

Longitudinal association between maternal response to child emotion and child regulation of  
anger and worry

by

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## **Abstract**

The importance of children's emotion regulation skills has been well documented. The healthy management of emotion in children is related to numerous positive outcomes—both short-term and long-term—such as reacting better to stress, preventing and handling various problems, and effectively engaging in peer relationships. Conversely, poor emotion-related skills have been linked with a myriad of negative outcomes, such as poor social competence, and have been linked to externalizing and internalizing behaviors, and been identified as a transdiagnostic risk factor in the development of various psychopathological disorders.

Parenting has been shown to have a powerful influence on the development of children's healthy emotion management. Children learn about emotions and the skills related to them through both explicit (e.g., overt discussions) and implicit (e.g., observations of parent's behaviors) means. Since parents play such a crucial role in how children learn about emotions and the strategies they use to manage them, it is important that we examine the behaviors parents engage in in response to various child emotions and how those responses are related to child management of different emotions.

This study explored the longitudinal association between maternal response to child emotion and child regulation of anger and worry. The sample consisted of 112 children and 112 mothers at two different time points (Wave 1 = 1<sup>st</sup> grade, Wave 5 = 4<sup>th</sup> grade). All data came from the Families and School for Health (FiSH) dataset. A correlation was conducted followed by two multiple regressions. Mother punitive reactions at Wave 1 was found to be significantly correlated with overall child report of anger at Wave 5. Mother minimization reactions at Wave 1 was found to be significantly correlated with overall child report of worry. Overall Child Report

of Anger at Wave 5 was correlated significantly with Overall Child Report of Worry at Wave 5. Mother's punitive, minimization, and distressed reactions were likewise found to significantly correlate with one another. When including the three non-supportive maternal responses and the control variables, only punitive reactions in Wave 1 was found to be significantly associated with increased child dysregulation of anger at Wave 5. When including the three non-supportive maternal responses and the control variables, only mothers' minimization reactions in Wave 1 was found to be related to increased child dysregulation of worry at Wave 5.

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## **Dedication**

To my partner in everything, Conrad. I had forgotten how to fly before I met you. Now, thanks to you, I soar.



## Chapter 1 - Introduction

The healthy management of emotion in children is related to many positive child outcomes—both short- and long-term. For example, children who have better developed emotional regulation skills have been shown to also react better to stress (Zimmer-Gembeck et al., 2017). This is perhaps because coping with stress can be seen as regulation while under stress, an action that relies heavily upon regulatory (including emotional) responses. Clear arguments have been made for the connection between emotion skills (particularly emotion regulation) and coping in various forms. Similarly, emotion regulation skills can be used as a resource to both prevent and assist with various problems (Aznar & Battams, 2022; De Raeymaecker & Dhar, 2022). One such example of this is the link between adaptive emotion-related skills and better social competence, which allows children to effectively engage in peer relationships (Cooke et al., 2019). These skills presumably develop as children do. As children mature, their emotion-regulation skills become more and more internalized: recognizing the origin of emotions, developing a sense of agency toward them, gaining an ability to recognize and name emotions without the help of caregivers, understanding the experience of mixed emotions, discovering the differences between internally felt and externally displayed emotions, gaining an awareness of the social context surrounding emotions, improving in emotion regulation capacities, and learning to deal with emotions autonomously (De Raeymaecker & Dhar, 2022). These skills come in stages, with each developmental period holding immense potential in terms of social and internal growth.

Numerous studies have found that poor emotion regulation skills in children leads to adverse outcomes. Poor emotion-related skills have been linked with poor social competence, potentially impacting a child's ability to create and maintain relationships with others (Cooke et

al., 2019). Poor emotion regulation (too little, dysregulated, and/or excessive positive emotions) has been identified as a transdiagnostic risk factor in the development of various psychopathological disorders (Bariola et al., 2011; Berking & Wupperman, 2012; Breaux et al., 2022; De Raeymaecker & Dhar, 2022; Goagoses et al., 2022). Additionally, Jugovac et al. (2022) state that significant adverse outcomes across the developmental span may occur if child externalizing behaviors and internalizing behaviors are left untreated. These include such risks as mental health problems, academic difficulties, and problems related to employment later in life.

Parenting has been shown to have a strong influence on children's development of healthy emotion management (Aznar & Battams, 2022; Breaux et al., 2022; Cooke et al., 2019; De Raeymaecker & Dhar, 2022; England-Mason & Gonzalez, 2020; Goagoses et al., 2022; Jugovac et al., 2022; Morris et al., 2007; Morris et al., 2017; Zimmer-Gembeck et al., 2017). Children learn about emotions and develop skills related to understanding and managing emotions through both explicit (e.g., parent-child discussions related to emotions, teaching children strategies to deal with certain emotions) and implicit (e.g., observations of how parents deal with their own emotions or with similar emotional experiences) means (De Raeymaecker & Dhar, 2022). Furthermore, emotion-focused parenting practices can be grouped into three sets of parenting behaviors: instructing about emotions, responding to children's emotions, and modeling emotions. These all contribute to child emotion skills: emotion regulation, emotion expression, and emotion knowledge (Zinsser et al., 2021).

Given the influential relationship parenting has on a child's understanding and management of emotions, there is a need for research to advance what we know about the influence of parenting on children's experience of different emotions. While a large body of cross-sectional research highlights the maladaptive influences on child poor emotional regulation

skills, fewer longitudinal studies have examined the specific influences in the development of healthy emotion regulation. Similarly, additional research is needed regarding the management of specific emotions, as this seems to be largely ignored in much of the present research. It would be important to gain a deeper understanding of how parent specific response to child emotion predicts how children manage anger and worry. In short, a more nuanced understanding is needed of how different parent responses to child emotion might affect child management of different emotions over time.

