

2011

# Children's Emotion Regulation and Social Anxiety, Generalized Anxiety, and Depressive Symptoms

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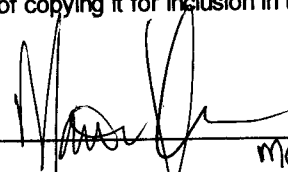
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
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Children's Emotion Regulation and Social Anxiety,  
Generalized Anxiety, and Depressive Symptoms

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Dedication

For Christopher Whitehead, for always supporting me throughout my educational career and during the course of this thesis.

### Acknowledgments

I would like to express my sincere appreciation for the following individuals who supported and guided me throughout this thesis process:

- My thesis chair, Dr. Wesley Allan. Thank you for your time, commitment, and guidance throughout this project. You have helped me become a critical thinker and a better writer. I truly learned so much about research and much more thanks to your support.
- My committee members, Dr. Anu Sharma and Dr. Jeffrey Stowell. Thank you both for dedicating your time and effort into this project. I am thankful for all of your help and suggestions that pushed me to make this paper the best that I could.
- To Dr. Ronan Bernas: Thank you for answering all of my statistical questions throughout the year, refreshing my mind on topics that you taught our class, and building my self-confidence in research.

### Abstract

Emotion regulation is necessary for a child to adapt to and function well in the environment. Problems in child emotion regulation have been linked with numerous negative outcomes. This paper reviews the current literature linking child social anxiety, generalized anxiety, and depression to emotion regulation. In addition, the relationship between parent symptomatology and child emotion regulation is discussed. A mediated model that examines the association between maternal social anxiety and the three symptom clusters (i.e., social anxiety, generalized anxiety, and depressive symptoms), with child emotion regulation as a mediator, was tested. Contrary to the hypotheses, child emotion regulation did not serve as a mediator between maternal social anxiety and child internalizing symptoms. However, maternal social anxiety and sex predicted child social anxiety, and lability/negativity and ethnicity predicted depressive symptoms. Possible explanations for these findings, suggestions for future research, and clinical implications are also discussed.



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### Children's Emotion Regulation and Social Anxiety, Generalized Anxiety, and Depressive Symptoms

A number of studies have documented the link between emotion regulation and externalizing problems, including aggression and defiance (e.g., Shields & Cicchetti, 1998). In contrast, relatively few studies have examined the relationship between children's emotion regulation and either anxiety or depression. Thus, this paper reviewed the link between children's emotion regulation and three negative internalizing outcomes (social anxiety, generalized anxiety, and depressive symptoms). Furthermore, this study examined emotion regulation as a predictor of three internalizing symptom clusters: social anxiety symptoms, generalized anxiety symptoms, and depressive symptoms. Because of the known relationship between parent symptomatology and child symptomatology, maternal social anxiety was also included. This paper begins with a consideration of emotion regulation and how it has been conceptualized in relevant studies.

#### **Emotion Regulation**

Emotion regulation has been conceptualized and examined in varying ways across studies. In general, child emotion regulation is considered to be the process by which children control and understand their emotions (Southam-Gerow & Kendall, 2002). Children with good emotion regulation can increase, decrease, stop, or maintain different emotions (both negative and positive) (Koole, 2009). Specifically, emotion regulation allows a child to engage in adaptive behaviors and have positive thoughts as well as a quicker, more adaptive recovery from negative emotions. Overall, emotion regulation is necessary for optimal functioning (Thompson, 1994).

Although some researchers view emotion regulation as a means of recovering after a negative experience, other researchers debate that emotion regulation may occur before the negative experience. Rather, anticipation of a negative event or emotion may be a component of emotion regulation. One school of thought is that emotion regulation is a two-step process (Cole, Martin, & Dennis, 2004). Specifically, they view emotion and emotion regulation as two separate entities. First, the emotion is generated. Then, the emotion is managed in such a way that the child decreases the likelihood of a negative experience (Lazarus, 1991). An example that illustrates this conceptualization is when a child is angry (emotion), he pounds his fists on the floor to alleviate the negative feelings (regulation). Although this conceptualization fits with countless examples of child behavior, it may be too simplistic (Campos, Frankel, & Camras, 2004). In particular, it does not account for avoidance behaviors and other strategies that are used to prevent or alleviate negative emotions.

Campos and colleagues (2004) assert that emotion and regulation are simultaneous processes. Instead of the two factor approach which states that an emotion is an initial, separate process from regulation, this latter conceptualization suggests that emotion and regulation are two components of one process. The one process approach argues that regulation takes place at all levels of an emotional experience. That is, it can occur before, during, and after an emotion. This theory supports the notion that regulation may occur prior to an emotion in order to increase positive emotions and decrease negative emotions (Zeelenberg & Pieters, 2007). Therefore, rather than reacting to an emotion, emotion regulation is a tool that assists children in deciding which emotion will be elicited. For example, a child may avoid a social situation (regulation) in order to

reduce the chance of feeling anxious (emotion). In this example, because the child does not feel anxious, regulation occurs without the actual emotional response. How a child responds to an anticipated situation allows a child to differentiate between different emotions because he/she will learn to pair regulation strategies with different emotional experiences. However, the process is much more complicated because of the unpredictable nature of emotions (Cole et al., 2004).

Several challenges exist with the study of emotion and emotion regulation. An emotion can be represented by numerous behaviors, and a single behavior can represent countless emotions. Furthermore, it is difficult to separate individual emotions (Amstadter, 2008). For example, with a series of high arousal events, an earlier event can influence how an individual responds of a later event by lowering the threshold to elicit a response, and therefore making it difficult to determine how a child would react solely to the later event.

Sroufe (1996) suggests that, rather than only examining emotions and behaviors, determining the significance of an event to the child may be more informative with regard to emotion regulation. The meaning of an event can help determine the degree of regulation that will occur. The significance helps a child decide how much effort should be put into regulation, which in turn decides if a positive emotion will result or the reduction of a negative emotion.

Significance is based on different motivations, including hedonic needs, the child's goals, and optimal personality functioning (Koole, 2009). If a child is motivated by hedonic needs, he/she will try to increase the amount of pleasurable experiences and decrease the amount of negative or painful experiences. Goal attainment is the primary

motivation when the aim of emotion regulation is to remain at a neutral, controlled emotion in order for the child to focus on a specific task unrelated to the negative experience. Though similar to goal-attainment, focusing on overall personality functioning involves accomplishing numerous goals at once (Koole, 2009). Rather than just a single task, the function of emotion regulation in this situation seeks to improve the child holistically (Campos et al., 2004). Therefore, this frame of reference allows for flexibility and learning of different strategies simultaneously rather than focusing on single entities.

Although Sroufe's (1996) conceptualization may be useful, obtaining a child's motivation is difficult, especially for younger children. Thus, most authors conceptualize emotion regulation in a simpler manner. Specifically, the majority of authors have focused on emotions displayed, positive and negative thoughts, and behaviors when investigating emotion regulation. Thus, this present study used a model involving emotions, thoughts, and behaviors when examining emotion regulation.

### **Child Emotion Regulation Strategies**

Children can regulate emotions based on using cognitive and behavioral strategies. Emotion regulation is important because it allows children to use different strategies to overcome a negative emotion (Gross, 1998). Children with good emotion regulation skills learn to be flexible and to use the appropriate strategies in different situations. Some of these strategies are effortful and must be learned whereas others are automatic. Two examples of regulation strategies include cognitive reappraisal and expressive suppression (Amstadter, 2008). The former involves creating more positive emotions and reducing negative emotions prior to an event occurring, which is more



effortful than expressive suppression. The latter involves attempting to ignore the emotions occurring in an event by remaining neutral to any stimuli (Campbell-Sills & Barlow, 2007). Although the cognitive reappraisal strategy is the preferred of the two, children do not always choose this strategy. Sometimes the maladaptive, expressive suppression is chosen (Dennis, 2007).

Rumination is another strategy that concerns focusing all of one's attention on the emotions and thoughts that occur due to an event. Catastrophizing is a maladaptive strategy that refers to when a child overestimates the negative emotions and outcomes associated with an experience (Garnefski & Kraaij, 2007). Another maladaptive strategy is situational avoidance, in which an individual strives to be present in situations that will not result in an undesired emotional experience (Amstadter, 2008). This strategy is maladaptive because it may result in social withdrawal, which may limit positive experiences as well (Campbell-Sills & Barlow, 2007). Distraction is a common strategy that also provides temporary relief from an unwanted emotion. This strategy exists when a child engages in an activity or focuses on stimuli not involved in the negative experience. Although temporary relief is achieved with this strategy, the child may need to constantly choose new stimuli or activities to distract oneself, and also, he/she does not learn how to cope with the negative experience itself (Campbell-Sills & Barlow, 2007).

Children with psychological symptoms in particular have difficulties establishing which strategy to use in order to have a positive experience. Their symptoms usually prevent them from choosing the adaptive, healthy strategy that is best for a specific situation. Different strategies are implemented at different ages because some strategies

are more cognitive than behavioral in nature, and in general require more effort (Amstadter, 2008). Therefore, development also plays a large part in emotion regulation.

### **The Development of Emotion Regulation**

How a child engages in emotion regulation depends on his or her developmental level. Emotion regulation begins developing when children are infants (Southam-Gerow & Kendall, 2002). As children mature and reach developmental milestones such as walking and talking, the ways they are able to regulate emotions increases (Campos et al., 2004). In particular, as a child learns new behaviors, the complexity of their daily goals increases. When goals become more complex, a child learns new, different responses. Thus, the child is able to become flexible in the way he/she handles emotions. Various influences can affect the development of children's emotion regulation, including parenting and the messages children receive from their parents about emotions.

Infants observe parental reactions when expressing an emotion (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997). Furthermore, at these early stages of development, infants and toddlers rely on social cues to learn about emotions (Parke, 1994). When a parent mimics the expression back to the child, the emotion and expression are reinforced or punished (Campos et al., 2004). The child learns how certain emotions are perceived by others through parental figures. However, if parents do not provide this social feedback to their child, then the child may improperly learn how emotions are perceived and how to express them. This process is also influenced by any parent dysfunction or maladjustment.

These negative effects in infancy can last through middle childhood. Specifically, as children grow, they transition from learning to regulate emotions through others'

reactions and cues to relying more on their own experiences (Southam-Gerow & Kendall, 2002). Essentially, children become more autonomous in emotion regulation as they develop. However, if they do not have a strong foundation as an infant, such as if their parents neglected to interact sufficiently with the child, then the child does not learn to associate past experiences and prior knowledge to regulate emotions (Sroufe, 1996). Therefore, without a strong, early foundation, a child may not be able to utilize adaptive strategies, transform negative thoughts into positive ones, be self-aware of their own emotions, or be able to read and understand the emotions of others (Morris, Silk, Steinberg, Myers, & Robinson, 2007).

It is evident that emotion regulation can be conceptualized in a variety of ways, including within a developmental context, the elements that the child is attempting to change, the strategies implemented, the child's motivation, and the child's cognitions. Shields and Cicchetti (1997) conceptualized emotion regulation as having the ability to modify emotional reactions such that one's goals can be accomplished. They emphasize that emotion regulation is a result of intrinsic and extrinsic forces acting upon the child (Thompson, 1994). Furthermore, these researchers consider developmental level when examining how a child regulates emotion (Cicchetti, Ganiban, & Barnett, 1991). They also found it important to examine a child's ability to respond appropriately to different situations (Thompson, 1994).

