

EXAMINING THE EFFECTS OF PARENTING  
BEHAVIORS AND MATERNAL ANXIETY  
SYMPTOMS ON EARLY ADOLESCENT ANXIETY  
SYMPTOMS

By

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EXAMINING THE EFFECTS OF PARENTING  
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Abstract: Although a significant amount of research has linked maternal anxiety and child anxiety, much of the research has addressed early childhood and young adulthood. Further, the potential role of overcontrolling and overprotective parenting in this link has been unclear. The current study examined overprotective parenting behaviors as a mediator for the association between maternal anxiety and child anxiety in a geographically diverse sample of 76 mothers of 11- to- 14-year-old children residing in the United States. Mothers completed surveys online through Amazon's Mechanical Turk. Maternal anxiety, use of overprotective parenting behaviors, and child anxiety were assessed using standardized measures. It was hypothesized that maternal anxiety would be positively correlated with child anxiety, maternal anxiety would be positively correlated with overprotective parenting behaviors, and that overprotective parenting behaviors would be positively correlated with child anxiety. Further, it was hypothesized that overprotective parenting behaviors would mediate the association between maternal anxiety and child anxiety. The results were as follows. As expected, maternal anxiety and overprotective parenting behaviors were positively correlated. However, maternal anxiety and child anxiety were not significantly correlated, and overprotective parenting behaviors and child anxiety were not significantly correlated. Thus, there was only partial support of the first three hypotheses. Further, bootstrapping analyses demonstrated that overprotective parenting behaviors did not mediate the association between maternal anxiety and child anxiety. In order to further explore these associations, child sex and age were included as moderators within the mediation model, again using bootstrapping analyses. However, this model was non-significant. Findings support previous research on the link between maternal anxiety and the use of overprotective parenting behaviors. However, the fact that neither maternal anxiety nor overprotective parenting behaviors predicted child anxiety, highlights the need for further research, particularly in early adolescence. Since rates of anxiety increase during adolescence, it is especially important for future research to explore these complex associations.

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## CHAPTER I

### INTRODUCTION

Fear is a typical and adaptive reaction to situations we perceive as dangerous to let us know to be on the defensive (Rosen & Schulkin, 1998). If that cautiousness did not develop, perhaps we may not have survived this long. Research indicates that certain fears and phobias are more persistent when there is an adaptive quality to them (i.e., preparedness theory; Seligman, 1971). Once learning has occurred and there is no longer an adaptive need, fears may decrease which aligns with the finding that adolescents experience significantly fewer fears than young children (Ollendick, King, & Frary, 1989). Much research has examined aspects of fear such as fearful temperament as a precursor to later development of anxiety disorders (Kiel & Buss, 2014; Muris & Ollendick, 2005).

Anxiety is often differentiated from fear in that anxiety deals with something that is unclear or uncertain about the future in contrast to present-oriented fear (Steimer, 2002). When this anxiety becomes a hindrance to daily functioning, or produces significant distress, it goes from being an adaptive behavior to becoming diagnosable pathology (American Psychiatric Association, 2013). Since about 25% of adolescents between the ages of 13 and 18 years will struggle with an anxiety disorder (Merikangas et al., 2010) and adolescence is a time of increased rates of anxiety disorders (Ghandour et al., 2019), studying anxiety during this developmental period is vital.

Parents are important for the development of our genetic information as well as the processing of our environmental information, and thus may play a critical role in child anxiety. Despite the societal shift of more women joining the workforce and more stay-at-home dads, mothers are still, on average, spending more time with children (U.S. Bureau of Labor Statistics, 2019). Thus, mothers play a major role in children's lives, particularly in the vital early years of development. It is crucial to further study the potential impact of maternal parenting behaviors and psychopathology, such as depression and anxiety, as these may be key components in the overall impact of maternal factors. Research in this area, however, has brought inconsistent results thus far and requires further exploration.

## Chapter II

### REVIEW OF THE LITERATURE

Determining whether parents with elevated levels of anxiety parent differently than non-anxious parents and whether this influences child outcome is important. Past research has examined the association of parenting and anxiety, however, many of the findings have been inconsistent, the methodologies have been varied, and the examination of these factors during early adolescence has been minimal.

#### **Developmental Model of Anxiety**

The Developmental Model of Childhood Anxiety (Ginsburg & Schlossberg, 2002) integrates previous models (Manassis & Bradley, 1994; Rubin & Mills, 1991) to explain disordered child anxiety. This model incorporates the bidirectional, developmental, and dimensional nature of anxiety with environmental, parental, and child characteristics. Parent characteristics such as parent temperament, attachment history, psychological symptoms, and parenting behaviors deemed to be “anxiety-enhancing,” are included in this model. These anxiety-enhancing parenting behaviors include overcontrol and overprotection. Child characteristics, taking into consideration continuous development and life events, are included in the model.

Many aspects of this model have theoretical support but lack consistent, empirical examination (Ginsburg & Schlossberg, 2002). More research is needed to provide empirical support for the role parents play in the development of anxious symptoms in

children. This study incorporates a portion of this model and examines the link between maternal anxiety symptoms and specific “anxiety-enhancing” parenting behaviors within the framework of early adolescence.

### **Differential Impact of Parenting on Age**

Parenting may impact children differently depending on the child’s age. McLeod, Wood, and Weisz (2007) note that some researchers believe that the earliest experiences of parenting have the most impact, while others believe that the associations between parenting and child outcomes (specifically anxiety) have a cumulative effect and thus are stronger in later childhood. In support of the latter view, van der Bruggen, Stams, and Bögels (2008) found child age to be a significant moderator in studies examining the association between parent and child anxiety and parental control, with higher effect sizes amongst school-age children than preschool children. However, studies emphasizing the diagnosis of anxiety may not contribute to understanding the early development of anxiety. Möller, Nikolić, Majdandžić, and Bögels (2016) emphasize the need to examine child anxiety in younger children through associated factors (e.g., shyness) which tend to develop earlier than specific anxiety symptoms.

