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This study utilizes a transactional framework to examine the influence of maternal depression and unsupportive emotion socialization at three time points from ages 5 to 10. Data from the Right Track project was used. Maternal depression, which has been linked to both unsupportive emotion socialization and children's depressive symptoms, was measured with maternal report on the SCL-90-R at ages 5, 7, and 10. Unsupportive emotion socialization, which has also been linked to children's depressive symptoms, was measured with maternal report on the Unsupportive scale on the CCNES at ages 5, 7, and 10. Children's depressive symptoms were measured with versions of the BASC and BASC-2 at ages 5, 7, and 10. A stability model was compared to a cross-lagged model to see which model had a better fit with the data, and as hypothesized, the cross-lagged model showed a stronger fit with the data. Many of the specific study hypotheses were confirmed. Stability was found for maternal depressive symptoms, unsupportive emotion socialization, and children's depressive symptoms from ages 5 to 7 and 7 to 10. All concurrent associations were significant for all three variables at age 5, with additional significant concurrent associations discussed for some variables at ages 7 and 10. Maternal depression at age 7 was associated with children's depressive symptoms at age 10. Children's depressive symptoms at age 5 were associated with maternal depression at age 7, and the same association was found from ages 7 to 10. Finally, unsupportive emotion socialization at age 5 was associated with children's depressive symptoms at age 7. Implications, limitations, and future directions are discussed.

IMPACT OF MATERNAL DEPRESSION AND EMOTION SOCIALIZATION ON

THE EMERGENCE OF CHILDREN'S DEPRESSIVE SYMPTOMS

FROM EARLY TO LATE CHILDHOOD

by

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CHAPTER I

INTRODUCTION

Depression is a relatively common disorder in adulthood and can be costly to

society, as people suffering from depression may miss work, show decreased productivity,

and experience deterioration in their relationships (Collins et al., 2011; Copeland,

Shanahan, Costello, & Angold, 2011; Pincus & Pettit, 2001). Depression is particularly

problematic for those whose symptoms begin in childhood, as childhood-onset

depression is associated with increased severity of depression in adults (Fernando et al.,

2011; Mondimore et al., 2006; Sung et al., 2013). While rates of depression spike as

children reach puberty (American Psychiatric Association, 2013; Angold, Costello,

Erkanli, & Worthman, 1999; Hankin et al., 2015; Hayward & Sanborn, 2002), maternal

factors begin to influence the path to depression as early as infancy (Ashman & Dawson,

2002; Schmid et al., 2011). Thus, the purpose of the present study is to examine maternal

factors that influence the emergence of symptoms of depression as children age from

early to late childhood, and to examine the influence of children's symptoms of

depression on those maternal factors. This is done in the context of risk factors for

children developing symptoms of depression.

The importance of this relationship between a mother and her child is reflected in

the large body of literature examining this relationship. However, most models of

children's development focus on the parent's influence on the child and neglect to

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examine the influence children have on parenting behaviors (Combs-Ronto, Olson, Lunkenheimer, & Sameroff, 2009; Crouter & Booth, 2003; Pardini, 2008). To fill this gap, this project examines maternal factors and the influence of children's depressive symptoms in a transactional framework. Transactional theories regarding the development of psychopathology suggest that children and their parents have a bidirectional influence on each other's behavior, and that understanding this relation is vital to understanding the emergence of psychopathology (Belsky, 1984; Sameroff, 1975, 2009).

Along these lines, the current study examined the interplay between children's symptoms of depression and two maternal variables: maternal depressive symptoms and maternal emotion socialization. First, depressive symptoms in children will be explored, including rates of depression at different developmental stages. Next, emotion socialization will be defined, and literature on the development of emotion socialization and its connection to children's depressive symptoms will be reviewed. Finally, maternal depression will be introduced as a key influence on both maternal emotion socialization and children's depressive symptoms.

Depressive Symptoms in Children

While the most prominent features of depression are typically a sad mood and a loss of interest or pleasure in activities, symptoms of depression also include loss of interest or pleasure in activities; changes in sleep, weight, and appetite; difficulty concentrating; fatigue; and feelings of guilt or worthlessness (American Psychiatric Association, 2013). Rates of depression in children range from 0.4% to 2.5%, and these

rates may be as high as 8.3% during adolescence (Birmaher et al., 1996). However, these rates do not include subthreshold depressive symptoms, which are more common than clinical depression and can also cause impairment in daily life (Fergusson, Horwood, Ridder, & Beautrais, 2005; Wesselhoeft, Heiervang, Kragh-Sørensen, Juul Sørensen, & Bilenberg, 2016).

While depressive symptoms are more common as children age, symptoms of depression have been identified in children as young as 3 (Kashani & Ray, 1983; Luby et al., 2003; Stalets & Luby, 2006). However, difficulties in regulating emotions are often present prior to the emergence of depressive symptoms. Both negative emotionality and positive emotionality have been linked to depressive symptoms in children. Negative emotionality or negative affectivity typically includes temperamental factors such as sadness, discomfort, anger, and fear (Rothbart, Ahadi, & Evans, 2000). Positive emotionality or positive affect involves approach behaviors and the trait of extraversion (Rothbart et al., 2000). Low levels of positive emotionality and high levels of negative emotionality have been linked to depressive symptoms in children, with children who exhibit both of these traits tending to show the largest increases in depressive symptoms across time (Dougherty, Klein, Durbin, Hayden, & Olino, 2010; Van Beveren et al., 2016). Children with depression also frequently experience difficulty regulating their feelings of sadness in particular (Bowie, 2010; Eisenberg et al., 2009). However, depressive symptoms may present differently across childhood.

In early childhood, subclinical depressive symptoms may present as helplessness (Kistner, Ziegert, Castro, & Robertson, 2001), and the duration of clinically significant

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depressive episodes may often be shorter than 2 weeks (Gaffrey, Belden, & Luby, 2011). As children reach middle childhood, the presentation of depression is similar to that of late childhood (Birmaher et al., 2004; Luby et al., 2003). Finally, from late childhood to adolescence, rates of depression spike (Hankin et al., 2015), highlighting the importance of studying the period of time prior to this spike in order to elucidate the processes that lead to the emergence of depressive symptoms.

Of note, though the present study focuses on symptoms of depression in children, many studies utilize general internalizing symptoms as an outcome, so internalizing symptoms are defined here. Symptoms of depression and anxiety are typically what are referenced when the term "internalizing symptoms" is utilized. Depressive symptoms are defined above. Anxiety symptoms generally consist of worry, and this worry could be limited to specific situations, such as social situations in social anxiety disorder, or more worry in several domains, such as in generalized anxiety disorder (American Psychiatric Association, 2013). While symptoms of anxiety and depression are sometimes studied separately, they are also studied jointly under the term "internalizing symptoms."

However, internalizing symptoms, including depressive symptoms, are far from being completely heritable, with heritability estimates typically falling around 40% (American Psychiatric Association, 2013; Franić, Middeldorp, Dolan, Ligthart, & Boomsma, 2010; Kendler, Gatz, Gardner, & Pedersen, 2006). As such, a focus of the present study is on factors that influence the risk factors of developing these depressive or general internalizing symptoms. Specifically, parents have the opportunity to exert substantial influence on the behavior of their children from the moment they are born, so

it is no surprise that parenting behaviors have been shown to influence the emergence of depression (e.g., McLeod, Weisz, & Wood, 2007; Milevsky, Schlechter, Netter, & Keehn, 2007). For example, insecure attachment to a parent earlier in life has been linked to later development of depressive symptoms (Priddis & Howieson, 2012; Sund & Wichstrøm, 2002). This connection between parenting and children's depressive symptoms is therefore the focus of the present study.

Parental Emotion Socialization

Maternal emotion socialization an important parenting factor that is linked to children's risk for developing depressive symptoms. Emotion socialization is an umbrella term for several behaviors exhibited by parents that teach their children about emotions. These behaviors include interactions between parents and children that indirectly allow children to learn about emotions as well as parents directly instructing and guiding their children regarding emotions (Denham & Kochanoff, 2002; Eisenberg, Fabes, & Murphy, 1996). Parents also shape their children's environment, and this influences the how children learn about emotions (Eisenberg et al., 1996). For example, some parents may not allow their children to be in places that are loud or chaotic, and as a result, these children lack experience coping with such an environment. However, emotion socialization also includes a fourth parental behavior: parents' responses to children's emotions that shape future emotion expression (Eisenberg et al., 1996). This domain has a substantial impact on children's developing repertoire of coping strategies, as this behavior serves as reinforcement or punishment for various emotional reactions displayed by the child (Denham & Kochanoff, 2002; Malatesta & Haviland, 1982).

This type of emotion socialization has also been described as *contingencies*, or parental responses that are contingent on the child's behavior (Klimes-Dougan & Zeman, 2007; Zeman, Cassano, & Adrian, 2013). Through contingencies, parents are able to clarify with their children what they consider appropriate and inappropriate forms of emotion regulation by utilizing reinforcement and punishment (Zeman et al., 2013). Contingencies are influenced by the extent to which parents are able to regulate their own emotions (Buckholdt, Parra, & Jobe-Shields, 2014; Rogers, Halberstadt, Castro, MacCormack, & Garrett-Peters, 2016). For example, parents who have strong emotion regulation skills will be able to control their own emotional reactions to their children's displays of emotions and react more rationally. On the other hand, parents who become distressed in reaction to their children's display of emotion will have reactions that are strongly colored by their own emotion, and these parents will not be as emotionally available for their children. Contingencies are also influenced by familial factors, such as socioeconomic status (Chaplin, Casey, Sinha, & Mayes, 2010; Dunbar, Perry, Cavanaugh, & Leerkes, 2015).

Much of the research on contingencies identifies six ways of reacting to a child's negative emotions, and these can be classified as either supportive or unsupportive. Supportive emotion socialization involves the encouragement of emotional expression, facilitating children learning how to alter negative emotions, and helping children learn to alter the circumstances leading to the negative emotion (Cassano, Zeman, & Sanders, 2014; Eisenberg, Cumberland, & Spinrad, 1998). Alternatively, unsupportive emotion socialization involves parental dismissal or minimization of negative emotions being

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displayed, parental punishment of the display of negative emotions, and a tendency for parents to display their own negative emotions in response to their children's display of negative emotions (Cassano et al., 2014; Eisenberg et al., 1998).

Overall, while emotion socialization can come from any external source in a child's life, parents are the most important source in early childhood (Zeman et al., 2013). Research is needed to clarify the extent to which parental emotion socialization continues to have a significant impact beyond early childhood.

The Development of Emotion Socialization and Associated Outcomes

Though the present study is proposing that emotion socialization is a transactional process between mother and child, the literature on its development focuses more on how emotion socialization changes as children age. As such, information on the concurrent development of emotion regulation abilities in children is included.

Parental emotion socialization begins from the moment a child is born (Eisenberg et al., 1998; Thompson, 2014). Parents of babies are able to manage their child's schedule and experiences in order to minimize distress, and they can actively soothe their babies when distress inevitably occurs. When children are younger than 3-months old, their emotion regulation skills predominantly consist of automatic and physical reactions (Calkins & Hill, 2007; Eisenberg, Spinrad, & Eggum, 2010). Early emotion regulation is also highly reliant on caregivers who influence the environment to which the child is exposed (Eisenberg et al., 2010; Eisenberg & Sulik, 2012; Losoya, Eisenberg, & Fabes, 1998).

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As children reach toddlerhood, parents typically engage in more direct emotion socialization methods (Thompson, 2014). This may take the form of implementing distraction, providing children with soothing thoughts to counter their distress, or reacting emotionally themselves in the face of their children's emotions. Young children are therefore still reliant on their parents to provide external emotion regulation through emotion socialization, but it is through these interactions that children learn many of the emotion regulation methods that they will employ later in life (Denham & Grout, 1993; Thompson, 2014). Children themselves also achieve some autonomy in that they can begin to take some actions to assist in regulating their emotions, such as attentional shifting (Calkins & Hill, 2007; Eisenberg & Sulik, 2012). As children reach early childhood, their executive functioning continues to improve; children's repertoire of emotion regulation and coping skills thus begins to expand in middle through late childhood (Eisenberg et al., 2010; Eisenberg & Sulik, 2012; Losoya et al., 1998; Zimmer-Gembeck & Skinner, 2011). During middle and late childhood, maternal emotion socialization begins to have a stronger effect on children's emotion regulation than paternal emotion socialization (Bariola, Hughes, & Gullone, 2012; McDowell, Kim, O'Neil, & Parke, 2002). Therefore, this study focuses specifically on maternal emotion socialization from early to late childhood.