Research in this area could equip parenting educators and human service professionals with the knowledge to support parents in understanding the implications of how their response to their child's different emotions is related to later child emotion regulation. To this end, this paper seeks to determine the relation between parental response to child anger and worry (first grade) and later child management of emotion (fourth grade).

## Chapter 2 - Literature Review

### Emotional Competence

Emotions can be considered a universal experience that serve a myriad of important purposes. On a more primitive and/or biological level, emotions act as a swift response to the environment around us. That is, we can often experience emotions like fear, joy, and anger in a split-second, before we cognitively recognize the cause of these emotions. Additionally, emotions serve to carry meaning (Cooke et al., 2019). It could be accurate to envision emotions as a sort of lens that aids us in recognizing not only our current context, but in quickly recognizing how we should respond. On a more nuanced level, emotions are also considered foundational when it comes to our relationships with others. Our happiness, fear, and anger help us to determine those we wish to spend more or less time with, signal how we should interact with individuals, and are an important piece of bonding with others. As De Raeymaecker and Dhar (2022) define it, emotion competence can be thought of in terms of emotion regulation, emotion dysregulation, and low emotion lability. *Emotion regulation* includes both intrinsic and extrinsic processes in terms of *monitoring*, *evaluating*, and *modifying* emotional reactions (Berking & Wupperman, 2012; Cooke et al., 2019; Goagoses et al., 2022). Further, it is not the goal of emotion regulation to reject more difficult or “negative” emotions, but to experience and express these emotions in a manner most appropriate for the environment (Aldao, 2013). As might be expected given the name, *emotion dysregulation* refers to efforts to control emotions that are ineffective and/or insufficient. Finally, *emotion lability* is seen as both sensitivity to emotion-arousing stimuli (i.e., *reactivity*) as well as difficulty recovering from emotional arousal, resulting in a longer period of emotional arousal (De Raeymaecker & Dhar, 2022). Low emotion lability, predictably, can be seen as the inverse. As England-Mason and Gonzalez (2020)

summarize, the goal of increasing emotion competence is for children to engage in “emotional self-soothing, regulating negative affect, and focusing attention” (England-Mason & Gonzalez, 2020, p. 99). In short, emotion competence is defined using a variety of elements of both regulation (especially as opposed to dysregulation) and low emotion lability. This understanding is important as emotion competence has been found to have a myriad of benefits. Meta-analytic findings demonstrate emotion regulation to be a protective factor for both externalizing and internalizing behaviors (Jugovac et al., 2022).

### **Emotion Regulation**

Goagoses and colleagues (2022) define self-management of emotions to include emotion recognition, awareness, monitoring, appropriate expression, and modification through several types of strategies (Goagoses et al., 2022, p. 2). Essentially, emotion management includes recognizing, understanding, and expressing emotions as well as the ability to engage in efforts to soothe and/or regulate oneself in more distressed states. More specifically, some strategies that children who have been found to more frequently manage their emotions may utilize are problem-solving, considering the emotions of others, relying on social support, talking about their emotions (and their causes), engaging in grounding exercises like deep breathing, alleviating distress, or practicing calm and reflective coping (Breux et al., 2022; Cooke et al., 2019; De Raeymaecker & Dhar, 2022; England-Mason & Gonzalez, 2020; Morris et al., 2007; Zimmer-Gembeck et al., 2017). Cooke and colleagues (2019) note that it appears that “children may also engage in active efforts to regulate their experiences of emotion” (Cooke et al., 2019, p. 1104). Thus, the regulation of emotions should empower children to engage in calm and reflective coping and encourage them to problem-solve when managing stressors.

### **Parenting and Child Emotion Competence**

Much of the present research indicates that parents have the strongest influence on their children's development of emotion management. Parents play a primary role in helping children learn about emotions (e.g., what they are, how we handle them, how they are demonstrated, if certain emotions are "acceptable" or not). Parent emotion socialization behaviors are how parents teach children to understand, express, and regulate emotions (Breux et al., 2022). These behaviors are not limited to explicitly discussing emotions with children, but also include how parents interact with their own emotions (recognition, expression, regulation), as well as how they react to their child's emotions (Breux et al., 2022; De Raeymaecker & Dhar, 2022). This is especially important when considering the crucial role parents play in their children's emotional and social development, especially in early childhood (Aznar & Battams, 2022; Bariola et al., 2011; Breux et al., 2022; De Raeymaecker & Dhar, 2022; England-Mason & Gonzalez, 2020; Morris et al., 2007; Morris et al., 2017).

A variety of parenting influences have been found to be influential in child development of emotion management. Children have been found to struggle with emotion regulation if their parents use physical punishment and authoritarian control (Balan et al., 2017; Coplan et al., 2009; Goagoses et al., 2022; Gülseven et al., 2018; Liu, 2020; Morris et al., 2007; Shaw & Starr, 2019; Skinner et al., 2005; Wang & Qi, 2017; Wang & Wang, 2018) or if their home environment was disorganized and chaotic (Bridgett et al., 2015; De Raeymaecker & Dhar, 2022; Goagoses et al., 2022; Hong et al., 2019; Skinner et al., 2005). Aznar and Battams (2022) founds that caregivers' perceived level of warmth (as reported by their children) positively influenced the emotion regulation skills of their children, with them modeling effective emotion regulation behaviors after their caregivers. Importantly, they found that self-reported parenting dimensions did not predict child emotion regulation skills and that children did not model

ineffective emotion regulation skills after their caregivers. In short, children's perceptions of parenting may be more important to emotion regulation than what caregivers report doing. De Raeymaecker and Dhar (2022) found that physical punishment and authoritarian control predicted poorer child emotion regulation and poorer psychological adjustment years later. Oloye and Flouri (2021) found that being raised in a noisy, crowded, and disorganized environment in early and middle childhood had a negative effect on children's ability to engage in emotion regulation.