Modification of emotion may target an emotion's intensity, duration, or arousal (Thompson, 1994). Shields and Cicchetti developed their own measure of emotion regulation that taps into specific emotions and behaviors experienced by the child. In addition, these researchers targeted lability, intensity, and flexibility. Included in their

study of emotion regulation, these researchers examine displays of emotion, empathy, and self-awareness (Shields & Cicchetti, 1997). All of these elements combined create their conceptualization of emotion regulation. Because of the broad nature of their conceptualization, this current study elected to focus on their model of emotion regulation. For the present study, emotion regulation was defined as the ability to identify and cope with emotions such that a child responds best to his or her environment (Shields & Cicchetti, 1997). To assess this model, Shields and Cicchetti (1997) developed the Emotion Regulation Checklist (ERC).

The ERC consists of two subscales—Lability/Negativity subscale and Emotion Regulation subscale. The Lability/Negative subscale assesses negative affect, mood swings, reactivity, and lack of flexibility. The Emotion Regulation subscale assesses empathy, self-awareness and expression of emotion, and appropriate displays of emotions (Shields & Cicchetti, 1998). A composite score, the ERC total score, combines both of these elements of emotion regulation into a single overall emotion regulation variable.

When children have difficulties coping with their emotions, problems in everyday functioning may develop. For instance, if a child cannot recover from a negative experience, then he/she may become more negative and feel sad regularly. In another instance, a child that is excessively clingy to a parent may become overly anxious about the environment and develop anxiety-like symptoms. Emotion regulation has been shown to correlate with not only poor functioning, but also to symptoms reminiscent of clinical disorders, ranging from aggression and defiance to anxiety and depression. For this study, the focus was on child internalizing symptoms, including social anxiety, generalized anxiety, and depressive symptoms.

**Child Emotion Regulation and Internalizing Symptoms**

As children develop through different developmental stages, their abilities to cope with various situations should expand and improve. However, children with poor emotion regulation skills do not learn new, more adaptive ways to cope with emotions. They are not able to accurately process information regarding identifying their own emotions, identifying others' emotions, and managing how they display emotions (Southam-Gerow & Kendall, 2002). A deficit in emotion regulation may cause a child to not be able to pick up on social cues and interpret a situation accurately, resulting in the child thinking negatively and exhibiting inappropriate behaviors. Examples of maladaptive emotion regulation include exhibiting mood swings, displaying flat, inappropriate, or labile affect, and not being able to verbalize feeling sad, angry, or fearful (Shields & Cicchetti, 1997). These manifestations of poor emotion regulation have a similar presentation to internalizing symptoms such as anxiety and depression.

In the developmental literature, child emotion regulation has been investigated largely in conjunction with broad-band measures of child functioning. In particular, these studies typically examine child symptoms more generally as internalizing or externalizing symptoms rather than specific diagnostic symptomatology (e.g., anxiety and depression). For example, many of these developmental studies use broad-band measures such as the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001; e.g., Kim & Cicchetti, 2010; Silk, Shaw, Forbes, Lane, & Kovacs, 2006), the Teacher Report Form of the CBCL (TRF; Achenbach, 1991; e.g., Eisenberg et al., 2001a; Eisenberg et al., 2001b), and the Behavior Assessment System for Children-2 (BASC-2; Reynolds & Kamphaus, 2004; e.g., Bowie, 2010). These measures tend to combine a wide variety of internalizing

symptoms (such as social withdrawal, anxiety, and depression) (Eisenberg et al., 2001a) rather than narrow-band measures such as the Multidimensional Anxiety Scale for Children –Revised (MASC-R; March, Parker, Sullivan, Stallings & Conners, 1997) that target symptoms of specific anxiety disorders.

Although these studies lack specificity, they do provide a general understanding of how emotion regulation is linked to internalizing and externalizing behaviors. Across these studies, deficits in emotion regulation have been associated with both internalizing and externalizing symptoms (e.g., Bowie, 2010; Stansbury & Zimmermann, 1999; Zeman, Shipman, & Suveg, 2002). Surprisingly, the way children with internalizing versus externalizing symptoms regulate emotions is similar. However, key differences do exist. Internalizing and externalizing symptoms can be distinguished by the types of strategies children use. In a sample of adolescents, participants with internalizing problems scored higher on strategies involving self-blame and rumination, whereas adolescents with externalizing symptoms scored higher on strategies involving catastrophizing and blaming others (Garnefski, Kraaij, & van Etten, 2005). In examining specific symptoms, the use of rumination correlated positively with both depressive and anxiety symptoms for children ages 11 to 14 years (Hatzenbuehler, McLaughlin, & Nolen-Hoeksema, 2008; McLaughlin, Hatzenbuehler, & Hilt, 2009). After finding results similar to Hatzenbuehler and colleagues (2008), Garnefski and colleagues (2005) concluded that the difference in strategies is likely due to children with internalizing symptoms reporting more negative cognitive distortions than children with externalizing symptoms.

In examining specific emotions, high fear emotionality and poor fear regulation predicted internalizing problem behavior while high anger emotionality and poor regulation of anger predicted externalizing behavior in children ages five to eight years (Rydell, Berlin, & Bohlin, 2003). Impulsivity was also predictive of group membership. Specifically, children with externalizing problem behaviors were more impulsive than controls, and children with internalizing problem behaviors were less impulsive than controls (Eisenberg et al., 2001a). Eisenberg and colleagues (2001a) also notes that differences in emotion regulation and anger emotionality set apart the two groups. Throughout these various studies, internalizing and externalizing symptoms are related to emotion regulation.

Examining only internalizing symptoms, poor emotional awareness, inappropriate expression of sadness and anger, and suppression of anger were found to be positive predictors of internalizing symptoms in a sample of fourth and fifth graders (Zeman, Shipman, & Suveg, 2002). Bowie (2010) examined depressive and anxious symptoms separately and found deficits in emotion regulation positively predicted both types of symptoms in children ages 5 to 12. Specifically, emotional awareness and regulation of sadness and anger correlated negatively with depressive symptoms, and emotional awareness and regulation of sadness correlated negatively with anxiety symptoms. Clearly, emotion regulation may appear similar for both anxiety and depressive symptoms. However, more information is needed to dissect these differences further. The current study aimed to add specificity to the study of emotion regulation and child internalizing problems by using three different outcomes (i.e., social anxiety, generalized anxiety, and depressive symptoms).

The developmental literature also suggests that, in addition to being a predictor of child outcomes, emotion regulation can serve as a mediator. Specifically, child emotion regulation has been shown to serve as a mediator to different environmental and social variables predicting child internalizing symptoms. Examples of these predictors include maltreatment (Kim & Cicchetti, 2010), peer victimization (McLaughlin et al., 2009), and maternal expressed emotion (Eisenberg et al., 2001b). Child emotion regulation was also modeled as a moderator of the association between maternal depression and child internalizing symptoms (Silk et al., 2006). Although this literature provides tentative evidence that child emotion regulation is linked to children's symptomatology, narrow-band measures are needed to draw conclusions relating to specific symptoms, such as social anxiety, generalized anxiety, and depression. Therefore, the current study examined a model of the link of maternal social anxiety to child symptoms (social anxiety, generalized anxiety, and depression) as mediated by child emotion regulation.

### **Child Emotion Regulation and Symptomatology**

Previous research demonstrates how various emotion regulation difficulties can lead to maladaptive functioning. In particular, children were unable to regulate emotions in an appropriate way may have poor outcomes including internalizing symptoms. A few studies have examined the relationship between child emotion regulation and depressive symptoms; the overlap between child depression and anxiety suggest that child emotion regulation may also be linked to anxiety. A few studies have examined this relationship for anxiety in general, but much less is known about whether emotion regulation is linked to specific forms of anxiety (e.g., social and generalized). Despite the similarities of these disorders, research concerning the links of emotion regulation to these three symptom



clusters is scarce for children, but relevant data exist concerning adult populations. These adult studies may be used to make inferences about how emotion regulation difficulties are linked to anxiety and depression in children. Because of the limited research in child populations, research concerning both populations was examined in order to hypothesize about the link between children emotion regulation and symptomatology.

**Social Anxiety.** Child social anxiety involves excessive worry about and avoidance of social situations (Goldin, Manber, Hakimi, Canli, & Gross, 2009). These children have a negative view of themselves and think that they will be rejected by others (Kashdan & Steger, 2006). Although there is research on children's emotion regulation and anxiety in general, there are to our knowledge no studies specific to child social anxiety. In general, relatively few articles link emotion regulation and anxiety, and these articles usually combine children with varying anxiety disorder diagnoses together into an "anxiety group." A few articles, though, examine the relationship between social anxiety and emotion regulation in adult populations.

In adults, poor emotional understanding has been associated with social anxiety disorder (SAD; Mennin, McLaughlin, & Flanagan, 2009; Turk, Heimberg, Luterek, Mennin, & Fresco, 2005). Turk and colleagues (2005) also added that persons with SAD compared to a nonclinical group tended to pay little attention to their emotions and had difficulties describing emotions. Compared to a control group, participants diagnosed with SAD reported greater intensity of negative emotions (Mennin et al., 2009). They also tend to express positive emotions less and are fearful of expressing positive emotions. In particular, they were fearful of expressing anxiety, depression, anger, and positive emotions (Turk et al., 2005). Compared to a control group, persons with social

anxiety disorder reacted more negatively during social and physical threat (Goldin et al., 2009). Adults with SAD also reported experiencing less positive daily events compared to individuals without SAD (Kashdan & Steger, 2006).

Thus, adults with social anxiety have difficulties with varying aspects of emotion regulation. Therefore, if they cannot clearly identify their emotions, it makes sense that they cannot choose the appropriate action or strategies given different situations. They are unable to accurately gauge and respond to their environment (Turk et al., 2005). Also, this population reports difficulty accessing a variety of emotion regulation strategies (Mennin et al., 2009). Adults with social anxiety tend to use submission as one of their main emotion regulation strategies (Weber, Wiedig, Freyer, & Gralher, 2004). Because of the numerous difficulties persons with social anxiety experience, negative consequences are likely to occur in social situations. For example, they may not respond as expected to something a peer says. Therefore, with negative social experiences adding up, the individual is likely to preserve his or her social anxiety symptoms.

Although these findings provide some insight into emotion regulation and social anxiety in adults, it is unknown whether these patterns parallel emotion regulation in connection with child social anxiety. Therefore, this study aimed to add to the extant literature on child emotion regulation and internalizing problems.

**Generalized Anxiety.** Children with generalized anxiety symptoms tend to worry about a wide variety of situations and often engage in negative self-talk about what may or may not occur in the future (Borkovec, Alcaine, & Behar, 2004). Suveg and Zeman (2004) used a clinical child sample (ages 8 to 12 years) and interviewed mothers and children, requesting that they rate the child's anxiety and emotion regulation. Children

with anxiety disorders used less adaptive coping with their emotions than did children without an anxiety diagnosis. According to mother report, children with anxiety experienced anger and worry more intensely when compared to the nonclinical group. Children with anxiety disorders reported higher levels of hiding worry than did children without anxiety disorders. Furthermore, mothers reported more child lability and negative emotions than did mothers of children without anxiety disorders. Suveg, Hoffman, Zeman, and Thomassin (2009) added to these findings, stating that, although children with anxiety disorders report experiencing a high frequency of negative emotions, they do experience a range of emotions, both positive and negative. Although these authors demonstrate significant findings relating anxiety and emotion regulation, they did not differentiate among different diagnoses or symptom clusters.

Concerning knowledge about emotions and regulation, emotional awareness was a negative predictor of anxiety symptoms (Suveg et al., 2009). Furthermore, Suveg and Zeman (2004) found that mothers of children with anxiety disorders perceived their children as less flexible in their use of strategies and less confident in their abilities to properly regulate emotions than did mothers of children without an anxiety disorder. These authors also noted that children with anxiety disorders reported lower ability to regulate emotions than did children without anxiety disorders. This research highlights the emotion regulation difficulties that children with anxiety may experience. However, more research is needed to determine whether poor emotion regulation is an associated feature of generalized anxiety or, as this study predicted, if poor emotion regulation is a positive predictor of internalizing symptoms.

