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THE ASSOCIATIONS WITHIN CHILDREN'S EMOTIONALITY, EMOTION REGULATION, PARENTING PRACTICES, PARENTAL EXPRESSIVITY AMONG CHILDREN IN LOW-INCOME FAMILIES

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THE ASSOCIATIONS WITHIN CHILDREN'S EMOTIONALITY, EMOTION REGULATION, PARENTING PRACTICES, AND PARENTAL EXPRESSIVITY AMONG CHILDREN IN LOW-INCOME FAMILIES

By

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ABSTRACT

THE ASSOCIATIONS WITHIN CHILDREN'S EMOTIONALITY, EMOTION REGULATION, PARENTING PRACTICES, AND PARENTAL EXPRESSIVITY AMONG CHILDREN IN LOW-INCOME FAMILIES

By

KyungSook Lee

This study examined how children's emotionality contributes to their social behaviors through various types of emotion regulation and parenting behaviors. The participants for the current study were 214 children (108 girls and 106 boys; mean age = 57 months, SD = 6.06), including their parents and teachers. Parents and teachers rated children on emotionality, emotion regulation, and social competence. In addition, parents rated themselves and their children on demographic factors, parenting practices, and parental expressivity. This study found that the relationships between children's emotionality and their social competence was mediated by their emotion regulation, and that parenting practices and parental expressivity played mediating roles in the relationships between children's emotion regulation and their social competence. The findings suggest that family as a proximal environment play an important role in children's socioemotional development.

DEDICATION

To God, my mother, JungJa Chang, my sister, KyungSoon Lee, and my brother,

JangJong Lee

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The completion of this dissertation is the product of invaluable contribution on the part of many others in my life. First, I am extremely grateful to my chair, Dr. Lillian Phenice, for her vast amount of support, guidance, and encouragement through many challenges. Her advice and feedback have not only affected my professional development, but have influenced my personal growth as well. I would like to thank Dr. Robert Griffore for lending me his statistical expertise and his supportive defense demeanor. Likewise, I offer my special gratitude to Drs. Julia Miller and Ronald Hall for their helpful comments and support. Above all, I wish to thank Michigan Head Start Association staff, all of the families, and teachers who participated in this study. Lastly, I am eternally thankful to my mother for providing an example of sacrifice, unlimited support, and strong work ethic. My sister has given me strengths and endless love that have sustained me throughout the process. Her trust and belief in me inspires me to achieve more each day. At this point, I am eagerly looking forward to writing the next chapter of my life.

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CHAPTER ONE

Introduction

In the study of child development, researchers have been interested in examining the factors that contribute to children's successful development of social competence (Parke & Buriel, 1994). According to Eisenberg and Mussen (1989), the behavior of human beings is the result of both biological potentialities and environmental experiences. In other words, human behavior is "the product of complex interactions among biological, social, psychological, economic, and historical events" (Eisenberg & Mussen, 1989, p. 3). Furthermore, socialization is "the process whereby an individual's standards, skills, motives, attitudes, and behaviors change to conform to those regarded as desirable and appropriate for his or her present and future role in any particular society" (Parke & Buriel, 1994, p. 463). Children acquire the prevalent norms (those that must be learned or internalized) as cultural expectations or prescriptions of how they ought to behave, thereby developing behaviors in a prosocial way (Bandura, 1986).

The critical roles played by families, peers, and schools influence children's socialization process. This study is an attempt to construct a model focusing on children's adaptation in the school environment with peers and teachers to identify the probability of social behaviors given a particular set of individual, family, and social conditions. There are a number of studies promoting the development of prosocial tendencies or socially appropriate behaviors, which examine the effects of modeling, and identification in natural settings such as home or school (Bandura, 1986; Eisenberg & Mussen, 1989). Many factors influence children's social behaviors. They include the nature of the family milieu (i.e., permissive or strict), specific child-rearing practices (i.e., the use of

punishment or reasoning as discipline skills) (Belsky, Youngblade, Rovine, & Volling, 1991; Brody, Stoneman, & Gauger, 1996; Helberstadt, 1999), the classroom peer interaction (i.e., cooperative play or isolated play) (Bornstein, Hayness, Maurice, & Painter, 1996; Cole & Cole, 1993; Cole, Dodge, & Kupersmidt, 1990; Hubbard & Coie, 1994), the characteristics of teachers (i.e., kindness and consideration or strict), the use of developmental discipline techniques, the use of programs or projects that can stimulate discussions of moral values and behaviors that encourage or discourage children's behavior patterns in either positive or negative ways (Hart & Eldstein, 1992).

Not only can the characteristics of parents, peers, and teachers play major roles in shaping the development of children's behavior, but the characteristics of children can also promote or diminish their own prosocial responses. For example, children's positive emotionality is likely to serve as a protective factor against the problems of their social competence (Eisenberg et al., 1994; Fables et al., 1999).