In a review of prior research, Goagoses et al. (2022) reviewed seven articles that included a longitudinal design (ranging from six months to four years) in various countries. They specifically examined positive and negative parenting dimensions and styles and the impact these had on emotion dysregulation. Generalized positive parenting dimensions and styles including parental warmth, autonomy support, authoritative parenting, and supportiveness have been found to have a direct negative effect on concurrent emotion lability during childhood. In contrast, generalized negative parenting, such as parental (maternal) rejection, parental coercion (psychological control), parental chaos, authoritarian parenting, harsh parenting, corporal punishment, and permissive parenting is associated with emotion dysregulation during adolescence (see Goagoses et al., 2022 for a review).

Cooke and colleagues (2019) found a number of parenting behaviors were related to child emotional competence including using more elaborative and descriptive language related to emotions, better modeling during emotional experiences, greater insight, better ability to predict their child's emotional needs, more sensitive attunement, scaffolding of emotional strategies, and providing a secure base and safe haven (which will allow children to feel comfortable seeking out social support in times of distress) (Cooke et al., 2019). In fact, much of the research

suggests that parent direct response to child emotion has been found to be one of the most important parenting factors on child development of emotion regulation (Breux et al., 2022; Cooke et al., 2019; De Raeymaecker & Dhar, 2022; Goagoses et al., 2022; Jugovac et al., 2022; Morris et al., 2007; Morris et al., 2017).

### **Parent Socialization of Emotion Theory**

Eisenberg et al. (1998) suggested the theory of “parent socialization of emotion” to better understand the role that caregivers play in their children’s development of emotion-related skills. This theory states that through socialization behaviors, caregivers play a critical role in helping children’s “understanding, experience, expression, and regulation of emotion” (Eisenberg et al., 1998, p. 241). These behaviors include various reactions to children’s emotions, how caregivers talk about emotions, and how caregivers experience/express their own emotions. This theory posits that parental response to child emotion is of great importance as it is one of the primary ways in which children learn about emotions and—therefore—gain mastery of emotion-related skills (Eisenberg et al., 2020; Peisch et al., 2020).

### **Attachment Theory**

Numerous empirical findings have suggested the connection between secure attachment and the development of emotion regulation skills. This is perhaps unsurprising when one considers the myriad ways and realms in which secure parent-child attachment relationships positively impact the wellbeing of a child (e.g., cognitive, language, socio-emotional; Bowlby, 1998; Brumariu, 2015; Cassidy, 1999; Cooke et al., 2019; De Reymaecker & Dhar, 2022; Mistry et al., 2010; Morris et al., 2007; Thompson, 2000; Zimmer-Gembeck et al., 2017). Bowlby (1988) suggests that maternal supportiveness is acutely connected to the developmental processes inherent in the management of children’s emotions (Thompson & Goodwin, 2007). In



fact, Ainsworth proposed that maternal sensitivity to an infant's signals serves as the primary determinant of attachment security (Pederson et al., 2014). Further, supportive parenting—which is critically linked to forming secure attachments—is associated with stronger social-emotional connections, allowing the child even more opportunities to learn and grow in social and emotional skills (Brophy-Herb et al., 2013; Davis & Logsdon, 2011; Morris et al., 2007). These data examine both the longitudinal and cross-sectional impact of attachment on a child (Cooke et al., 2019; Jones et al., 2014; Zimmer-Gembeck et al., 2017). These studies provide strong evidence for a connection between attachment and children's emotion regulation. Given the importance of attachment—and the parental supportiveness that seems intrinsically linked to it—it is only natural to closely examine how parental supportiveness (and unsupportiveness) might occur in response to children when in distress and the eventual impact this may have on them.

### **Parent Response to Child Emotion and Child Emotion Regulation**

Parent direct response to child emotion has been found to have a major impact on children's ability to regulate emotion (Breux et al., 2022; Gülseven et al., 2018). Aznar and Battams (2022) examined relations between children's perceived parenting dimensions, their caregivers' self-reported parenting dimensions, and children's emotion regulation. Their findings suggest that only perceived caregiver warmth influenced positive emotion regulation strategies (cognitive reappraisal) and that reported use of positive emotion regulation strategies influenced their children's same strategies while caregivers' use of emotional suppression did not influence their children's use of this same strategy. Crespo and colleagues (2017) found that difficulties in maternal emotion regulation were significantly associated with difficulties in children's emotion regulation. Additionally, they found that maternal difficulties with emotion regulation and a lack of emotional awareness were significantly associated with both internalizing and externalizing

problems in children. Finally, their study found indirect associations between children's emotion regulation difficulties or negativity and maternal emotion regulation difficulties and child behavior problems.