We know that children whose parents utilize unsupportive emotion socialization in their early years are at risk for to developing ineffective emotion regulation abilities (Shewark & Blandon, 2015). One possible mechanism for this relation is physiological arousal (Eisenberg et al., 1998; Hastings, Klimes-Dougan, Kendziora, Brand, & Zahn-

Waxler, 2014). Children whose parents demonstrate unsupportive emotion socialization tend to have higher physiological arousal to difficult events or experiences, and this arousal has been found to mediate and moderate the relation between unsupportive parental emotion socialization and dysregulated emotions in the child (Mirabile, Scaramella, Sohr-Preston, & Robison, 2009; Williams & Woodruff-Borden, 2015). Additionally, when parents react in an unsupportive fashion to children's display of negative emotions, children may receive and internalize the message that they are not able to properly process their emotions; this leads to difficulty managing emotions because these interactions prevent children from learning appropriate methods for emotion management (Breaux, McQuade, Harvey, & Zakarian, 2018). Moreover, when children reach adolescence, parents are more likely to use unsupportive emotion socialization in response to their adolescent's displays of emotions, particularly for children with emotional or behavioral difficulties (Klimes-Dougan et al., 2007; Shortt et al., 2016). Additionally, adolescents with difficultly establishing autonomy in regulating their emotions are more at risk for developing internalizing difficulties (Morris, Silk, Steinberg, Myers, & Robinson, 2007).

Along these lines, unsupportive emotion socialization in particular is associated with problematic behavior in children. In early childhood, unsupportive emotion socialization has been linked transactionally to maladaptive play behaviors (Davis & Buss, 2012). In other words, children who experienced unsupportive emotion socialization were more likely to have deficits in play behaviors; additionally, specific types of behavior, such as ineffective social interactions, were more likely to lead to a

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display of unsupportive emotion socialization. On the other hand, Miller, Dunsmore, and Smith (2015) found that parental involvement in emotion socialization was linked to children's effortful control during early childhood and, as a result, positive social behaviors in these children. In this study, parental involvement was defined as parents who reported more engagement in emotion socialization practices as opposed to a more disengaged approach when their children expressed negative emotions. This study also found that increases in effortful control led to increases in parental involvement in emotion socialization, suggesting a transactional relation between the behavior of parents and children.

Unsupportive emotion socialization has also been linked to internalizing symptoms in particular, including depressive symptoms. This relation has been found as early as toddlerhood (Luebbe, Kiel, & Buss, 2011), as well as throughout childhood (Silk et al., 2011; Tillery, Cohen, Parra, Kitzmann, & Howard Sharp, 2015). However, the majority of research into the relation between unsupportive emotion socialization and internalizing symptoms focuses on late childhood or adolescence, highlighting the need to study this relation in early and middle childhood. For example, Sanders, Zeman, Poon, and Miller (2015) found a link between unsupportive emotion socialization and symptoms of depression in late childhood. Parents who used unsupportive emotion socialization also perceived these children to have dysregulated emotions. Additionally, Hastings and colleagues (2014) found that youths, ranging from late childhood to adolescence, experienced higher rates of internalizing symptoms if they evidenced stronger physiological reactions to films that tended to trigger feelings of sadness.

While most research focuses on the influence of emotion socialization on children, a bidirectional relation between unsupportive emotion socialization and internalizing symptoms has also been found (Rodas, Chavira, & Baker, 2017; Zahn-Waxler, 2010). Additionally, the majority of the research examines internalizing symptoms in general, so additional research is needed to examine depressive symptoms in particular. Furthermore, additional maternal factors must be considered in regard to this relation.

<div align="center">**Emotion Socialization and Maternal Depression**</div>

One key maternal factor that is associated with maternal emotion socialization is maternal depression. Depressed mothers are more likely than their non-depressed counterparts to have unsupportive interactions with their children, even when their children are infants (Cummings & Davies, 1994; Murray, Fiori-Cowley, Hooper, & Cooper, 1996; Silk et al., 2011). Mothers with depression are also more likely to engage in insensitive or unresponsive parenting (Goodman & Gotlib, 1999) and to display irritability and sadness (Goodman & Gotlib, 1999).

This tendency to display irritability and sadness is indicative of difficulty regulating emotions. As noted above, depression in children is associated with difficulty regulating emotions (Bowie, 2010; Dougherty et al., 2010; Eisenberg et al., 2009; Van Beveren et al., 2016), and this is true for adults with depression as well (Havighurst & Kehoe, 2017; Joormann & Gotlib, 2010). When parents are depressed, this difficulty with emotion regulation has an impact on their emotion socialization practices. In their editorial about the impact of depression on parenting, Psychogiou and Parry (2014) suggest that the emotional dysregulation associated with depression influences parenting

because depressed parents are unpredictable and may not be emotionally accessible for their children. Additionally, symptoms of depression include feelings of guilt and apathy (American Psychiatric Association, 2013). Psychogiou and Parry suggest that these feelings of guilt may extend to parenting behavior, and this guilt, as well as the lack of motivation associated with apathy, may lead to more difficulty providing adaptive emotion socialization. Along these lines, contingences require intensive interaction between parents and children, and parental apathy could lead to less frequent contingency-based interactions. When these apathetic parents do engage in contingences, they would then be at risk for engaging in unsupportive emotion socialization due to their difficulties with emotion regulation and the additional symptoms of depression that they are experiencing.

When emotion socialization is unsupportive, children are more at risk for demonstrating difficulties with emotion regulation (Eisenberg et al., 1999; Zeman et al., 2013), including coping with emotions (Eisenberg & Fabes, 1994) and displaying more intense emotions (Jones, Eisenberg, Fabes, & MacKinnon, 2002). This relation is also transactional, as difficulties with emotion regulation are associated with maternal depression, even in children as young as preschool-age (Feng, Shaw, & Silk, 2008). Silk and colleagues also found that children of depressed mothers have difficulty using effective emotion regulation strategies (Silk, Shaw, Skuban, Oland, & Kovacs, 2006). Specifically, they noted that children of depressed mothers tended to use more passive styles of emotion regulation, such as ruminating about negative emotions and taking no overt actions to change these emotions. Additionally, children of depressed parents

develop maladaptive social-cognitive processes that limit their ability to effectively regulate their emotions (Cummings & Davies, 1994).

Maternal Depression and Children's Internalizing Symptoms

Children's internalizing symptoms are also robustly linked to maternal depression, with maternal depression placing children at a higher risk for developing depressive or internalizing symptoms (Coyne & Thompson, 2011; Goodman et al., 2011; Pizeta, Loureiro, & Pasian, 2018). Findings indicate that symptoms of maternal depression, including chronicity and severity of that depression, predict concurrent levels of internalizing symptoms (O'Connor, Langer, & Tompson, 2017). Genetic transmission has been identified as one component that links maternal depression to internalizing symptoms in children (Goodman, 2007; Goodman & Gotlib, 1999). Goodman argues that this is due to children inheriting vulnerability to specific traits that are linked to depression, such as low self-esteem and neuroticism (Goodman, 2007).

In additional to genetic transmission, additional factors influence this relation, such as problematic parent-child relationships and the manner in which depression affects parent-child interactions (Cummings & Davies, 1994; Heberle, Krill, Briggs-Gowan, & Carter, 2015). Maternal depression is associated with displays of inattentive or inconsistent parenting, and this can result in mothers being less available to their children (Hammen, 2002). In other words, depressed mothers are often unable to meet the needs of their children in order to foster healthy development (National Research Council & Institute of Medicine, 2009). Mothers with depression also model depressive cognitions and behaviors (Goodman, 2007; Hammen, 2002), and this allows their children to learn

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to react in a manner that is consistent with depression. Of particular concern is research suggesting that the effects that depression has on parenting continues even after the depressive episode has ended (Seifer, Dickstein, Sameroff, Magee, & Hayden, 2001), suggesting that even a history of depression in mothers may put their children at risk for developing depressive symptoms themselves.

Maternal characteristics, such as warmth and intrusiveness, may also contribute to the link between maternal depression and children's internalizing symptoms (Hummel & Kiel, 2015). Children of depressed parents may develop maladaptive social-cognitive processes and attributional styles that limit their ability to effectively regulate their emotions (Cummings & Davies, 1994). Mothers with depression also tend to have a more negative view of their children's behavior, and this negative view is likely passed down to their children through more unsupportive interactions with their children (Breaux, Harvey, & Lugo-Candelas, 2016; Cummings & Davies, 1994). Mothers with depression are also more likely to have children with men who have psychiatric disorders (Hammen, 2002). This leads to increased stress in their children, which is a risk factor for children developing depressive symptoms themselves.

Child characteristics, such as temperament, are also likely to factor into the relation between maternal depression and internalizing symptoms in children (Goodman, 2007; Rosenbaum et al., 2000). Familial socioeconomic status (SES) has also been found to account for some variability in the relation between maternal depression and children's symptoms of depression (Ahun et al., 2017).

Finally, while the overwhelming majority of research has investigated the influence of maternal depression on internalizing symptoms in the children, theory suggests that mothers and children have a transactional relationship, such that the behavior of mothers affects the behavior of children and vice versa (Belsky, 1984; Sameroff, 1975, 2009). In their review of the literature regarding children of depressed parents, Downey and Coyne (1990) note that while the link between maternal depression and children's outcomes is well established, causal directionality is difficult to determine in much of the literature. However, while literature in this domain is lacking, Nicholson and colleagues demonstrated that the relation between internalizing symptoms in children and maternal depression is bidirectional in nature, such that children's internalizing symptoms also influence maternal depression (Nicholson, Deboeck, Farris, Boker, & Borkowski, 2011).

Summary and Proposed Model

Though more prevalent in adolescence and adulthood (Angold et al., 1999; Hayward & Sanborn, 2002), depression begins to affect children when they are as young as 3 (Kashani & Ray, 1983; Luby et al., 2003; Stalets & Luby, 2006). Symptoms of depression cause significant impairment in those children who suffer with this disorder (Collins et al., 2011; Copeland et al., 2011; Pincus & Pettit, 2001). Additionally, childhood-onset depression is associated with increased severity of depression in adults (Fernando et al., 2011; Mondimore et al., 2006; Sung et al., 2013), and rates of depression tend to spike between late childhood and adolescence (American Psychiatric

Association, 2013; Hankin et al., 2015). This suggests a need to investigate the processes that lead to this increase from early to late childhood.

Parenting behaviors and factors have been shown to place children at risk for the emergence of depressive symptoms during this time period (McLeod et al., 2007; Milevsky et al., 2007). However, most models of children's development focus on the parent's influence on the child and neglect to examine the influence children have on parenting behaviors (Combs-Ronto et al., 2009; Crouter & Booth, 2003; Pardini, 2008). For example, maternal emotion socialization is an important parenting factor that is linked to children's depressive symptoms throughout childhood (Hastings et al., 2014; Luebbe et al., 2011; Silk et al., 2006; Tillery et al., 2015). This is consistent with findings that when emotion socialization is unsupportive, children are more at risk for demonstrating difficulties with emotion regulation (Eisenberg et al., 1999; Zeman et al., 2013). On the other hand, research supports a transactional theory, such that children and their parents have a bidirectional influence on each other's behavior (Pesonen et al., 2008; Sameroff, 1975; Zadeh, Jenkins, & Pepler, 2010), and a study by Rodas and colleagues (2017) supports this bidirectional relation between unsupportive emotion socialization and internalizing symptoms. Further research specific to depressive symptoms in children is needed.

Additionally, maternal emotion socialization is influenced by maternal factors, such as maternal depression. Mothers with depression are more are risk for engaging in unsupportive forms of emotion socialization (Cummings & Davies, 1994; Murray et al., 1996; Silk et al., 2011). Finally, a clear connection between maternal depression and

internalizing symptoms in children has been identified (Coyne & Thompson, 2011; Goodman et al., 2011; Pizeta et al., 2018), and there is evidence that this relation is bidirectional (Nicholson et al., 2011).

Study Models

Research has been conducted on the influence of maternal depression and maternal emotion socialization on the emergence of depressive symptoms in children, but most of this research is unidirectional and focuses only on the influence of parent behaviors and factors on children's outcomes. To fill this gap, this project examines maternal factors and the influence of children's depressive symptoms in a transactional framework. Additionally, much of the research on parental emotion socialization is focused on early childhood or sooner, so research is needed to clarify the extent to which parental emotion socialization continues to have a significant impact beyond early childhood. Finally, much of the research linking children's depressive symptoms to maternal emotion socialization and maternal depression examines children's internalizing symptoms in general. Therefore, research is needed to examine maternal emotion socialization and maternal depression in a transactional model regarding the specific outcome of children's depressive symptoms.