Additional variables that potentially lead to the development of prosocial behaviors, such as, children's emotional regulatory skills, parent rearing practices, family expressivity, and family demographics were investigated to examine the relationship between children's emotionality and their social competence. This study examined how children's emotionality contributed to their social competence through various types of emotion regulation and parenting behaviors. Construction of path model utilizing multilevel variables provides a clear understanding of the relationships among children's own characteristics, family functioning, and their social behaviors. The path model articulated the relationships between children's emotionality and their social competence as mediated by their regulatory skills, parental expressivity, and parenting practices. The

first path hypothesized that the relationships between children's emotionality and their social competence was mediated by their emotion regulation. The second path asserted the relationships between children's emotionality and their social competence as mediated by children's emotion regulation and parenting practices. The third path articulates the relationships between children's emotionality and their social competence as mediated by children's emotion regulation and parental expressivity.

The Purpose of the Study

The purpose of this study was to explain the relationship between children's emotionality and their social competence. Precursors of social behaviors such as, children's regulation, parent rearing practices, and family expressiveness were examined as potential mediators of the relationship between children's emotionality and their social behavior, for combinations of variables play a role in differentiating social behavior.

The specific objectives of this study were to examine the relationships between: 1) children's emotionality and their social competence through emotion regulatory skills; 2) between parenting practices and their social competence through emotion regulatory skills, 3) parental expressivity and children's social competence through emotion regulatory skills.

Reasons for the Study

To date, there are only a small number of studies residing in low-income families that examine the relationships pertaining to children's emotionality, emotion regulation, parenting practices, and parental expressivity to their social functioning. Poverty heightens risk for poor adaption among people who come from minority populations, no matter how young or old one is.

According to Duncan and Brooks-Gunn (1997), duration and severity of poverty affect children's development: in physical and mental growth, academic ability, and their socio-emotional well-being. Studies have shown that persistent financial stress and negative life styles inhibit effective parenting. In other words, low-income parents are more likely to provide less nurturance, less responsiveness to the socioemotional needs of their children, be more restrictive, and use more physical punishment in disciplining than middle-income parents (Garner, Jones, & Miner, 1994; McLoyd & Wilson, 1990; McLoyd, 1998). In addition, according to Mendez, Fantuzzo, and Cicchetti (2002), culturally diverse children might undergo far more complications in the process of school entry than expected, because competencies fostered within low-income and minority families may differ from those inquired at school. In order to keep children from the potential trajectory toward negative outcomes for children from economically disadvantaged families, early intervention programs are required.

Theoretical Framework

The ecological systems theory of human development articulated by Bronfenbrenner (1989) underlies the present study. He viewed human development from a person-in-environment context, emphasizing the principle that all growth and development takes place within the context of relationships. Understanding development as "the set of processes through which properties of the person and the environment interact to produce constancy and change in the characteristics of the person over the life course" (Bronfenbrenner, 1989, p. 191) provides the interconnections of events and the bi-directionality of effects between the person and the environment. In order words, "developmental outcomes and processes are illustrated as a joint function of the

characteristics of the person and the environment, thus permitting the detection of synergistic effects" (Bronfenbrenner, 1989, p. 200).

Under the original defining properties of the model, a newly-evolving theoretical framework called the bioecological model was introduced to account for processes and outcomes of human development over the life course (Bronfenbrenner, 1997). The bioecological model involves four principal components (i.e., process, person, environmental context, and time) and proximal processes which refer to dynamic, interactive relationships among the components. The bioecological model is referred to as the process-person-context-time model (PPCT). The PPCT shows the processes to influence development as "a function of the characteristics of the developing person, of the immediate and more remote environmental contexts, and the time periods, in which the proximal processes take place" (Bronfenbrenner, 1997, p. 4). Within this bioecological perspective, this study examined the relationships among children's emotionality, their emotion regulatory skills, their social competence, parental discipline practices, and parental responsiveness.

In the PPCT model, three types of characteristics of a developing person that influence future development are dispositions, bioecological resources, and demands. Dispositions of an individual can "set proximal processes in motion in a particular developmental domain, and continue to sustain their operation" (Bronfenbrenner, 1997, p. 5). Examples of dispositions of children in the study include such characteristics as: the degree of emotionality (i.e., negative, positive, or general emotionality), distress, the level of emotional regulation (i.e., high, medium, or low), and inhibitory behavior control. The bioecological resources of ability, experience, knowledge, and skills are "required for the

effective functioning of proximal processes at a given stage of development" (Bronfenbrenner, 1997, p. 5). Instances of resource characteristics of the person as shapers of development include gender and ethnicity. Finally, demand characteristics "invite or discourage reactions from the social environment of a kind that can foster or disrupt the operation of proximal processes" (Bronfenbrenner, 1997, p. 6).

