeman, J. (2007). Influence of gender on parental socialization of children's sadness regulation. *Social Development, 16*(2), 210-231. doi: 10.1111/j.1467-9507.2007.00381.x

Chaplin, T. M., Cole, P. M., & Zahn-Waxler, C. (2005). Parental socialization of emotion expression: Gender differences and relations to child adjustment. *Emotion, 5*(1), 80-88. doi: 10.1037/1528-3542.5.1.80

Cicchetti, D., Ackerman, B. P., & Izard, C. E. (1995). Emotions and emotion regulation in developmental psychopathology. *Development and Psychopathology, 7,* 1-10. doi: 10.1017/S0954579400006301

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Coffino, B. (2009). The role of childhood parent figure loss in the etiology of adult depression:

Findings from a prospective longitudinal study. *Attachment & Human Development, 11*(5), 445-470. doi:10.1080/14616730903135993

Cummings, E. M., Iannotti, R. J., & Zahn-Waxler, C. (1985). Influence of conflict between adults on the emotions and aggression of young children. *Developmental Psychology, 21*(3), 495-507. doi:10.1037/0012-1649.21.3.495

Dallaire, D. H., Ciccone, A., & Wilson, L. C. (2010). Teachers' experiences with and expectations of children with incarcerated parents. *Journal of Applied Developmental Psychology, 31*(4), 281-290. doi:10.1016/j.appdev.2010.04.001

Dallaire, D. H., & Wilson, L. C. (2010). The relation of exposure to parental criminal activity, arrest, and sentencing to children's maladjustment. *Journal of Child and Family Studies, 19*(4), 404-418. doi:10.1007/s10826-009-9311-9

Davis, T. L. (1995). Gender differences in masking negative emotions: Ability or motivation? *Developmental Psychology, 31*(4), 660-667. doi: 10.1037/0012-1649.31.4.660

Denham, S. A. (1998). *Emotional development in young children.* New York, NY: Guilford Press.

Garber, J., & Dodge, K. (1991) *The development of emotion regulation and dysregulation*. New York, NY, US: Cambridge University Press.

Duggal, S., Carolson, E. A., Sroufe, L. A., & Egeland, B. (2001). Depressive symptomatology in childhood and adolescence. *Development and Psychopathology, 13*, 143-164. doi: 10.1017/S0954579401001109

Fivush, R. (1993). Emotional content of parent–child conversation about the past. In C. A.

Nelson (Ed.), *Memory and Affect in Development*. Minnesota Symposium on Child Psychology, *26*, 39–78.

Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., . . . Guthrie, I. K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development, 72*(4), 1112-1134. doi:10.1111/1467-8624.00337

Eisenberg, N., Fabes, R. A., Guthrie, I. K., & Murphy, B. C. (1996). The relations of regulation and emotionality to problem behavior in elementary school children. *Development and Psychopathology, 8*(1), 141-162. doi:10.1017/S095457940000701X

Eisenberg, N., Spinrad, T. L., & Eggum, N. D. (2010). Emotion-related self-regulation and its relation to children's maladjustment. *Annual Review of Clinical Psychology, 6*, 495-525. doi:10.1146/annurev.clinpsy.121208.131208

Fabrega, H., Ulrich, R., & Loeber, R. (1996). Adolescent psychopathology as a function of informant and risk status. *The Journal of Nervous and Mental Disease*, 184, 27-34. doi: 10.1097/00005053-199601000-00006

Field, T. (1994). The effects of mother's physical and emotional unavailability on emotion regulation. *Monographs of the Society for Research in Child Development, 59*(2-3), 208-283. doi:10.2307/1166147

Fuchs, D., & Thelen, M. H. (1988). Children's expected interpersonal consequences of communicating their affective state and reported likelihood of expression. *Child Development, 59*(5), 1314-1322. doi:10.2307/1130494

Gabel, K., Johnston, D. (1995). *Children of incarcerated parents.* New York, NY: Lexington

Books.

Garber, J., Braafladt, N., & Zeman, J. (1991). The regulation of sad affect: An information-processing perspective. In J. Garber, & K. A. Dodge (Eds.), *The development of emotion regulation and dysregulation.* (pp. 208-240) New York, NY: Cambridge University Press.

Garnefski, N., & Kraaij, V. (2006). Relationships between cognitive emotion regulation strategies and depressive symptoms: A comparative study of five specific samples. *Personality and Individual Differences, 40*(8), 1659-1669. doi:10.1016/j.paid.2005.12.009

George, S. M., & LaLonde, R. J. (2002). Incarcerated mothers in Illinois State Prisons: An analysis of administrative data. June 2002. www.harrisschool.uchicago.edu/research/chppp/research.html (Retrieved September 24, 2011 from).