A number of studies have examined these issues in adults, which provides us with some insight as to how these processes work. Although these studies provide some groundwork as to what potentially may be demonstrated in children, it is unclear if the findings generalize to children. Decker, Turk, Hess, and Murray (2008) found that participants with Generalized Anxiety Disorder (GAD) did not report experiencing more negative emotions compared to positive emotions, which is contradictory to the results found in child populations. Comparing a clinical population to controls, adults with GAD rated experiencing emotions more intensely than adults without GAD. Other researchers have found similar results (e.g., Mennin, Heimberg, Turk, and Fresco, 2002; Turk et al., 2005). Mennin and colleagues (2009) also found that persons with GAD reported experiencing more emotional intensity than a control group. Mennin and colleagues (2002) suggest that because of the intensity of emotions, persons with generalized anxiety tend to avoid emotions and view emotions as overwhelming and negative. It was also theorized that, rather than utilizing emotions as a source of information to help understand their surroundings, they act without such information, leading to the use of maladaptive ways of dealing with emotions (Decker et al., 2008). Salters-Pedneault, Roemer, Tull, Rucker, and Mennin (2006) found that individuals with GAD report feeling out of control of their emotions. Also, compared to adults without GAD, adults with GAD were characterized as having more negative affectivity in general (Turk et al., 2005).

**Depressive Symptoms.** Children with depressive symptoms can be characterized by depressed mood, difficulties in concentration, and sometimes by irritability (Rohde, Beevers, Stice, & O'Neil, 2009). Difficulties in child emotion regulation go beyond the

use of specific strategies for children experiencing depressive symptoms. In particular, the types of emotions that children with these symptoms experience may be different compared to children not experiencing depressive symptoms. In a community sample of fourth and fifth graders, children with depression experienced a low frequency of positive affect and a high frequency of negative affect, indicating limited emotional experiences (Suveg et al., 2009). The authors suggest that the lack of positive emotions may contribute to poor emotion regulation, and in turn lead to depressive symptoms.

Children experiencing depressive symptoms may also be characterized by a lack of knowledge in how to regulate emotions adaptively. Suveg and colleagues (2009) found that this population reported a lack of emotion awareness and used less effective coping strategies than children without depressive symptoms. Using a sample of infants and pre-schoolers, Kovacs, Joormann, & Gotlib (2008) noted that good regulation of sadness negatively predicted depressed mood. However, these age groups may differ in how they experience and regulate emotion as compared to children of elementary and school-age, who will comprise the participants of this study. Therefore, it is unclear if Kovacs and colleagues' (2008) findings can be generalized to older children.

In comparison to the anxiety literature, far more studies have examined depressive symptoms and emotion regulation. However, most of this research has been conducted with adult populations. Furthermore, a majority of the research focuses on this symptom cluster in relation to specific emotion regulation strategies, such as cognitive reappraisal and expressive suppression (Dennis, 2007). However, results across studies are not always consistent. Garnefski and Kraaij (2007) found a positive correlation between depressive symptoms in adults and both adaptive and maladaptive strategies. These

strategies included positive reappraisal, catastrophizing, rumination, and self-blame. In another study, numerous maladaptive regulation strategies were predictive of depression in adults, such as self-blame, rumination, catastrophizing, and low positive reappraisal (Martin & Dahlen, 2005). Martin and Dahlen (2005) found similar results between emotion regulation and anxiety. Although these authors' findings are very informative and useful, they do not target different facets of emotion regulation, such as lability, negativity, and recovery. Perhaps other variables exist that distinguish emotion regulation between the two symptom clusters.

Clearly, some similarities exist across internalizing outcomes (e.g., social anxiety, generalized anxiety, and depressive symptoms) in relation to emotion regulation; however, the results are not identical. The way children experience emotions, how they recover, strategies used, and the types of emotions they display can potentially differentiate from the kinds of symptoms they may develop. Exploring these aspects of emotion regulation and symptoms comprised the primary aim of the current study.

### **Parent and Child Symptomatology**

Research has shown an association between parent psychopathology and child psychopathology. For example, if a parent is diagnosed with major depressive disorder (MDD) prior to the age of 30, then the child is 13 times more likely to being diagnosed with the same disorder compared to children who have parents without a diagnosis of MDD (Maughan, Cicchetti, Toth, & Rogosch, 2007). Furthermore, parents who do not meet full clinical criteria for a diagnosis but display subclinical symptoms may still lead to an increased chance of the development of the child's symptomatology (West &

Newman, 2003). The current study focused on maternal social anxiety in relation to three child symptom clusters (social anxiety, generalized anxiety, and depressive symptoms).

This link of symptoms may be due to genetics or temperament. Parenting behaviors and modeling may also play an important role in this transmission. Through conditioning and vicarious learning, a child develops behaviors and schemas similar to his or her parent's (Mineka & Zinbarg, 2006). If a child has a parent who is experiencing internalizing symptoms, then the child may develop a worldview that is negative and fearful. Having such a maladaptive view of the environment may lead to the maladaptive behaviors and even diagnosable symptoms.

Prominent research suggests a transmission of similar symptoms from parent to child; for example, some children with parents with depression may develop either depression or anxiety (Colletti et al., 2010). Most research focuses on parental depression (and more specifically, maternal depression), but there is some research that focuses on maternal anxiety. Children with a mother who has an anxiety disorder are more likely to develop an anxiety disorder themselves compared to children with a mother without any anxiety disorders. Schreier, Wittchen, Hofler, and Lieb (2008) found that the link is especially likely when the mother has social anxiety disorder or generalized anxiety disorder compared to other anxiety disorders. Researchers have also found a genetic predisposition between parental social anxiety disorder and child social anxiety disorder (Elizabeth, King, & Ollendick, 2004).

Some research indicates that parent diagnoses are related to similar but not always exactly the same symptoms in children. Research linking different symptom clusters is increasing because of the known comorbidity of anxiety and depression in children and

adults (Colletti et al., 2010). In particular, it was found that maternal depression is linked to child internalizing symptoms in general (Foster, Garber, & Durlak, 2008). Hayward and colleagues (2008) also noted that both parental depressive and anxiety symptoms are associated with child social anxiety disorder. Furthermore, it was found that parent anxiety is associated with both child depressive and anxiety symptoms (Burstein, Ginsburg, & Tein, 2010).

It is evident that research is increasing to discover the links between different symptom clusters for parents and children. However, the exact links are still unclear, possibly due to the likelihood of comorbid diagnoses and symptoms in both parents and children (Colletti et al., 2010). Although the majority of existing research focuses on maternal depression, this study focused on maternal social anxiety and its link to different internalizing symptoms in children to add to the existing body of literature linking maternal and child symptoms.

### **Parent Symptoms and Child Emotion Regulation**

Research has shown that if a parent has a clinical diagnosis, then there is an increased chance of the child having such a diagnosis compared to parents without a diagnosis. Not only will this child be more likely to exhibit similar symptoms of the disorder that the parent displayed, but the child may be affected in other ways as well. In particular, children with parents who experience clinical symptoms are at risk for developing emotion regulation difficulties. For example, child (ages four to seven years) of mothers with depression were rated as less skilled at emotion regulation than children of mothers experiencing no symptoms (Blandon, Calkins, Keane, & O'Brien, 2008).



Two main models examine parental symptoms and child presentation—biological and social learning. For this present study, the social learning model was more relevant. Children learn which emotions are acceptable and how to handle such emotions by observing the reactions of their parents (Morris et al., 2007). The majority of current research focuses on parent depressive symptoms rather than parent anxiety symptoms in relation to learned child emotion regulation. Although there is not much research concerning maternal anxiety and child emotion regulation, maternal social anxiety functioned as the main parent symptomatology variable for this current study.

One possible reason that children's emotion regulation may be affected is because of the negativity parents with depressive and anxious symptoms often display (Creasey et al., 1997). Parents with these symptoms experience high levels of negative emotion compared to parents with no symptoms. Also, parents who experience high levels of negative emotion are likely to exhibit hostility toward their children (Morris et al., 2007). These parents also tend to model passive, withdrawn, and negative behavior (Downey & Coyne, 1990). Maughan and colleagues (2007) suggest that without a variety of emotional displays, children are likely to be unprepared to deal with certain emotions that are less displayed within the home. In preschoolers, depressed mothers compared to nondepressed mothers were less likely to respond to children's display of distress and less likely to reinforce positive behaviors (Feng et al., 2008). Mothers with depressive symptoms also reported interacting, providing quality stimulation, and participating in affectionate contact less with their infants compared to mothers without depressed symptoms (Fleming, Ruble, Flett, & Shaul, 1988). Overall, parents with depressed symptoms may deprive their children of the necessary learning experiences in order to

properly regulate emotions (Kovacs et al., 2008). The combination of negativity and unpredictability may lead children to feel less confident about their own emotional abilities and experiences.

Moreover, parents, and in particular, mothers, may also utilize poor emotion regulation skills, and through observation the child absorbs these maladaptive skills and does not learn the best ways of handling emotions and experiences (Feng et al., 2008). Examining children ages eight to twelve years, mothers of children with anxiety symptoms reported discouraging discussions of negative or anxiety-provoking situations, further causing their children to not learn how to adapt to such experiences (Suveg, Zeman, Flannery-Schroeder, & Cassano, 2005). Anxious parents may limit their children's ability to regulate emotions themselves by removing children from situations they deem threatening, causing the child to learn that avoidance is appropriate for handling emotions. Specifically considering parent social anxiety, parents with these symptoms are thought to underestimate their child's ability in regulating their own emotions (Murray et al., 2008). Further, because of the intrusiveness of the parent, the child may not learn what he/she is capable of doing in regards to regulation emotions, causing his or her to only use the maladaptive strategies, such as avoidance, set forth by parents.

West and Newman (2003) examined subclinical parental depression and anxiety symptoms and how they relate to children ages three to five years. Parents with anxiety symptoms had children who are less able to shift their attention, less able to calm themselves, and less able to sustain focus on a task compared to children of parents

without anxiety symptoms. In general, the research shows that parent symptoms of depression and anxiety have negative effects on child emotion regulation.

These findings demonstrate that even mild parent symptomatology can affect different facets of emotion regulation and functioning of children. In the present study, the link between maternal social anxiety and child social anxiety was examined, with child emotion regulation included as a possible mediator. Social anxiety was the focus in this study because so little is known about the relationship between child social anxiety and child emotion regulation. However, because the effects of both parent anxiety and parent depressive symptoms on child outcomes are similar, this study also investigated whether maternal social anxiety is related to not only the anxiety symptom clusters but to depressive symptoms as well.

### **Current Study and Hypotheses**

The primary goal of the present study was to examine emotion regulation in relation to symptoms of social anxiety, generalized anxiety, and depression—symptoms that are known to be comorbid in children frequently. Specifically, emotion regulation was used as a mediator between these symptoms. This study theorized that mothers with internalizing symptoms teach their children poor emotion regulation skills through learning and observation. Then, because these children cannot regulate emotions in an adaptive way, internalizing or other symptoms may develop. In existing literature, the links between (1) mother and child symptomatology, (2) maternal symptoms and child emotion regulation, and (3) child emotion regulation and child internalizing symptoms are well documented. However, to our knowledge, no studies have combined all three links. Numerous studies use emotion regulation as a mediator of the link between various

predictors (e.g., maltreatment and peer victimization) and internalizing symptoms. Therefore, exploring this type of relationship, but with maternal social anxiety as a predictor, added to the existing literature.