The development of the child is viewed by the way the child perceives and interacts within the environment (Bronfenbrenner, 1994); environment is defined at four different connected levels from immediate to distant. In this study, a child was studied in the context of the family, the school, its community, and the larger society. According to Bronfenbrenner (1994), there are four connected levels. They include a microsystem:

> a pattern of activities, social roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical, social, and symbolic features that invite, permit, or inhibit, engagement in sustained, progressively more complex interaction with, and activity in, the immediate environment. (p. 1645)

With this definition, a mother-child dyad or a father-child dyad at home, and a teacher-child dyad and a peer-child dyad at school are microsystems that affect developmental processes and outcomes. The next expanded environmental interconnection is a mesosystem, defined as a linkage between the settings in which the individual participates. In other words, it is a system of two or more microsystems. The child's environment's next systemic level includes an exosystem, which is defined as linkages between the settings that affect the individual but in which the child is not a participant. The last systemic level is the macrosystem, which is defined as the distant situations. The PPCT Model suggests that the child's immediate environment seem to exert the greatest influence, but other systems also have their impact. For example, the microsystem

includes the interpersonal activities in the unit of analysis's face-to-face settings, such as behaviors of the child at home and at school. The degree to which a child experiences positive and fulfilling interaction with his or her parent may influence his or her feelings about peers and teachers at school. Thus, the satisfaction s/he derives from each relationship may determine how well s/he acts at home and at school. Both home and school are significant socializing forces for the child, and each may provide early indicators of external behavior problems or prosocial behaviors. Furthermore, the transactional nature of the parent-child relationship, defined as bidirectional proximal processes, makes the child particularly reactive to familial variables, and those conditions that enhance family life. Similarly, in the school setting there must be mutual adaptation between the child and his teacher, his peers, and the classroom setting.

Under the influence of family ecological systems theory (Andrews, Bubolz, & Paolucci, 1980), recognition is being given to the family as a social system and defined as a bonded unit interacting with the environment that is constantly coping and adapting. Furthermore, to fully understand the nature of the family relationships, it is necessary to recognize the interdependence among the roles and functions of all family members. Consequently, to understand the behavior of one member of a family, the complementary behaviors of other family members also need to be recognized and assessed. Family members – mother, father, siblings, and child – influence each other directly and indirectly.

Different units of analysis are necessary to understand families. While the individual level remains a useful and necessary level of analysis, it is necessary to recognize the relationships among family members as units of analysis. To understand

the nature of parent-child relationships within families, a multilevel and dynamic approach is required. Multiple levels of analysis are necessary to capture the individual, dyadic, and family unit aspects of operation within the family itself.

The present study focused on the parent-child subsystem, the relations between this subsystem, considering the impact of parent-child interaction, and parental behaviors on children's social behaviors.

Conceptual Model

On the basis of the objectives and the theoretical framework of this study, conceptual path model shows that the effects of children's emotionality on their social competence are mediated by their emotion regulation, parenting practices, and parental expressivity. In Figure 1, 1 represents the first path model, 2 represents the second path model, and 3 represents the third path model.