This study aims to address these gaps in the literature by examining a stability model (Figure 1) and comparing it to a transactional model (Figure 2) in which pathways between maternal depression, unsupportive emotion socialization, and depressive symptoms are examined across time (see Figures 1 and 2). Specifically, these variables were all examined at ages 5, 7, and 10.

A stability model was estimated in which maternal depression, unsupportive emotion socialization, and children's depressive symptoms were expected to be stable across time, from ages 5 to 7 to 10 (Figure 1). A transactional model (Figure 2) was also estimated to look at the longitudinal relations across variables in order to examine directional pathways. Maternal depression at age 5 was expected to be associated with unsupportive emotion socialization and depressive symptoms at age 7, and maternal depression at age 7 was expected to be associated with unsupportive emotion socialization and depressive symptoms at age 10. Similarly, unsupportive emotion socialization at age 5 was expected to be associated with maternal depression and depressive symptoms at age 7, and unsupportive emotion socialization at age 7 was expected to be associated with maternal depression and depressive symptoms at age 10. Finally, depressive symptoms at age 5 were expected to be associated with maternal depression and unsupportive emotion socialization at age 7, and depressive symptoms at age 7 were expected to be associated with maternal depression and unsupportive emotion socialization at age 10. This transactional model (Figure 2) was compared to the stability model (Figure 1) with the hypothesis that the transactional model would better fit the data than the stability model.

CHAPTER II

METHOD

Participants

The sample for this study utilized data from three cohorts of children who are part of an ongoing longitudinal study. The goal for recruitment was to obtain a sample of children who were at risk for developing future externalizing behavior problems that was representative of the surrounding community in terms of race and socioeconomic status (SES). All cohorts were recruited through child day care centers, the County Health Department, and the local Women, Infants, and Children (WIC) program. Potential participants for cohorts 1 and 2 were recruited at 2-years of age (cohort 1: 1994-1996 and cohort 2: 2000-2001) and screened using the Child Behavior Checklist (CBCL 2-3; Achenbach, 1992) completed by the mother in order to over-sample for externalizing behavior problems. Children were identified as being at risk for future externalizing behaviors if they received an externalizing T-score of 60 or above. Efforts were made to obtain approximately equal numbers of males and females. A total of 307 children were selected. Cohort 3 was initially recruited when infants were 6-months of age (in 1998) for their level of frustration based on laboratory observation and parent report and followed through the toddler period (See Calkins, Dedmon, Gill, Lomax, & Johnson, 2002, for more information). Children whose mothers completed the CBCL at 2-years of age were included in the current study (n = 140). Of the entire sample (N = 447), 37% of the

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children were identified as being at risk for future externalizing problems. There were no significant demographic differences between cohorts with regard to gender, χ^2 (2, $N =$ 447) = .63, p = .73, race, χ^2 (2, $N =$ 447) = 1.13, p = .57, or 2-year SES, F (2, 444) = .53, p = .59. Cohort 3 had a significantly lower average 2-year externalizing T-score ($M =$ 50.36) compared to cohorts 1 and 2 ($M =$ 54.49), t (445) = -4.32, p = .00.

Of the 447 original screened participants, 6 were dropped because they did not participate in any 2-year data collection. At 4 years of age, 399 families participated. Families lost to attrition included those who could not be located, who moved out of the area, who declined participation, and who did not respond to phone and letter requests to participate. There were no significant differences between families who did and did not participate in terms of gender, χ2 (1, N = 447) = 3.27, p = .07, race, χ2 (1, N = 447) = .70, p = .40, 2-year SES, t (424) = .81, p = .42, or 2-year externalizing T-score, t (445) = -.36, p = .72. At 5-years of age, 365 families participated, including 4 that did not participate in the 4-year assessment. Again, there were no significant differences between families who did and did not participate in terms of gender, χ^2 (1, $N =$ 447) = .76, p = .38, race, χ^2 (1, N = 447) = .17, p = .68, 2-year socioeconomic status, t (424) = 1.93, p = .06) and 2-year externalizing T-score [t (445) = -1.73, p = .09]. At 7-years of age, 350 families participated, including 19 that did not participate in the 5-year assessment. Again, there were no significant differences between families who did and did not participate in terms of gender, χ^2 (1, $N =$ 447) = 2.12, p = .15, race, χ^2 (3, $N =$ 447) = .60, p = .90 and 2-year externalizing T-score (t (445) = -1.30, p = .19). Families with lower 2-year socioeconomic status, [t (432) = 2.61, p > .01] were less likely to continue participation at

the 7-year assessment. Data was collected at laboratory visits on the University of North Carolina-Greensboro campus, during which participants and their mothers completed questionnaires and various tasks.

Study Sample

This study utilized a portion of the larger sample that completed questionnaires at ages 5, 7, and 10. All participants with any data were utilized; missing data were accounted for through Full Information Maximum Likelihood (FIML). Socioeconomic status (SES), as measured by the Hollingshead (1975), fell in the "medium business and minor professional, technical" category on average, but ranged from the lowest to the highest levels of SES at ages 5, 7, and 10. Regarding sex, at each time point, between 45% and 46% of participants were female. The majority of the sample was Caucasian (between 65-67% at each time point); African Americans comprised about 27% of the remaining participants, and this number was fairly consistent across each time point (see Table 1 for detailed demographic percentages regarding sex, race, and SES).

<div align="center">

Procedure

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Children and mothers participated in two separate laboratory assessments at ages 5, 7, and 10, during which they completed various tasks, interviews, and questionnaires. Typically, the first visit included data collection regarding domains such as emotion regulation, frustration tolerance, and mother-child interactions. The second visit typically involved collecting data about mental health, cognitive functioning, and academic achievement. At the 5- and 7-year assessments, mothers typically completed questionnaires regarding emotion socialization and their own depressive symptoms at the

first visit, with the questionnaire regarding maternal depressive symptoms being completed first. The questionnaire regarding the child's depressive symptoms was typically completed at the second visit. At the 10-year assessment, the questionnaire regarding emotion socialization was typically completed at the first visit, and the questionnaires regarding maternal and child depressive symptoms were completed at the second visit. Mothers typically completed the questionnaire regarding their own depressive symptoms prior to the questionnaire that asked about their child's symptoms of depression. Assessments were conducted on the University of North Carolina at Greensboro (UNCG) campus by research assistants and graduate students. See below for additional details on specific tasks and questionnaires relevant to the current study.

Materials

Maternal Depressive Symptoms

Symptoms of maternal depression were measured at age 5, 7, and 10 by maternal report on the 13-item Depression subscale on the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1994; See Appendix B for items). The SCL-90-R is a 90-item, self-report measure designed for adults that assesses symptoms of psychopathology. The SCL-90-R asks respondents to rate each item on the extent to which they have experienced that particular symptom in the past 7 days. Items are rated on a 5-point scale, with possible responses ranging from "Not at All" to "Extremely." Sample items include "Feeling critical of others" and "Feeling lonely." The SCL-90-R has adequate reliability and validity (Derogatis, 1994). The Depression scale is reported at a *T*-score, which has a mean of 50 and a standard deviation of 10. For the current sample, Cronbach's alpha for

the Depression scale was 0.89 at the 5- and 7-year visits, and it was 0.90 at the 10-year

visit, indicating strong internal consistency of the items.

Emotion Socialization

Maternal unsupportive styles of emotion socialization was measured at ages 5, 7,

and 10 by maternal report on the Coping with Children's Negative Emotions Scale

(CCNES; Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002). The CCNES is a 12-item,

parent report measure designed to assess the manner in which the parent typically reacts

to his or her child's emotions. The CCNES presents 12 scenarios that tend to result in a

child's display of negative affect. For each scenario, the parents are asked to rate the

extent to which they are likely to react in six specific manners, so the CCNES contains a

total of 72 items (i.e., six items for each of the 12 scenarios). The rating for the parent's

likelihood to react in each manner is based on a Likert scale ranging from 1 to 7, with "1"

indicating "Very Unlikely" and "7" indicating "Very Likely."

While a more global measure of unsupportive emotion socialization was not

included in the present study, this scale was created by taking an average of the Punitive

Reactions, Distress Reactions, and Minimization of Reactions subscales, meaning that

this measure was based on 36 items (see Appendix C for these items). This practice was

consistent with previous research utilizing the CCNES (e.g., DeBoard-Lucas, Fosco,

Raynor, & Grych, 2010; Nelson, O'Brien, Blankson, Calkins, & Keane, 2009; Shadur &

Hussong, 2018). Detailed information on descriptives for these three scales and

correlations between these three scales at each time point can be found in Table 2 and

Table 3, respectively. The mean for the Distress Reactions subscale across ages 5, 7, and

10 fell between 2.46 to 2.62, and the range fell between 3.58 and 4.08. For the Punitive

Reactions subscale, the mean fell between 2.28 and 2.38, with the range falling between

3.50 and 4.22. Finally, on the Minimization Reactions subscale, the mean fell between

2.42 and 2.55, while the range fell between 4.00 and 4.58. This indicates that the three

scales have similar means, but less variability was reported at some ages on the Distress

Reactions and Punitive Reactions subscales. In other words, low and high reports of

minimization were more consistently included on the Minimization Reactions susbscale.

In terms of correlations, the Punitive and Minimization subscales were the most highly

correlated, with estimates ranging from 0.58 to 0.62. Correlations between the Distress

Reactions subscales and the other two subscales were moderate, with estimates ranging

from 0.30 to 0.54. Cronbach's alpha for the combined Unsupportive scale was 0.86 at the

5-year visit, 0.88 at the 7-year visit, and 0.86 at the 10-year visit, indicating strong

internal consistency of the items.

Depressive Symptoms

Depressive symptoms were measured by maternal report at age 5 on the preschool

version of the 131-item Behavior Assessment System for Children (BASC; Reynolds &

Kamphaus, 1998), at age 7 on the 138-item child version of the BASC, and at age 10 on

the 160-item, child version of the second edition of the Behavior Assessment System for

Children (BASC-2; Reynolds & Kamphaus, 2004). The preschool version of the BASC

Depression scale includes 13 items, the child version of the BASC Depression scale

includes 12 items, and the child version of the BASC-2 Depression scale includes 14

items (see Appendix D for these items). This scale assesses depressive symptoms, such as

crying easily, loneliness, feeling sad and pessimistic, and having the desire to harm or kill oneself. For this study, a standardized T-score using norms based on sex was utilized to control for differences in depressive symptoms by sex. T-scores have a mean of 50 and a standard deviation of 10.

The BASC and BASC-2 ask parents to rate statements on a scale from 0 to 3 indicating the degree to which the statement represents their child, with "0" indicating "Never," "1" indicating "Sometimes," "2" indicating "Often," and "3" indicating "Almost Always." Sample items include, "Is easily upset" and "Cries easily." Overall, the BASC-2 has adequate reliability; it has high internal consistency and test-retest correlations, though inter-rater agreement varied (Gladman & Lancaster, 2003). Strong convergent validity was found with other measures (Gladman & Lancaster, 2003). For this project, Cronbach's alpha for the BASC and BASC-2 Depression scales was 0.79 at the 5-year visit, 0.83 at the 7-year visit, and 0.89 at the 10-year visit, indicating strong internal consistency of the items.

Control Measures

Sex was controlled for children's depressive symptoms by utilizing the T-score that accounts for sex based on the original normative sample. Additionally, sex was also included as a control variable for depressive symptoms at age 5 due to statistical differences across sex in this sample at age 5 only [t (324) = 2.43, $p < .05$]. In this sample, sex was coded as 1 = male and 2 = female. Socioeconomic status (SES), as measured with the Hollingshead (Hollingshead, 1975), was controlled for maternal depression and unsupportive emotion socialization. The Hollingshead uses education level and

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occupation to create a score indicative of social status. The education and occupation

scales of this index were validated using the 1970 United States Census (Hollingshead,

1975). For this project, data on occupation and education were collected through the use

of a demographics form. These data were then coded based on the lists provided by the

Hollingshead measure, and a score was calculated based on the Hollingshead procedure.