Specifically, child emotion regulation was tested as a mediator between maternal social anxiety and each of the internalizing symptom clusters. Substantial research demonstrates that parental, and especially maternal, psychopathology correlates with child psychopathology of the same disorder. Three separate models were created and contrasted—one model for each type of internalizing symptoms. The hypothesized mediated models are based on current literature, and therefore the emotion regulation mediators were chosen based on existing findings. For example, because child social anxiety has been shown in several studies to be linked to poor emotional understanding and adaption (e.g., Turk et al., 2005), the Emotion Regulation subscale (which examines adaptation, understanding, and displays of emotions) was used in relation to child social anxiety. In relation to child generalized anxiety, research has shown to link both a lack of adaptation and negativity to generalized anxiety symptoms, and therefore the Emotion Regulation total score will be used in relation to these symptoms. Finally, in relation to child depressive symptoms, negativity and a lack of flexibility are linked to these symptoms, and therefore the Lability/Negativity subscale is used in relation to this symptom cluster.

The current study had several advantages compared to previous studies. First, the majority of studies relating emotion regulation to disorders focus on externalizing behaviors. Second, this study used a dimensional approach as opposed to the categorical approach when examining internalizing behaviors, allowing for the examination of a

mediated model. Third, a community as opposed to a clinical sample made up the participants in this study. Overall, this study aimed to combine previously studied areas related to emotion regulation, which would allow for comparison and distinction of common child symptoms.

Hypothesis 1 examined the relationship of maternal social anxiety and two different facets of emotion regulation. Hypotheses 1a predicted a negative relationship between maternal social anxiety and (1) the child emotion regulation subscale of the ERC (defined as adaptation, understanding, and displays of emotions) and (2) child emotion regulation (total score of the ERC). Hypothesis 1b predicted a positive relationship between maternal social anxiety and child emotion regulation (the lability/negativity subscale of the ERC).

Hypothesis 2 examined correlations between each of the symptom clusters and the other variables within this study. Hypothesis 2a examined the relationships between social anxiety symptoms and other variables. It was predicted that child social anxiety symptoms would correlate negatively with the emotion regulation subscale of the ERC, and positively with maternal social anxiety. Hypothesis 2b examined correlates of child generalized anxiety symptoms. Hypothesis 2b predicted that the child generalized anxiety would correlate negatively with emotion regulation total score. It was also predicted that child generalized anxiety symptoms would correlate positively with maternal social anxiety. Hypothesis 2c explored the relationship between child depressive symptoms and the other variables in this study. Specifically, hypothesis 2c predicted that child depressive symptoms would correlate positively with (1) the lability/negativity subscale and (2) maternal social anxiety.

Hypothesis 3 examined the link between maternal social anxiety and each of the three internalizing symptom clusters as mediated by child emotion regulation. Hypothesis 3a predicted a positive relationship between maternal social anxiety and child social anxiety symptoms as mediated by the emotion regulation subscale (see Figure 1). Hypothesis 3b predicted a positive relationship between maternal social anxiety and child generalized anxiety symptoms as mediated by child emotion regulation total score (see Figure 2). Hypothesis 3c predicted a positive relationship between maternal social anxiety and child depressive symptoms as mediated by the lability/negativity subscale (see Figure 3).

## Method

### Participants

The sample (see Table 1) consisted of 89 children, ages 9 years to 14 years and their mothers. Forty-five (50.6%) of the children were girls. The majority of children (65.2%) were Caucasian ( $n = 58$ ). African Americans ( $n = 25$ ) comprised 28.1%, multi-racial/bi-racial children ( $n = 5$ ) comprised 5.6%, and Latino/Hispanic children ( $n = 1$ ) comprised 1.1 % of the child participants. Children were recruited from private ( $n = 51$ ), public charter ( $n = 29$ ), or public schools ( $n = 9$ ), and they were provided with a \$10 mall gift certificate for participating. Data were collected in a medium-sized southern city.

### Measures

**Child-completed measures. *Child symptoms.*** Two instruments were to measure child symptoms. The Social Phobia and Anxiety Inventory for Children (SPAI-C; Beidel, Turner, & Morris, 1995) is a 26-item child-report measure that examines a child's social anxiety in three different settings: familiar peers, unfamiliar peers, and adults. This

measure was adapted from the Social Phobia and Anxiety Inventory (SPAI; Turner, Beidel, Dancu, & Stanley, 1989). Each item is rated on a three-point Likert scale, ranging from 0 to 2 corresponding to how often an item relates to the child, with higher scores signifying greater social anxiety (total scores can range from 0 to 52). This measure taps into distress related to the cognitive, somatic, and behavioral dimensions of social anxiety disorder. Items include "I am scared when becoming the center of attention," "I am scared in the school cafeteria," and "I am scared when joining a large group." The SPAI-C has good internal consistency ( $r = 0.95$ ; Beidel et al., 1995) and strong test-retest reliability ( $r = 0.86$  after two weeks, and  $r = 0.63$  after 10 months; Beidel et al., 1995). The SPAI-C also has good convergent validity as evidenced by correlating with the Internalizing Subscale of the CBCL ( $r = 0.45$ ; Beidel et al., 1995).

The Revised Child Anxiety and Depression Scale (RCADS; Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000; Ebesutani, Bernstein, Nakamura, Chorpita, & Weisz, 2009). includes 47 items that assess depression and anxiety symptoms. The RCADS items are rated on a Likert scale, ranging from 0 to 3, indicating how much each item applies to the child; higher scores are indicative of more symptoms. The six subscales are Separation Anxiety Disorder, Social Phobia, Generalized Anxiety Disorder, Obsessive-Compulsive Disorder, Panic Disorder, and Major Depressive Disorder. Two subscales were used for this study: the Generalized Anxiety subscale (5 items; scores may range from 0 to 15) and the Major Depressive Disorder Subscale (10 items; scores may range from 0 to 30). Examples of items on the GAD subscale include "I worry about bad things happening to me," and "I worry that something awful will happen to my family." Examples of items on the MDD subscale include "I feel sad or empty," and "I

feel that nothing is much fun anymore.” The RCADS has good psychometric properties as evident by strong internal consistency, ranging from 0.70 to 0.83 for the six subscales, and good test-retest reliability, ranging from 0.65 to 0.82 for the subscales (Chorpita et al., 2000). The RCADS also correlates with other measures of depression and anxiety. The MDD subscale correlates with the Child Depression Inventory ( $r = 0.70$ ), and the anxiety subscales correlate with the Revised Children's Manifest Anxiety Scale total score (with reliabilities ranging from 0.49 to 0.68 for the subscales).

**Mother-completed measures.** *Child symptoms.* Mothers also completed the SPAI-C (Beidel et al., 1995) to report on their perception of their child's social anxiety symptoms. The SPAI-C items have been adapted to be completed from a parent's perspective (e.g., “My child is scared when joining a large group.”). The SPAI-C Parent Version has good internal consistency ( $r = 0.93$ ; Higa, Fernandez, Nakamura, Chorpita, & Daleiden, 2006). The SPAI-C Parent Version also correlates with the Internalizing Subscale of the CBCL ( $r = 0.42$ ; Higa et al., 2006).

Likewise, mothers completed a version of the RCADS (Chorpita et al., 2000) that was developed for this study. Items were re-worded to be consistent with a parent's perspective (e.g., “My child worries that something awful will happen to our family.”). As with the child report, two subscales of the RCADS were used: Generalized Anxiety subscale and Major Depressive Disorder subscale. The parent version of the RCADS has good psychometric properties. This measure has an internal consistency, ranging from 0.81 to 0.95 for the six subscales, and good convergent validity, correlating with the Anxious/Depressed Syndrome Scale of the CBCL (RCADS total score:  $r = 0.78$ ; RCADS



Generalized Anxiety subscale:  $r = 0.71$ ; RCADS Major Depressive Disorder subscale:  $r = 0.68$ ; Ebesutani et al., 2009).

***Child emotion regulation.*** Emotion regulation was measured using the Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997, 1998; see Appendix A), which is a parent-reported 24-item measure designed to assess a child's emotionality and regulation. There are two subscales, the Emotion Regulation subscale (8 items; e.g., "Can say when s/he is feeling sad, angry or mad, fearful or afraid.") and the Lability/Negativity subscale (15 items; e.g., "Exhibits wide mood swings."). The first subscale assesses adaptation, understanding, and displays of emotions; higher scores are indicative of adaptive emotion regulation. The latter measures changes in mood, intensity, and reactivity; higher scores are indicative of poorer emotion regulation. There is also a total score (24 items) that combines the constructs of the two subscales into a single emotion regulation score; as with the Emotion Regulation subscale, higher scores are indicative of better emotion regulation. The total score is calculated by reverse scoring all items pertaining to poor emotion regulation (Shields & Cicchetti, 1997). Items are responded to on a Likert scale ranging from 1 to 4, describing how characteristic a statement is of the child. Scores on the Emotion Regulation subscale may range from 8 to 32, scores on the Lability/Negativity subscale may range from 15 to 60, and scores on the ERC total score may range from 24 to 96.

This measure has strong internal consistency. For the Lability/Negativity subscale, Cronbach's alpha is .96, and for the Emotion Regulation subscale, the value is 0.83 (Shields & Cicchetti, 1998). Furthermore, the two subscales significantly correlate with one another,  $r = -0.50$ ,  $p < .001$ . The internal consistency for the ERC total score is

0.89 (Shields & Cicchetti, 1997). The ERC correlates significantly with other emotion-related measures, such emotional observation ratings (Lability/Negativity  $r = -0.49$ ; Emotion Regulation subscale  $r = 0.23$ ), the Minnesota Behavior Ratings Negative Mood subscale (Lability/Negativity  $r = 0.74$ ; Emotion Regulation subscale  $r = -0.55$ ), and with measures of Ego Resiliency (Lability/Negativity  $r = 0.67$ ) (Shields & Cicchetti, 1997).

***Maternal social anxiety.*** The Social Phobia and Anxiety Inventory (SPAI; Turner et al., 1989) was used to measure maternal social anxiety symptoms. The SPAI consists of 45 self-reported items. Items are scored on a Likert scale, ranging from 1 (never) to 7 (always), according to how often an individual experiences the item. The SPAI has two subscales; Social Phobia subscale and the Agoraphobia subscale. Calculating the total score involves subtracting the items pertaining to Agoraphobia to provide a score that is strictly related to social anxiety. Total scores may range from -78 to 192, higher scores indicating more social anxiety. Items cover such topics as behaviors in different social situations ("I attempt to avoid social situations where there are people of the opposite sex"), thoughts associated about being in the company of others ("I feel anxious when I am in a social situation and I become the center of attention"), and somatic symptoms ("I experience the following in social situations: sweating"). The measure also discusses different types of social situations (e.g., large groups, small groups, with strangers, authority figures). The SPAI demonstrates strong internal consistency,  $r = 0.96$  and  $r = 0.85$  for its two subscales, and test-retest reliability,  $r = 0.86$  after a two-week period (Turner et al., 1989). This measure can significantly discriminate between socially-anxious and non-socially-anxious individuals, and between individuals with social phobia and individuals with other anxiety disorders (Turner et al., 1989).

**Demographics.** A demographics form was also included (see Appendix B).

Questions pertained to the child's age, child's ethnicity, parent's age, parent's ethnicity, income, occupation, and relationship to the child (such as birth parent, step-parent, and so forth).

### **Procedure**

Data collected was conducted in Greensboro, North Carolina. Children were provided with parental consent forms at school, with the request to take the form home to a parent. Parents had the option of mailing the consent form back to the researcher in a self-addressed stamped envelope or returning the form to school. Consenting parents were contacted by phone or email to set up a meeting time to collect data, which occurred either in a university psychology lab or the homes of the parents.