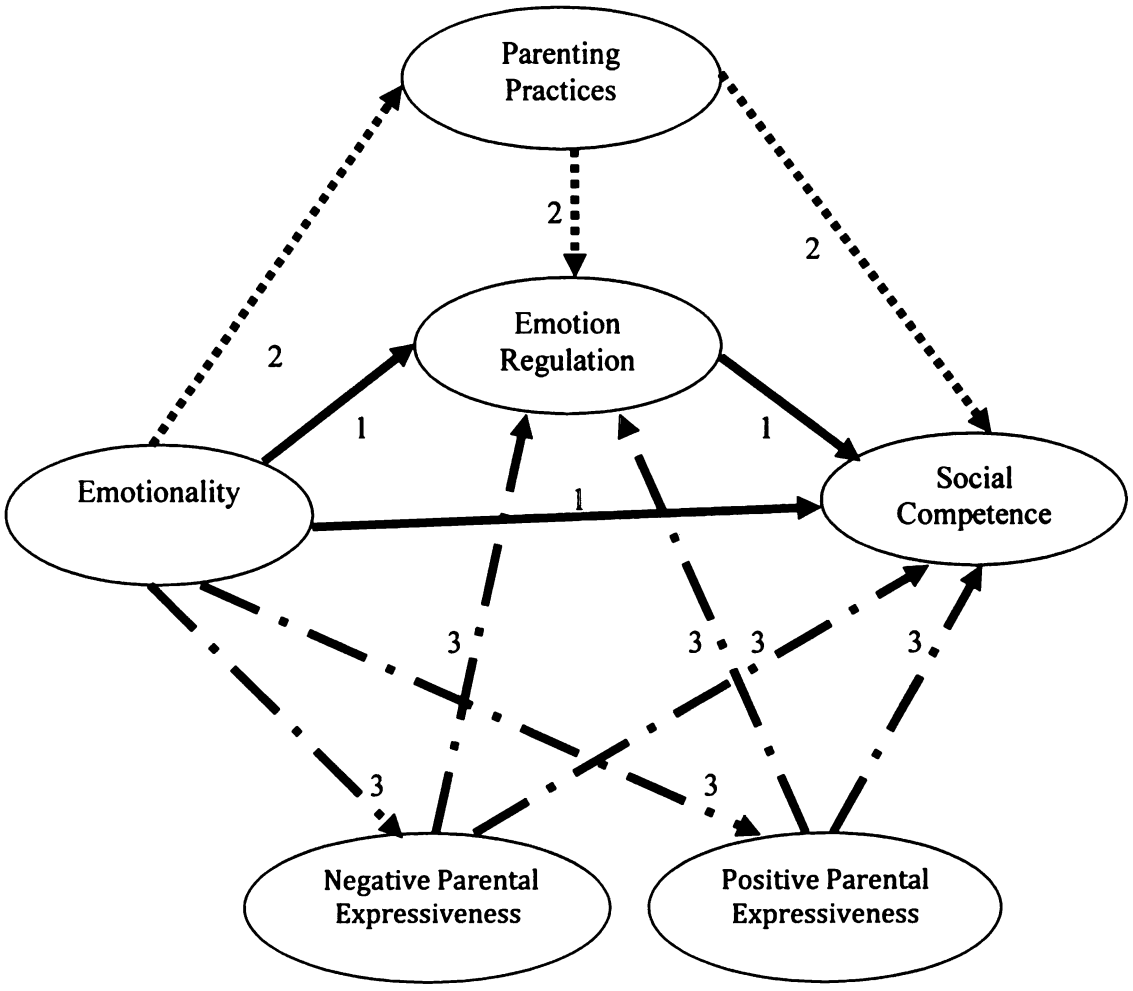

Figure 1. Conceptual Path Model of Children's Emotionality to Social Competence as Mediated by Children's Emotion Regulation, Parenting Practice and Parental Expressiveness.

Conceptual Definitions

All the constructs were depicted in Figure 1 are stated as follows:

Emotionality is conceptualized in terms of the individual's dispositional level of emotional reactivity, particularly the intensity and threshold of emotion, when it is experienced without reference to valence of the emotion (as aspects of temperament: Larsen & Diener, 1987; Derryberry & Rothbart, 1988). In particular, negative emotionality has been described as a stable factor that contributes to differences in how individuals experience and express their emotions (Larsen & Diener, 1987).

Emotion regulation refers to processes that serve to initiate, modulate, or maintain the experience of the emotion or the associated behavior or situation (Walden & Smith, 1997). Also, it includes both "extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals" (Thompson, 1994, p. 27-28). Thus, two categories of regulation - emotional regulation and emotion-relevant behavioral regulation are discussed in this study:

1. Emotional regulation is viewed as emotion-focused coping that involves regulation of emotional reactivity in social or nonsocial contexts through allocating attention. Emotional regulation is examined as involving attentional processes such as the abilities to shift and focus attention as needed (Derryberry & Rothbart, 1997; Rothbart, Ahadi, & Hershey, 1994).

2. Behavioral regulation refers to the regulation of emotionally driven behavior, which involves expressing in facial or bodily reactions under the situation that induced the emotional arousal, or which involves the ability to modulate the behavioral

expression of impulse and feelings (Block & Block, 1980; Kochanska, 1993; Kopp, 1982). Behavioral regulation is operationalized as behavioral inhibition or impulsivity (Rothbart, Ahadi, Hershey, & Fisher, 2001).

Social competence is defined as skills - problem-solving behavior, perspective taking, and person perception - that result in effective or successful social functioning in a given context (Cole & Cole, 1993). The social outcomes include having friends, being popular or liked by other children, and engaging in effective social interaction with peers (Dunham, Blair, & DeMulder, 2003).

Parenting practices is defined as "the specific, goal-directed behaviors through which parents perform their parental duties" (Darling & Steinberg, 1993, p. 488). That is, parenting practices represent the specific parent behaviors used to guide or lead children to attaining socialization goals. Transactional model shows us how the behavior of children is affected by the actions of their parents over time and vice versa. One possible negative outcome of this interaction is that parents' use of verbal and corporal punishment is related to increased behavior problems in children.

Parental expressiveness is defined as a persistent pattern or style (measured in terms of frequency of occurrence) in exhibiting nonverbal and verbal expressions that often but not always appear to be emotion related. Parental expressivity refers to the predominant style of exhibiting nonverbal and verbal expressions within a family (Halberstadt, Cassidy, Stifer, Parke, & Fox, 1995).

Assumptions

The following assumptions are made in this study.

1. Parents care for their children in ways that affect the social and emotional development of children.
2. Parenting practices affect the social and emotional development of children.
3. Parental expressivity affects the social and emotional development of children.
4. Teaching and learning contexts include the family and the school.

CHAPTER TWO

The Review of Literature

The relationships among parenting practice, children's emotion, and regulation

Regulatory processes begin to demonstrate quite early in infancy. Through interactions with caregivers, especially parents, they develop into more complex mechanisms that allow the child to cope with emotional arousal. These regulatory processes eventually become critical to successful familial and extra-familial interpersonal functioning (Rubin, Coplan, Fox, & Calkins, 1995).

According to Eisenberg et al. (1992), young school-aged children's vicarious emotional responses are largely predictable by maternal empathy-related characteristics and maternal vicarious emotional responding. Specifically, the findings indicated that significantly lower levels of the expression of nonsupportive negative emotions at home were linked to children's aversive reactions to dealing with others' negative emotions. Moreover, the findings also claimed that children exposed to high degrees of negative emotions and conflicts at home are more likely to become very sensitive to exposure to negative parental expressivity (Eisenberg et al. 1992).

In studying the effects of family emotional environment on children's emotional responding, Eisenberg et al. (1992) have found that there is an association between maternal practices and children's sympathetic and personal distress responding. Namely, maternal reports of negative submissive emotion (e.g., sadness) were positively related to young girls' sympathy, whereas maternal reports of negative dominant emotion (e.g., anger) were associated with personal distress for both boys and girls.