Gnepp, J., & Hess, D. R. (1986). Children's understanding of verbal and facial display rules. *Developmental Psychology, 22*, 103-108. doi: 10.1037/0012-1649.22.1.103

Greenfeld, L. A., & Snell, T. L. (2000). Women Offenders. Bureau of Justice Statistics Special Report. U.S. Department of Justice, Washington, D.C. NCJ 175688 http://harrisschool.uchicago.edu/research/faculty_projects/incarcerated_mothers/lalonde_incarceratedmothers.pdf (Retrieved November 20, 2011 from).

Gorman-Smith, D., & Tolan, P. (1998). The role of exposure to community violence and developmental problems among inner-city youth. *Development and Psychopathology, 10*(1), 101-116. doi:10.1017/S0954579498001539

Gottman, J., Katz, L., & Hooven, C. (1997). *Meta-emotion: how families communicate*

emotionally. Mawhaw, NJ: Lawrence Erlbaum.

Gullone, E., Hughes, E. K., King, N. J., & Tonge, B. (2010). The normative development of emotion regulation strategy use in children and adolescents: A 2-year follow-up study. *Journal of Child Psychology and Psychiatry,51*(5), 567-574. doi:10.1111/j.1469-7610.2009.02183.x

Gunnar, M. R., Brodersen, L., Nachmias, M., Buss, K., & Rigatuso, J. (1996). Stress reactivity and attachment security. *Developmental Psychobiology, 29*(3), 191-204. doi:10.1002/(SICI)1098-2302(199604)29:3<191::AID-DEV1>3.0.CO;2-M

Guzder, J., Paris, J., Zelkowitz, P., & Marchessault, K. (1996). Risk factors for borderline psychology in children. *Journal of the American Academy of Child & Adolescent Psychiatry, 35*(1), 26-33. doi:10.1097/00004583-199601000-00009

Hanlon, T. E., Carswell, S. B., & Rose, M. (2007). Research on the caretaking of children of incarcerated parents: Findings and their service delivery implications. *Children and youth services review, 29*(3), 348-362. doi: 10.1016/j.childyouth.2006.09.001

Hartung, C. M., & Widiger, T. A. (1998). Gender differences in the diagnosis of mental disorders: Conclusions and controversies of the DSM–IV. *Psychological Bulletin*, *123*(3), 1998, 260-278

Kendler, K. S., Neale, M. C., Kessler, R. C., & Heath, A. C. (1992). Childhood parental loss and adult psychopathology in women: A twin study perspective. *Archives of General Psychiatry, 49*(2), 109-116.

Klimes-Dougan, B., Brand, A. E., Zahn-Waxler, C., Usher, B., & Hastings, P., Kendziora, K.,

& Garside, R.B. (2007). Parental emotion socialization in adolescence: Differences in sex, age and problem status. *Social Development, 16*(2), 326-342. doi: 10.1111/j.1467-9507.2007.00387.x

Kopp, C. B. (1989). Regulation of distress and negative emotions: A developmental view. *Developmental Psychology, 25*(3), 343-354. doi:10.1037/0012-1649.25.3.343

Kovacs, M. (1992). *Manual for Children's Depression Inventory.* Multi-Health Systems, Inc, North Tonawanda, NY.

Lotze, G. M., Ravindran, N., & Myers, B. J. (2010). Moral emotions, emotion self-regulation, callous-unemotional traits, and problem behavior in children of incarcerated mothers. *Journal of Child and Family Studies, 19*(6), 702-713.

Jacques, H. K., & Mash, E. J. (2004). A test of the tripartite model of anxiety and depression in elementary and high school boys and girls. *Journal of Abnormal Child Psychology: 32*(1), 13-25. doi:10.1023/B:JACP.0000007577.38802.18

Johnson, J. G., Bromley, E., & McGeoch, P. G. (2005). Role of childhood experiences in the development of maladaptive and adaptive personality traits. In J. M. Oldham, A. E. Skodol & D. S. Bender (Eds.), *The American Psychiatric Publishing Textbook of Personality Disorders* (pp. 209-221). Arlington, VA: American Psychiatric Publishing, Inc.

Mackintosh, V. H., Myers, B. J., & Kennon, S. S. (2006). Children of incarcerated mothers and their caregivers: Factors affecting the quality of their relationship. *Journal of Child and Family Studies, 15*(5), 581-596. doi:10.1007/s10826-006-9030-4

March, J., Parker, J., Sullivan, K., Stallings, P., & Connors, K. C. (1997). The

Multidimensional Anxiety Scale for Children (MASC): Factor structure, reliability, and validity. *Journal of American Academy for Child and Adolescent Psychiatry, 36,* 554-565.

Martinez, P., & Richters, J. E. (1993). The NIMH community violence project II: Children's distress symptoms associated with violence exposure. *Psychiatry: Interpersonal and Biological Processes, 56*(1), 22-35.