During the data collection session, parents read and signed the informed consent forms for their own participation in the study. The child assent form was read aloud to the child. The rest of the data collection occurred with the children and parents in separate rooms. The children were read the measures, and they marked the responses their surveys. Parents completed their own measures.

### **Results**

Descriptive statistics, including means, standard deviations, ranges, and internal consistency values ( $\alpha$ ), were calculated. Next, independent-samples t-tests and ANOVAs were calculated to examine possible differences in main study variables across demographics (i.e., child age, sex, and ethnicity). Then, correlations were computed to observe links between main study variables, and multiple regression equations tested

main study hypotheses concerning mediated models. Finally, exploratory analyses are presented involving main study variables.

### **Descriptive Statistics**

The data were examined for missing responses and outliers. Although a few extreme low and high responses were found, these responses appeared valid and were maintained in the dataset. Skew and kurtosis values for all main study variables were within the acceptable range with two exceptions: The Emotion Regulation subscale of the ERC and the GAD subscale of the mother-reported RCADS. For these two subscales, skew was acceptable, but the kurtosis values were very high (5.28 and 2.91 respectively). We explored various options to normalize the data, including using non-normal analytic methods; however the method that seemed most appropriate was to delete one extreme value on the Emotion Regulation subscale of the ERC and two outliers of the RCADS. After excluding these values, the kurtosis values for both of these variables fell within the acceptable range (0.48 and 0.65 respectively).

Cronbach's alpha was calculated for each scale in this study. All alpha values were acceptable, ranging from  $\alpha = 0.69$  (Emotion Regulation subscale of the ERC) to  $\alpha = 0.97$  (SPAI) (see Table 2). Means, standard deviations, and ranges are also reported in Table 2. All were similar to values in existing literature involving community samples.

Measures concerning both mother and child symptoms in relation to their clinical cut-off scores were also examined. Of the child-report measures, 25.8% of children ( $n = 23$  of 89 children-reported scores) scored above the clinical cut-off score of 18 (Beidel et al., 1995) on the SPAI-C for social anxiety. On the RCADS, 18.0% of children ( $n = 16$  of 89 children-reported scores) scored above the clinical cut-off score of 6 on the

Generalized Anxiety Disorder subscale, and 67.4% of children ( $n = 60$  of 89 children-reported scores) scored above the clinical cut-off score of 7 (Ebesutani et al., 2009) on the Major Depressive Disorder subscale. Examining mother-report of child symptoms, 31.0% of children ( $n = 26$  of 84 mother-reported scores) scored above the clinical cut-off score of 18 (Beidel et al., 1995) on the SPAI-C for social anxiety. On the RCADS, 19.3% of children ( $n = 16$  of 83 mother-reported scores) scored above the clinical cut-off score of 6 on the Generalized Anxiety Disorder subscale, and 31.0% of children ( $n = 26$  of 84 mother-reported scores) scored above the clinical cut-off score of 7 (Ebesutani et al., 2009) on the Major Depressive Disorder subscale. The clinical cut-off score on the SPAI for maternal social anxiety is 80 (Turner et al., 1989). Eleven of the seventy-one mother-reported scores (15.5%) on the SPAI were above this cut-off score.

To examine possible age differences among main study variables, children were divided into two groups: 9 to 11 years ( $n = 52$ ) and 12 to 14 years ( $n = 37$ ). Independent samples t-tests examined potential differences between the groups among the emotion regulation, symptom presentation, and maternal social anxiety variables. No significant age differences existed among main study variables. Likewise, no significant sex differences were found among main study variables. Finally, a one-way ANOVA, followed by Tukey's HSD test, was conducted to investigate race/ethnicity differences for main study variables. For the ERC total score, Caucasian participants ( $M = 78.19$ ,  $SD = 1.16$ ) scored higher than multi-racial participants ( $M = 67.60$ ,  $SD = 3.81$ ) ( $p = .03$ ). However, due to the low number of multi-racial participants ( $n = 5$ ), these findings will not be interpreted.

Next, zero-order correlations were conducted to investigate relationships between main study variables (see Table 3; note: some correlations are discussed in the subsequent section concerning hypotheses). Because mothers and children both completed the RCADS and SPAI-C, we examined informant agreement to help determine which reports would be used in subsequent analyses. In general, agreement was poor; only reports on the SPAI-C correlated ( $r = 0.22, p = .05$ ). Of note, only mother-reported child symptoms (i.e., depression) were correlated with emotion regulation, which is not surprising considering that the ERC was completed by mothers.

Because some of the mother-reported symptoms correlated with emotion regulation variables (in contrast to the child-reported symptoms), and because emotion regulation is the main focus of this study, subsequent main analyses will use mother reports of child symptoms (i.e., child social anxiety, generalized anxiety, and depressive symptoms). Furthermore, because the other two main study foci are mother-report (i.e., maternal social anxiety symptoms and child emotion regulation), mother-report of symptoms was used to be congruent.

### **Main Hypotheses**

**Zero-order correlations.** Hypothesis 1 predicted a negative relationship between maternal social anxiety and child emotion regulation. Hypothesis 1a was partially supported, with maternal social anxiety correlating negatively with the ERC total score ( $r = -0.27, p = .02$ ). However, the relationship between maternal social anxiety and the emotion regulation subscale of the ERC was not significant ( $r = -0.22, p = .08$ ). Hypotheses 1b was supported with a positive relationship between maternal social anxiety and the lability/negativity subscale of the ERC ( $r = 0.24, p = .05$ ).

Hypothesis 2a examined the relationships between child social anxiety and the other main study variables (i.e., child emotion regulation and maternal social anxiety). Maternal social anxiety correlated positively with child social anxiety ( $r = 0.36, p = .002$ ), confirming part of hypothesis 2a. However, the correlation between child social anxiety and the emotion regulation subscale of the ERC was not significant ( $r = -0.18, p = .11$ ). Although not part of the hypotheses, relationships between the other two measures of emotion regulation (ERC total score and lability/negativity subscale) and child social anxiety were also examined. Neither of these two relationships was significant ( $r = -0.15, p = .17$ ;  $r = 0.12, p = .28$ ).

Hypothesis 2b examined the relationship between child generalized anxiety and the other main study variables. This hypothesis was not supported, as child generalized anxiety did not correlate with maternal social anxiety ( $r = 0.06, p = .65$ ), or the ERC total score ( $r = -0.15, p = .18$ ). The other two measures of emotion regulation were also examined in relation to child generalized anxiety. However, neither of these measures correlated with the symptom cluster (emotion regulation subscale:  $r = -0.08, p = .47$ ; lability/negativity subscale:  $r = 0.16, p = .14$ ).

Hypothesis 2c examined the relationship between child depressive symptoms and the other main study variables. This hypothesis was partially supported, as child depression correlated with the lability/negativity subscale ( $r = 0.53, p < .001$ ). However, these symptoms did not correlate with maternal social anxiety ( $r = 0.16, p = .18$ ). The relationships between the other two emotion regulation measures and child depression were also calculated. Child depression correlated negatively with the ERC total score ( $r =$

-0.53,  $p < .001$ ). However, child depression did not correlate with the emotion regulation subscale of the ERC ( $r = -0.21$ ,  $p = .06$ ).

**Mediated regression models.** Hypothesis 3 concerned three mediated models of the relationships of maternal social anxiety to each of the three child internalizing symptoms (i.e., child social anxiety, generalized anxiety, and depression) as mediated by child emotion regulation. Baron and Kenny (1986) outline three necessary steps prior to examining the mediated relationship between the predictor and outcome. These steps involve the computation of regression equations. First, the predictor variable must predict the mediator. Second, the predictor variable must predict the outcome variable. Third, the outcome variable is regressed on both the predictor and mediator variables. In this third equation, the mediator must significantly predict the outcome variable, while controlling for the predictor variable (i.e., examining the partial correlation of the mediator on the outcome variable). If these three conditions are met, then mediation may be tested (Frazier, Tix, & Barron, 2004). In step 4, the effect of the predictor variable on the outcome variable is examined; first, examining the direct relationship between the predictor and outcome, and then examining the relationship between the predictor and outcome while controlling for the mediator. If mediation is present, the effect of the predictor variable on the outcome variable is reduced and no longer significant in the latter. To determine if this reduction is significant, Sobel's test is used, which signifies the indirect effect of the predictor variable on the outcome variable while controlling for the mediator and determines if this effect is statistically different from zero (Sobel, 1982).

Hypothesis 3a predicted a positive relationship between maternal social anxiety and child social anxiety as mediated by the emotion regulation subscale of the ERC. In



step 1, maternal social anxiety did not significantly predict the emotion regulation subscale of the ERC,  $\beta (69) = -0.21, p = .08$ ) (see Figure 4). In step 2, maternal social anxiety positively predicted child social anxiety symptoms,  $\beta (70) = 0.36, p = .002$ . In step 3, the emotion regulation subscale did not predict child social anxiety while controlling for maternal social anxiety,  $\beta (69) = -0.09, p = .44$ . Therefore, the third step was not met. Because not all three conditions were met, a mediated model does not fit these data, and step 4 cannot be completed. Therefore, hypothesis 3a was not confirmed.

Hypothesis 3b predicted a positive relationship between maternal social anxiety and child generalized anxiety as mediated by the ERC total score (see Figure 5). In step 1, maternal social anxiety negatively predicted the ERC total score,  $\beta (69) = -0.27, p = .02$ . In step 2, maternal social anxiety did not significantly predict child generalized anxiety symptoms, and therefore did not meet this condition,  $\beta (69) = 0.06, p = .69$ . In step 3, the ERC total score did not predict child generalized anxiety symptoms while controlling for maternal social anxiety,  $\beta (69) = -0.12, p = .32$ . Because steps 2 and 3 were not upheld, a mediated model does not fit these data, and therefore step 4 was not completed. Furthermore, hypothesis 3b was not confirmed.

Hypothesis 3c predicted a positive relationship between maternal social anxiety and child depressive symptoms as mediated by the lability/negativity subscale (see Figure 6). In step 1, maternal social anxiety positively predicted lability/negativity,  $\beta (70) = 0.24, p = .05$ . In step 2, maternal social anxiety did not predict child depressive symptoms,  $\beta (70) = 0.16, p = .18$ . In step 3, lability/negativity positively predicted child depressive symptoms while controlling for maternal social anxiety,  $\beta (70) = 0.47, p <$

.001. Although steps 1 and 3 were upheld, because step 2 failed, a mediated model does not fit these data, and therefore hypothesis 3c was not confirmed.

### **Exploratory Analyses**

Further analyses were conducted to examine the relationships between maternal social anxiety, child symptoms, and emotion regulation. Two main sets of analyses were conducted. First, because we were not able to test the mediated models, we wanted to explore what variables best predict the child symptom clusters. Multiple regression analyses were computed to examine predictors of child symptoms. Specifically, forward selection regression equations were used.

When predicting child social anxiety symptoms, measures of emotion regulation (i.e., the emotion regulation subscale and lability/negativity subscale), maternal social anxiety, and demographics (i.e., age, sex, and ethnicity) were included. Maternal social anxiety,  $\beta(65) = 0.32, p = .005$ , and sex,  $\beta(65) = -0.33, p = .005$  (sex was dummy-coded with boys = 0 and girls = 1), were the only significant predictors (see Table 4). In this regression equation, boys had more social anxiety symptoms than girls. When predicting child generalized anxiety symptoms with the two emotion regulation subscales, maternal social anxiety, and demographics as potential predictors, none of these variables were significant predictors.