The relationship between parenting practice and children's social competence

Parental use of authoritative discipline is positively related to higher competence in children, including better achievement, higher self-esteem and social competence, and fewer problem behaviors (Coley, 1998).

Additional studies have demonstrated a strong relationship between parenting practices and children's social development. Specific findings are that moderate control, high expectations, high nurturance, high responsiveness, and the use of reasoning were positively associated with children's emotion regulation and social competence, while yelling, physical punishment, low control, and ignoring discipline situations were negatively related to children's regulation and social competence (MacDonald & Parke, 1984). For example, Denham, Renwick, and Holt (1991) found that mothers' inabilities to regulate hostilities and to interact with positive emotions resulted in withdrawn and ineffectual engagement in peer groups.

Research by Putallaz (1987) illustrated that as to the relationship between maternal behaviors and children's sociometric status, children acquired their social behavior repertoire through interaction with their mothers, which in turn influenced their sociometric status. Moreover, her results suggested that children, in their social interactions with peers, seemed to display affective behavior similar to that of their mothers. Positive, agreeable mothers had positive, agreeable children. There is also evidence in her study that maternal behavior may evoke responses that induce complementary behavior in their children (Putallaz, 1987). For example, the mothers who talked and who also attempted to influence their children's behavior were most likely to have children high on the agreeable/feeling factor scale, rather than the factors involving a greater display of control (i.e., disagreeable/demanding factor or the questioning factor).

Belsky, Youngblade, Rovine, and Volling (1991) found that parents who engaged the least frequently in control plus guidance as an initial child management strategy had children who engaged in the most defiant behavior in their initial reaction to parental control. Probably in consequence, parents experienced most negative escalation in efforts to regulate children's behavior.

Rudolph, Hammen, and Burge (1995) reported the impact of family experiences on the emergence of children's peer competence. For example, prosocial behavior with peers and high sociometric status have been linked to parental warmth, responsivity, engagement, and affection, whereas peer difficulties and low sociometric status have been linked to parental hostility, intrusiveness, unpredictability, and uninvolvement. Parents of popular children have been found to differ from those of rejected children in their affective styles and discipline practices (Rudolph, Hammen, & Burge, 1995).

Brody, Stoneman, and Gauger (1996) found that higher levels of positivity in the parent-child relationship are linked to higher levels of positive affectivity and prosocial behavior in the peer relationship. Negative parent-child relationships are related to aggressive, self-protective behavior in peer relationships.

The relationships among parental expressivity, children's emotion regulation, and their social competence

Parental expressivity contributes both to children's abilities to interpret and understand other's emotional reactions, and to their beliefs about how much and what types of emotional expressions are appropriate and effective in social interactions. Further, such knowledge fosters both self-regulation and social skills (Eisenberg et al., 2003; Zhou et al., 2002). In particular, they found that mothers' positive expressivity was

associated with high emotion regulation, and well-adjusted and socially competent behaviors. Furthermore, parental expressivity appears to contribute to children's social skills and peer relations. In particular, parental expressivity is correlated to preschoolers' prosocial responses to peers and children's understanding of emotions and display rules (Denham & Grout, 1992; Garner et al., 1994).

The relationship between emotionality and emotion regulation.

Children's response to emotionally arousing situations with family members at home and with peers in the classroom and subsequent behavioral regulation may reflect aspects of temperament (Fox, 1989). Fables et al. (1999) have indicated that there is an interaction between emotional arousability (i.e., emotional reactivity and intensity) and emotion regulatory skills. Their study of middle-class European American children provided some support for this relationship. For example, children who are rated as emotionally intense or rated as experiencing high levels of negative affect tend to have less well-regulated coping skills (Eisenberg et al., 1999; Rubin, Coplan, Fox, & Calkins, 1995). Because emotional intensity (the degree of affect expressed when children experience positive and negative emotion) heightens emotional responsiveness, emotion regulation should be more difficult for emotionally intense children than those whose emotional reactions are more controlled. Children with high levels of emotionality are more likely to be expressive, interpersonally engaging, uncontrolled and active, and have low levels of social skills as well as exhibiting low levels of delay and high levels of frustration. Also they are more likely to be prone to personal distress and reactive aggression. Even though they are sociable or extroverted, they are more likely to be

rejected frequently or disliked by peers because of their aggression and lack of social skills.

In contrast, underregulated children who are moderately low emotional intensity also are assumed to have low levels of prosocial behaviors and sympathy and engage in nonconstructive modes of coping (Eisenberg et al., 1997). People who are underregulated and relatively high levels of emotional intensity are prone to negative emotions and tend to be associated with lack of inhibitory behavior control.

The relationship between emotionality and social competence.

Denham, Renwick, and Holt (1991) argued that children's temperament and social cognitive abilities are assumed to predict prosocial behaviors with peers. For example, children who showed predominantly negative emotions, whether sad, angry, or hurt, showed varying deficits in social cognitive and/or prosocial domains. In particular, a greater prevalence of angry emotional displays was highly associated with lesser social cognitive abilities and prosocial responses (Denham, Renwick, & Holt, 1991). Thus, emotionality was highlighted as a correlate of prosocial behaviors with peers in the classroom whereas negative emotionality was related to low social competence and problem behaviors (Eisenberg et al., 1997).