Numerous studies have examined emotional regulation from a longitudinal perspective. This literature includes various ages and developmental stages of children. From these studies, several themes emerge. Firstly, maternal attitudes and behaviors are considered far more often (August et al., 2015; Bozicevic et al., 2016; Brenning et al., 2015; Brophy-Herb et al., 2013; Halligan et al., 2013; Richter et al., 2022) than their paternal counterparts (Bockneck et al., 2014). Some of the maternal factors that were found to make a difference in children's emotional regulation were maternal rejection (Di Giunta et al., 2022), aggression (August et al., 2015; Bozicevic et al., 2016), supportive vs. non-supportive parenting strategies and responses (Bozicevic et al., 2016; Brenning et al., 2015; Brophy-Herb et al., 2013), autonomy support (Brenning et al., 2015), warmth (Richter et al., 2022), and orientation to emotion (Tao et al., 2022). While a lot of literature supports the influence parents have on children's development of emotion regulation skills, the specific ways in which emotion-focused parenting practices impact these skills has been found to be lacking (Zinsser et al., 2021).

What seems to be lacking in the literature is more of a direct focus on parental response to child emotion and the impact this may have on the child's emotion regulation abilities, from a longitudinal perspective. Findings that did emerge from the existing literature, however, tended to be consistent, specifically when considering parental supportiveness/reactions in the face of their child's distress. Bozicevic et al. (2016) sought to determine what (if any) the influence culture might play on parenting practices, child aggression, and child emotion regulation. In addition to this, they examined the role of parenting in child emotion regulation. Specifically,

this study examined both effective maternal reactions to child (3-months and 2-years) distress (such as physical soothing and social soothing), and noneffective responses (such as dismissal of distress). Results found that maternal strategies when responding to the infant's distress tended to differ by culture and predicted later (2-year-old) child emotion regulation. When mothers acknowledged and responded to infant distress (especially using social soothing), children would later utilize active emotion regulation strategies. When infant distress was ignored or responded to in a non-soothing way, children were more likely to be passive when later facing frustration. Similarly, Breaux et al. (2018) found supportive vs. non-supportive parenting practices for 8 to 12 years old children to have a significant impact on both child emotion regulation and levels of emotional lability a year later. They defined supportive practices as reactions that encouraged expressiveness, were focused on emotions, and/or focused on problems. Non-supportive practices were qualified as punitive and/or minimizing reactions. While they did not find significant results when examining non-supportive practices, supportive practices held a significant negative correlation with emotion lability and a significant positive correlation with emotion regulation. Additionally, it was found that parents' use of more supportive emotion socialization could significantly predict stronger emotion regulation a year later. Finally, Brophy-Herb and colleagues (2013) also examined longitudinal connections between both maternal supportiveness when children were 14-, 24-, and 36-months and toddler emotion regulation. They found a positive correlation between maternal supportiveness and children's emotion regulation skills. Although the research shows that parent response to child emotion is associated with later child regulation of emotion, much of this research is focused on young children in the ages of infancy or toddlerhood and in many cases fails to examine how parenting may affect child regulation of different emotions (i.e., sadness, anger, fear) differently.

## **Control Variables**

Child sex, child race, and household income have been shown to be related to parent response to child emotion and to child regulation of emotion. In their longitudinal study, Peisch and colleagues (2020) found a significant difference in sex (both of the parent and of the child) between socialization of engagement coping and child adaptive emotion regulation. Differences based on sex have been common throughout various studies and indicate a difference in socialization based on child sex, such as encouraging emotional expressiveness in girls (Brophy-Herb et al., 2013; Liu et al., 2020). Likewise, male children have been found to have greater emotion lability than female children (Breax et al., 2017; Brophy-Herb et al., 2013; Liu et al., 2020) and female children were frequently found to engage in more types of emotion regulation strategies, use coping strategies more frequently, and to have higher levels of emotion regulation (Brophy-Herb et al., 2013; Liu et al., 2020; Peisch et al., 2020). Based on the impact sex may have on both mother's response to child emotion and to child's emotion regulation skills, this study likewise controlled for child sex (1=female, 0=male). Bozicevic et al. (2016) and Liu et al. (2020) found that the race and ethnicity of primary caregivers are often correlated with specific parental reaction (such as styles of discipline) and child emotion regulation. Because of the difference culture has been found to have, this study controlled for child race (1=white, 0=minoritized identity). I included household income as a control due to research indicating differences in the relation between parenting and child emotion regulation by household income, especially when reflecting upon the multiple stressors related to poverty (Breax et al., 2017; Brophy-Herb et al., 2013; Liu et al., 2020; Mesquita & Albert, 2007; Peisch et al., 2020). Finally, I chose to examine only mothers and children in this study due to vastly different respondent rates of parents as well as the abundance of research supporting the importance of maternal

reaction to child distress. Though there is certainly room to consider other types of caregivers (e.g., fathers, grandparents, stepparents, foster families), this study should serve as a solid foundation.

### **Summary and Hypotheses**

A large body of literature supports the key role of parenting in a child's development of emotional management. Many studies highlight the importance of the parent-child relationship in terms of attachment and the impact various attachment styles and/or attachment-focused parenting interventions may play in a child's emotion regulation. This is especially true of mothers. Specifically, much of the literature correlates more secure attachments with better regulation of emotions, more positive affect, and coping (Cooke et al., 2019; Goagoses et al., 2022; Jugovac et al., 2022; Zimmer-Gembeck et al., 2017). Another common theme throughout literature is the key role parenting appears to play in the development of emotional regulation skills. As many authors and researchers point out, the parent-child relationship is often the most significant form of social interaction in a young child's life (especially from a developmental perspective). Considering how much social/emotional development occurs during this time (particularly infancy to preschool age), it is not surprising that parents play such a significant role in helping children learn how to manage emotions (Breux et al., 2022; De Raeymaecker & Dhar, 2022; England-Mason & Gonzalez, 2020).