Specific parenting behaviors may also differentially impact children at different ages. Multiple studies of specific parenting behaviors have yielded significantly different effect sizes across child age, from none to a medium effect (McLeod, Wood and Weisz, 2007; Möller, Nikolić, Majdandžić, and Bögels, 2016; van der Bruggen, Stams, and Bögels, 2008). As children age, appropriate parenting techniques may change. For example, protection may be more adaptive for parents of younger children than for

parents of typically developing young adolescents. Maladaptive protection may elicit unwarranted levels of fear and anxiety.

### **Adolescence.**

Adolescence is the period of time between the ages of 10 and 19 years (Canadian Paediatric Society, 2003). Puberty has been proposed to be a particularly sensitive period for internalizing symptoms to develop as changes in hormones (Patterson et al., 2018), increasing social demands (Hergovich, Sirsch, & Felinger, 2002; Newman & Newman, 2006), and changes in quality of peer relationships (Gavin & Furman, 1989; Newman & Newman, 2006) present unique challenges during this time. Thus, the fact that adolescence is a time when rates of child anxiety disorders increase (Ghandour et al., 2019) is not surprising.

### **Overprotection and Overcontrol.**

The construct of overcontrol is often used interchangeably with overprotection or is viewed as being too difficult to separate from the construct of overprotection. While most studies and models conclude that there is some connection between overprotective/overcontrolling parenting behavior and negative child outcomes, the degree to which these are related has not been well-established, which may be a result of the inconsistent definitions of these constructs. The following studies use a wide-range of measures and definitions to assess the constructs of overprotection and/or overcontrol.

#### ***Parental anxiety and overcontrolling/overprotective parenting.***

##### *Survey studies of parental anxiety and parenting.*

Bögels and van Melick (2004) examined a community sample of 75 Dutch children 8- to 13 years of age and their parents. Parental anxiety symptoms were assessed

using a self-report questionnaire while parental overprotection and psychological control were assessed through an aggregate of self-report, partner-report, and child-report of parenting behaviors using the Mother—Father—Peer Inventory (MFP; Epstein, 1983) and Child-Report of Parental Behavior Inventory-30 (CRPBI-30; Schludermann & Schludermann, 1970). Maternal and paternal anxiety were associated with overprotective parenting behaviors (MFP; e.g., encouraging independence) but not psychological control (CRPBI-30; e.g., “wants to control whatever I do”).

Cooklin, Giallo, D’Esposito, Crawford, and Nicholson (2013) examined 5,107 Australian infants (3-12 months) and their mothers. Maternal separation anxiety (i.e. anxiety when experiencing short-term separation from the infant) was assessed in addition to maternal overprotective parenting using the Parenting Practices Questionnaire (Bayer, Sanson, & Hemphill, 2006). They found that mothers who experienced separation anxiety when their children were in infancy (3-12 months) were significantly more likely to engage in overprotective parenting when their children were in toddlerhood (2-3 years).

*Observational studies of parental anxiety and parenting.*

Whaley, Pinto, and Sigman (1999) observed 18 clinically anxious mothers (most with the primary diagnosis of panic disorder), a control group of 18 mothers (with no past or current diagnosis of anxiety or depressive disorders), and their children aged 7 to 14 years. They coded overcontrol in three different scenarios: one in which the parent and child made decisions together, one in which the parent and child discussed something they frequently argue about, and one in which the parent and child discussed something that makes the child anxious. Overcontrol was further divided into granting autonomy to

the child (e.g., parental encouragement of individuality) and conversational dominance (i.e., ratio of parent to child speech during conflict and anxiety conversations).

Researchers found that anxious mothers engaged in significantly less autonomy granting than non-anxious mothers, but did not display significant differences in conversational dominance.

Ginsburg, Grover, and Ialongo (2005) observed 25 mothers who had been diagnosed with an anxiety disorder (via a clinical interview) and 25 mothers who did not have a history of any psychological disorder, in interactions with their 5- to 8-year-old children. Researchers coded overcontrol and granting of autonomy through one task in which the child recreated multiple Etch-A-Sketch designs. Overcontrol was operationally defined as a mother providing unsolicited help, and granting of autonomy as the mother supporting and accepting the child's opinions and ideas. Researchers found no significant difference between anxious and non-anxious mothers in overcontrol or granting of autonomy.

Woodruff-Borden, Morrow, Bourland, and Cambron (2002) observed a community sample of 57, 6- to 12-year-old children and their parents. Overcontrol was coded in a scenario in which the children were instructed to complete two different tasks: solve impossible puzzles and prepare a speech. Overcontrol was operationally defined as the parent taking over the task, making choices for the child, and attempting to regulate the child's behavior. Anxious (as per a diagnostic clinical interview) and non-anxious mothers were compared to examine whether anxious parents differed in level of overcontrol. Researchers found no significant difference between anxious and non-anxious mothers in overcontrolling behaviors.

Barrett, Shortt and Healy (2002) observed the parents of 18, 8- to 14-year-old children with a primary diagnosis of Obsessive-Compulsive Disorder (OCD), 22, 6- to 14-year-old children with an anxiety disorder (excluding OCD), 21, 7- to 12-year-old children with a primary diagnosis of oppositional defiant disorder or attention deficit/hyperactivity disorder, and 22, 7- to 13-year-old children with no psychological diagnoses. Control was coded during a conversation about a potentially physically threatening situation and a potentially socially threatening situation. High control was defined as using discipline to restrict creativity. Further, researchers combined level of control and level of warmth and doubt (e.g. parent questioning him/herself). into a variable labeled affectionate control. Parental anxiety (as per a self-report survey) and affectionate control were not associated.