Mash, E. J., & Barkley, R. A. (2003). *Child psychopathology*. (2 ed.). New York, NY: Guilford Press.

Mumola, C. J. (2000). Incarcerated parents and their children. Bureau of Justice Statistics Special Report (Report No. NCJ-182335). Retrieved from Bureau of Justice Statistics website: http://www.urban.org/uploadedpdf/310882_families_left_behind.pdf

Murray, J., Farrington, D. P., Sekol, I., & Olsen, R. F. (2009). Effects of parental imprisonment on child antisocial behaviour and mental health: A systematic review. *Campbell Systematic Reviews, 4,* 1–105. doi:10.4073/csr.2009.4

Myers, B. J., Smarsh, T. M., Amlund-Hagen, K., & Kennon, S. (1999). Children of incarcerated mothers, *Journal of Child and Family Studies, 8*(1), 11-25. doi: 10.1023/A:1022990410036

O'Neil, K., Podell, J., Benjamin, C., & Kendall, P. C. (2010). Comorbid depressive disorders in anxiety-disordered youth: Demographic, clinical, and family characteristics. Child Psychiatry and Human Development, *41*, 330-341.

Perry-Parrish, C., & Zeman, J. (2011). Relations among sadness regulation, peer acceptance, and

social functioning in early adolescence: The role of gender. *Social Development, 20*(1), 135-153. doi: 10.1111/j.1467-9507.2009.00568.x

Plutchik, R. (1993). Emotions and their vicissitudes: emotions and psychopathology. In: Lewis M, Haviland J, eds. *The Handbook of Emotions*. (pp. 53-66) New York: Guilford Press.

Poehlmann, J. (2005a). Representations of attachment relationships in children of incarcerated mothers. *Child Development, 76,* 79-96. doi: 10.1111/j.1467-8624.2005.00871.x

Poehlmann, J. (2005b). Incarcerated mothers' contact with children, perceived family relationships, and depressive symptoms. *Journal of Family Psychology, 19*, 350-357. doi: 10.1037/0893-3200.19.3.350

Poehlmann, J., Dallaire, D., Loper, A. B., & Shear, L. D. (2010). Children's contact with their incarcerated parents: Research findings and recommendations. *American Psychologist, 65*(6), 575-598. doi: 10.1037/a0020279

Raver, C. C. (2004). Placing emotion self-regulation in sociocultural and socioeconomic contexts. *Child Development, 72*(2), 346-353. doi: 10.1111/j.1467-8624.2004.00676.x

Rudolph, K. D., Hammen, C., Burge, D., Lindberg, N., Herzberg, D., & Daley, S. E. (2000). Toward an interpersonal life-stress model of depression: The developmental context of stress generation. *Development and Psychopathology, 12*(2), 215-234. doi: 10.1017/S0954579400002066

Rutter, M. (1989). Pathways from childhood to adult life. *Journal of Child Psychology and Psychiatry, 30*(1), 23-51. doi:10.1111/j.1469-7610.1989.tb00768.x

Rutter, M. (1994). Family discord and conduct disorder: Cause, consequence, or correlate? *Journal of Family Psychology, 8*(2), 170-186. doi:10.1037/0893-3200.8.2.170

Rydell, A., Berlin, L., & Bohlin, G. (2003). Emotionality, emotion regulation, and adaptation

among 5- to 8-year-old children. *Emotion, 3*(1), 30-47. doi: 10.1037/1528-3542.3.1.30

Saarni, C. (1999). *The development of emotional competence*. New York, NY: Guilford Press.

Samaan, R.A. (2000). The influence of race, ethnicity, and poverty on the mental health of children. *Journal of Healthcare for Poor and Underserved, 11*(1), 100-110.

Santostefano, S. (1978). *A biodevelopmental approach to clinical child psychology*. New York, NY: Wiley.

Schirmer, S., Nellis, A., & Mauer, M. (2009). Incarcerated parents and their children, trends 1991-2007. Retrieved from The Sentencing Project website: http://www.sentencingproject.org/doc/publications/publications/inc_incarceratedparents.pdf

Shaw, D. S., Keenan, K., Vondra, J. I., Delliquadri, E., & Giovannelli, J. (1997). Antecedents of preschool children's internalizing problems: A longitudinal study of low-income families. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*(12), 1760-1767. doi:10.1097/00004583-199712000-00025

Shipman, K. L., & Zeman, J. L. (1999). Emotional understanding: A comparison of physically maltreating and nonmaltreating mother-child dyads. *Journal of Clinical Child Psychology, 28*(3). 407-417. doi: 10.1207/S15374424jccp280312

Southam-Gerow, M. A., & Kendall, P. C. (2002). Emotion regulation and understanding: Implications for child psychopathology and therapy. *Clinical Psychology Review, 22,* 189-222. doi: 10.1016/S0272-7358(01)00087-3