CHAPTER III

RESULTS

The aim of the study was to examine a transactional model in which pathways

between maternal depression, unsupportive emotion socialization, and depressive

symptoms were examined across time (see Figure 2). To address this aim, a path analysis

was conducted utilizing Mplus Version 8 (Muthén & Muthén, 2017), with missing data

accounted for through Full Information Maximum Likelihood (FIML), and fit indices

were derived. As suggested by de Jonge and colleagues (2001), a stability model was

compared to the more complex, cross-lagged model. Therefore, the following models

were estimated: a stability model for maternal depression, unsupportive emotion

socialization, and children's depressive symptoms with no cross-lag paths (Figure 1), and

a model including cross-lagged and indirect pathways for maternal depression,

unsupportive emotion socialization, and children's depressive symptoms (Figure 2).

Across models, concurrent associations among constructs were estimated. Given that the

stability and cross-lagged models were nested, a chi-square difference test was used to

evaluate whether the cross-lagged model explained the data above and beyond the

stability model (Kline, 2011).

Evaluation of model fit was assessed by examining chi-square, standardized root

mean square residual (SRMR), root mean square error of approximation (RMSEA; Cole

& Maxwell, 2003), and comparative fit index (CFI; Marsh & Hau, 2007). Values close to

or greater than 0.95 indicate good model fit for the CFI, values less than 0.06 indicate good model fit for RMSEA, and values less than or equal to 0.08 indicate good model fit for SRMR (Hu & Bentler, 1999). Within the cross-lagged model, a bias-corrected bootstrapping procedure (10,000 draws) was used to test the indirect effects across maternal depression, unsupportive emotion socialization, and children's depressive symptoms from ages 5 to 10. This approach generates the most accurate confidence intervals for indirect effects, reducing Type 1 error rates and increasing power over other similar tests (MacKinnon, Lockwood, & Williams, 2004).

Prior to these analyses, data screening was conducted to examine whether the variables were normally distributed and to assess for outliers (see Table 4). One outlier was identified and removed. Additionally, due to moderate positive skew, depressive symptoms at all ages (5, 7, and 10) were transformed by computing a base-10 logarithm from the variable plus 1.

Correlations were also run for all study variables (see Table 5). As expected maternal depression at ages 5, 7, and 10 showed a moderate to high positive correlation, with estimates ranging from 0.58 to 0.68. Additionally, unsupportive emotion socialization at ages 5, 7, and 10 showed a moderate to high positive correlation, with estimates ranging from 0.56 to 0.65. Children's depressive symptoms at ages 5, 7, and 10 also showed a moderate to high positive correlation, with estimates ranging from 0.60 to 0.65. Maternal depression showed a modest positive correlation with unsupportive emotion socialization at all ages, with the exception that maternal depression at age 10 and unsupportive emotion socialization at age 5 were not significantly correlated.

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Estimates of significant correlations between these variables ranged from 0.14 to 0.24.

Maternal depression showed a moderate positive correlation with children's depressive

symptoms at all ages, with estimates ranging from 0.31 to 0.41. Unsupportive emotion

socialization showed a modest positive correlation with children's depressive symptoms

at all ages, with the exception that children's depressive symptoms at age 10 and

unsupportive emotion socialization at age 7 were not significantly correlated. Estimates

of significant correlations between these variables ranged from 0.14 to 0.26. Sex (coded

as 1 = male and 2 = female) showed a modest negative correlation with children's

depressive symptoms at age 5 ($r = -0.13$), suggesting that males had higher rates of

depressive symptoms at age 5 only. SES showed a modest negative correlation with

maternal depression at all ages, with estimates ranging from -0.19 to -0.14. SES was also

negatively correlated with unsupportive emotion socialization at age 10 ($r = -0.13$) and

with children's depressive symptoms at age 5 ($r = -0.15$).

Structural Model Comparisons

Stability Model

Autoregressive coefficients were constant over time for maternal depression,

unsupportive emotion socialization, and children's depressive symptoms in the stability

model (Figure 3; see Table 6 for standardized and unstandardized estimates). Maternal

depression showed moderate to high stability from age 5 to age 10 (5yrs to 7yrs: $B = 0.67$,

$p < 0.01$; 7yrs to 10yrs: $B = 0.56$, $p < 0.01$). Unsupportive emotion socialization also

showed moderate to high stability from age 5 to 10 (5yrs to 7yrs: $B = 0.64$, $p < 0.01$; 7yrs

to 10yrs: $B = 0.58$, $p < 0.01$). Additionally, children's depressive symptoms showed

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moderate to high stability from age 5 to age 10 (5yrs to 7yrs: $B = 0.64$, $p < 0.01$; 7yrs to

10yrs: $B = 0.65$, $p < 0.01$). There were also some significant within-time correlations (see

Table 6). Specifically, at age 5, maternal depression was associated with unsupportive

emotion socialization 5 ($r = 0.17$, $p < 0.01$) and with children's depressive symptoms ($r =$

0.42, $p < 0.01$). Unsupportive emotion socialization at age 5 and children's depressive

symptoms at age 5 were also associated ($r= 0.20$, $p < 0.01$). At age 7, maternal depression

and unsupportive emotion socialization were associated ($r = 0.15$, $p < 0.05$). Finally, at

age 10, maternal depression was associated with unsupportive emotion socialization ($r =$

0.14, $p < 0.05$) and children's depressive symptoms ($r = 0.24$, $p < 0.01$). The stability

model had adequate fit with the data: $\chi^2(32) = 130.019$, $p = .00$; RMSEA = 0.10 (CI =

0.08- 0.11); CFI = 0.91; SRMR = 0.09.

Cross-Lagged Model

The cross-lagged model also demonstrated acceptable fit: $\chi^2(20) = 96.06$, $p = .00$;

RMSEA = 0.11 (CI = 0.09- 0.13); CFI = 0.93; SRMR = 0.05. Additionally, the chi-

square difference test indicated that the cross-lagged model significantly improved fit

over the stability model: $\Delta\chi^2 (12) = 33.96$, $p < .01$. As such, the cross-lagged model

accounting for the cross-construct relations better explained the associations between

maternal depression, unsupportive emotion socialization, and children's depressive

symptoms from age 5 to age 10 than the model containing just stability pathways. Within

the cross-lagged model (Figure 4; see Table 7 for standardized and unstandardized

estimates), all autoregressive stability paths remained positive and significantly different

from zero. Additionally, the cross-lagged paths indicated that maternal depression at age

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7 was associated with children's depressive symptoms at age 10 ($B = 0.11$, $p < 0.05$), supporting the link between maternal depression and future depressive symptoms in children. However, this link was not found at earlier time points, from maternal depression at age 5 to children's depressive symptoms at age 7. Furthermore, children's depressive symptoms at age 5 were associated with maternal depression at age 7 ($B = 0.12$, $p < 0.05$), and children's depressive symptoms at age 7 were associated with maternal depression at age 10 ($B = 0.13$, $p < 0.05$). This suggests that, earlier in childhood, children's depressive symptoms may influence maternal mental health. Additionally, unsupportive emotion socialization at age 5 was associated with children's depressive symptoms at age 7 ($B = 0.11$, $p < 0.05$).

No significant indirect effects were found beyond those that included stability paths. However, multiple indirect pathways including stability paths were found to be significant (see Table 8). The pathway from maternal depression at age 5 to maternal depression at age 7 to children's depressive symptoms at age 10 was significant (standardized estimate = 0.04). This finding indicates that greater maternal depression at age 5 is linked to greater maternal depression at age 7, and this subsequently leads to higher levels of depression in children over time. The pathway from children's depressive symptoms at age 5 to children's depressive symptoms at age 7 to maternal depression at age 10 was significant (standardized estimate = 0. 08). This finding indicates that greater depressive symptoms in children at age 5 are linked to greater depressive symptoms in children at age 7, and this subsequently leads to higher levels of maternal depression at age 10. Finally, the pathway from children's depressive symptoms at age 5 to maternal

depression at age 7 to maternal depression at age 10 was significant (standardized estimate = 0.07). This finding indicates that greater depressive symptoms in children at age 5 are linked to higher levels of maternal depression at age 7, and this subsequently leads to higher levels of maternal depression at age 10. The percent of the variance explained by the direct versus indirect pathways was not reported, as these pathways are interdependent, so the percent of variance explained is not a good measure for the purpose of comparison. Specifically, the percent of variability explained by the indirect pathway is the full percent of variability minus the direct pathways. Since the direct pathways cannot be statistically separated from the indirect pathways for the purpose of percent of variability explained, they are interdependent.

CHAPTER IV

DISCUSSION

Recent perspectives on the relation between parenting and children's behavior suggests a bidirectional influence (Pesonen et al., 2008; Sameroff, 2009; Zadeh et al., 2010). For example, a study by Rodas and colleagues (2017) identified a bidirectional relation between unsupportive emotion socialization and internalizing symptoms. Nicholson and colleagues (2011) demonstrated a bidirectional relation between internalizing symptoms in children and maternal depression. However, the literature on bidirectional relations regarding maternal depression, maternal unsupportive emotion socialization, and children's depressive symptoms is predominantly theoretical, and these relations require further investigation. Additionally, this is the first study to examine children's depressive symptoms directly as opposed to the more overarching concept of internalizing symptoms. Finally, literature was sparse on the impact of emotion socialization beyond early childhood, so this study fills that gap.

The aim of the study was to examine a transactional model (Figure 2) in which pathways between maternal depression, unsupportive emotion socialization, and children's depressive symptoms were examined across time (see Figures 1 and 2). Specifically, these variables were all examined at ages 5, 7, and 10. Overall, the hypotheses of this study were partially confirmed. This model had adequate fit with the data, and maternal depression, unsupportive emotion socialization, and children's

depressive symptoms each showed stability from age 5 to age 10. Although the focus was on the pathways across time, concurrent associations were also found that suggest important relations between the variables examined. Specifically, within-time associations were found between maternal depression and children's depressive symptoms as well as unsupportive emotion socialization at age 5. This is consistent with research showing associations between maternal depression and children's internalizing symptoms (Coyne & Thompson, 2011; Goodman et al., 2011; Pizeta et al., 2018) as well as links between maternal depression and unsupportive emotion socialization (Cummings & Davies, 1994; Murray et al., 1996). Consistent with previous research linking unsupportive emotion socialization and internalizing symptoms, unsupportive emotion socialization and children's depressive symptoms were also associated at age 5 (Luebbe et al., 2011; Silk et al., 2011). Overall, this suggests that maternal depression, unsupportive emotion socialization, and children's depressive symptoms were all influencing each other at age 5. Furthermore, at age 7, maternal depression and unsupportive emotion socialization were correlated. Finally, at age 10, maternal depression was associated with unsupportive emotion socialization and children's depressive symptoms. While associations between all variables were not found at age 7 and 10, this indicates a concurrent connection between maternal depression and unsupportive emotion socialization at all time points, and concurrent associations between maternal and children's depressive symptoms at two time points. In other words, while this does not address longitudinal associations, these results indicate that maternal

depression, unsupportive emotion socialization, and children's depressive symptoms are influencing each other when examined at specific time points.

Longitudinal or bidirectional associations, which were the primary aim of this study, were also found. Consistent with the robust literature connecting maternal depression to children's symptoms of depression, maternal depression at age 7 was associated with children's depressive symptoms at age 10. Children's depressive symptoms at age 5 were associated with maternal depression at age 7, and the same association was found from ages 7 to 10, suggesting that these early symptoms of depression in children are exacerbating maternal depression. This is consistent with indirect pathways indicating that maternal depression and children's depressive symptoms influenced each other across time. Though most literature investigates the link from maternal depression to children's depressive symptoms, this is consistent with literature indicating that this relation is bidirectional (Rodas et al., 2017). Finally, unsupportive emotion socialization at age 5 was associated with children's depressive symptoms at age 7. This begins to fill in a gap in the literature regarding the relation between unsupportive emotion socialization and children's depressive symptoms in early and middle childhood.

Some of the study hypotheses were not confirmed. For example, the link between maternal depression and children's depressive symptoms was not found from age 5 to 7 (i.e., from maternal depression at age 5 to children's depressive symptoms at age 7). However, Goodman and Gotlib (1999) suggest that mothers with chronic depression will have a more substantial impact on their child's functioning. Therefore, it is possible that

this link did not appear until later ages, when the long-term effects of recurrent depression have had a chance to have a detrimental impact on their children. Given moderately high stability of both maternal depressive symptoms from ages 5 to 7 and 7 to 10, this suggests that high maternal depressive symptoms at age 5 are associated with high maternal depressive symptoms at 7, and the same pattern holds from 7 to 10. In other words, mothers reporting high levels of depressive symptoms at early ages are continuing to report high levels of depressive symptoms at later ages. Therefore, this does suggest that mothers experiencing depressive symptoms tend to experience a chronic course of these symptoms, adding support for the idea that the association between maternal depression at age 5 to children's depressive symptoms at age 7 was not significant because the chronic course of maternal depressive symptoms had not yet had an impact on children's symptoms of depression. However, these data do not identify whether there was a cumulative effect of maternal depression since stability estimates cannot be compared to see if there are statistical differences. This also presumes that maternal depression affects parenting, but this was not tested directly in the present study.