***Overcontrolling/overprotective parenting and Child anxiety.***

*Survey studies of parenting and child anxiety.*

Lieb, Wittchen, Höfler, Fuetsch, Stein, and Merikangas (2000) studied 1,047 German adolescents, 14- to 17 years of age, for a baseline assessment and a 20-month follow-up. They assessed child anxiety via diagnostic interview and child perceptions of overprotection/control through the Questionnaire of Recalled Parental Rearing Behavior (Schumacher, Eisemann, & Brähler, 1999). Although the measure is for retrospective reports of parenting, most of the children in this sample were still living with their parents during the assessment. Researchers found that parental overprotection was significantly associated with adolescent social phobia at follow-up.

León and León (1990) compared four groups of adults (18-55 years old): 60 with panic disorder, 30 with no psychiatric symptoms, 30 with generalized anxiety disorder,



and 30 with depression. Researchers used the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979) to examine the subjects' perceptions of their parents' parenting before the subjects were 16 years old. The PBI scales were separated into quadrants: high care-low protection (optimal), high care-high overprotection (affectionate control), low care-low overprotection (neglectful parenting), and low care-high overprotection (affectionless control). For the reports of both maternal and paternal behavior, the largest percentage of the nonclinical sample fell into the optimal quadrant while the largest percentage of the panic disorder, depression, and generalized anxiety disorder groups indicated maternal and paternal parenting that fell into the affectionless control quadrant. The results demonstrate that individuals with clinical levels of anxiety and depression frequently rate past parenting experiences as characterized by high levels of overprotection.

Borelli, Margolin, and Rasmussen (2015) examined 102, 9- to 10-year-old children at baseline and follow-up (two and a half years later). They assessed parental overcontrol by a parent self-report measure. This measure, the USC Parental Overcontrol Scale (USC-POS; Borelli & Margolin, 2013), utilizes a set of questions from the CRPBI. Researchers found that children with non-controlling parents experienced reductions of anxious symptoms at follow-up but that children with controlling parents were less likely to experience a significant reduction of anxious symptoms. They also found that parental overcontrol mediated the association between parental anxiety and child anxiety at follow-up.

A study conducted in the Netherlands by Grüner, Muris, and Merckelbach (1999) examined 117, 9- to 12-year-old children. They assessed parental overprotection/control

through Egnä Minnen Beträffande Uppfostran-Child which is translated to “My Memories of Upbringing” (EMBU-C; Castro, Toro, Van der Ende, & Arrindell, 1993). Children also completed a self-report questionnaire for the identification of anxiety disorders. Children’s perceptions of parental overprotection were associated with child anxiety.

In another study conducted in the Netherlands, Bögels, van Oosten, Muris, and Smulders (2001) examined 64 clinically anxious children (20 with high social anxiety) and 126 healthy control children between the ages of 8 and 18 years of age. They assessed parental overprotection using parent-report and child-report scores on the EMBU. Child-reported maternal overprotection was associated with child social anxiety.

*Observational studies of parenting and child anxiety.*

Lewis-Morrarty and colleagues (2012) observed a community sample of 62 mothers of 7-year-old children and performed a follow-up assessment when the children were adolescents, 14- to 17-years-old. Overcontrol was coded during three activities; playing with toys, cleaning up toys, and completing an origami task. Researchers defined overcontrol as engaging in excessive controlling behaviors that did not align with the child’s interests and behaviors. Maternal overcontrol during childhood predicted self-reported social anxiety symptoms in adolescence.

Donenberg and Weisz (1997) observed 60 parents of 7- to 16-year-old children receiving outpatient therapeutic services. The combined construct of watching and controlling was coded during a task in which parent-child dyads were asked to plan a vacation and a task in which parent and child were asked to work out a conflict. Watching and controlling was defined as directing the child’s thoughts or behaviors.

Parental watching and controlling behaviors were positively associated with higher levels of anxious/depressive symptoms in children (as per parent-, self-, and teacher-report on a survey and a parent-report interview).

Greco and Morris (2002) observed 48 fathers of elementary and middle school-aged children. Overprotection/control was coded during an origami task. Overprotection/control was defined as commands (i.e., telling the child what to do) and physical control (i.e., physically taking over for the child). Fathers of children with high levels of social anxiety (per child self-report surveys) displayed higher levels of physical control than fathers of children with low levels of social anxiety; but the groups did not differ in commands.

Additionally, in an earlier mentioned study, Barrett, Shortt and Healy (2002) found that mothers of anxious children displayed higher levels of control than mothers of non-anxious children.

### ***Meta-analytical results involving overprotection and overcontrol.***

While coping with a psychological disorder is a difficult task in itself, these difficulties can be exacerbated by the additional stress of having children or other life stressors. Generally, research has demonstrated that parental mental health symptoms and parenting behaviors have an impact on child mental health. Three meta-analyses have specifically focused on parenting and child outcomes within the context of anxiety.

McLeod, Wood and Weisz (2007) examined the association between parenting behaviors, including control, and child anxiety disorders. They focused on diagnostic status of the child, symptom type, measurement approach, type of anxiety measure, informants, and parenting categories. When looking at individual parenting constructs,

they found that control had a medium effect on child anxiety while parenting behaviors overall had a small effect on child anxiety. McLeod and colleagues provide several explanations for why these results are not stronger based on the crucial role parenting plays in models of anxiety. For example, measurement is addressed as a concern in that observational methods for measuring parenting tended to result in stronger effects than survey methods.

Van der Bruggen, Stams, and Bögels (2008) extended the findings of McLeod, Wood, and Weisz (2007) in order to gain an in-depth look at why control was a stronger predictor of child anxiety than other parenting constructs. In this study, they specifically focused on observational studies, as they were found to have stronger effect sizes in the previous study. They examined studies that included a construct similar to control rather than only including those with the exact construct name. Included constructs were parental control, granting of autonomy, psychological control, negative control, involvement, intrusiveness, command, watching and controlling, and restriction. They found a medium-to-large effect size for the association between child anxiety and parental control.