Sroufe, L. A. (1990). Considering normal and abnormal together: The essence of developmental

psychopathology. *Development and Psychopathology, 2*(4), 335-347. doi:10.1017/S0954579400005769

Sroufe, L. A. (1997). Psychopathology as an outcome of development. *Development and Psychopathology, 9*(2), 251-268. doi:10.1017/S0954579497002046

Sroufe, L. A., & Egeland, B. (1991). Illustrations of person-environment interaction from a longitudinal study. In T. D. Wachs, & R. Plomin (Eds.), *Conceptualization and measurement of organism-environment interaction* (pp. 68-84). Washington, DC: American Psychological Association. doi:10.1037/10100-004

Suveg, C., & Zeman, J. (2004). Emotion regulation in children with anxiety-disorders. *Journal of Clinical Child and Adolescent Psychology, 33,* 750-759. doi: 10.1207/s15374424jccp3304_10

Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. In N.A. Fox (Ed.), The development of emotion regulation: Behavioral and biological considerations. *Monographs for the Society for Research in Child Development, 59,* 25-52.

Thompson, R. A., & Meyer, S. (2007). Socialization of emotion regulation in the family. In J. Gross (Ed.), *Handbook of emotion regulation* (pp. 249-268). New York, NY: Guilford Press.

Tracy, M., Zimmerman, F. J., Galea, S., McCauley, E., & Vander Stoep, A. (2008). What explains the relation between family poverty and childhood depressive symptoms? *Journal of Psychiatric Research, 42*(14), 1163-1175. doi:10.1016/j.jpsychires.2008.01.011

Underwood, M. K., Coie, J. D., & Herbsman, C. R. (1992). Display rules for anger and

aggression in school-age children. *Child Development, 63*(2), 366-380. doi:10.2307/1131485

van der Kolk, B. A., & McFarlane, A. C. (1996). The black hole of trauma. In B. A. van der Kolk, A.C. McFarlane & L. Weisaeth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp. 3-23). New York, NY: Guilford Press.

Walcott, C. M., & Landau, S. (2004). The relation between disinhibition and emotion regulation in boys with attention deficit hyperactivity disorder. *Journal of Clinical Child and Adolescent Psychology, 33,* 772-782. doi: 10.1207/s15374424jccp3304_12

Williams, T. M. (2008). The effects of maternal incarceration on school-age children. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 68*(11), 4602.

Zeman, J., Cassano, M. & Adrian, M. (in press). Methodological implications of the affect revolution: Socialization influences on children's and adolescents' emotional self-regulation processes: A developmental psychopathology perspective.

Zeman, J. L., Cassano, M., Suveg, C., & Shipman, K. (2010). Initial validation of the children's worry management scale. *Journal of Child and Family Studies, 19*(4), 381-392. doi:10.1007/s10826-009-9308-4

Zeman, J., & Shipman, K. (1997). Social-contextual influences on expectancies for managing anger and sadness: The transition from middle childhood to adolescence. *Developmental Psychology, 33*(6), 917-924. doi:10.1037/0012-1649.33.6.917

Zeman, J., & Shipman, K. (1998). Influence of social context on children's affect regulation: A functionalist perspective. *Journal of Nonverbal Behavior, 22*(3), 141-165.

doi:10.1023/A:1022900704563

Zeman, J., Shipman, K., & Penza-Clyve, S. (2001). Development and initial validation of the children's sadness management scale. *Journal of Nonverbal Behavior, 25*(3), 187-205. doi:10.1023/A:1010623226626

Zeman, J., Shipman, K., & Suveg, C. (2002). Anger and sadness regulation: Predictions to internalizing and externalizing symptoms in children. *Journal of Clinical Child and Adolescent Psychology, 31*(3), 393-398. doi:10.1207/153744202760082658

Table 1

Child Demographics as a Percentage of the Total Sample

Characteristic	High Risk Sample (n = 74)	Community Sample (n = 89)
Gender		
Male	52.7	52.8
Female	47.3	47.2
Age		
Younger (7-9)	46.6	52.3
Older (10-12)	53.4	47.7
Race		
Caucasian	23.2	78.9
African-American	67.1	12.4
Asian	0	4.5
Mixed/Other	9.6	3.4
Socioeconomic Status[a]		
Major business	1.5	33.0
Medium business	9.1	36.4
Skilled craftsmen	15.2	17.0
Semiskilled worker	31.8	12.5
Unskilled laborer	40.9	1.1

[a] According to Hollingshead, 1975.