The relationship between emotion regulation and social competence.

Many studies have demonstrated an association between regulation and social competence (i.e., the behavioral manifestation of social problem-solving skills such as peer acceptance and interpersonal skills that facilitate the maintenance of relationships). Therefore, regulation may be tied to the growth of social problem-solving skills in childhood (Fox, 1994). Eisenberg and Fabes (1992) found that children who can manage

their emotion and emotion-related behaviors appear better able to behave in appropriate and socially competent ways at school. In particular, constructive coping was positively correlated to high quality social functioning. In addition, according to Rubin, Coplan, Fox, and Calkins (1995), optimal regulation (like ego resiliency), which is defined by flexibility and the ability to respond effectively to changing environmental conditions and demands, is associated with the most positive, adaptive behavior. Social behavior is seen as varying somewhat as a function of individual difference in emotional intensity. In contrast, destructive coping (i.e., aggression, venting of emotion, and low avoidance) was related to low quality social functioning. Generally children who are more likely to experience negative emotions would be likely to lose control and enact negative behaviors than other children (Eisenberg et al., 1997; Fabes et al., 1999). In particular, negative emotionality was associated with problem behavior and low levels of social competence, especially when such emotionality was intense.

The relationship among emotionality, regulation, and social competence

Fabes et al., (1999) indicated that emotion regulation and emotional reactivity are interrelated and jointly contribute to children's social competence, (which is defined as the ability to be effective in realizing constructive social goals; having friends, maintaining interactions, being liked, and so forth.). For example, many researchers have found that there is an importance of regulations and emotions to children's social competence and adjustment. Rothbart, Ahadi, and Hershey (1994) found that negative affect was negatively related to empathy and positively related to aggression, guilt, and negativity. Also, regulation was inversely related to aggression and negativity, and positively related to empathy and guilt. Moreover, maternal and teacher reports of

emotion regulatory coping and emotionality are associated with social competence (Eisenberg et al., 1995). For example, some researchers have found that ineffective emotion regulation and high emotional negativity are negatively associated with preschoolers' and older children's adult-rated social competence (Eisenberg et al., 1995; Eisenberg et al., 1996; Eisenberg et al., 1997).

According to Eisenberg et al. (1993) have found that as to the relationship between children's emotion regulation and emotional reactivity, the combination of high emotional intensity and low attentional regulation is related to low social skills and sociometric status. In the follow-up study, Eisenberg (1997) also found that positive social functioning was predicted by measures of low levels of negative emotionality and high levels of regulation taken two years previously. Moreover, Eisenberg et al. (1996) have indicated that children with high levels of behavioral regulation were likely to be viewed as nice, helpful, and socially appropriate. Indeed, particularly at school, highly controlled children may be viewed positively because they do not cause problems and engage in relatively little negative behavior. According to Eisenberg, Fabes, Murphy, Maszk, Smith, and Karbon (1995), low levels of negative emotionality, high levels of behavioral regulation, low levels of nonconstructive coping, low levels of general emotional intensity for boys were related to socially appropriate behaviors, whereas children who are both unregulated and high in emotional intensity may be particularly prone to behavioral and social problems. Thus, according to Eisenberg, Fabes, Bernzweig, Karbon, Poulin, and Hanish (1993), the relationships between emotionality and socially competent functioning are due to the fact that children who are dispositionally well-

regulated are better able to attend to social situations and others' needs, as well as to regulate negative emotional reactions that interfere with socially competent functioning.

CHAPTER THREE

Methodology

This chapter is divided into the following sections: 1) Questions and Hypotheses, 2) Research Design, 3) Research Subjects, 4) Research Procedures, 5) Instruments, and 6) Data Analysis.

Questions and Hypotheses

Based on the prior literature and underlying theoretical frameworks, this study examined the nature of the associations within children's emotionality, their emotion regulation, and their social competence while taking parenting practices and parental expressivity into consideration. The goals of the study are specified by the numbered paths in the model depicted in Figure 1 on page 8. The first path hypothesizes that the relationship between children's emotionality and their social competence was mediated by their emotion regulation.

The second path articulates the relationship between children's emotionality and their social competence as mediated by children's emotion regulation and parenting practices. This model asserts that children's emotionality predicts both their emotion regulation and parenting practices, and the latter variables are hypothesized to have a direct effect on children's social competence.

Finally, the third path articulates the relationship between children's emotionality and their social competence as mediated by children's emotion regulation and parental expressivity. This model explains that children's emotionality predicts both their regulation and parental expressivity, and the latter variables are hypothesized to have a direct effect on children's social competence.

Specific questions and hypotheses are stated as follows:

Question 1: Are both children's emotionality and emotion regulation related to their social competence?

H_0 1: Children's emotionality will have no direct effect on their social competence.

H_a 1: Children's emotionality will have a direct effect on their social competence.

H_0 2: Children's emotion regulation will have no direct effect on their social competence.

H_a 2: Children's emotion regulation will have a direct effect on their social competence.

H_0 3: The relationship between children's emotionality and their social competence will not be mediated by their emotion regulation.