When predicting depression, two variables were significant: the lability/negativity subscale ( $\beta(65) = 0.38, p = .001$ ), thus depression was the only symptom cluster linked to emotion regulation, and ethnicity,  $\beta(65) = -0.29, p = .01$  (race was dummy coded with Caucasians = 0 and African-Americans = 1) (see Table 5), indicating that Caucasian children are more depressed than African-American children.

## **Discussion**

This paper examined predictors of three child internalizing problems: social anxiety, generalized anxiety, and depressive symptoms. In particular, the potential link between maternal social anxiety and child internalizing problems was examined via a mediated model with emotion regulation as the mediator. Several interesting findings emerged.

### **Emotion Regulation and Symptomatology**

Emotion regulation was defined as the ability to identify and cope with emotions such that a child responds best to his or her environment (Shields & Cicchetti, 1997). This study used Shield's and Cicchetti's model of emotion regulation that incorporates negative emotions, recovery from unpleasant experiences, empathy, and self-understanding. Shield and Cicchetti's Emotion Regulation Checklist (ERC) was used to measure aspects of emotion regulation in this study. The ERC has two subscales: Emotion Regulation, which assesses adaptation, understanding, and displays of emotions, and Lability\Negativity, which assesses negative affect, mood swings, reactivity to experiences. The ERC total score combines both of these subscales into one composite score to assess total emotion regulation abilities.

First, mother-reported child depression was related to the lability/negativity aspect of child emotion regulation, indicating that children with depression tend to not only experience negative affect but also lability in their negative emotions. The development in emotion regulation begins as early as infancy. When children are negative and have difficulties handling their emotions, they may begin to expect all of their experiences to be negative. Therefore, children with negative and labile mood may

develop negative thoughts, negative experiences, and unpleasant mood, which may turn into depressive symptoms. This finding adds to the growing literature that examines how emotion regulation problems can affect child symptoms, in particular depression (e.g., Suveg et al., 2008).

In addition to finding a type of child symptoms to be linked to lability/negativity, we found an association between maternal symptoms (i.e., social anxiety) and the lability/negativity aspect of child emotion regulation, and a negative relationship between maternal social anxiety and overall emotion regulation, which includes both lability/negativity and the adaptation aspects of emotion regulation. These findings indicate that mothers with social anxiety symptoms may, through their parenting behaviors, be passing some of their negativity, fear, and maladaptive behaviors onto their children. For example, emotion regulation may be passed from mothers to children through learning and temperament. In particular, mothers who are socially anxious not only expect social situations to be negative experiences, but they may also lack confidence and view themselves negatively (e.g., a socially anxious mother may think she will not be welcomed if she were to enter into a group setting). A child may observe this pattern in a parent and accepts these thoughts as his/her own. Therefore, when a child experiences negative emotions, and expects situations to be unpleasant, he/she may react maladaptively and develop poor emotion regulation skills. The way a mother views experiences, especially social experiences, is passed along to the child, leading the child to potentially not develop necessary emotion regulation skills.

**Maternal Social Anxiety and its Links to Child Symptoms**

Maternal social anxiety was related to child social anxiety symptoms. Child reports of social anxiety and depression also were linked with maternal social anxiety. In the existing literature, the connection between parent symptoms and child symptoms is well documented (e.g., Colletti et al., 2010; West & Newman, 2003). However, in this study, mother reports of child depression in contrast to child reports were not linked to maternal social anxiety. Perhaps mothers with social anxiety only notice similar symptoms in their children, and therefore miss signs of depression. Furthermore, because displays of depression in children may look like irritability and externalizing behaviors (although irritability is not addressed on the RCADS Major Depressive Disorder subscale), perhaps these mothers do not understand that acting out behaviors may be indicative of depression and sadness and overlook these emotions in their children. However, because depression includes negative internalized thoughts, mothers can easily miss these telltale signs of depression. Finally, because these mothers may tend to expect social situations to be negative and potentially intimidating, they may be less willing to discuss such interpersonal things with their children, which would also make them unaware of depression in their children.

Surprisingly, child generalized anxiety was not linked to maternal social anxiety. Generalized anxiety previously has been linked to both child depression and anxiety (e.g., Burstein et al., 2010). Perhaps because social anxiety is limited to social situations, only thoughts and behaviors associated with social anxiety specifically are transmitted from mother to child, as opposed to anxiety in general.

### **Predictors of Child Internalizing Symptoms**

In addition to exploring the links between variables, we wanted to find predictors of the three internalizing symptom clusters were examined. Maternal social anxiety and sex predicted child social anxiety. Because children with social anxiety symptoms may shy away from peers and be clingy towards mothers, the dependence on mothers may greatly influence children on how they perceive the world. Therefore, when a mother is negative toward social situations and tends to avoid them, he/she teaches the child to act in a similar way (e.g., avoidance) thus influencing the child's level of social anxiety. The other predictor of child social anxiety was sex, indicating sex differences in social anxiety symptoms. Surprisingly, boys had higher rates of social anxiety than girls in the present study. However, existing studies have found sex differences, with higher rates of social anxiety in girls than boys (e.g., Beidel, Turner, & Morris, 1999). We did not find significant predictors of child generalized anxiety symptoms, which was surprising based on the current literature linking generalized anxiety symptoms to both maternal anxiety (e.g., Burstein et al., 2010) and different aspects of emotion regulation (e.g., Suveg & Zeman, 2004).

Child lability/negativity and ethnicity predicted depressive symptoms when aspects of emotion regulation, maternal social anxiety, and demographics were included as potential predictors. When race/ethnicity differences are found in current research, Caucasians usually have higher rates of depression than African Americans (Riolo, Tuan Anh, Greden, & King, 2005). The ethnicity difference found in this study is consistent with previous research. Perhaps children who experience high levels of negative emotions and are reactive tend to have many negative social interactions, which in turn

leads to more negativity, which may lead to depressive symptoms. Furthermore, because child depression, as opposed to social and generalized anxiety, was predicted by lability/negativity, we were able to distinguish predictors of these common symptoms in children.

### **Summary and Looking Ahead**

We also tested mediated relationships that, to our knowledge, have not been tested in existing literature. Although the hypothesized mediated models were not upheld, several implications can still be made from this study. First, child depression correlated with child lability/negativity, but no aspects of child emotion regulation were related to either type of anxiety. Perhaps the anxiety clusters did not correlate with emotion regulation because anxiety is somewhat more internalized compared to depression, which can be more behavioral and irritable in presentation for children. Furthermore, the ERC measure includes mainly behavioral items and none relating to thoughts. Perhaps if a measure that includes more cognitive items was used instead, the results would differ. Finally, the ERC behavioral items are mostly acting out/aggressive in nature (e.g., “Is prone to disruptive outbursts,” “responds angrily to limit setting,” and “takes pleasure in the distress of others”) as opposed to internalizing, also potentially affecting the results.

When investigating the hypothesized mediated models, none of the models were confirmed. As expected, both maternal social anxiety and aspects of child emotion regulation predicted different child symptom clusters. However, no symptom cluster had both of these constructs as predictors. Perhaps, instead, the development of emotion regulation and clinical symptoms is simultaneous rather than progressive. Another option

would be to explore if poor emotion regulation develops after clinical symptom presentation.

This study accomplished several objectives. First, the relationship between maternal and child symptoms was explored. Second, a mediated relationship was examined that, to our knowledge, had not been tested previously. Third, a measure, the Emotion Regulation Checklist, that has been used frequently in relation to externalizing symptoms, was used in relation to child internalizing symptoms. Although the mediated relationships were not significant, the other findings still add to current knowledge about child psychopathology. These constructs, child and parent symptoms, and emotion regulation, should be studied more in depth to better understand the relationships to each other and to other psychological variables pertinent to child research.

### **Limitations and Directions for Future Research**

This study had several limitations. First, a parent-reported instrument was used to measure emotion regulation. Perhaps using observation to measure the construct would have provided a less biased description of the child's emotion regulation abilities (e.g., Eisenberg et al., 2001b; Maughan et al., 2007). Also concerning emotion regulation measures, if a self or parent-report measure is desired, perhaps another measure rather than the Emotion Regulation Checklist should be used in relation to internalizing symptoms. Although numerous significant findings have been found linking externalizing problems and emotion regulation using the ERC (e.g., Shield & Cicchetti, 1998), the measure does not include items that tap into other elements of emotion regulation that may be more relevant to internalizing disorders, such as cognitive distortions.



This current study was also of the correlational nature. Although we were able to investigate links between the main study variables, we were unable to determine direction or causality between these variables. Another limitation was that we used a community as opposed to a clinical sample. Perhaps if a clinical sample was used, some of our findings may have been different. Furthermore, seeking out a clinical sample could have possibly resulted in a wider range of values on the measures and a wider range of symptom severity.

Next, data were collected on maternal social anxiety only, but data concerning three types of symptoms in children were collected. Data on all three symptom clusters for maternal symptoms may have been preferable. Next, father-report data were not investigated. We attempted to collect father data, but less than 50% chose to participate. Having these data may have added to present findings. Perhaps some of the lack of maternal influence on symptoms was due to children having closer relationships with their fathers, and therefore, are more likely to learn from them. Furthermore, perhaps the children's symptoms are influenced by their father's symptoms, but without the father's symptoms, this link is unknown. This link is important to investigate because of the known relationship between parent and child symptoms, but that was not found in this study except for one type of internalizing symptom (i.e., social anxiety).

Several suggestions exist for future research. One suggestion would be to further explore the link between different reporters. This study did involve both mother and child-report, but children's reports were used primarily in early analyses. Also, it would be interesting to compare mother and father reports of child symptoms. Next, it is suggested that because of the documented connections between child emotion regulation

and internalizing, other types of potential relationships should be explored, such as the relationship between parent symptoms and child emotion regulation, as mediated by child internalizing. Another potential relationship to explore would be whether emotion regulation moderates the relationship between parent symptoms and child symptoms.

### **Clinical Implications**

Although the results of this study are tentative, several implications can still be made from the findings. The link between child emotion regulation and child depression demonstrate the importance of addressing emotional issues in treatment (e.g., how children recover from emotions and the types of emotions experienced), not just behavioral or peer relational topics. For example, it is important to teach children adaptive emotion regulation strategies. Clearly, child emotion regulation can be learned, especially from parents. Therefore, emotion regulation can be taught through treatment. For children who are prone to angry outbursts and mood swings, perhaps learning about how to slow down and think about their emotions/experiences may help them engage in these behaviors less. Mothers of children with depression may also become involved by helping children become comfortable in talking about and expressing their emotions. Mothers can also be involved by encouraging positive outlets of emotions. Because children with depression may tend to be more negative, mothers can help by exploring the child's interests to increase the number of positive experiences and emotions the child has.

Another suggestion is involving mothers who are also experiencing symptoms of social anxiety in their child's treatment. Because maternal social anxiety was found to predict child social anxiety, perhaps if the mothers receive guidance on handling their

symptoms as children are receiving treatment, children may have a higher or quicker improvement rate. It is important that the mother understands how her children learn about the world through observing the mother's reaction. Perhaps if the socially anxious mother is able to correct her intense emotions and recovery from negative experiences, then in turn the child will learn positive emotion regulation and adaptive behaviors. Furthermore, it is currently common practice to involve parents in the child's treatment when the child is experiencing clinical symptoms. However, because of the transmission of symptoms and the learning through observation that takes place, perhaps if a mother is in treatment herself, the child should also be brought into the session occasionally, regardless if the child is experiencing internalizing symptoms. The goal of involving the child in a mother's treatment would be to decrease the likelihood that the child will learn the maladaptive behaviors and thoughts that the mother displays.