Table 2

Cronbach's Alpha for CAMS and CSMS Subscales, Child and Parent Report

	Child Report (α)	Parent Report (α)
CAMS: Emotion Regulation Coping	.62	.84
CAMS: Dysregulation	.52	.67
CAMS: Inhibition	.66	.80
CSMS: Emotion Regulation Coping	.55	.72
CSMS: Dysregulation	.53	.55
CSMS: Inhibition	.65	.86

Table 3

Means and Standard Deviation of CDI, MASC, and CBCL by Sample Type and Gender

	High Risk Sample				Community Sample			
	Boys		Girls		Boys		Girls	
	T	*SD*	*T*	*SD*	*T*	*SD*	*T*	*SD*
CDI Total	44.82	7.99	49.70	8.73	45.77	8.69	46.38	6.58
MASC Total	52.00	10.87	56.42	10.90	54.64	10.00	54.67	10.23
CBCL Int.	54.82	9.97	51.76	11.05	57.26	9.91	55.05	10.52
CBCL Ext.	57.95	11.17	55.09	10.59	52.63	10.13	49.57	8.06

Table 4

CAMS Inhibition and Standard Deviation by Age and Sample Type

	M	*SD*
Older High Risk	8.00	1.97
Older Community	6.93	2.23
Younger High Risk	6.44	1.94
Younger Community	6.72	2.05

Table 5

CSMS Inhibition and Standard Deviation by Age and Sample Type

	M	*SD*
Older High Risk	8.13	2.08
Older Community	6.73	2.06
Younger High Risk	7.44	2.15
Younger Community	7.46	2.08

Table 6

Stepwise Regression Analyses Predicting Anger Coping to Externalizing Symptoms, Sadness Dysregulation to Externalizing Symptoms

Predictor	R^2	β
Anger Coping to Externalizing		
Step 1	.14***	
Age Group		-.131
Gender		-.172*
Anger Cope		-.28***
Step 2	.21***	
Age Group x Anger Cope		.21**
Gender x Anger Cope		.13
Age x Gender		.02
Step 3	.21***	
Age Group x Gender x Anger Cope		-.01
Sadness Dysregulation to Externalizing		
Step 1	.09**	
Age Group		-.19*
Gender		-.21**
Sad Dysregulation		.17*
Step 2	.14**	
Age Group x Sad Dysreg		.06

Gender x Sad Dysreg		.18*
Age x Gender		.05
Step 3	.18***	
Age Group x Gender x Sad Dysreg		-.22**

Note: ^ $p < .065$; *$p < .05$; **$p < .01$; ***$p < .001$

Table 7

Multiple Regression Analyses Predicting Mother-Child Contact to Child Emotion Regulation Skills and Symptoms of Psychopathology

	Older Children							
	Anger Dysregulation		Anger Inhibition		Sadness Inhibition		Internalizing Symptoms	
Predictor	R^2	β	R^2	β	R^2	β	R^2	β
Model 1	.27*		.24*		.22^		.33*	
Letters		-.42*		-.31		-.40*		-.13
Phone calls		.28		-.30		-.29		.25
Visits		-.17		.38*		.16		.44*

	Girls			
	General Anxiety		Separation Anxiety	
Predictor	R^2	β	R^2	β
Model 1	.24^		.27*	
Letters		-.43*		-.53**
Phone calls		-.14		.04
Visits		-.06		.02

Note: ^ $p < .065$; *$p < .05$; **$p < .01$; ***$p < .001$

Table 8

Multiple Regression Analyses Predicting Experiences with Maternal Incarceration to Older Child Emotion Regulation Skills and Symptoms of Psychopathology

	Older Children							
	Anger Dysregulation		Anger Coping		Sadness Coping		Externalizing Symptoms	
Predictor	R^2	β	R^2	β	R^2	B	R^2	β
Model 2	.31**		.27*		.28*		.25*	
Number of Incar.		.48**		-.57**		.58**		.46*
Length of Separation		-.06		.28		-.29		.11
Composite variable		-.20		-.15		-.20		.12

	Younger Children	
	Sadness Dysregulation	
Predictor	R^2	B
Model 2	.23^	
Number of Incar.		-.06
Length of Separation		-.40*
Composite variable		-.15

Note: ^ $p < .065$; *$p < .05$; **$p < .01$; ***$p < .001$

Appendix A.1

Children's Emotion Management Scale: Anger

Please circle the response that best describes your behavior when you are feeling mad.

	Hardly-Ever	**Sometimes**	**Often**
1. When I am feeling mad, I control my temper.	1	2	3
2. I hold my anger in.	1	2	3
3. I stay calm and keep my cool when I am feeling mad.	1	2	3
4. I do things like slam doors when I am mad.	1	2	3
5. I hide my anger.	1	2	3
6. I attack whatever it is that makes me mad.	1	2	3
7. I get mad inside but I don't show it.	1	2	3
8. I can stop myself from losing my temper.	1	2	3
9. I say mean things to others when I am mad.	1	2	3
10. I try to calmly deal with what is making me feel mad.	1	2	3
11. I'm afraid to show my anger.	1	2	3

Appendix A.2

Children's Emotion Management Scale: Sadness

Please circle the response that best describes your behavior when you are feeling sad.