H_a 3: The relationship between children's emotionality and their social competence will be mediated by their emotion regulation.

Question 2: Are there relationships among children's emotionality, their emotion regulation, parenting practices, and their social competence?

H_0 1: There is no relation of parenting practices to children's social competence.

H_a 1: Parenting practices will have a direct effect on children's social competence.

H_0 2: The relationship between children's emotionality and their social competence will not be mediated by parenting practices.

H_a 2: The relationship between children's emotionality and their social competence will be mediated by parenting practices.

H_0 3: The relationship between parenting practices and children's social competence will not be mediated by their emotion regulation.

H_a 3: The relationship between parenting practices and children's social competence will be mediated by their emotion regulation.

Question 3: Are positive or negative parental expressivity related to children's social competence through children's emotional regulation?

H_0 1: Positive or negative parental expressivity will have no direct effects on children's social competence.

H_a 1: Positive or negative parental expressivity will have a direct effect on children's social competence.

H_0 2: The effects of children's emotionality on their social competence will not be mediated by their emotion regulation and positive or negative parental expressivity.

H_a 2: The effects of children's emotionality on their social competence will be mediated by their emotion regulation and positive or negative parental expressivity.

H_0 3: The relationships between positive or negative parental expressivity and children's social competence will not be mediated by their emotion regulation.

H_a 3: The relationships between positive or negative parental expressivity and children's social competence will be mediated by their emotion regulation.

Research Design

A correlational design was used to achieve the objectives of this study. The study contained four major categories of independent variables: 1) children's emotionality,

which includes negative, general, and positive emotional intensity, and distress, 2) children's emotion regulation, which includes emotional and behavioral regulation, 3) parenting practices, which include expectations and nurturing, and 4) parental expressivity, which includes negative and positive parental expressivity. The dependent variable is children's social competence. Social skills would be studied. The units of analysis are mother and her child or father and his child, teacher and the child, and peer and the child.

Subjects

The subjects for the current analysis were 214 children (108 girls and 106 boys; mean age = 57 months, SD = 6.06) who were recruited from the Head Start early childhood development program in Clinton, Eaton, Ingham, and Shiawassee counties, Michigan. At least one of their parents or guardians and teachers were included in this study as well. Ninety-two percent of the data was reported by mothers and 12% by fathers. Seventy-four percent of participants used English as a primary language. Forty-four percent of the children were from African American families; 23% were Hispanic; 21% were European American; and 10% were others. Forty-three percents of the children lived in a single family household; 42.5% were married couples; and 9.8% were divorced. Parents were under-educated with 15.8% of mothers and 24.8% of fathers who had less than a high school, 38.4% of mothers and 28.6% of fathers who graduated high school, 21% of mothers and 14.3% of fathers who had some college education, 11.6% of mothers and 11.4% of fathers who had 2 years college,12.1% of mothers and 20% of fathers who had 4-year college degree, and 1.1% of mothers and 1% of fathers who had post graduate work.

Procedures

Consent forms were sent home to parents of children whose teachers agreed to participate. Parents who consented received questionnaires regarding their parenting practices and their parental expressivity, their children's emotionality, and their children's emotion regulation, and their children's social competence. Teachers also completed questionnaires regarding children's emotionality, their emotion regulation, and their social competence.

Instruments

Ten instruments were used in this study. A multiple-reporter methodology (i.e., parent and teacher) and multiple instruments were also used to gather data with regard to given constructs. Instruments are listed and described below under the constructs they represent.

Demographics

Parents completed a questionnaire asking for basic demographic information. Specifically, they were asked to provide (1) child's birth date, (2) child's birth order, (3) number of other siblings living at home, (4) number of adults living at home, (5) marital status, (6) number of times the child had moved since he/she was born, (7) mother's age, (8) mother's type of employment, (9) spouse's age (if applicable), (10) spouse's type of employment (if applicable), (11) racial/ethnic background, (12) mother's education, (13) spouse's education (if applicable), (14) religion, and (15) primary language.

Emotionality

The Emotionality, Activity, and Sociability Temperament Survey for Children (EAS). The Emotionality, Activity, and Sociability Temperament Survey for children was

developed by Buss and Plomin (1984). Parents and teachers completed this 20-item assessment to measure children's emotionality. This instrument consisted of 4 subscales: emotionality (a measure of distress), activity, sociability, and shyness based on a 5-point Likert scale ranging from *not characteristic or typical of your child* (1) to *very characteristic or typical of your child* (5). Sample items included "Child often fusses and cries" (Emotionality), and "Child is very energetic" (Activity), "Child likes to be with people" (Sociability), and "Child takes a long time to warm up to strangers" (Shyness). The higher scores indicate greater negative emotionality. The internal consistencies of the scales averaged .83.

The Affective Intensity Scale (AIS, a shortened version). The AIS, developed by Larsen and Diener (1987), was revised by Eisenberg et al. (1993). As a 19-item scale measuring the intensity with which children experience positive and negative emotions such as happiness, anxiety, anger, and being upset. This instrument used a 7-point Likert scale ranging from *never* (1) to *always* (7). Negative emotional intensity (6 items), positive emotional intensity (6 items), and general emotional intensity (7 items) were used to assess children's emotional intensity. Sample items include: "When my child gets nervous or distressed, he/she gets very nervous/upset" (negative emotional intensity), "My child responds very emotionally to things around him/her" (general emotional intensity), and "When my child is happy, he/she bubbles over with emotion" (positive emotional intensity). The higher scores indicate greater emotional intensity.