A general limitation of most of the examined literature is a lack of longitudinal research examining parent emotion socialization behaviors and their impact on children over time (Breux et al., 2022; De Raeymaecker & Dhar, 2022; Goagoses et al., 2022). While there are myriad longitudinal studies exploring various parenting practices and aspects such as attachment on later emotion regulation, there is a gap in the literature when considering *direct* parental responses to

their children's various emotions and the impact this may have on later emotional regulation.

When such studies *could* be found, they tended to focus almost exclusively on either infancy/toddlerhood or adolescence/emerging adulthood with little attention to parent response to child emotions during the preschool or middle childhood developmental periods.

Developing a greater understanding of the parent-responses to child emotions that are associated with child long-term emotion regulation is central to healthy child development. They have implications for later adult functioning including the tendency to engage in emotional dismissal/invalidation in emerging adulthood and low trait emotional intelligence (Aldea & Rice, 2006; Armstrong et al., 2011; Sheppard & Hicks, 2017), negative beliefs about emotions (Rimes & Chalder, 2010; Sydenham et al., 2017; Tran & Rimes, 2017; Westphal et al., 2016), emotional suppression (Bergman et al., 2007; Dagleish et al., 2009; Dunkley et al., 2000; Gross & John, 2003; Krause et al., 2003; Richards & Gross, 1999; Sauer & Baer, 2010; Sydenham et al., 2017; Tran & Rimes, 2017; Trinder & Salkovshis, 1994; Westphal et al., 2016). Addressing emotional skills would be beneficial for the child both in the present and in the future. To most effectively do so, we must first better understand how parent response to children's emotions shapes their management of different emotions. Because much of the literature regarding parent-child emotion interactions tends to focus more primarily on supportive responses and/or positive emotions, I will specifically be examining non-supportive reactions of mothers toward children and the emotions of anger and worry, though future research would certainly do well to consider both supportive and non-supportive parental reactions concurrently as well as multiple forms of emotions.

Based on the literature, my research will test the following hypotheses:

1. Maternal unsupportive response to child emotion when children are in first grade will be significantly associated with poorer emotion regulation of anger when children are in fourth grade.
2. Maternal unsupportive response to child emotion when children are in first grade will be significantly associated with poorer emotion regulation of worry when children are in fourth grade.

## Chapter 3 - Methods

### Participants and Procedures

Data for this study were collected from the Families and School for Health (FiSH) project. This longitudinal study took place in 20 rural towns in Oklahoma. The rural sample is important as there is a lack of research in this area among rural families (Strijker et al., 2020). Children from 29 public schools were recruited in the falls of 2005 and 2006 (for a total of 1171). Children participated in hour-long interviews during the first four months of and at the end of the child's first grade year (Waves 1 & 2). Children were contacted again to complete follow-up individual interviews during the spring of their second (Wave 3), third (Wave 4), and fourth grade (Wave 5) years. These interviews took place during regular school hours. Interviews included a range of topics including child relationships with peers, depression, behaviors around eating and activity, body image, peer teasing and bullying, and emotion regulation. From the child interviews only child emotion regulation will be used in this study. Parents completed questionnaire packets at each wave of the study. Parents completed items on a variety of topics including food parenting, parenting styles, parent response to child emotion, parent depression, and parent perceptions of child health and body weight. Only data related to parent response to child emotion were used in this study. No siblings were included in this study. Questionnaire packets were sent home with children from school, and parents returned completed questionnaires via the mail. Parents were paid \$US 20 for completing questionnaires. Parent questionnaire packets included items measuring a number of variables related to child physical, mental, and emotional health and to parenting practices and styles. Of interest to this study were items related to emotional health and parenting practices and styles. The sample for this study includes those for whom we had parent questionnaire data at Wave 1 and child data at Wave 5



(n=130). Because there was only one father in the sample, the decision was made to focus exclusively on mothers. The decision to use Wave 5 data was due to the more acceptable alpha levels for the child regulation scales when compared to Wave 4. Additionally, child's self-report answers in Wave 5 were likely more accurate as older children likely have greater awareness of their own emotions. The protocol and procedures of the FiSH project were approved by the Institutional Review Board for Human Subjects and complied with the US Health Insurance Portability and Accountability Act (HIPAA) guidelines regarding the protection of the privacy of health information.

The sample used in this study consisted of 130 children; self-reported demographic information was available for 112 of participating children. The ethnicity distribution for these children was: 75.5% Caucasian, 20.9% Native American, 2.7% Hispanic, and .9% Multiethnic. 70 (62.5%) of the children were male while 42 (37.5%) were female. Income information was included for 112 parents and widely varied, with 23.8% of participants earning \$0-999, 29.4% earning \$1000-2499, 21.1% earning \$2500-3999, and 25.7% earning \$4000 or more per month.