	Hardly-Ever	**Sometimes**	**Often**
1. When I'm feeling sad, I can control my crying and carrying on.	1	2	3
2. I hold my sad feelings in.	1	2	3
3. I stay calm and don't let sad things get to me .	1	2	3
4. I whine/fine about what's making me sad.	1	2	3
5. I hide my sadness.	1	2	3
6. When I'm sad, I do something totally different until I calm down.	1	2	3
7. I get sad inside but I don't show it.	1	2	3
8. I can stop myself from losing control of my sad feelings.	1	2	3
9. I cry and carry on when I am sad.	1	2	3
10. I try to calmly deal with what is making me sad.	1	2	3
11. I do things like mope around when I'm sad.	1	2	3
12. I'm afraid to show my sadness.	1	2	3

Appendix B

Children's Depression Inventory

Item 1

- ☐ I am sad once in a while
- ☐ I am sad many times.
- ☐ I am sad all the time.

Item 2

- ☐ Nothing will ever work out for me.
- ☐ I am not sure if things will work out for me.
- ☐ Things will work out for me O.K.

Item 3

- ☐ I do most things O.K.
- ☐ I do many things wrong.
- ☐ I do everything wrong.

Item 4

- ☐ I have fun in many things.
- ☐ I have fun in some things.
- ☐ Nothing is fun at all.

Item 5

- ☐ I am bad all the time.
- ☐ I am bad many times.
- ☐ I am bad once in a while.

Item 6

- ☐ I think about bad things happening to me once in a while.
- ☐ I worry that bad things will happen to me.
- ☐ I am sure that terrible things will happen to me.

Item 7

- ☐ I hate myself.
- ☐ I do not like myself.
- ☐ I like myself

Item 8

- ☐ All bad things are my fault.
- ☐ Many bad things are my fault.
- ☐ Bad things are not usually my fault.

Item 9

- ☐ I do not think about killing myself.
- ☐ I think about killing myself but I would not do it.
- ☐ I want to kill myself.

Item 10

- ☐ I feel like crying every day.
- ☐ I feel like crying many days.
- ☐ I feel like crying once in a while.

Item 11

- ☐ Things bother me all the time.
- ☐ Things bother me many times.
- ☐ Things bother me once in a while.

Item 12

- ☐ I like being with people
- ☐ I do not like being with people many times.
- ☐ I do not want to be with people at all.

Item 13

- ☐ I cannot make up my mind about things.
- ☐ It is hard to make up my mind about things.
- ☐ I make up my mind about things easily.

Item 14

- ☐ I look O.K.
- ☐ There are some bad tings about my looks.
- ☐ I look ugly.

Item 15

- ☐ I have to push myself all the time to do my schoolwork.
- ☐ I have to push myself many times to do my schoolwork.
- ☐ Doing schoolwork is not a big problem.

Item 16

- ☐ I have trouble sleeping every night.
- ☐ I have trouble sleeping many nights.
- ☐ I sleep pretty well.

Item 17

- ☐ I am tired once in a while.
- ☐ I am tired many days.
- ☐ I am tired all the time.

Item 18

- ☐ Most days I do not feel like eating.
- ☐ Many days I do not feel like eating.
- ☐ I eat pretty well.

Item 19

- ☐ I do not worry abut aches and pains.
- ☐ I worry about aches and pains many times.
- ☐ I worry about aches and pains all the time.

Item 20

- ☐ I do not feel alone.
- ☐ I feel alone many times.
- ☐ I feel alone all the time.

Item 21

- ☐ I never have fun at school.
- ☐ I have fun at school only once in a while.
- ☐ I have fun at school many times.

Item 22

- ☐ I have plenty of friends.
- ☐ I have some friends but I wish I had more.
- ☐ I do not have any friends.

Item 23

- ☐ My schoolwork is alright.
- ☐ My school work is not as good as before.
- ☐ I do very badly in subjects I used to be good in.

Item 24

- ☐ I can never be as good as other kids.
- ☐ I can be as good as other kids if I want to.
- ☐ I am just as good as other kids.

Item 25

- ☐ Nobody really loves me.
- ☐ I am not sure if anybody loves me.
- ☐ I am sure that somebody loves me.

Item 26

- ☐ I usually do what I am told.
- ☐ I do not do what I am told most times.
- ☐ I never do what I am told.

Item 27

- ☐ I get along with people.
- ☐ I get into fights many times.
- ☐ I get into fights all the time.

Appendix C

Multidimensional Anxiety Scale for Children

This questionnaire asks you how you have been thinking, feeling, or acting recently. For each item, please circle the number that shows how often the statement is true for you.