Additionally, the association between unsupportive emotion socialization and children's depressive symptoms was not found from age 7 to 10. However, this is consistent with literature showing that emotion socialization changes as children age (Thompson, 2014). For example, during middle through late childhood, children's executive functioning improves, making them better equipped to utilize their own coping skills (Eisenberg et al., 2010; Eisenberg & Sulik, 2012; Losoya et al., 1998; Zimmer-Gembeck & Skinner, 2011). However, as children reach late childhood and adolescence,

the impact of emotion socialization from peers begins to increase (Klimes-Dougan et al., 2014; Zahn-Waxler, 2010). Though emotion socialization from parents remains important, its influence may be diluted by the emergence of peer emotion socialization. Therefore, children's symptoms of depression may not be strongly influenced by parental emotion socialization by the time they reach late childhood.

No pathways between maternal depression and unsupportive emotion socialization were found to be significant. This is likely due to the fact that the range of maternal report of unsupportive emotion socialization was truncated around the mean, indicating minimal variability (see Table 4 for descriptives). The average score and limited variability in mothers' report of unsupportive emotion socialization suggests that no mothers were reporting truly high unsupportive emotion socialization, and it is specifically high levels of unsupportive emotion socialization that have been linked to maternal depression (Cummings & Davies, 1994; Murray et al., 1996; Silk et al., 2011).

Additionally, it is possible that it is not the valence of the emotion socialization (i.e., supportive versus unsupportive) that should be investigated. For example, a study by Miller and colleagues found that parental involvement in emotion socialization was a better predictor for children's effortful control and positive social behaviors than whether the emotion socialization was supportive or unsupportive (Miller et al., 2015). In other words, children of parents who engaged in emotion socialization were more likely to develop better effortful control than those parents who did not engage in emotion socialization. However, this study measured emotion socialization differently, such that questions asked about mothers overall emotional style and ideas regarding emotions.

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Unlike the CCNES, scenarios were not used, and mothers were asked to rate the truth of statements such as, "When my child feels sad, it's an opportunity for getting close." Since this study utilized the CCNES, involvement in emotion socialization could not be measured in the present data set to test this theory.

Conversely, other parenting variables beyond emotion socialization may be important to consider. Perry and colleagues found that parental overcontrol at age 2 predicted later difficulties in emotion regulation (Perry, Dollar, Calkins, Keane, & Shanahan, 2018). It is possible that children of parents who tend to be controlling prevent their children from the opportunity to experience a variety of emotions and learn to regulate those emotions. This type of behavior would disrupt emotion socialization process by limiting children's opportunities to experience a variety of emotions.

Furthermore, it is not clear that the types of emotion socialization that are considered "unsupportive" in this study are universal for all families and cultures. While research in this area is limited, a literature review on cross-cultural emotion socialization noted that the Coping with Children's Negative Emotions Scale (CCNES) is used mostly widely to study emotion socialization around the world, and it was developed based on research regarding emotion socialization from the United States (Friedlmeier, Corapci, & Cole, 2011). Friedlmeier and colleages noted that European-American parents are more likely to endorse the types of emotion socialization labeled as supportive within the CCNES than those types of emotion socialization that are identified as unsupportive. Furthermore, the idea of what is considered supportive is based on the individualistic culture of the United States. The review also noted that other cultures also have different

priorities regarding what emotions are important and acceptable, so culture could influence how parents are reporting based on the emotion elicited in the vignette on the CCNES.

Additionally, in a study comparing emotion socialization of European American and Africa American mothers, Hooper, Wu, Ku, Gerhardt, and Feng (2018) found that ethnicity moderated the relation between emotion socialization. For example, when African American mothers demonstrated more unsupportive emotion socialization regarding their children's anger, children's rates of internalizing and externalizing symptoms were higher 1 year later. This association was not found for European American mothers. Thus, the concept of unsupportive emotion socialization is not universal, and it may not be consistent across the study sample.

The above considerations may also account, at least in part, for the lack of findings regarding indirect pathways that included unsupportive emotion socialization. Additionally, it is possible that the relation between maternal depression, children's depression, and unsupportive emotion socialization is not mediational but moderational. This would be consistent with the literature suggesting that mothers with psychopathology in general, and symptoms of depression in particular, are more likely to utilize unsupportive emotion socialization (Breaux et al., 2016; Monti, Rudolph, & Abaied, 2014). Additionally, a moderated mediation in this case would be allow for different levels of depressive symptoms to have a differential effect. In other words, it is possible that mothers must reach a clinical level of depression before maternal depression

moderates the relation between unsupportive emotion socialization and children's depression.

Limitations and Future Directions

The models for this study only used maternal report, and the depression-distortion hypothesis suggests that depressed mothers are more likely to rate their children's behavior more negatively, such that the tendency toward negativity associated with their own depressive symptoms colors the behavior of their children in a negative light (Kroes, Veerman, & De Bruyn, 2003; Najman et al., 2000). As a result, pathways from maternal depression to children's depressive symptoms may be more reflective of maternal perception in rating the child's behaviors and emotions. However, as this was a community sample, the majority of the mothers in this sample were not reporting clinical levels of depressive symptoms. Specifically, the percentage of mothers reporting symptoms that were at least 1.5 standard deviations above the mean (i.e., a *T*-score of 65 or higher) ranged from approximately 15-17% at each time point. There is also research suggesting that this depression-distortion hypothesis may instead be a reflection of their children's behavior being objectively more negative (Richters & Pellegrini, 1989).

As such, other reporters were considered for the present project. Self-report is often used to assess depressive symptoms in adolescents and adults, but in early childhood, children have yet to develop the necessary cognitive abilities to accurately assess and report on their own depressive symptoms (Chrisman, Egger, Compton, Curry, & Goldston, 2006; Garber & Kaminski, 2000; Kazdin, 1981). This presents a challenge for measuring depression in children, as the only remaining options for measuring

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depression in early childhood are observations and report by others (Klein, Dougherty, & Olino, 2005). However, current evidence regarding observational measures is too limited (Klein et al., 2005). Current observational systems only allow for observing a subset of symptoms (e.g., sleep studies are only useful for sleep problems, whereas lab tasks are primarily assessing mood and psychomotor difficulties); this means that there is not a single, global observational system, much less one that is accepted in the literature as a valid measure of depression (Garber & Kaminski, 2000; Kendall, Cantwell, & Kazdin, 1989).

Beyond observational measures and maternal report, teachers are potential collateral reporters for symptoms of depression, However, some research suggests that teacher report is not very accurate regarding depressive symptoms (Auger, 2004; Cunningham & Suldo, 2014). Specifically, teachers are often viewed as the non-preferred reporter for depressive symptoms because internalizing symptoms are often less observable in the classroom than externalizing behavior (Frick, Barry, & Kamphaus, 2010). Still, in the present study, the BASC was utilized, and this measure operationalizes many of the items asking about depression in a particularly observable fashion, so teacher report may be more accurate when this type of measure is used.

In addition to the above considerations, selection of maternal report was influenced by the availability of limited options in the current dataset. In the present study, at age 5, the correlation between maternal and teacher report was significant but modest. At age 7, maternal and teacher report were significantly and moderately correlated, but child report was only modestly correlated with child self-report. Finally, at

age 10, maternal, child, and teacher report were all moderately correlated with the other reporters. Detailed correlations between maternal, teacher, and child report at each time point can be found in Table 9.

Regarding use of alternate reporters, self-report from the child was not collected regarding self-report at age 5, and it was only collected for a portion of the sample at age 7. Father report was also considered, but fathers did not complete a measure that assesses depression specifically. Teacher report was also considered, but using teacher report would have decreased the number of participants included in the analyses and required more imputation through FIML because teacher report was not collected as consistently as maternal report. Based on theoretical considerations and the available data, the present study necessitated the use of maternal report despite concerns about biased maternal perception.

However, to adjust for possible biased maternal perception of depressive symptoms, future research could utilize teacher report or a second reporter in the home (e.g., father, grandparent) if available. When children approach pre-adolescence and are old enough to accurately report their own depressive symptoms, self-report rating scales could also be used. Utilization of an additional reporter or reporter may yield different results than those found in the present study, as each reporter brings a different perspective and reporting on an alternative setting. There is also literature suggesting differing levels of behavior problems at school versus in the home (e.g., Ingersoll & Eist, 1998), and while this has not been studied regarding emotional difficulties, it is possible that this is the case for depressive symptoms as well. Additionally, while using an

additional reporter would adjust for maternal bias and extend interpretation of the results, use of a single reporter provides valuable information regarding maternal perspective. Therefore, there are benefits and difficulties when utilizing a single reporter and multiple reporters.

An additional consideration is the construct of depression at age 5. Children with depression tend to demonstrate difficulty with emotion regulation, especially sadness (Bowie, 2010; Dougherty et al., 2010; Eisenberg et al., 2009; Van Beveren et al., 2016). At young ages, it may be difficult to separate the symptoms of depression from general difficulty with emotion regulation. The manner in which the BASC assesses these symptoms is different for children at the age of 5 than for older children. Items such as "pouts" and "complains about being teased" are on the version of the BASC used when children were 5 but not on the version used at ages 7 and beyond (see Appendix D for the items on each version of the measure). However, depressive symptoms go beyond dysregulated emotion (American Psychiatric Association, 2013), and depression may simply present differently in young children (Gaffrey et al., 2011; Kistner et al., 2001). Additionally, depressive symptoms have been identified as early as age 3 (Kashani & Ray, 1983; Luby et al., 2003; Stalets & Luby, 2006). Thus, depressive symptoms at age 5 may sometimes appear to be dysregulated sadness, but they are indicative of difficulties beyond the ability to regulate emotions. Additionally, dysregulated emotion in depression may not be related exclusively to sadness, as irritability is sometimes an additional form of dysregulated emotions in children (Stringaris, Maughan, Copeland, Costello, & Angold, 2013). If sadness were examined in lieu of depression in the present study, a

subset of children who experience substantial irritability related to their depressive symptoms may have been missed, including the differential maternal emotion socialization that may occur in response to irritability mixed with sadness.

Furthermore, as the study begins when the children are 5-years old, it does not address maternal depression that may have been present prior to this age and even prior to the birth of the child in question. Adults with an early history of depression often have more chronic depressive symptoms (Fernando et al., 2011; Mondimore et al., 2006; Sung et al., 2013), so it is possible that maternal depression that preceded the birth of these children, especially depression that began when the mothers were children themselves, would have a different effect than depression that began when children were in early childhood. While this is somewhat accounted for in this study by examining severity of symptoms, chronicity and frequency of depressive symptoms is not included in the measure of maternal depressive symptoms. Future research could examine this question, particularly in light of the suggestion by Goodman and Gotlib (1999) that mothers with chronic depression will have a more substantial impact on their child's functioning. In other words, chronic maternal depression may have a cumulative effect on the functioning of the children of depressed mothers.

Desirability bias may also be problematic in ratings of unsupportive emotion socialization. It is possible that some parents are unwilling to report the extent to which they engage in unsupportive methods of emotion socialization, and they may be unaware that they are engaging in this behavior. To address this limitation, future research could utilize alternative methods to measure unsupportive emotion socialization. Prior studies

have implemented coding of laboratory interactions to measure emotion socialization (see

Hastings et al., 2014). This has the limitation of only measuring a snapshot and failing to

capture the entire picture of emotion socialization. It may also be subject to the

desirability bias, as mothers may demonstrate less unsupportive emotion socialization

when they are aware that their interaction is being viewed by a third party. Coding over

multiple home visits may correct for both of these limitations, but it would be costly and

time consuming. Future research could investigate the feasibility of selecting a method of

this type. Notably, the study that utilized laboratory coding of emotion socialization also

included additional measures of this variable in an effort to balance limitations, so this

approach may be useful for future research. Alternative reporters may also help address

this limitation. When children reach late childhood, the child's perspective of how their

mother reacts to negative emotions could be obtained. The present study did obtain some

related information in an interview format, but it was not sufficient to assess emotion

socialization. Additionally, to measure these variables longitudinally, coding often

reduces sample size, as it is easier to obtain rating scales than to regularly bring families

in for laboratory visits. This has been the case with the present sample, as more data are

available for rating scales at each time point than is available for coded variables.