One suggestion concerning a clinical method to address the co-occurrence of mother and child social anxiety symptoms is the use of transfer-of-control therapy (Ginsburg, Silverman, Kurtines, 1995). This type of therapy involves addressing both the mother's and child's symptoms together in treatment. In particular, the therapist teaches a parent the techniques and strategies, such as contingency management, to be implemented with the child. The parent also encourages the child to be engaged in the situations that he/she is avoiding in order to help the child overcome their anxieties. This encouragement is a technique of exposure. In addition, the parent is taught how to handle the child's social anxiety symptoms and how to encourage adaptive behaviors. Essentially, the therapist coaches the parent on how to be the child's therapist, and therefore, control is transferred from the therapist to parent. Then, after the child is able

to implement techniques on his/her own accord, the parent allows the child to take charge of his/her own treatment (i.e., control is transferred to the child) (Ginsburg et al., 1995). Other topics may be addressed in these therapy sessions such as family relationships and communication. Because of the strong influence a mother may have on how her child learns about social situations, this type of therapy is ideal to address both the child's and mother's contributions to the child's social anxiety symptoms. In this therapy, the mother is learning about adaptive coping skills and how to teach her son/daughter these skills as well. Therefore, these skills are being reinforced and modeled both in the therapy sessions and at home.

Because this study found significant predictors of the child internalizing symptom clusters, early intervention is also suggested, before symptoms develop to a clinical or diagnosable level. If a mother is experiencing social anxiety and is in treatment, she needs to be aware of symptoms and difficulties in emotion regulation that a child may develop. For example, although the child is not yet clinically depressed or experiencing social anxiety symptoms constantly, if the child is disruptive, unable or unwilling to talk about emotions, or experienced wide mood swings, the child will still benefit from treatment and education on how to handle emotions. Furthermore, because child emotion regulation was found to be a significant predictor of depression in children, it is important that parents and teachers monitor the emotional problems a child may have. If emotional difficulties are left untreated, the child may develop depression or potentially other types of internalizing problems.

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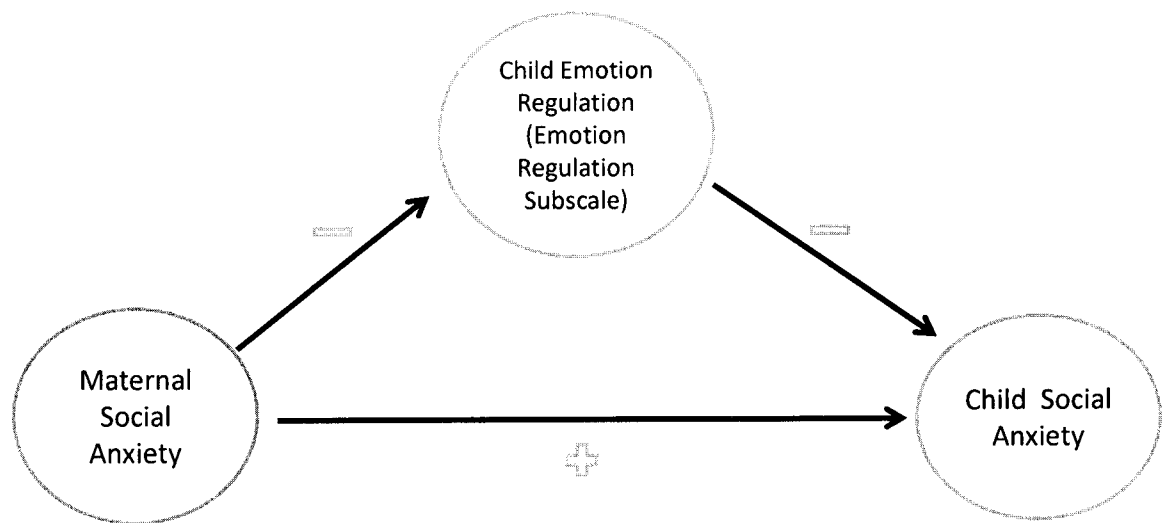
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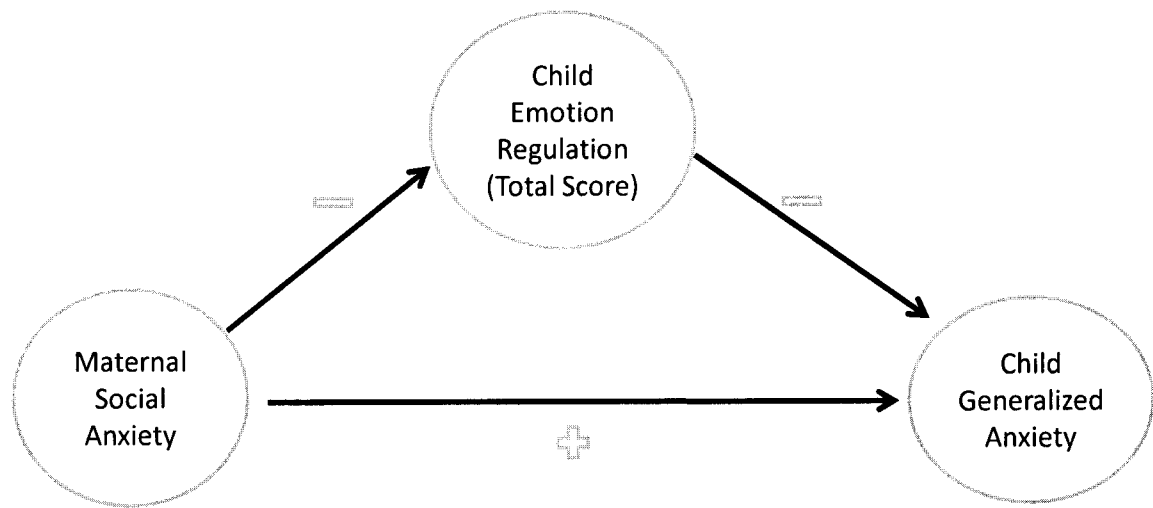
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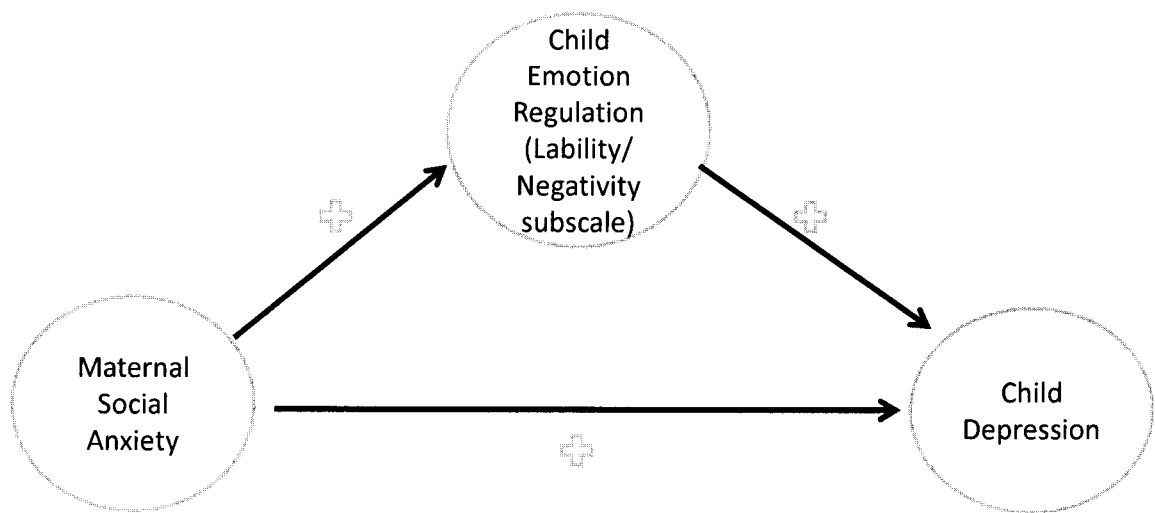




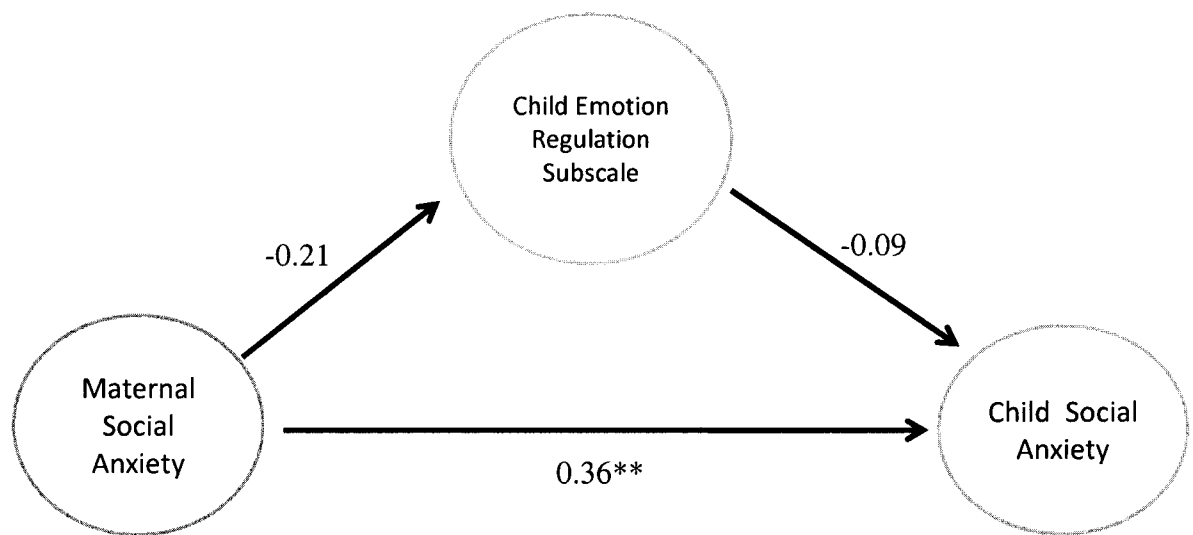
*Figure 1.* Hypothesized mediated model between maternal social anxiety and child social anxiety, as mediated by the child emotion regulation subscale of the ERC (adaptation, understanding, and displays of emotion).



*Figure 2.* Hypothesized mediated model between maternal social anxiety and child generalized anxiety, as mediated by child emotion regulation (total score of the ERC).



*Figure 3.* Hypothesized mediated model between maternal social anxiety and child depression, as mediated by the lability/negativity subscale of the ERC.



*Figure 4.* Mediated model between maternal social anxiety and child social anxiety, as mediated by the emotion regulation subscale of the ERC.