## **Measures**

### *Parent response to child emotion*

The Child Coping with Negative Emotion Scale (CCNES) was used to measure mother response to child negative emotion (Fabes et al., 2002). The CCNES is widely used in family science research as an effective way to measure parent response (supportive or non-supportive) to child negative emotion. It presents parents with hypothetical scenarios in which the child gets upset or angry along with six potential parent responses to each scenario. Parents are asked to indicate the degree to which they would respond in each way to each scenario. Three of the responses fall under the category of supportive (problem-focused, emotion-focused, expressive

encouragement) and three fall under the category of non-supportive (minimization, punitive, distress). For the purpose of my study, I will be utilizing the non-supportive responses of minimization (e.g., *“If my child becomes angry because he/she is sick or hurt and can’t go to his/her friend’s birthday party, I would tell my child not to make a big deal out of missing the party”*), *“If my child falls off his/her bike and breaks it, and then gets upset and cries, I would tell my child that he/she is over-reacting”*), punitive reactions (e.g., *“If my child loses some prized possession and reacts with tears, I would tell him/her that’s what happens when you’re not careful”*), *“If my child is afraid of injections and becomes quite shaky and teary while waiting for his/her turn to get a shot, I would tell him/her to shape up or he/she won’t be allowed to do something he/she likes to do (e.g., watch TV)”*), and distress (*“If my child is going over to spend the afternoon at a friend’s house and becomes nervous and upset because I can’t stay there with him/her, I would feel upset and uncomfortable because of my child’s reactions”*), *“If my child is participating in some group activity with his/her friends and proceeds to make a mistake and then looks embarrassed and on the verge of tears, I would feel uncomfortable and embarrassed myself”*). A Likert scale is used to measure the range of response options (1 = very unlikely, 4 = medium, 7 = very likely). Higher scores indicated more unsupportive responses (Fabes et al., 1990). Internal consistency was strong for each of the three subscales (minimizing  $\alpha=.781$ , punitive  $\alpha=.703$ , distress  $\alpha=.679$ ).

### *Child emotion regulation*

The Children’s Emotion Management Scale (CEMS) was used as a measure of children’s self-reported emotion regulation (Zeman et al., 2001). The CEMS is typically used to measure a child’s ability to emotionally regulate anger (11 items), sadness (12 items), and worry (10 items) (Ogbasele et al., 2022). To reduce participant burden, only the anger and worry scales were

included in the Wave 5 assessment. Children were asked when in situations that would evoke anger or worry how often they responded with various strategies. Their strategies were defined as anger inhibition (e.g., “*I hold my anger in*”), anger dysregulation (e.g., “*I do things like slam doors when I am mad*”), anger coping (e.g., “*I can stop myself from losing my temper*”), worry inhibition (e.g., “*I hide my worried feelings*”), worry dysregulation (e.g., “*I can’t stop myself from acting really worried*”), and worry coping (e.g., “*I talk to someone until I feel better when I’m worried*”). A 3-point scale and bar graph poster were utilized to help children indicate how often they employed said strategies (1 = hardly ever, 2 = sometimes, 3 = often). Higher scores were associated with less emotion regulation on all measures except for coping (for which the reverse was true). Coping with emotion items were reverse coded and a composite anger regulation scale was created by averaging the 11 associated items ( $\alpha=.728$ ). A worry regulation score was similarly derived ( $\alpha=.689$ ).

The demographic questions included items related to both mother and child age; race; and parent education, income, and occupation. All demographic data was collected during Wave 1 of the original study.

**Table 1***Variable Descriptive Statistics*

All	Mean	Standard Deviation	Skewness	Kurtosis
Child Regulation of Anger (W5)	1.80	.24	.09	-.05
Child Regulation of Worry (W5)	1.78	.27	.30	-.13
Mother Punitive Reactions (W1)	1.88	.40	.51	.03
Mother Minimization Reactions (W1)	2.13	.48	.57	-.23
Mother Distressed Reactions (W1)	2.15	.43	.11	-.66

**Analysis**

Pearson product moment correlations were computed to see if there was a significant correlational relationship between variables. In order to test the hypotheses, two multiple regression analyses were conducted; the first, regressing the child anger dysregulation variable onto the three maternal non-supportive response variables (i.e., punitive, minimizing, and distress), and the second, regressing the child worry dysregulation onto the maternal non-supportive response variables. As previously stated, child sex, child race, and household income were included as controls due to the impact these factors may have on the results.

## Chapter 4 - Results

### Preliminary Analyses

First, a Pearson product moment correlation was computed among variables to see if significant correlational relationships between variables could be found. Mother punitive reactions at Wave 1 was found to be significantly correlated with overall child report of anger at Wave 5 ( $r = .198, p = .037$ ). Mother minimization reactions at Wave 1 was found to be significantly correlated with overall child report of worry ( $r = .236, p = .012$ ). Additionally, Overall Child Report of Anger at Wave 5 was correlated significantly with Overall Child Report of Worry at Wave 5 ( $r = .287, p < .001$ ). Finally, mother's punitive, minimization, and distressed reactions were likewise found to significantly correlate with one another (see Table 2).

**Table 2***Bivariate Correlations of Predictor, Criterion, and Control Variables.*

Variables	1	2	3	4	5	6	7	8
1. Overall Child Report of Anger (W5)	--							
2. Overall Child Report of Worry (W5)	.287**	--						
3. Mother Punitive Reactions (W1)	.198*	.136	--					
4. Mother Minimization Reactions (W1)	.082	.236*	.609**	--				
5. Mother Distressed Reactions (W1)	-.022	-.034	.448**	.297**	--			
6. Child Race	.024	-.084	.046	.031	.018	--		
7. Child Gender	-.037	.060	-.118	-.016	.104	.003	--	
8. Parent 1 household income per month before taxes	-.060	-.076	.092	.069	.065	.062	-.018	--

Note. Child Gender – Male = 1 and Female = 2. Child Race – White = 1 and Other = 0. \*indicates  $p < .05$ .