Furthermore, due to the predominantly standardized order in which the measures

were presented, order effects may have had an impact on the results of this study. At the

5- and 7-year visits, mothers typically completed the questionnaires regarding emotion

socialization and maternal depression at the same visit, with the maternal depression

questionnaire typically being completed first. Having recently reported on their own

mental health may have colored their view of their emotion socialization practices. A the 10-year visit, the questionnaires regarding maternal and child symptoms of depression were typically completed at the same visit, with the questionnaire regarding personal mental health typically being completed first. As a result, mothers' recent reporting of their own depressive symptoms may have influenced their report of their children's depressive symptoms.

Another consideration is whether the definition of unsupportive emotion socialization is culturally consistent or even consistent across families, as emotion socialization practices vary across countries and among ethnic groups within the United States (Chen, Fu, & Zhao, 2014; Friedlmeier et al., 2011). This is supported in the present study by the fact that post-hoc analyses revealed the transactional model to have significantly stronger fit for European American participants than African American participants, $\Delta\chi^2(1) = 15.95$, $p < .01$. Therefore, other dimensions of emotion socialization may be useful to study, such as involvement in emotion socialization or the extent to which overcontrol limits opportunities for emotion socialization.

Future research could potentially utilize a qualitative approach to build an idea of what emotion socialization looks like in each family and whether it functions as supportive or unsupportive for the particular family. This qualitative research could potentially be combined with quantitative research to identify patterns for families with mothers who are and are not experiencing symptoms of depression and for children who do and do not develop internalizing symptoms. This relates to the additional study limitation that the sample was predominantly Caucasian and African American. While

the sample is unique in including a relatively large African American population, a more racially diverse sample could be particularly interesting if this method of qualitative data collection were utilized, particularly based on literature suggesting that culture influences emotion socialization (Chen et al., 2014; Friedlmeier et al., 2011). Future research could also examine the role of fathers in emotion socialization, and this may also be an interesting population within which to implement qualitative research.

Similarly, while this study controlled for sex regarding children's symptoms of depression, the processes described may differ by sex. While rates of depression are typically similar across sex during early and middle childhood, when children reach puberty, rates tend to increase more substantially for girls, and this difference persists throughout adulthood (American Psychiatric Association, 2013; Angold & Costello, 2006; Angold, Costello, & Worthman, 1998; Ge, Conger, & Elder, 2001; Hayward & Sanborn, 2002). This is supported in the present study by post-hoc analyses indicated that the transactional model had significantly stronger fit for female participants than male participants, $\Delta\chi^2 (1) = 17.30$, $p < .01$. Therefore, future research should examine how these processes differ by sex.

The present study was also limited by attrition, which is typical for a longitudinal study. While attrition in the years included within the present study were accounted for by FIML, FIML cannot account for the attrition that occurred between the ages of 2 and 5. Along these lines, participants with lower socioeconomic status (SES) at the 2-year visit were significantly less likely to participate in 7-year visit. Still, while SES was controlled

in this study, and while SES was correlated with some variables, none of the variables utilized differed significantly by SES, so this is likely a minimal limitation.

Future research could also examine these factors in a clinical sample as opposed to the community sample utilized in this study, as mothers and children with clinical levels of depression may yield different results. Future research could also recruit a sample of children with clinically significant symptoms of depression and compare them to a control population, though this would not generalize to the overall population. Alternatively, a community population that is oversampled for internalizing symptoms could be recruited and studied longitudinally to examine these questions, and these results would be more generalizable to the overall population.

Another future direction would be to examine this model as a cascade, with these variables leading to depression at age 10. This method was not utilized in the present study because the aim was to examine how depressive symptoms develop in early through late childhood. Examining these variables in a cascade that ends with depressive symptoms at age 10 or later could tap into more clinically significant levels of depressive symptoms and may speak more to how depression is maintained or exacerbated after development. This method may also be useful for identifying protective factors regarding the development of depression. For example, supportive emotion socialization may act as a buffer for children of depressed mothers. Along these lines, future research may investigate the use of statistical profiles. Perhaps patterns of children's depressive symptoms over time yield different relations with maternal depression and unsupportive emotion socialization. For example, children with depressive symptoms that increase

over time may look different from children with stable but high levels of depressive symptoms.

Overall, however, this study suggests that the manner in which parents react to their children's emotions has implications for children's depressive symptoms and the manner in which maternal and children's depressive symptoms are related. It also suggests that children's mental health has an effect on the mental health of their parents. In clinical work, for parents who engage in unsupportive emotion socialization, parenting interventions may be required in order to treat the mental health of both the parent and child in an effective fashion. As such, parent-child interactions may be a key factor to examine when beginning mental health interventions for either party.

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TABLES AND FIGURES

Table 1

Sample Demographics

Children's Sex			
Sex	*5yr*	*7yr*	*10yr*
Male	46.8%	45.3%	45.5%
Female	53.2%	54.7%	54.5%
Children's Race			
Race	*5yr*	*7yr*	*10yr*
Caucasian	67.3%	67.4%	65.1%
African American	27.2%	26.8%	28.4%
Mixed	3.2%	3.8%	4.1%
Other	2.3%	2.1%	2.3%
Children's Socioeconomic Status			
Category (Score)	*5yr*	*7yr*	*10yr*
Major business and professional (55-66)	12.7%	19.6%	19.5%
Medium business, minor professional, technical (40-54)	49.7%	51.4%	50/2%
Skilled craftsman, clerical, sales workers (30-39)	27.2%	17.8%	17.0%
Machine operators, semiskilled workers (20-29)	8.3%	8.7%	10.5%
Unskilled laborers, menial service workers (8-19)	2.1%	2.5%	2.8%

Figure 1

Theoretical Stability Model for Maternal Depression, Unsupportive Emotion Socialization, and Children's Depressive Symptoms.
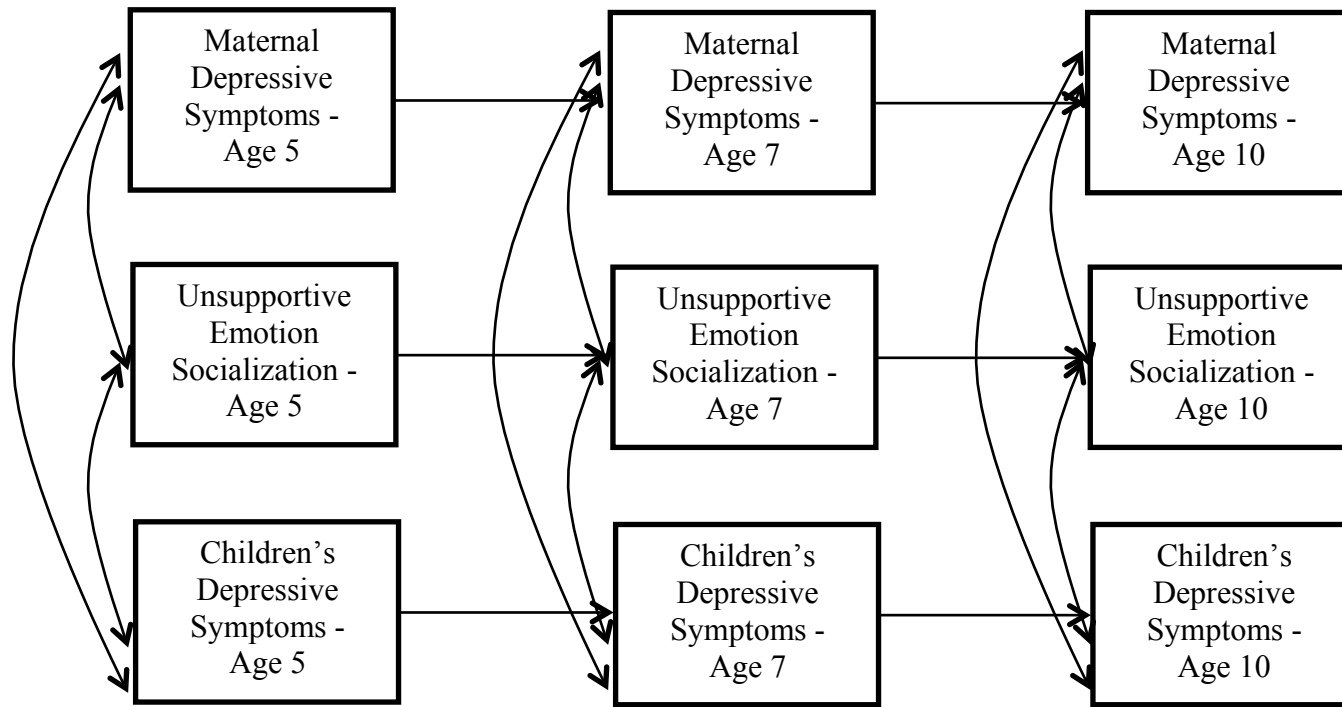
Figure 2

Theoretical Transactional Model for Maternal Depression, Unsupportive Emotion Socialization, and Children's Depressive Symptoms.
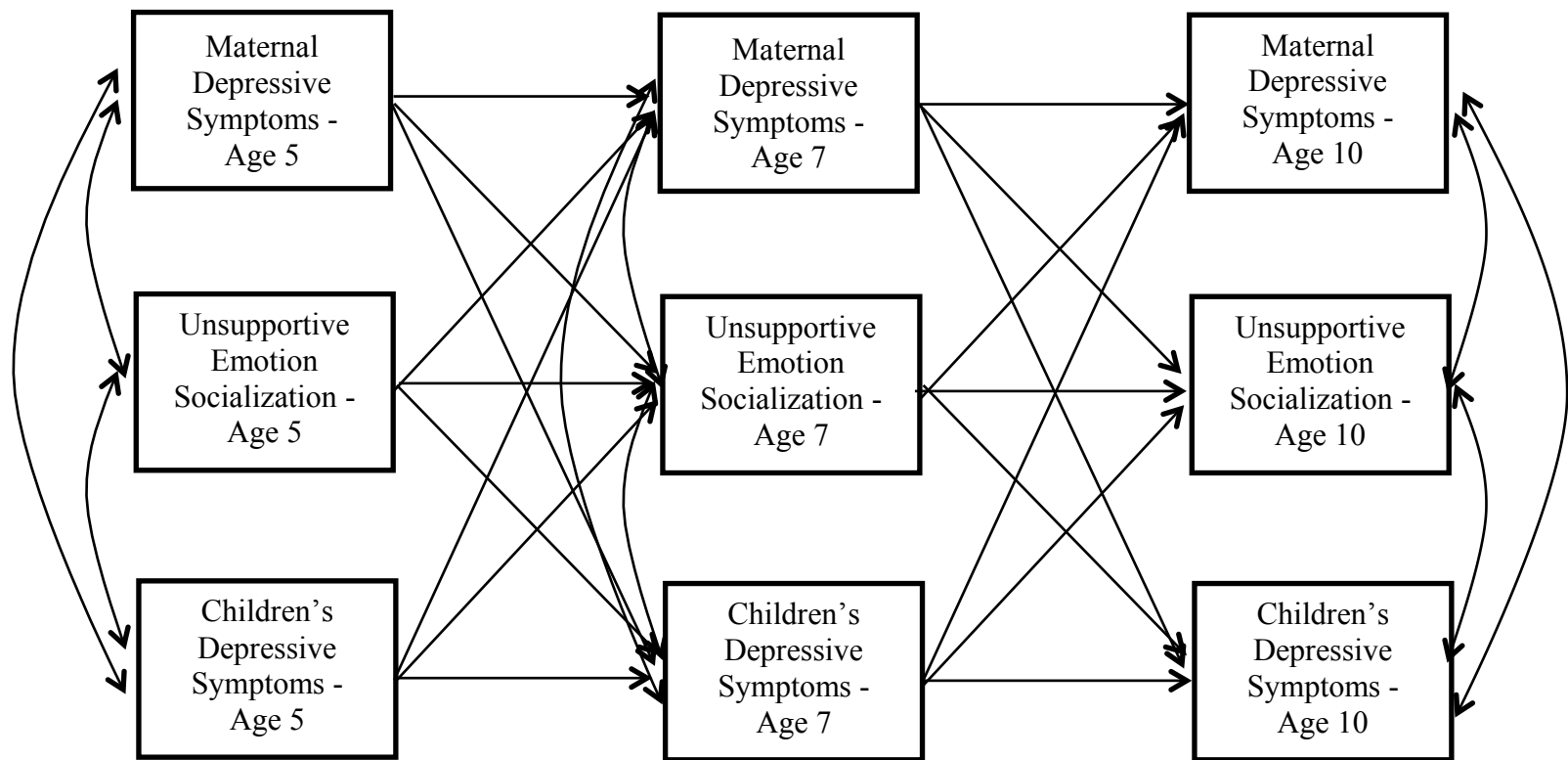
Table 2