Möller, Nikolić, Majdandžić, and Bögels (2016) conducted a meta-analysis examining parental anxiety, parenting behaviors, and child anxiety in the context of early childhood. The term overinvolvement was utilized when there was not a clear distinction between overprotection and overcontrol. They found a small effect for maternal overinvolvement and overprotection, while there was not a significant effect for maternal overcontrol and autonomy granting. Additionally, they found no significant effect for

paternal overinvolvement, overcontrol, and overprotection. No studies specifically assessed paternal autonomy granting.

While there is moderate research support for the importance of overcontrol in research on parent and child anxiety, overprotection has not received as much empirical support. However, part of this may be due to issues in definitions.

### **Gaps in the Literature**

#### **Definitions.**

Overcontrol has been defined as taking over the child's tasks or offering unwarranted help, or as providing unwarranted advice, or as not giving the child options. Likewise, definitions of overprotection vary, including its use as an interchangeable term with overcontrol and identification as its own construct. There is not one measure of overcontrolling/overprotective parenting used consistently, and few have adequate psychometric studies examining their reliability, validity, and factor structure. These inconsistencies are clearly present in survey studies as well as observational studies. Further, coding systems for observational studies are often created for individual studies and are not necessarily clinically informative (Hill, Maskowitz, Danis, & Wakschlag, 2008).

#### **Context.**

Most of the above observational studies of overcontrol and overprotection focus on various contexts intended to elicit a variety of affective states (e.g., anxiety-provoking tasks, frustration-provoking tasks, play). However, this does not necessarily mimic common interactions of the family or provide a clear picture of parenting in different

situations. Additionally, the limitation of time can reduce the range of behaviors that can be witnessed and coded.

On the other hand, questionnaire studies often provide information on how parents respond to their children during day-to-day activities. However, most examine parent-report of parenting which may inaccurately assess actual behaviors or child perceptions of these behaviors. For example, Bögels and van Melick (2004) found that parents' ratings of themselves did not correlate highly with their children's ratings of parenting. Since parents and children often perceive things differently, it is beneficial to assess using multiple reporters.

#### **Current versus retrospective reports.**

Many studies utilize retrospective reports of overcontrolling and overprotective parenting, allowing researchers to examine parenting and child outcomes simultaneously. Though retrospective reports provide valuable information about perception of parenting behaviors, these are not necessarily accurate representations of parenting in the past. Many studies have found that retrospective reports are often inaccurate and biased in recall (Hardt & Rutter, 2004; Berg-Nielson, Vikan, & Dahl, 2002). For example, one study found that depressed individuals recalled their parents' behaviors in a more negative way than non-depressed individuals (Lewinsohn & Rosenbaum, 1987). These biases can create difficulties as the researcher has to differentiate between current thoughts and past events. With retrospective reports, we cannot differentiate whether parents of anxious adults are more overprotective or anxious adults remember more overprotectiveness as a result of their anxiety.

### **Age of child.**

The age of the child may have an impact on the associations between parenting and child anxiety. For example, age of child was found to moderate the association between parental control and child anxiety such that larger effect sizes are found in studies of older children (van der Bruggen, Stams, & Bögels, 2008). This indicates that for parental control alone there is support for the potential differential impact of parenting on children of different ages. Since there is a potential age effect, it is particularly important to study children of different ages to identify the strength of these associations and critical periods of change. Additional research is needed to focus on early adolescence as it is clear that puberty and life transitions play a crucial role in the development of anxiety.

### **Conclusions**

In order to identify those at-risk for high levels of anxiety, it is important to empirically study associations thought to play a role in child anxiety symptoms. We need to fully understand which children are most at-risk for developing internalizing problems and what factors are impacting these symptoms. This study will provide evidence for how mothers with higher levels of anxious symptomology parent and how that is associated with the emotional symptoms of their children. For the purposes of this study, the specific parenting behavior of overcontrol/overprotection was examined as it has been shown to be a potentially key component in child anxiety.

### **Current Study**

The purpose of this study was to: 1) examine the link between maternal anxiety symptoms and anxiety symptoms in young adolescents (i.e., children aged 11 to 14

years); 2) examine whether maternal anxiety is related to overcontrol/overprotectiveness; and 3) examine whether overcontrol/overprotectiveness explains the association between maternal anxiety symptoms and child anxiety symptoms.

### *Hypotheses*

#### **Hypothesis 1**

It was hypothesized that mothers' anxiety would be significantly and positively correlated with overcontrolling/overprotective parenting behaviors. It was predicted that there would be a significant positive correlation between the DASS Anxiety scale and PBI Overcontrol scale.

#### **Hypothesis 2**

It was hypothesized that overprotective parenting behaviors would be significantly and positively correlated with anxiety in adolescents. It was predicted that there would be a significant positive correlation between PBI Overcontrol scale and the Total Anxiety score on the SCARED.

#### **Hypothesis 3**

It was hypothesized that the link between maternal anxiety and child anxiety would be mediated through overprotective parenting behaviors. It was predicted that the PBI Overcontrol scale would mediate the association between the DASS Anxiety scale score and the SCARED Total Anxiety score. Bootstrapping was used to find statistical significance of a mediated relationship (Hayes, 2009, 2012; Preacher & Hayes, 2004, 2008). The original data was resampled 5,000 times in this bootstrapping analysis, as recommended by Hayes (2012). A 95% confidence interval was utilized to detect significance.



## Chapter III

### METHOD

#### **Participants**

A sample of mothers with children between the ages of 11-14 years was recruited for this study through Amazon Mechanical Turk (MTurk). MTurk is a tool that is gaining popularity in the recruitment of diverse samples of parents. Past research has found that data collected on Mturk has high reliability for samples of mothers and fathers (Parent, Forehand, Pomerantz, Peisch, & Seehus, 2017; Schleider & Weisz, 2015). Data were collected through Mturk to recruit a diverse sample of mothers across the United States. Individuals from other countries were excluded from the study in order to limit potential cultural differences, fathers were excluded from the study due to the narrow scope of the study, and children with developmental delays (e.g., Pervasive Developmental Disorders) were excluded from the study due to differences in parenting a child with exceptionally different needs.