\*\*indicates  $p < .01$ .

### Regression Analyses

Two multiple regression analyses were then computed. The model regressing child regulation of anger onto the three maternal non-supportive response variables (i.e., punitive, minimizing, and distress) was non-significant ( $R^2 = .075$ ,  $F(1.354)$ ,  $p = .241$ ). When including the three non-supportive maternal responses and the control variables, only punitive reactions in Wave 1 was found to be significantly associated with increased child dysregulation of anger at Wave 5 ( $b = .20$ ,  $\beta = .34$ ,  $p = .012$ ).

The model regressing child regulation of worry onto the maternal non-supportive response variables was also not significant ( $R^2 = .093$ ,  $F(1.717)$ ,  $p = .125$ ). When including the three non-supportive maternal responses and the control variables, only mothers' minimization reactions in Wave 1 was found to be related to increased child dysregulation of worry at Wave 5 ( $b = .15$ ,  $\beta = .25$ ,  $p = .048$ ).

**Table 3**

*Regression Results Predicting Overall Child Report of Anger*

Variable	B	SE	t	p
(Constant)	1.674	0.158	10.601	< .001
Mother Punitive Reactions (W1)	0.199	0.078	2.559	0.012
Mother Minimization Reaction (W1)	-0.046	0.063	-0.732	0.466
Mother Distressed Reactions (W1)	-0.610	0.059	-1.029	0.306
Child Gender	-0.009	0.047	-0.183	0.855
Child Race	0.013	0.052	0.253	0.801
Household Income	-0.004	0.007	-0.488	0.626

*Dependent Variable:* Overall Child Report of Anger (W5).

*Note.* Child Gender – Male = 1 and Female = 2. Child Race – White = 1 and Other = 0.

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

**Table 4***Regressions Results Predicting Overall Child Report of Worry*

Variable	B	SE	t	p
(Constant)	1.652	0.181	9.107	<.001
Mother Punitive Reactions (W1)	0.041	0.089	0.463	0.644
Mother Minimization Reaction (W1)	0.145	0.073	2.000	0.048*
Mother Distressed Reactions (W1)	-0.099	0.068	-1.465	0.146
Child Gender	0.050	0.054	0.912	0.364
Child Race	-0.064	0.060	-1.068	0.288
Household Income	-0.009	0.008	-1.050	0.296

*Dependent Variable:* Overall Child Report of Worry (W5)

*Note.* Child Gender – Male = 1 and Female = 2. Child Race – White = 1 and Other = 0.

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



## Chapter 5 - Discussion

### Main Findings

Findings of the study indicate that non-supportive maternal reaction to child emotion when children were in first grade was associated with children's difficulty regulating their emotions three years later, but the nature of the associations was dependent on which emotion the child was regulating (i.e., anger vs. worry). Specifically, mother punitive reactions in Wave 1 were found to be significantly associated with child dysregulation of anger at Wave 5 while mother minimization reaction in Wave 1 was found to be related to child dysregulation of worry at Wave 5. Although the overall models tested were non-significant, results of this study indicate that specific non-supportive reactions are more impactful on the child depending on the distressed emotion being experienced.

Hypothesis 1 stated that maternal unsupportive response to child emotion when children are in first grade will be significantly associated with poorer emotion regulation of anger when children are in fourth grade. This was partially supported. More specifically, only punitive response was found to be significantly associated with poorer emotion regulation of child anger three years later. Hypothesis 2 likewise stated that maternal unsupportive response to child emotion when children are in first grade will be significantly associated with poorer emotion regulation of worry when children are in fourth grade. This was similarly found to be only partially supported. As with anger, only one non-supportive response to emotion—minimization—was found to have a significant negative impact on overall worry two years later.

In similar longitudinal studies, supportive parenting has been significantly associated with stronger emotion regulation skills later; however—like this study—any associations between non-supportive responses or practices were dependent on the specific act itself (as opposed to a detrimental effect being associated with general non-supportive practices overall). Bozicevic and colleagues (2016) found parental response to various emotions to play a role in later child emotion regulation skills. More generally, when mothers acknowledged and responded to infant distress in a supportive manner, children later used active emotion regulation strategies; however, when mothers dismissed their infants’ distress, ignored it, or provided non-soothing care, children later demonstrated more difficulty dealing with frustration. Breaux and colleagues (2018) found no significant results when examining the impact of non-supportive parenting practices on the later emotion regulation skills of children. Rather, they found significant positive correlations between supportive practices and such skills. Brophy-Herb and colleagues (2013) specifically examined maternal supportiveness and its impact on emotion regulation. While their results were consistent with existing theoretical models and studies suggesting the importance of emotionally supportive interactions, they did not examine non-supportive interactions in contrast. Again, if we consider Eisenberg’s theory of parent socialization of emotion and the role that caregivers play in their children’s development of emotion regulation skills, it is imperative to understand both supportive *and* non-supportive reactions to various types of emotional expression (Eisenberg et al., 1998). Parenting interventions that are based on the emotion socialization theory place emphasis on the parent-child relationship. Likewise, such interventions aim to support parents in both understanding and responding to their child’s behaviors by recognizing the emotional needs behind them (Jugovac et al., 2022). As the current study suggests, specificity in terms of various types of parental

responses and how they impact the regulation of different emotions is important as regulation of different emotions seems to be influenced by different parental responses.