Descriptive Statistics for Three Types of Unsupportive Emotion Socialization on CCNES

	Age 5			
Variable	*Mean (SD)*	*Skewness*	*Kurtosis*	*Range*
CCNES Distress Scale	2.55 (0.72)	0.30	0.07	4.00
CCNES Punitive Scale	2.38 (0.71)	0.53	0.20	4.22
CCNES Minimization Scale	2.47 (0.87)	0.77	0.28	4.58
	Age 7			
Variable	*Mean (SD)*	*Skewness*	*Kurtosis*	*Range*
CCNES Distress Scale	2.46 (0.74)	0.50	0.08	4.08
CCNES Punitive Scale	2.28 (0.67)	0.60	0.33	3.50
CCNES Minimization Scale	2.42 (0.87)	0.63	0.25	4.50
	Age 10			
Variable	*Mean (SD)*	*Skewness*	*Kurtosis*	*Range*
CCNES Distress Scale	2.62 (0.76)	0.00	-0.54	3.58
CCNES Punitive Scale	2.38 (0.69)	0.77	1.01	4.17
CCNES Minimization Scale	2.55 (0.89)	0.60	-0.28	4.00

Notes. CCNES = Coping with Children's Negative Emotions Scale

Table 3

Correlations Between Three Types of Unsupportive Emotion Socialization on the CCNES

Variable	1	2	3	4	5	6	7	8	9
1. CCNES Distress Scale at age 5	1								
2. CCNES Punitive Scale at age 5	0.42**	1							
3. CCNES Minimization Scale at age 5	0.30**	0.65**	1						
4. CCNES Distress Scale at age 7				1					
5. CCNES Punitive Scale at age 7				0.54**	1				
6. CCNES Minimization Scale at age 7				0.39**	0.62**	1			
7. CCNES Distress Scale at age 10							1		
8. CCNES Punitive Scale at age 10							0.45**	1	
9. CCNES Minimization Scale at age 10							0.31**	0.58**	1

Notes. * = $p < .05$, ** = $p < .01$; CCNES = Coping with Children's Negative Emotions Scale

Table 4

Descriptive Statistics

Maternal Depression				
Variable	*Mean (SD)*	*Skewness*	*Kurtosis*	*Range*
SCL-90-R Depression scale, 5yr	51.74 (9.94)	-0.03	-0.69	41.00
SCL-90-R Depression scale, 7yr	48.78 (9.52)	0.32	-0.51	41.00
SCL-90-R Depression scale, 10yr	49.05 (10.27)	0.33	-0.40	47.00
Unsupportive Emotion Socialization				
Variable	*Mean (SD)*	*Skewness*	*Kurtosis*	*Range*
CCNES Unsupportive scale, 5yr	2.66 (0.56)	0.59	0.17	3.35
CCNES Unsupportive scale, 7yr	2.59 (0.56)	0.74	1.13	3.25
CCNES Unsupportive scale, 10yr	2.70 (0.56)	0.39	-0.21	3.11
Children's Depressive Symptoms				
Variable	*Mean (SD)*	*Skewness*	*Kurtosis*	*Range*
BASC Depression scale, 5yr	46.39 (10.89)	1.19	2.59	71.00
BASC Depression scale, 7yr	44.90 (8.90)	1.62	4.11	56.00
BASC Depression scale, 10yr	48.46 (10.22)	1.45	2.76	59.00

Notes. SCL-90-R = Symptom Checklist-90; CCNES = Coping with Children's Negative Emotions Scale; BASC = Behavior Assessment System for Children; SCL-90-R scores are *T*-scores; BASC depression scales are based on the separate-sex *T*-score

Table 5

Correlations Among All Variables (N = 271)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Maternal Depression at 5	1										
2. Maternal Depression at 7	0.68**	1									
3. Maternal Depression at 10	0.60**	0.58**	1								
4. Unsupportive ES at 5	0.14*	0.20**	0.11	1							
5. Unsupportive ES at 7	0.16**	0.24**	0.14*	0.65**	1						
6. Unsupportive ES at 10	0.19**	0.17**	0.17**	0.56**	0.59**	1					
7. Depressive symptoms at 5	0.41**	0.36**	0.34**	0.18**	0.14*	0.17**	1				
8. Depressive symptoms at 7	0.32**	0.34**	0.31*	0.26**	0.19*	0.16**	0.64*	1			
9. Depressive symptoms at 10	0.36**	0.34**	0.40**	0.19**	0.09	0.16**	0.60**	0.65**	1		
10. Sex	-0.08	-0.03	-0.01	-0.06	-0.01	-0.05	-0.13*	-0.07	0.09	1	
11. Hollingshead SES at 5	-0.19**	-0.18**	-0.14*	-0.03	-0.11	-0.13*	-0.15**	-0.03	-0.10	-0.08	1

Notes. * = $p < .05$, ** = $p < .01$; ES = Emotion Socialization

Table 6

Stability Model Results (N = 338)

Parameter	Unstandardized	SE	Standardized
Direct Effects			
MD (age 5) → MD (age 7)	0.62**	0.04	0.67**
MD (age 7) → MD (age 10)	0.60**	0.05	0.56**
UES (age 5) → UES (age 7)	0.63**	0.04	0.64**
UES (age 7) → UES (age 10)	0.58**	0.05	0.58**
CD (age 5) → CD (age 7)	0.53**	0.04	0.64**
CD (age 7) → CD (age 10)	0.66**	0.05	0.65**
Within-Time Correlations			
MD (age 5) with UES (age 5)	0.94**	0.32	0.17**
MD (age 5) with CD (age 5)	0.39**	0.06	0.42**
UES (age 5) with CD (age 5)	0.01**	0.00	0.20**
MD (age 7) with UES (age 7)	0.43*	0.17	0.15*
MD (age 7) with CD (age 7)	0.03	0.03	0.07
UES (age 7) with CD (age 7)	0.00	0.00	0.05
MD (age 10) with UES (age 10)	0.52*	0.23	0.14*
MD (age 10) with CD (age 10)	0.12**	0.03	0.24**
UES (age 10) with CD (age 10)	0.00	0.00	0.11

Notes. * = $p < .05$, ** = $p < .01$; MD = Maternal Depressive Symptoms; UES = Unsupportive Emotion Socialization; CD = Child Depressive Symptoms

Table 7

Transactional Model Direct Effects (N = 338)

Parameter	Unstandardized	SE	Standardized
Direct Effects (Stability Paths)			
MD (age 5) → MD (age 7)	0.58**	0.05	0.61**
MD (age 7) → MD (age 10)	0.59**	0.06	0.54**
UES (age 5) → UES (age 7)	0.64**	0.06	0.64**
UES (age 7) → UES (age 10)	0.58**	0.06	0.58**
CD (age 5) → CD (age 7)	0.49**	0.05	0.59**
CD (age 7) → CD (age 10)	0.65**	0.06	0.63**
Direct Effects (Crosslagged Paths)			
UES (age 5) → MD (age 7)	0.96	0.77	0.06
CD (age 5) → MD (age 7)	11.97*	5.01	0.12*
MD (age 5) → UES (age 7)	0.00	0.00	0.06
CD (age 5) → UES (age 7)	0.06	0.34	0.01
MD (age 5) → CD (age 7)	0.00	0.00	0.08
UES (age 5)→ CD (age 7)	0.02*	0.01	0.11*
UES (age 7) → MD (age 10)	-0.54	0.87	-0.03
CD (age 7) → MD (age 10)	16.19*	7.89	0.13*
MD (age 7) → UES (age 10)	-0.00	0.00	-0.03
CD (age 7) → UES (age 10)	0.54	0.41	0.08
MD (age 7) → CD (age 10)	0.00*	0.00	0.11*
UES (age 7)→ CD (age 10)	0.00	0.01	0.00

Notes. * = $p < .05$, ** = $p < .01$; MD = Maternal Depression; UES = Unsupportive Emotion Socialization; CD = Child Depressive Symptoms

Table 8

*Transactional Model Indirect Effects (N = 338)*

Parameter	Unstandardized	SE	Standardized
MD (age 5) → MD (age 7) → MD (age 10)	0.34**	0.04	0.33**
MD (age 5) → UES (age 7) → MD (age 10)	-0.00	0.00	-0.00
MD (age 5) → CD (age 7) → MD (age 10)	0.01	0.01	0.01
CD (age 5) → MD (age 7) → MD (age 10)	7.01*	2.96	0.07*
CD (age 5) → UES (age 7) → MD (age 10)	-0.03	0.35	0.00
CD (age 5) → CD (age 7) → MD (age 10)	7.90*	3.76	0.08*
UES (age 5) → MD (age 7) → MD (age 10)	0.56	0.45	0.03
UES (age 5) → UES (age 7) → MD (age 10)	-0.34	0.56	-0.02
UES (age 5) → CD (age 7) → MD (age 10)	0.25	0.17	0.01
MD (age 5) → MD (age 7) → UES (age 10)	-0.00	0.00	-0.02
MD (age 5) → UES (age 7) → UES (age 10)	0.00	0.00	0.04
MD (age 5) → CD (age 7) → UES (age 10)	0.00	0.00	0.01
CD (age 5) → MD (age 7) → UES (age 10)	-0.02	0.04	-0.00
CD (age 5) → UES (age 7) → UES (age 10)	0.03	0.20	0.01
CD (age 5) → CD (age 7) → UES (age 10)	0.27	0.21	0.05
UES (age 5) → MD (age 7) → UES (age 10)	-0.00	0.00	-0.00
UES (age 5) → UES (age 7) → UES (age 10)	0.37**	0.05	0.37
UES (age 5) → CD (age 7) → UES (age 10)	0.01	0.01	0.01
MD (age 5) → MD (age 7) → CD (age 10)	0.00*	0.00	0.04
MD (age 5) → UES (age 7) → CD (age 10)	0.00	0.00	0.00
MD (age 5) → CD (age 7) → CD (age 10)	0.00	0.00	0.05
CD (age 5) → MD (age 7) → CD (age 10)	0.01	0.01	0.01
CD (age 5) → UES (age 7) → CD (age 10)	0.00	0.00	0.00
CD (age 5) → CD (age 7) → CD (age 10)	0.32**	0.04	0.37**
UES (age 5) → MD (age 7) → CD (age 10)	0.00	0.00	0.01
UES (age 5) → UES (age 7) → CD (age 10)	0.00	0.00	0.00
UES (age 5) → CD (age 7) → CD (age 10)	0.01	0.00	0.07