One hundred twenty-four mothers participated in the study; however, 41 participants were excluded due to inconsistent and/or inappropriate responding and 7 participants were excluded due to reported child developmental delays. Due to a high rate of inappropriate and inconsistent responders, researchers increased consistency checks and switched to the TurkPrime interface for MTurk, which includes additional features to reduce rates of inappropriate responding (e.g., geolocation). Inappropriate and

inconsistent responding decreased dramatically after the additional reliability checks and features were utilized. The final sample included 76 mothers who were primarily biological parents (97.4%). Participants represented all regions of the United States of America and 28 states. Mother ages ranged from 26 to 56 ( $M_{age} = 38$ ) years of age and were primarily married (56.6%). Mothers were Caucasian (72.4%), African American (14.5%), Asian (2.6%), and biracial (5.3%). Approximately half of participants reported a yearly income between \$35,000 and \$75,000. Child ages ranged from 11 to 14 years ( $M_{age} = 12.47$ ) and grade levels from 5<sup>th</sup> to 9<sup>th</sup> grade. Approximately 44% of children were male and 56% of children were female. Mothers reported that approximately 17.1% of children had a psychological diagnosis. Diagnoses included ADHD ( $n = 5$ ), learning disability ( $n = 1$ ), anxiety ( $n = 6$ ), and depression ( $n = 2$ ).

## **Materials**

### Informed Consent

An informed consent was utilized for parents to understand the risks and benefits of participating in the study.

### Demographic Questionnaire

A demographics form completed by mothers assessed state of residence, age, ethnicity, sex, and family income. The form also included questions regarding the target child's grade level, sex, and previous diagnoses.

### Depression, Anxiety, and Stress Scales-21 (DASS; Lovibond & Lovibond, 1995)

The DASS is a 21-item measure of general depression, anxiety, and stress levels in adults (Lovibond & Lovibond, 1995). This is a shortened version of the DASS—42 and has strong internal consistency (Cronbach's  $\alpha > .85$ ) for each of the subscales;

Depression, Anxiety, and Stress (Sinclair et al., 2012). Items are rated using a 4-point Likert scale ranging from *did not apply to me at all* to *applied to me very much or most of the time*. The Anxiety subscale score (a sum of items) was used to measure maternal anxiety. Scores on the DASS-21 Anxiety subscale range from 0 to 57 with higher scores indicating higher levels of anxiety. Within this sample internal consistency of the Anxiety subscale was strong (Cronbach's  $\alpha = .91$ ).

#### Parental Bonding Instrument Modification (PBI; Parker, Tupling, & Brown, 1979)

The PBI is a 25-item measure of parenting behaviors reported by an adult retrospectively remembering his/her parent's behaviors during the first 16 years of the respondent's life (Parker, Tupling, & Brown, 1979). For the purposes of this study, the PBI was modified for use as a parent report (PBI) as has been done several times in the literature (Bureau, Martin, Freynet, Poirier, Lafontaine, & Cloutier, 2009; Duggan, Sham, Minne, Lee, & Murray, 1998; Kendler, Myers, & Prescott, 2000). It should be noted, however) that there have not been any psychometric studies using the PBI in this format. Items are rated on a 4-point Likert scale from how *very like* to *very unlike* a behavior is like the respondent. The original factor structure yields two sum scores: Care and Overprotection (Parker, Tupling, & Brown, 1979). The Care subscale (e.g., spoke to my child in a warm and friendly voice/ spoke to me in a warm and friendly voice) of the original PBI has high reliability (Cronbach's  $\alpha = .90$ ) and the Overprotection subscale (e.g., tried to control everything my child did/ tried to control everything I did) of the original PBI has lower reliability (Cronbach's  $\alpha = .62$ ). The internal consistency of the PBI Overprotection scale was similar in this sample (Cronbach's  $\alpha = .63$ ). Scores range from 0 to 39.

Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1997)

The SCARED is a 41-item measure of child anxiety symptoms as reported by a parent (Birmaher et al., 1997). Items are rated on a three-point Likert scale from *not true or hardly ever true* to *very true or often true*. The internal consistency for Total Anxiety is excellent (Cronbach's  $\alpha = .90$ ), while the subscales have been found to vary (Cronbach's  $\alpha = .78-.87$ ; Birmaher et al., 1999). Birmaher and colleagues (1999) found that the parent-report SCARED scores (subscale and total) were significantly correlated with child-report SCARED scores. The Total Anxiety sum score, which ranges from 0 to 82, was used to examine overall child anxiety. Within this sample, the internal consistency was high (Cronbach's  $\alpha = .95$ ).

**Procedure**

Before beginning recruitment or administration, approval was gained from the Oklahoma State University Institutional Review Board (IRB). Recruitment occurred through MTurk. Participants completed questionnaires that took approximately one hour to complete. Participants were compensated \$6 for their participation, which is slightly above the average level of compensation for studies on MTurk.

## CHAPTER IV

### RESULTS

#### **Descriptive Statistics**

Child anxiety (SCARED Total Anxiety scores) ranged from 0 to 57 ( $M = 11.72$ ,  $SD = 12.14$ ) with 10.4% of participants falling in the clinical range (scores of 25 or more indicate potential presence of an anxiety disorder). Maternal anxiety (DASS Anxiety scores) ranged from 0 to 40 ( $M = 12.07$ ,  $SD = 12.37$ ). Maternal anxiety scores were as follows: 69.8% in the normal range, 3.9% in the mild range, 10.4% in the moderate range, 7.8% in the severe range, and 11.7% in the extremely severe range. Maternal overcontrol (PBI Overcontrol scores) ranged from 2 to 26 ( $M = 12.93$ ,  $SD = 5.15$ ). A control score of 13.5 or higher, indicates a high level of protection for mothers, and 67.1% of mothers fell within the low protection category while 32.9% fell within the high protection range. Demographic information is presented in Table 1.