\*  $p < .05$ ; \*\*  $p < .01$

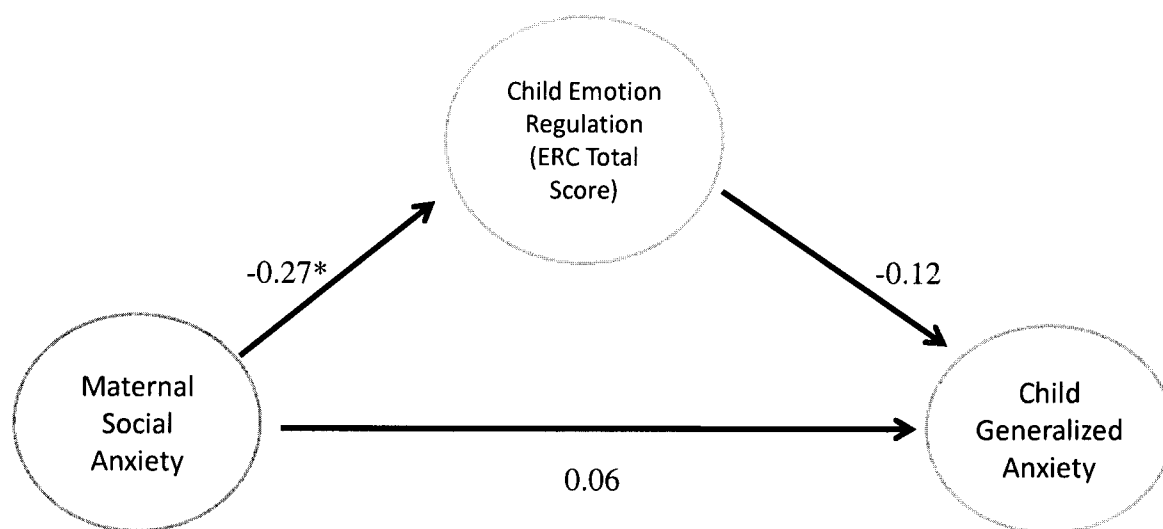
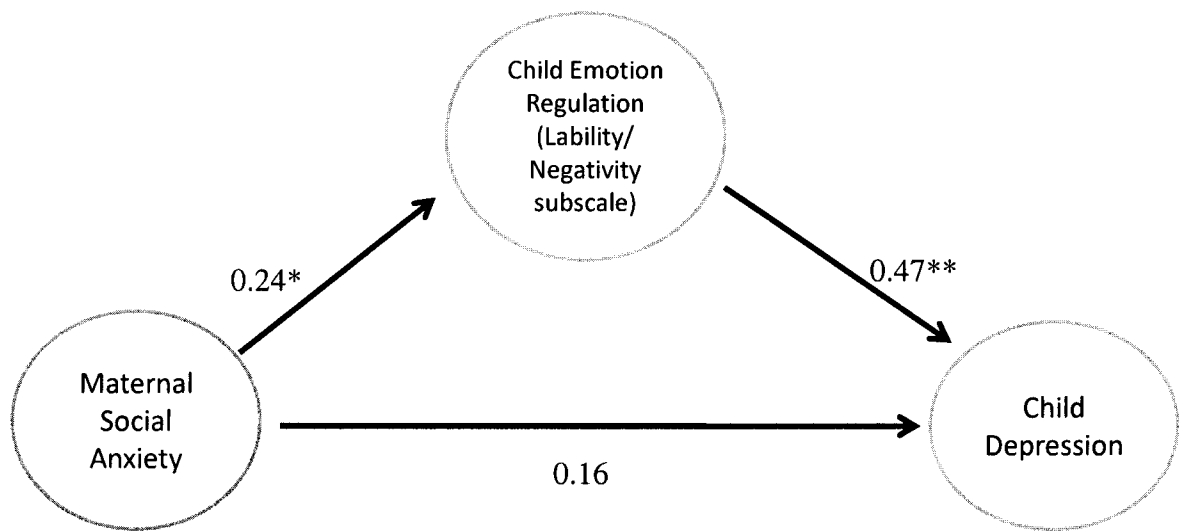


Figure 5. Mediated model between maternal social anxiety and child generalized anxiety, as mediated by child emotion regulation (ERC total score).

\*  $p < .05$ ; \*\*  $p < .01$



*Figure 6.* Mediated model between maternal social anxiety and child depression, as mediated by the lability/negativity subscale of the ERC.

\*  $p < .05$ ; \*\*  $p < .01$

Table 1

*Ages (in years) of Child Participants*

Age	<i>n</i>
9	9
10	19
11	24
12	18
13	12
14	7
	89

Table 2

*Means and Standard Deviations of Main Study Variables*

	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>α</i>
Social Anxiety (ch)	13.15	7.77	1.33-31.32	.91
Generalized Anxiety (ch)	3.98	3.17	0.00-15.00	.86
Depression (ch)	6.37	4.54	1.00-24.00	.80
Social Anxiety (mo)	13.34	8.61	0.00-31.57	.94
Generalized Anxiety (mo)	3.60	2.45	0.00-12.00	.86
Depression (mo)	4.60	5.54	0.00-17.00	.82
Mother Social Anxiety (mo)	46.49	28.13	0.15-108.50	.97
ERC Total (mo)	77.24	8.77	47.00-90.00	.79
Emotion Regulation (mo)	27.83	2.73	19.00-32.00	.69
Lability/Negativity (mo)	26.51	6.72	16.00-47.00	.82

*Note.* Ch = child-report; Mo = mother-report; Social Anxiety = Social Phobia and Anxiety Inventory for Children; Generalized Anxiety = Generalized Anxiety Disorder subscale score of the Revised Children's Anxiety and Depression Scale; Depression = Major Depressive Disorder subscale score of the Revised Children's Anxiety and Depression Scale; Mother Social Anx = total score of the Social Phobia and Anxiety Inventory; ERC Total = total score of the Emotion Regulation Checklist; Emotion Regulation = Emotion Regulation subscale score of the Emotion Regulation Checklist; Lability/Negativity = Lability/Negativity subscale score of the Emotion Regulation Checklist.



Table 3

*Zero-Order Correlations between Main Study Variables*

Measure	1	2	3	4	5	6	7	8	9	10
1. Social Anxiety (ch)	-									
2. Generalized Anxiety (ch)	.48**	-								
3. Depression (ch)	.43**	.45**	-							
4. Social Anxiety (mo)	.22*	.06	.22*	-						
5. Generalized Anxiety (mo)	.002	.06	.16	.33**	-					
6. Depression (mo)	-.03	-.17	.11	.29**	.64**	-				
7. Mother Social Anxiety (mo)	.26*	.10	.26*	.36**	.06	.16	-			
8. ERC Total (mo)	.02	-.01	-.14	-.15	-.15	-.53**	-.27*	-		
9. Emotion Regulation (mo)	.01	-.03	-.08	-.18	-.08	-.21	-.21	.70**	-	
10. Liability/Negativity (mo)	-.03	.01	.15	.12	.16	.53**	.24*	-.94**	-.41**	-

*Note.* Ch = child-report; Mo = mother-report; Social Anxiety = Social Phobia and Anxiety Inventory for Children; Generalized Anxiety = Generalized Anxiety Disorder subscale score of the Revised Children's Anxiety and Depression Scale; Depression = Major Depressive Disorder subscale score of the Revised Children's Anxiety and Depression Scale; Mother Social Anx = total score of the Social Phobia and Anxiety Inventory; ERC Total = total score of the Emotion Regulation Checklist; Emotion Regulation = Emotion Regulation subscale score of the Emotion Regulation Checklist; Liability/Negativity = Liability/Negativity subscale score of the Emotion Regulation Checklist.

\* $p < .05$ ; \*\* $p < .01$

Table 4

*Summary of Multiple Regression Analysis for Significant Variables Predicting Child Social Anxiety Symptoms (n = 65)*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>
Maternal Social Anxiety	0.09	0.03	0.32**	2.90	.005
Sex	-5.09	1.73	-0.33**	-2.94	.005

*Note.*  $R^2 = 0.23$ ; adjusted  $R^2 = .21$ .

\*  $p < .05$ ; \*\*  $p < .01$

Table 5

*Summary of Multiple Regression Analysis for Significant Variables Predicting Child Depressive Symptoms (n = 65)*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>
Lability/Negativity	0.21	0.06	0.38**	3.50	.001
Ethnicity	-2.10	0.79	-0.29**	-2.66	.010

*Note.*  $R^2 = 0.24$ ; adjusted  $R^2 = .22$ .

\*  $p < .05$ ; \*\*  $p < .01$

## Appendix A

021395-1

## EMOTION REGULATION CHECKLIST

Rarely/ Never	Sometimes	Often	Almost Always	
1	2	3	4	1. Is a cheerful child.
1	2	3	4	2. Exhibits wide mood swings (child's emotional state is difficult to anticipate because s/he moves quickly from a positive to a negative mood).
1	2	3	4	3. Responds positively to neutral or friendly overtures by adults.
1	2	3	4	4. Transitions well from one activity to another; doesn't become angry, anxious, distressed or overly excited when moving from one activity to another.
1	2	3	4	5. Can recover quickly from upset or distress (for example, doesn't pout or remain sullen, anxious or sad after emotionally distressing events).
1	2	3	4	6. Is easily frustrated.
1	2	3	4	7. Responds positively to neutral or friendly overtures by peers.
1	2	3	4	8. Is prone to angry outbursts / tantrums easily.
1	2	3	4	9. Is able to delay gratification.
1	2	3	4	10. Takes pleasure in the distress of others (for example, laughs when another person gets hurt or punished; seems to enjoy teasing others).
1	2	3	4	11. Can modulate excitement (for example, doesn't get "carried away" in high energy play situations or overly excited in inappropriate contexts).
1	2	3	4	12. Is whiny or clingy with adults.
1	2	3	4	13. Is prone to disruptive outbursts of energy and exuberance.
1	2	3	4	14. Responds angrily to limit-setting by adults.
1	2	3	4	15. Can say when s/he is feeling sad, angry or mad, fearful or afraid.
1	2	3	4	16. Seems sad or listless.
1	2	3	4	17. Is overly exuberant when attempting to engage others in play.
1	2	3	4	18. Displays flat affect (expression is vacant or inexpressive; child seems emotionally absent).
1	2	3	4	19. Responds negatively to neutral or friendly overtures by peers (for example, may speak in an angry tone of voice or respond fearfully).
1	2	3	4	20. Is impulsive.
1	2	3	4	21. Is empathic towards others; shows concern when others are upset or distressed.
1	2	3	4	22. Displays exuberance that others find intrusive or disruptive.
1	2	3	4	23. Displays appropriate negative emotions (anger, fear, frustration, distress) in response to hostile, aggressive or intrusive acts by peers.
1	2	3	4	24. Displays negative emotions when attempting to engage others in play.

A.5

## Appendix B

Code Number: \_\_\_\_\_

**Demographic Form**

Child's name: \_\_\_\_\_

Today's date: \_\_\_\_\_

Child Information

Child's age: \_\_\_\_\_ Child's DOB: \_\_\_\_\_ Child's grade: \_\_\_\_\_

Child's race/ethnicity: \_\_\_\_\_

Has the child ever had any medical hospitalizations or surgical procedures? Yes No

If yes, please describe: \_\_\_\_\_

Has the child ever had any serious or chronic illnesses? Yes No

If yes, please describe: \_\_\_\_\_

Please list the sex and ages of child's siblings: \_\_\_\_\_

Parent/Guardian Information

Age of female parent/guardian: \_\_\_\_\_ Age of male parent/guardian: \_\_\_\_\_

Relation to child: \_\_\_\_\_ Relation to child: \_\_\_\_\_

\_\_\_\_\_ Natural \_\_\_\_\_ Step \_\_\_\_\_ Natural \_\_\_\_\_ Step

\_\_\_\_\_ Adoptive \_\_\_\_\_ Foster \_\_\_\_\_ Adoptive \_\_\_\_\_ Foster

\_\_\_\_\_ Other \_\_\_\_\_ Other

Marital status of parent(s) with whom the child lives:

\_\_\_\_\_ Married \_\_\_\_\_ Divorced \_\_\_\_\_ Widowed \_\_\_\_\_ Never Married

\_\_\_\_\_ Separated \_\_\_\_\_ Other

Female parent's occupation: \_\_\_\_\_

Male parent's occupation: \_\_\_\_\_

Family income: \_\_\_\_\_ \$0 – \$15,000

\_\_\_\_\_ \$15,001 – \$30,000

\_\_\_\_\_ \$30,001 – \$50,000

\_\_\_\_\_ \$50,001 or above

Female parent's education: \_\_\_\_\_

Male parent's education: \_\_\_\_\_