### **Strengths**

A major strength of the data used in this study was its population. The data were collected from rural populations in the United States; whereas much of the previous research had been conducted in more urban and affluent settings. The data also utilized mother- and child-report measures strengthening the internal validity of the study. Additionally, data were collected at numerous time points. Examining the associations from a longitudinal perspective is an asset to the current literature, as cross-sectional studies would not fully capture the relationship between maternal responses to various emotions and the impact this may have on a child's skills with emotion regulation. Yet another addition to the current literature is the examination of *specific* maternal responses to distressed emotions, something that is not often considered. One surprising strength of this study turned out to be its examination of non-supportive practices. Many of the existing longitudinal studies consider supportive practices; however, non-supportive practices and their possible impacts are not given the same consideration.

### **Limitations**

One limitation of note in this study was the somewhat small alpha of the subscales for the Child Coping with Negative Emotion Scale (CCNES) and Children's Emotion Management Scale (CEMS). Another limitation is a common one: many studies (both cross-sectional and longitudinal) consider the impact of maternal practices but largely ignore other caregivers (paternal, nonbinary, grandparents, etc.). This study utilized only maternal responses. Additionally, it is important to acknowledge the impact that social desirability may have on questionnaire responses. Similarly, demographic information such as income was only collected

in Wave 1. It is important to note that household income may have changed over time and may have had an influence on results unaccounted for by the control. Peer and other social relationships and child temperament were not considered with relation to their influence on child's ability to engage in regulation of emotion. It is important given these facts that future studies look at what might be happening across time as well as how some of these factors may interact and possibly influence one another. Finally, another common limitation that can be found in the literature is a tendency to not consider both non-supportive and supportive parental reactions and practices in the same study. This study only considered the impact of non-supportive practices on later emotion regulation skills, rather than considering (and even comparing) both.

### **Future Research**

Future research would do well to expand upon current studies by including factors such as parent's own understanding of and relationship with emotions as well as their emotion regulation skills. Perhaps the relation between these, parents' response to child's emotion, and the child's emotion regulation skills can be further examined. Various contextual factors should likewise be considered in future studies, such as how many children are in the home, ethnicity, similarities and differences in how more than one caregiver reacts to the child (especially if these reactions vary widely), and genders of both the parents and children. These factors would be especially important to consider given how we are often socialized to think about various emotions and are taught to interact with them (e.g., if certain emotions are seen as "good" or "bad" and if there are more "acceptable" ways to demonstrate these emotions), which can often be dependent on such contextual details. Considerations such as race and ethnicity as well as gender have long had an unequal and unfair impact on one's relationship with various emotions

(e.g., people of color being seen as more aggressive, girls and women being seen as more irrational or emotional). To ignore such societal messages steeped in historical stereotypes is essentially to engage in willful ignorance and assume that we are all held to the same standard when it comes to all emotions; something that is—unfortunately—untrue. Future research may aim to further understand and break down these various messages, where/how they originated, and why/how they continue to be perpetuated. In order to effectively do so, future research should aim to be responsive to sociohistorical context and account for intersectionality rather than assuming that emotions are experienced by all groups of people in the same way. This means that future research should take care to respect and ask about contextual specificity (e.g., “From whom did you learn about sadness? What were the consequences of being seen as ‘too sad?’”). In addition to this, the current study only examined mothers and one child. Future studies would do well to examine caregivers of all types (e.g., mothers, fathers, stepparents, grandparents, foster parents) as well as possibly examine siblings. As earlier noted, this study relied on parent response measures based on hypothetical scenarios. The use of observational measurement would strengthen future studies.

### **Clinical implications**

It is important for a variety of people to know the importance of their reactions to emotions for numerous reasons. For example, this study indicates that specific parental reactions to a child’s emotion may have very different impacts, such as minimizing responses impacting emotion regulation of overall worry and punitive responses impacting emotion regulation of overall anger. Findings indicate that the effects of such reactions may be long-lasting or perhaps even build upon each other over time. Parent educators should be made aware of the differences that each type of reaction to emotion may have on the child in order to best help parents in

learning to assist their children during these difficult times. Clinicians can similarly work with parents in a psychoeducational manner but may also more effectively approach discussions relevant to emotions, emotion regulation, and feelings such as rejection or dismissal with their clients once the clinician knows the influence and importance of the client's parents' reactions to the client's emotions. Considering the myriad risk factors related to poor emotion regulation skills, a better understanding of what may have been detrimental in the client developing such skills may prove invaluable to the clinician. For instance, when parents present for services with concerns about child dysregulation of particular emotions providers can give particular attention to helping a parent replace the demonstrated negative non-supportive responses that have been shown to be associated with problems in child regulation of that emotion. Finally, better prioritizing both our understanding of emotions as well as parents' direct reactions to emotions would likely serve us well as a community based on the earlier mentioned risk factors associated with poor emotion regulation. Because of this, policymakers may choose to place greater emphasis and focus on understanding these parental reactions to emotions once they realize why they are important. For instance, perhaps the government can sponsor parenting classes and trainings related to specific emotions and reactions to emotions on a local, state, and/or national level (especially for first-time parents). This should aim to strengthen and enhance parenting and overall parental supportiveness and take special care to help parents with specific emotions they may find unsettling or to address specific non-supportive reactions they may be more drawn to using. Finally, policy makers may choose to advocate for the furthered funding and support of agencies and professionals who focus on parent education and resources (e.g., home visitors, social workers) and may share with caregivers the importance of parental reaction to emotions, especially from a longitudinal perspective.

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