Notes. * = $p < .05$, ** = $p < .01$; MD = Maternal Depression; UES = Unsupportive
Emotion Socialization; CD = Child Depressive Symptoms
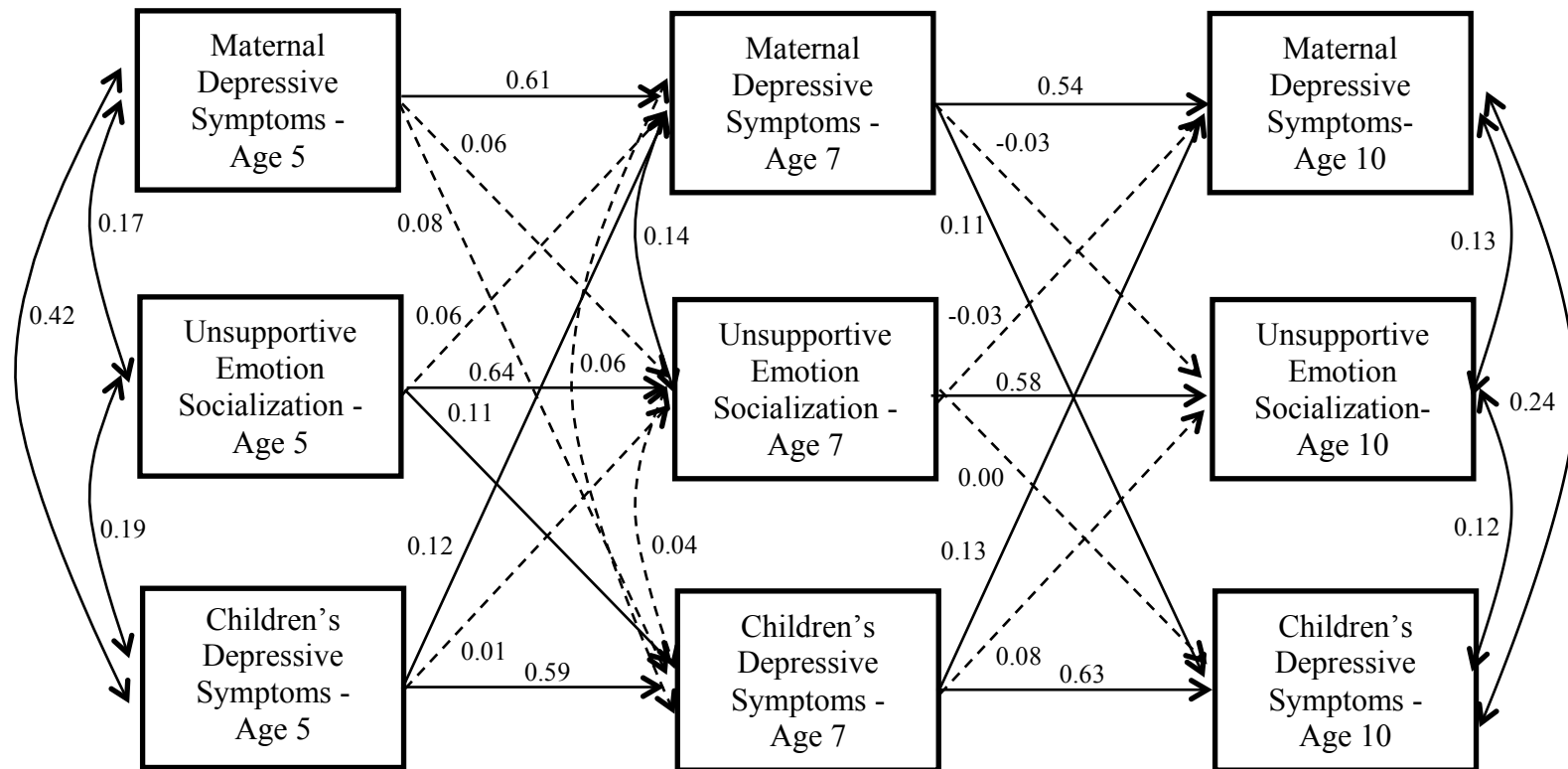
Figure 3

Results for Stability Model Across Constructs (Standardized Estimates).
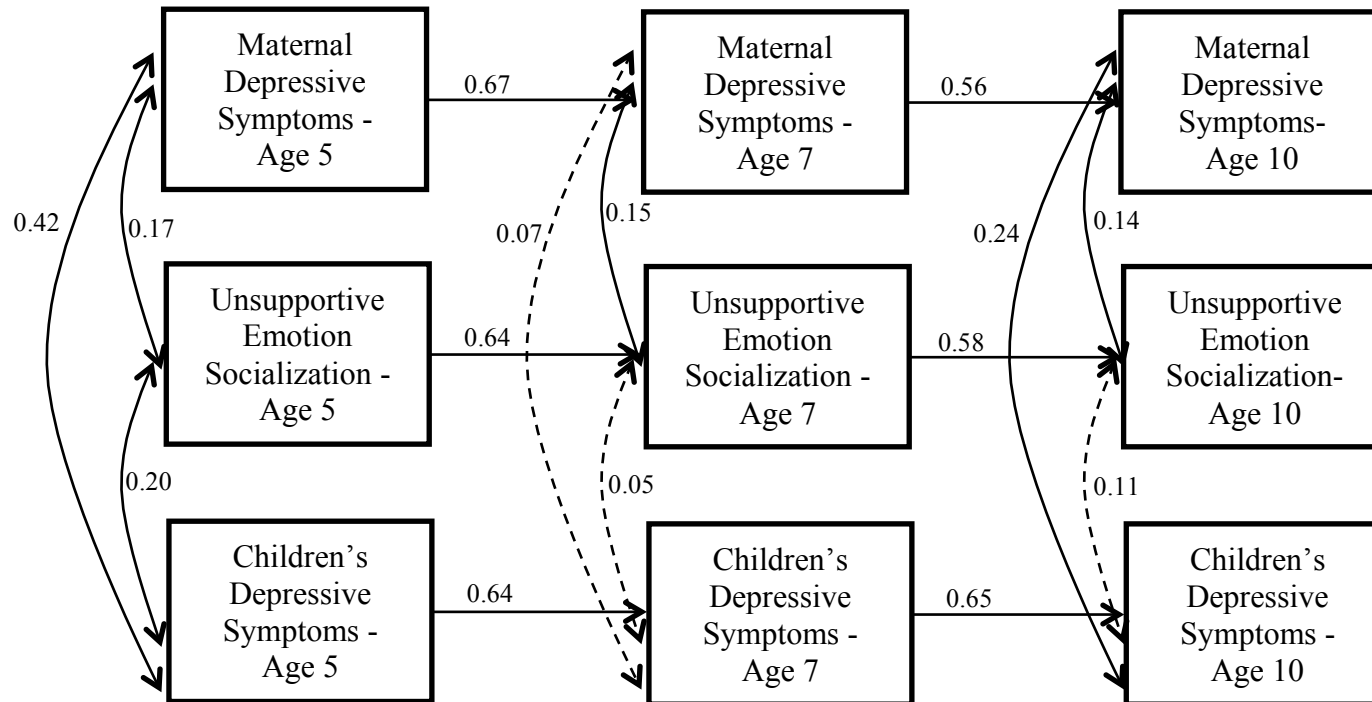
Notes. Socioeconomic status is entered as a control variable for maternal depression and unsupportive emotion socialization at all ages, and sex is entered as a control for children's depressive symptoms at age 5. Model fit: $\chi^2(32) = 130.019$, $p = .00$; root mean square error of approximation (RMSEA) = 0.10 (CI = 0.08- 0.11); comparative fit index (CFI) = 0.91; standardized root mean square residual (SRMR)= 0.09; solid line = $p < 0.05$, dashed line = $p > 0.05$

Figure 4

Results for Transactional Model Across Constructs (Standardized Estimates).

Notes. Socioeconomic status is entered as a control variable for maternal depression and unsupportive emotion socialization at all ages, and sex is entered as a control for children's depressive symptoms at age 5. Model fit: $\chi^2(20) = 96.06$, $p = .00$; root mean square error of approximation (RMSEA) = 0.11 (CI = 0.09- 0.13); comparative fit index (CFI) = 0.93; standardized root mean square residual (SRMR)= 0.05; solid line = p < 0.05, dashed line = p > 0.05

Table 9

Children's Depression Reporter Correlations

Variable	1	2	3	4	5	6	7	8	9
1. Maternal BASC at age 5	1								
2. Teacher BASC at grade K	0.17**	1							
3. Maternal BASC at age 7			1						
4. Child CDI at age 7			0.14‡	1					
5. Teacher BASC at grade 2			0.31**	0.16*	1				
6. Maternal BASC at age 10						1			
7. Teacher BASC at grade 5						0.43**	1		
8. Child CDI at age 10						0.40**	0.30*	1	
9. Child BASC at 10						0.37**	0.35**	0.65**	1

Notes. Grade K = Kindergarten; ‡ = $p < .06$; * = $p < .05$, ** = $p < .01$; BASC = Behavior Assessment System for Children; CDI = Children's Depression Inventory; Child CDI at age 7 only included 2 out of 3 cohorts

APPENDIX B

SCL-90-R: DEPRESSION SCALE

5. Loss of sexual interest or pleasure
14. Feeling low in energy or slowed down
15. Thoughts of ending your life
20. Crying easily
22. Feelings of being trapped or caught
26. Blaming yourself for things
29. Feeling lonely
30. Feeling blue
31. Worrying too much about things
32. Feeling no interest in things
54. Feeling hopeless about the future
71. Feeling everything is an effort
79. Feelings of worthlessness

APPENDIX C

CCNES: UNSUPPORTIVE EMOTION SOCIALIZATION ITEMS

1. If my child becomes angry because s/he is sick or hurt and can't go to a friend's birthday party, I would:
   a. send my child to his/her room to cool off.
   b. get angry at my child.
   d. tell my child not to make a big deal out of missing the party.
2. If my child falls off his/her bike and breaks it, and then gets upset and cries, I would:
   a. remain calm and not let myself get anxious.
   c. tell my child that s/he is overreacting.
   f. tell my child to stop crying or s/he won't be allowed to ride his/her bike anytime soon.
3. If my child falls off his/her bike and breaks it, and then gets upset and cries, I would:
   a. get upset with him/her for being so careless and then crying about it.
   b. tell my child that s/he is overreacting.
   f. tell him/her that's what happens when you're not careful.
4. 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:
   a. tell him/her to shape up or s/he won't be allowed to do something s/he likes to do (e.g. watch TV).
   c. tell my child not to make a big deal of the shot.
   d. tell him/her not to embarrass us by crying.
5. 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:
   c. tell my child to quit overreacting and being a baby.
   d. tell the child that if s/he doesn't stop that s/he won't be allowed to go out anymore.
   e. feel upset and uncomfortable because of my child's reactions.
6. If my child becomes angry and starts to yell after I accidentally throw away his favorite comic
   a. punish my child for his/her behavior.
   b. get angry and yell back at my child.
   d. tell my child not to get so upset over a comic book.
7. If my child is about to appear in a recital or sports activity and becomes visibly nervous about people watching him/her, I would:
   *c. remain calm and not get nervous myself.
   d. tell my child that s/he is being a baby about it.
   e. tell my child that if s/he doesn't calm down, we'll have to go home right away.
8. If my child becomes very angry at her/his sibling and begins to shout and stomp around the room, and I am nearby, I would:
   a. tell him to calm down immediately or there will be consequences.

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b. become angry and irritated with my child.

e. tell my child s/he doesn't need to get so upset over a silly disagreement.

9. If my child is panicky and can't go to sleep after watching a scary TV show, I would:

b. get upset with him/her for being silly.

c. tell my child that he/she is over-reacting.

e. tell him/her to go to bed or he/she won't be allowed to watch any more TV.

10. If my child is at the park and is on the verge of tears because the other children are mean to him/her and won't let him/her play with them, I would:

*a. not get upset myself.

b. tell my child that if he/she starts crying we will have to go home right away.

f. tell my child that he/she will feel better soon.

11. If my child is playing with other children and one of them calls him/her names, and my child then begins to tremble and become tearful, I would:

a. tell my child not to make a big deal out of it.

b. feel upset myself.

c. feel upset myself.

12. If my child is scared and shy around strangers and consistently becomes teary and wants to stay in his/her bedroom whenever family friends come to visit, I would:

d. feel upset and uncomfortable because of my child's reactions.

e. tell my child that he/she must stay in the living room and visit with our friends.

f. tell my child that he/she is being a baby.

* = Reverse scored

BASC AND BASC-2: DEPRESSION SCALE (BY MEASURE)

BASC Preschool (PRS-P): Used at Age 5 Visit
6. Says, "Nobody likes me."
17. Holds a grudge
26. Cries easily
39. Is sad
50. Pouts
59. Says, "That's not fair."
64. Complains about being teased
72. Complains of being tired
83. Says, "I want to be alone" or "I like being alone."
92. Is easily upset
105. Changes moods quickly
116. Says, "I want to die" or "I wish I were dead."
125. Whines

BASC Child (PRS-C): Used at Age 7 Visit
7. Says, "I don't have any friends."
19. Says, "I want to kill myself."
29. Cries easily
42. Says, "Nobody understands me."
54. Is easily frustrated
64. Is easily upset
77. Complains about not having friends
89. Changes mood quickly
99. Says, "I want to die" or "I wish I were dead."
111. Says, "Nobody likes me."
123. Is sad
133. Says, "I'm so ugly."

BASC-2 Child (PRS-C): Used at Age 10 Visit
10. Is easily upset
18. Complains about being teased
28. Cries easily
42. Says, "Nobody understands me."
50. Complains about not having friends
60. Says, "Nobody likes me."
74. Is negative about things
82. Says, "I don't have any friends."

92. Says, "I want to die" or "I wish I were dead."
106. Says, "I hate myself."
114. Is sad
124. Seems lonely
138. Says, "I want to kill myself."
156. Changes moods quickly