#### **Bivariate Correlations**

Bivariate correlations further established the associations between variables and allowed for comparisons with previous studies and are presented in Table 2. It was predicted that maternal anxiety would be positively correlated with maternal overcontrol. DASS Anxiety scores were positively correlated with PBI Overcontrol scores ( $r = .37$ ,  $p < .01$ ). It was also predicted that maternal overcontrol would be positively correlated with child anxiety. However, PBI Overcontrol scores were not correlated with SCARED Total

Anxiety scores. Lastly, it was predicted that maternal anxiety would be positively correlated with child anxiety. Contrary to our prediction, DASS Anxiety scores were not correlated with SCARED Total Anxiety scores. When including child age and sex, two additional significant correlations were found. PBI Overcontrol scores were negatively associated with child age, indicating that higher levels of control were used with younger children ( $r = -.29, p < .01$ ). Additionally, PBI Overcontrol scores were associated with child sex such that higher levels of overcontrol were used with girls than boys ( $r = .24, p < .05$ ) All other correlations were non-significant.

### **Mediation Analysis**

In order to examine whether maternal overprotective parenting behaviors mediated the association between maternal anxiety symptoms and child anxiety symptoms, analyses were run utilizing bootstrapping (Hayes, 2009, 2012; Preacher & Hayes, 2004, 2008). As per Fritz and MacKinnon (2007), this study should have adequate power to detect expected differences. The DASS Anxiety score was utilized to measure maternal anxiety, the SCARED Total Anxiety score was utilized to measure child anxiety, and the PBI Overcontrol subscale was utilized to measure maternal overcontrolling parenting behaviors.

Maternal anxiety significantly predicted maternal overcontrol,  $M = .21, t = 3.47, p < .01, 95\% \text{ CI} = .09 \text{ to } .32$ . However, maternal anxiety did not predict child anxiety,  $M = .26, t = 1.64, p = .11, 95\% \text{ CI} = -.06 \text{ to } .58$ . Maternal overcontrol did not predict child anxiety,  $M = .06, t = .22, p = .83, 95\% \text{ CI} = -.52 \text{ to } .64$ . The indirect effect of maternal anxiety on child anxiety as mediated by child maternal overcontrol was not significant,  $r^2 = .14$ . Unstandardized results are presented in Figure 2.

## Post Hoc Analysis

While the initial mediation model explored a parsimonious look at components of the Developmental Model of Anxiety (Ginsburg & Schlossberg, 2002), a more complex mediation model was tested to accommodate for additional factors that may be directly impacting the results of the initial model. Multiple meta-analyses found that child sex had a significant impact on the effect sizes for studies examining parenting and child anxiety as well as parental anxiety and parenting (Möller, Nikolić, Majdandžić, & Bögels, 2016; van der Bruggen, Stams, & Bögels, 2008). Therefore, sex was analyzed as a moderator for both the association between maternal anxiety and overcontrolling parenting and overcontrolling parenting and child anxiety. Additionally, as discussed above, child age may play a role in how certain parenting behaviors (e.g., control) impact child outcomes (McLeod, Wood, & Weisz, 2007). Therefore, child age was examined as a moderator for the relationship between overcontrolling parenting and child anxiety.

As with the above analysis, maternal anxiety predicted overcontrolling parenting,  $M = .26$ ,  $t = 1.35$ ,  $p = .18$ , 95% CI =  $-.13$  to  $.65$ . Sex was not found to moderate the relationship between maternal anxiety and overcontrolling parenting,  $M = 2.64$ ,  $t = 1.99$ ,  $p = .05$ , 95% CI =  $-.01$  to  $5.29$ . Maternal anxiety did not predict child anxiety,  $M = .32$ ,  $t = 1.97$ ,  $p = .05$ , 95% CI =  $-.00$  to  $.64$ . Overcontrolling parenting did not predict child anxiety,  $M = -1.57$ ,  $t = -.47$ ,  $p = .64$ , 95% CI =  $-8.29$  to  $5.14$ . Sex and age were not found to moderate the relationship between overcontrolling parenting and child anxiety,  $M = -10.72$ ,  $t = -1.32$ ,  $p = .19$ , 95% CI =  $-26.87$  to  $5.43$ ;  $M = 1.38$ ,  $t = .42$ ,  $p = .68$ , 95% CI =  $-5.16$  to  $7.91$ . The indirect effect of maternal anxiety on child anxiety as mediated by child maternal overcontrol was not significant,  $r^2 = .20$ . However, given that this is a more

sophisticated model with added variables, we may not have sufficient power.

Unstandardized results are presented in Figure 3.



## CHAPTER V

### DISCUSSION

This study examined the anxiety symptoms of children and mothers as well as overprotective parenting in a community sample of families from various backgrounds and with a wide-range of symptoms. Participants ranged from exhibiting minimal levels of anxiety to clinical levels, as expected. Additionally, mothers displayed low to high levels of overprotective parenting behaviors. These results replicated previous results that maternal anxiety and maternal overprotective behaviors are positively associated. This supports the idea that psychological symptoms are important in understanding parenting practices. The results, however, did not replicate an association between maternal anxiety and child anxiety or overprotective parenting behaviors and child anxiety. Additionally, overprotective parenting behaviors were not a mechanism for the association between maternal anxiety and child anxiety. In examining a more complex model, researchers took into consideration the differential effect that has been found in previous research for boys versus girls in the relationship between maternal anxiety and overprotective parenting and overprotective parenting and child anxiety. Additionally, the post hoc model took into consideration how overprotective parenting behaviors may have more of an effect on older children than younger children due to the less adaptive nature of protection for parents of older children. However, this model also did not produce significant results. While these results do not provide additional support for commonly

expected relationships, these results are similar to the inconsistent findings in previous research.

The intergenerational transmission of anxiety is commonly discussed and there are many widely accepted mechanisms contributing to this association, as displayed in the above model. However, it is difficult to study all of these mechanisms simultaneously. Therefore, current research breaks down this complex blueprint into simpler models. It may be that these smaller studies are missing out on the differential pathways that may lead to child anxiety. For example, if a parent models anxious behaviors to a high degree, parenting behaviors may be less important in the development of child anxiety for that family.