	Never true about me	**Rarely true about me**	**Sometimes true about me**	**Often true about me**
Example A: I'm scared of dogs	0	1	2	3
Example B: Thunderstorms upset me	0	1	2	3
1. I feel tense or uptight	0	1	2	3
2. I usually ask permission	0	1	2	3
3. I worry about other people laughing at me	0	1	2	3
4. I get scared when my parents go away	0	1	2	3
5. I keep my eyes open for danger	0	1	2	3
6. I have trouble getting my breath	0	1	2	3
7. The idea of going away to camp scares me	0	1	2	3
8. I get shaky or jittery	0	1	2	3
9. I try to stay near my mom or dad	0	1	2	3
10. I'm afraid that other kids will make fun of me	0	1	2	3
11. I try hard to obey my parents and teachers	0	1	2	3
12. I get dizzy or faint feelings	0	1	2	3

13. I check things out first	0	1	2	3
14. I worry about getting called on in class	0	1	2	3
15. I'm jumpy	0	1	2	3
16. I'm afraid other people will think I'm stupid	0	1	2	3
17. I keep the light on at night	0	1	2	3
18. I have pains in my chest	0	1	2	3
19. I avoid going to places without my family	0	1	2	3
20. I feel strange, weird, or unreal	0	1	2	3
21. I try to do things other people will like	0	1	2	3
22. I worry about what other people think of me	0	1	2	3
23. I avoid watching scary movies and TV shows	0	1	2	3
24. My heart races or skips beats	0	1	2	3
25. I stay away from things that upset me	0	1	2	3
26. I sleep next to someone from my family	0	1	2	3
27. I feel restless and on edge	0	1	2	3
28. I try to do everything exactly				

Right	0	1	2	3
29. I worry about doing something stupid or embarrassing	0	1	2	3
30. I get scared riding in the car or on the bus	0	1	2	3
31. I feel sick to my stomach	0	1	2	3
32. If I get upset or scared, I let someone know right away	0	1	2	3
33. I get nervous if I have to perform in public	0	1	2	3
34. Bad weather, the dark, heights, animals, or bugs scare me	0	1	2	3
35. My hands shake	0	1	2	3
36. I check to make sure things are safe	0	1	2	3
37. I have trouble asking other kids to play with me	0	1	2	3
38. My hands feel sweaty or cold	0	1	2	3
39. I feel shy	0	1	2	3

Appendix D

Child Behavior Checklist

Below is a list of items that describe children and youths. For each item that describes your child *now or within the past 6 months*, please circle the 2 if the item is *very true or often true* of your child. Circle the 1 if it is *somewhat or sometimes true* of your child. If the item is *not true* of your child, circle the 0. Please answer all items as well as you can, even if some do not seem to apply to your child.

0 = Not True 1 = Somewhat or Sometimes True 2 = Very True or Often True

1. Acts too young for his/her age……0 1 2
2. Drinks alcohol without parents' approval

   (describe): _____ 0 1 2
3. Argues a lot…… 0 1 2
4. Fails to finish things he/he starts…… 0 1 2
5. There is still very little he/she enjoys……0 1 2
6. Bowel movements outside toilet…… 0 1 2
7. Bragging, boasting……..… 0 1 2
8. Can't concentrate, can't pay attention for long…… 0 1 2
9. Can't get his/her mind off certain thoughts; obsessions

   (describe): _____..... 0 1 2
10. Can't sit still, restless, are hyperactive……..…… 0 1 2
11. Clings to adults or too dependent…… 0 1 2
12. Complains of loneliness…… 0 1 2
13. Confused or seems to be in a fog…… 0 1 2
14. Cries a lot …… 0 1 2