Additionally, as noted above, these links are thought to be bidirectional in nature. Studies at a single time-point or that have a short-term follow-up are not able to account for which behaviors preceded others and how that may have a differential impact on parent and child outcomes. This study takes a snapshot of these factors, which provides a foundation for continued research using theoretical estimates of directionality rather than the ability to parcel apart directionality empirically.

With regard to age, this study examined a restricted age range in order to pointedly examine how these factors may relate in the beginning of adolescence. Life changes such as increased autonomy during middle school years and the start of puberty are thought to play a role in the increased rates of anxiety during this time. However, this restricted age range may have made it more difficult to detect age effects within the sample. Expanding the age range would allow for a more thorough examination of how

these associations may differ in the years shortly preceding the onset of puberty and the transition to middle school as well as the few years following these changes.

An additional factor to consider when examining age is how these factors are studied. Most research utilizes observational and parent-report measures during early childhood and self- and parent-report measures in adolescence. The age range examined in this sample represents a transitional time in reporting. As displayed in previous research, there are differential effects expected with type of reporter. It may be that these associations would have been different if child-report or observational methods had been utilized.

The importance of these results lies in the evidence of a continued need for exploration of the gaps in the literature. This study is another example of the current state of the literature on the role of parenting on child anxiety. Further research is needed to address the gaps in the literature described above (e.g., type of reporter, definitions).

### **Clinical Implications**

As has been well-established, high levels of anxiety can have negative ramifications for those with the symptoms and their families. Examining anxiety during early adolescence is particularly important due to the increasing rates of anxiety that occur in adolescence (Merikangas et al., 2010). Research on etiology and correlates may help with early intervention or prevention of disordered anxiety. This may mitigate the financial and emotional cost of anxiety on families and individuals.

Research on the role of parenting also provides another potential outlet for aiding in anxiety treatment. Childhood anxiety is often treated through individual therapy. For example, Kendall's (1990) Coping Cat is a commonly utilized, individual, cognitive-

behavioral therapy for anxiety in which the child receives psychoeducation on anxiety and learns cognitive restructuring techniques before beginning gradual exposures of feared stimuli. This treatment has been shown to be efficacious in reducing anxiety in children and maintaining treatment gains (Kendall, 1994). While there is some integration of family (e.g., multiple parent sessions, parent workbook), there is not a focus on parental symptomology or potentially anxiety-enhancing parenting behaviors.

Most research on family-based interventions for children focuses on externalizing problems rather than internalizing problems. However, recent research has started investigating treating internalizing problems within this framework. For example, the FRIENDS program reflects the core interventions involved in individual therapy while maintaining parental involvement throughout the entire treatment (Shortt & Barrett, 2002). Parents practice skills with their child and with their partner. In a long-term study using FRIENDS as a prevention program, Barrett, Farrell, Ollendick, and Dadds (2006), found that younger children (i.e. 6<sup>th</sup> graders) had more significant long-term benefits from the treatment than older children (i.e. 9<sup>th</sup> graders). There is still much left to study with regard to the efficacy of family-based interventions for childhood anxiety. However, foundational research on topics such as age effects, may help to simplify and expedite this research.

### **Limitations and Strengths**

This study should be interpreted with consideration of several strengths and limitations. With regard to limitations, this study utilizes one type of reporter: mothers. This is particularly important when considering both parenting behaviors and child anxiety. As discussed above, parent self-report of parenting behavior may not fully

represent the actual behaviors and how the behaviors impact children. It should also be noted that multi-informant assessment is recommended in the assessment of child symptomology (Achenbach, McConaughy, & Howell, 1987). Including children as reporters of parenting behaviors and child anxiety may provide a clearer picture of the impact parenting may have on child outcomes.

Additionally, although this study represents a sample of families from across the nation, this study represents a primarily Caucasian sample. Some research suggests that there is a need to further examine how parenting may look differently within different cultures (Ortiz & Del Vecchio, 2013). It may be that certain cultural groups utilize differing parenting practices. When these behaviors are commonplace, they may have a differential impact on children than parenting practices that are out of the norm or extreme for the child's culture.

The demographics of this study also pose a strength. Much of the research reviewed in this study was conducted in other countries (e.g., the Netherlands). These results are thought to likely be comparable to results found in the United States. For example, one meta-analysis reported that the SCARED had strong reliability across samples from 19 different countries including the Netherlands (Runyon, Chestnut, & Burley, 2018). However, while past research has found comparable results in these countries as the United States, it is important to examine whether specific associations will replicate across different countries. Examining the same factors in different countries is a step in understanding potential cultural differences.

Another strength of this study is the inclusion of young adolescents. Much of the research on parenting focuses on early childhood or retrospective reports during

adulthood. While it is important to study parenting at all age ranges, this age group may be particularly important and underrepresented in the research. Even within the small age range examined in this study (i.e. 11-14 years of age), overprotective parenting and age were correlated with parents of younger children engaging in more overprotective parenting behaviors, exemplifying the importance of age.

### **Future Directions for Research**

This study highlights several directions for future research. It is always important to replicate studies and expand using different age ranges, reporters, and methods in order to determine whether results are consistent. A larger, more diverse sample may allow for analyses that take into consideration additional factors from broader models of childhood anxiety that may be influencing the factors included in the study.

Specific to child anxiety, more empirical research is needed to examine the factors and associations included in current models of child anxiety. As discussed above, although there is research on specific components, more research is needed to examine how these components are related. While simplified studies are important for foundational research, studies that combine more of these factors may help to identify different pathways to disordered anxiety.

Specific to parenting research, definitions of overprotection and overcontrol should be further examined in the research. While these are not the only parenting behaviors that have a significant amount of overlap, these constructs come up frequently when examining the role of parenting on childhood anxiety. Having clearer definitions that clarify the level of overlap with these constructs may help to hone in the research on these constructs.

Examining child-report of parenting and anxiety is important, particularly in early adolescence. This is a time when children are able to consistently report on personal internalizing symptoms and corresponds with a globally transitional period. Not only does the reporter issue bring up the concern about accuracy of reporting but also how perception may be impactful. For example, even if parents are displaying relatively typical levels of overprotective parenting, if a child perceives higher levels of overprotection this may lead to more anxious symptomology as opposed to a parent displaying high levels of overprotective parenting that the child does not perceive as being atypical. Including child- and parent-report of these factors may help clarify some inconsistencies in the literature.

### **Conclusion**

In conclusion, child anxiety is complex and additional research is necessary for understanding the nuances involved. Many of the associations that would be expected in the Developmental Model of Childhood Anxiety (Ginsburg & Schlossberg, 2002) were not supported in this specific study. Specifically, the association between parent anxiety and child anxiety as well as the association between overprotective parenting behavior and child anxiety. The association between maternal anxiety and overprotective parenting behaviors, however, was found to be significant, indicating that anxious mothers may engage in more overprotective parenting behaviors. Thus, parenting should be addressed as a key factor in continued research on anxiety. This study took on a crucial age range of early adolescence to further address the age gap in the literature. However, further research is necessary to expand on current findings.

Clear definitions of overcontrol and overprotection, further examination of age and gender, and diverse studies are necessary for expanding off of these results. Once our current models of childhood anxiety have fuller empirical support, prevention and intervention programs will have increased leverage for improving efficacy and efficiency. Through the integration of research, rates of childhood anxiety may decrease in future generations.



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## APPENDICES

## APPENDIX A

### TABLES

Table 1. *Demographics*

Variable	N = 76 (%)
<i>Caregiver</i>	
Biological Mother	74 (97.4)
Step-Mother	2 (2.6)
<i>Annual Household Income</i>	
\$15,000 or less	6 (7.9)
\$15,001 - \$35,000	14 (18.4)
\$35,001 - \$55,000	17 (22.4)
\$55,001 - \$75,000	20 (26.3)
\$75,001 - \$95,000	8 (10.5)
\$95,001 - \$115,000	6 (7.9)
\$115,001 - \$135,000	3 (3.9)
>\$135,001	2 (2.6)
<i>Marital Status</i>	
Married	43 (56.6)
Living with partner	6 (7.9)
Divorced	15 (19.7)
Single/Never married	12 (15.8)
<i>Child Sex</i>	
Girl	42 (56)
Boy	33 (44)

Table 2. Zero-order Correlations

Measure	Child's Age	Child's Sex	DASS Anxiety	PBI Overprotect
1. Child's Age	--			
2. Child's Sex	-.21	--		
3. DASS Anxiety	-.21	.03	--	
4. PBI Overprotect	-.29**	.24*	.37**	--
5. SCARED Total	.12	.02	.21	.10

Note: \*  $p < .05$ , \*\* $p < .01$



APPENDIX B

FIGURES

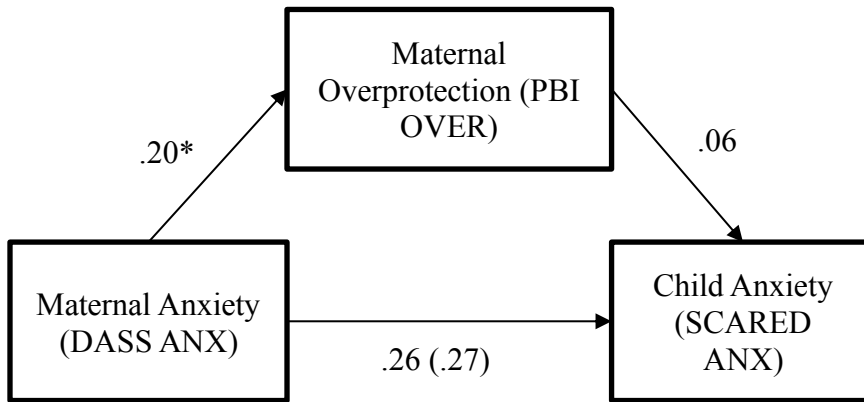


Figure 1. Overprotection mediation parent and child anxiety.

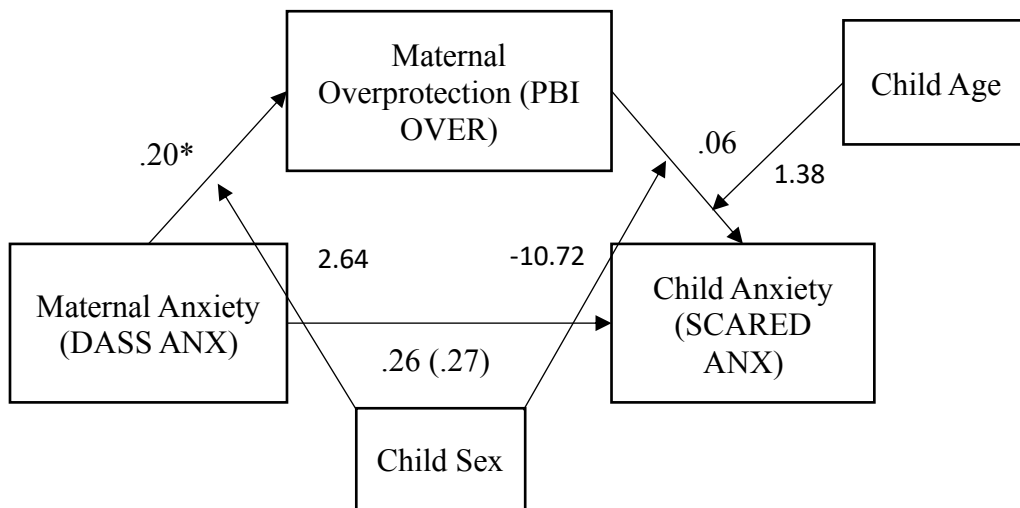


Figure 2. Child sex and age moderating the mediation model.

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