15. Cruel to animals…… 0 1 2

16. Cruelty, bullying, or meanness to others…… 0 1 2

17. Daydreams or gets lost in his/her thoughts…… 0 1 2

18. Deliberately harms self or attempts suicide……..… 0 1 2

19. Demands a lot of attention…….. 0 1 2

20. Destroys his/her own things…… 0 1 2

21. Destroys things belonging to his/her family or others…… 0 1 2

22. Disobedient at home…… 0 1 2

23. Disobedient at school……. 0 1 2

24. Doesn't eat well…… 0 1 2

25. Doesn't get along with other kids…… 0 1 2

26. Doesn't seem to feel guilty after misbehaving……. 0 1 2

27. Easily jealous…… 0 1 2

28. Breaks rules at home, school, or elsewhere…… 0 1 2

29. Fears certain animals, situations, or places, other than school

(describe): _____..... 0 1 2

30. Fears going to school…… 0 1 2

31. Fears he/she might think or do something bad…… 0 1 2

32. Feels he/she has to be perfect…… 0 1 2

33. Feels or complains that no one loves his/her…… 0 1 2

34. Feels others are out to get him/her……0 1 2

35. Feels worthless or inferior…… 0 1 2

36. Gets hurt a lot, accident-prone…… 0 1 2

37. Gets in many fights…… 0 1 2

38. Gets teased a lot…… 0 1 2

39. Hangs around with others who get in trouble…….. 0 1 2

40. Hear sounds or voices that aren't there

(describe): _____ …… 0 1 2

41. Impulsive or acts without thinking…… 0 1 2

42. Would rather be alone than with others……0 1 2

43. Lying or cheating……..……0 1 2

44. Bites fingernails……0 1 2

45. Nervous, high-strung, or tense……0 1 2

46. Nervous movements or twitching

(describe): _____ ……0 1 2

47. Nightmares…….0 1 2

48. Not liked by other kids…… 0 1 2

49. Constipated, doesn't move bowels…….0 1 2

50. Too fearful or anxious…… 0 1 2

51. Feels dizzy or lightheaded…….. 0 1 2

52. Feels too guilty…… 0 1 2

53. Overeating…….0 1 2

54. Overtired without good reason……..0 1 2

55. Overweight…… 0 1 2

56. Physical problems *without known medical causes*:

a. Aches or pains (not stomach or headaches)…… 0 1 2

b. Headaches…… 0 1 2

c. Nausea, feels sick……0 1 2

d. Problems with eyes (not if corrected by glasses)

(describe): _____…… 0 1 2

e. Rashes or other skin problems…….0 1 2

f. Stomachaches…… 0 1 2

g. Vomiting, throwing up……0 1 2

h. Other (describe): _____…… 0 1 2

57. Physically attacks people…….. 0 1 2

58. Picks nose, skin, or other parts of body

(describe): _____.....0 1 2

59. Plays with own sex parts in public…….……0 1 2

60. Plays with own sex parts too much…….0 1 2

61. Poor school work……0 1 2

62. Poorly coordinated or clumsy…….0 1 2

63. Prefers being with older kids…….0 1 2

64. Prefers being with younger kids……0 1 2

65. Refuses to talk……0 1 2

66. Repeats certain acts over and over; compulsions

(describe): _____.....0 1 2

67. Runs away from home…… 0 1 2

68. Screams a lot…… 0 1 2

69. Secretive, keeps things to self ……0 1 2

70. Sees things that aren't there

(describe):_____.....0 1 2

71. Self-conscious or easily embarrassed……0 1 2

72. Sets fires…… 0 1 2

73. Sexual problems

(describe):_____.....0 1 2

74. Showing off or clowning…… 0 1 2

75. Too shy or timid…… 0 1 2

76. Sleeps less than most kids…… 0 1 2

77. Sleeps more than most kids during the day and/or night

(describe): _____.....0 1 2

78. Inattentive or easily distracted……..0 1 2

79. Speech problem

(describe):_____.....0 1 2

80. Stares blankly…… 0 1 2

81. Steals at home……0 1 2

82. Steals outside the home…….0 1 2

83. Stores up too many things he/she doesn't need

(describe):_____.....0 1 2

84. Strange behavior

(describe):_____……0 1 2

85. Strange ideas

(describe): _____.....0 1 2

86. Stubborn, sullen, or irritable…….0 1 2

87. Sudden changes in mood or feelings…… 0 1 2

88. Sulks a lot……0 1 2

89. Suspicious……. 0 1 2

90. Swearing or obscene language…… 0 1 2

91. Talks about killing self……...… 0 1 2

92. Talks or walks in sleep

(describe): _____.....0 1 2

93. Talks too much…… 0 1 2

94. Teases a lot……0 1 2

95. Temper tantrums or hot temper……0 1 2

96. Thinks about sex too much…….…….0 1 2

97. Threatens people…… 0 1 2

98. Thumb-sucking……0 1 2

99. Smokes, chews, or sniffs tobacco……0 1 2

100. Trouble sleeping

(describe): _____.....0 1 2

101. Truancy, skips school…… 0 1 2

102. Underactive, slow moving, or lacks energy…… 0 1 2

103. Unhappy, sad, or depressed……0 1 2

104. Unusually loud…… 0 1 2

105. Uses drugs for nonmedical purposes (don't include alcohol or tobacco)

(describe): _____.....0 1 2

106. Vandalism…… 0 1 2

107. Wets self during the day……0 1 2

108. Wets the bed …… 0 1 2

109. Whining…… 0 1 2

110. Wishes to be of opposite sex…… 0 1 2

111. Withdrawn, doesn't get involved with others……0 1 2

112. Worries…… 0 1 2

113. Please write in any problems your child has that were not listed above:

_____.....0 1 2

_____.....0 1 2

_____.....0 1 2