Emotion Regulation

The Emotional Regulation Checklist (ERC). The ERC instrument was developed by Shields Cicchetti (1997). The ERC is a 24-item adult-report assessment of children's

emotional regulation, which was completed by parents and teachers. This measurement included both positively and negatively weighted items rated on a 4-point Likert scale ranging from *rarely/never* (1) to *almost always* (4). This measure consists of two subscales, Negativity/Lability and Emotion Regulation. The Negativity/Lability scale contained 10 items that referred to the child's tendency to become distressed (Cronbach's alpha = .77). The Regulation scale that referred to the child's ability to inhibit, enhance, maintain, and modulate emotional reactivity under a variety of conditions. However, in this study, only Emotion Regulation subscale was used to measure children's emotional regulatory skills. Sample items include: "Responds positively to neutral or friendly overtures by adults" and "Is empathic towards others; concern when others are upset or distressed?"

The Children's Behavior Questionnaire (CBQ). The CBQ was developed by Gold-smith and Rothbart (1991). As a 100-item adult-report assessment of children's emotion regulation, the CBQ was rated on a 7-point Likert scale ranging from *extremely untrue* to *extremely true*. The items are presented in 8 subscales: parent rating of child's anger (13 items), inhibitory behavior control (13 items), attention shifting (11 items), attention focus (9 items), shyness (13 items), fear (13 items), impulsiveness (13 items), and sadness (13 items). However, parents and teachers completed inhibitory behavior control and impulsiveness subscales to measure children's behavioral regulation. Sample items include: "Usually rushes into an activity without thinking about it" (Impulsiveness) and "Can lower his/her voice when asked to do so" (Inhibitory behavior control). The higher scores in inhibitory behavior control and the lower scores in impulsiveness indicate higher behavioral regulation.

Social Competence

The Social Skills Rating System for Parents and for Teachers (SSRS-P and SSRS-T). The SSRS-P and the SSRS-T were developed by Gresham and Elliott (1990). The SSRS-P is a 49-item assessment of children's social competence, was completed by parents. The items are presented in two scales, Social Skills (items 1 - 39) and Problem Behaviors (items 40 - 49). The Social Skills scale consists of 4 subscales: Cooperation, Assertion, Responsibility, and Self-control. The Problem Behaviors scale consists of 2 subscales: Externalizing Problems and Internalizing Problems. Social Skill and Problem Behavior items are rated on a 3-point Likert scale (Never, Sometimes, Very Often). And the SSRS-T is a 40-item checklist of items comprising two scales: Social Skills (items 1-30) which consist of 3 subscales: Cooperation, Assertion, and Self-control and Problem Behaviors (items 31-40) which consist of 2 subscales: Externalizing Problems and Internalizing Problems. Similar to SSRS-P, this measurement used a 3- point Likert-type scale (Never, Sometimes, Very Often). Sample items include: "Give compliments to friends or other children in the family" (Responsibility); "Control temper in conflict situations with you" (Self-Control); "Appropriately expresses feelings when wronged" (Assertion); and "Attempts household tasks before asking for your help" (Cooperation). In this study, social Skills scale was used to assess children's social competence.

Parenting Practices

The Parent Behavior Checklist (PBC). The PBC, developed by Fox (1994) assesses parenting behaviors. Three subscales, expectations (50 items that measure parents' developmental expectations), discipline (30 items that assess a parental responses to children's problem behaviors and nurturing (20 items that measure specific

parents' behaviors that promote children's psychological growth) were used to assess parenting practices. Each item is rated on a 4-point Likert-type scale, ranging from *almost never/never* (1) to *almost always/always* (4). Sample items include: "My child should be able to use the toilet without help" (Expectation); "When my child doesn't do what I tell him/her to do, I spank him/her" (Discipline); and "I read to my child at bedtime" (Nurturing).

Parental Expressivity

The Self-Expressiveness in the Family Questionnaire (SEFQ). The Self-Expressiveness in the Family Questionnaire was developed by Halberstadt et al. (1995). Parents rated their own emotional expressivity within their family by completing the Self-Expressiveness in the Family Questionnaire, which measured the frequency with which positive and negative emotions are expressed in a variety of settings typical for most families. This instrument used 9-point Likert scales, ranging from *not at all frequently* (1) to *very frequently* (9). Negative emotional expressiveness subscale (10 items) and positive emotional expressiveness subscale (30 items) were used to assess negative and positive parental expressivity. Sample items include "Expressing dissatisfaction with someone else's behavior" (Negative parental expressivity) and "Praising someone for good work" (Positive parental expressivity).

A graphical presentation of the constructs and the respective instruments used to measure them summarizes the information discussed above in Figure 2. As a confirmatory factor analysis 6 subscales (discipline, sociability, shyness, activity, and impulsiveness) were omitted. The factor loadings are also presented in Figure 2.

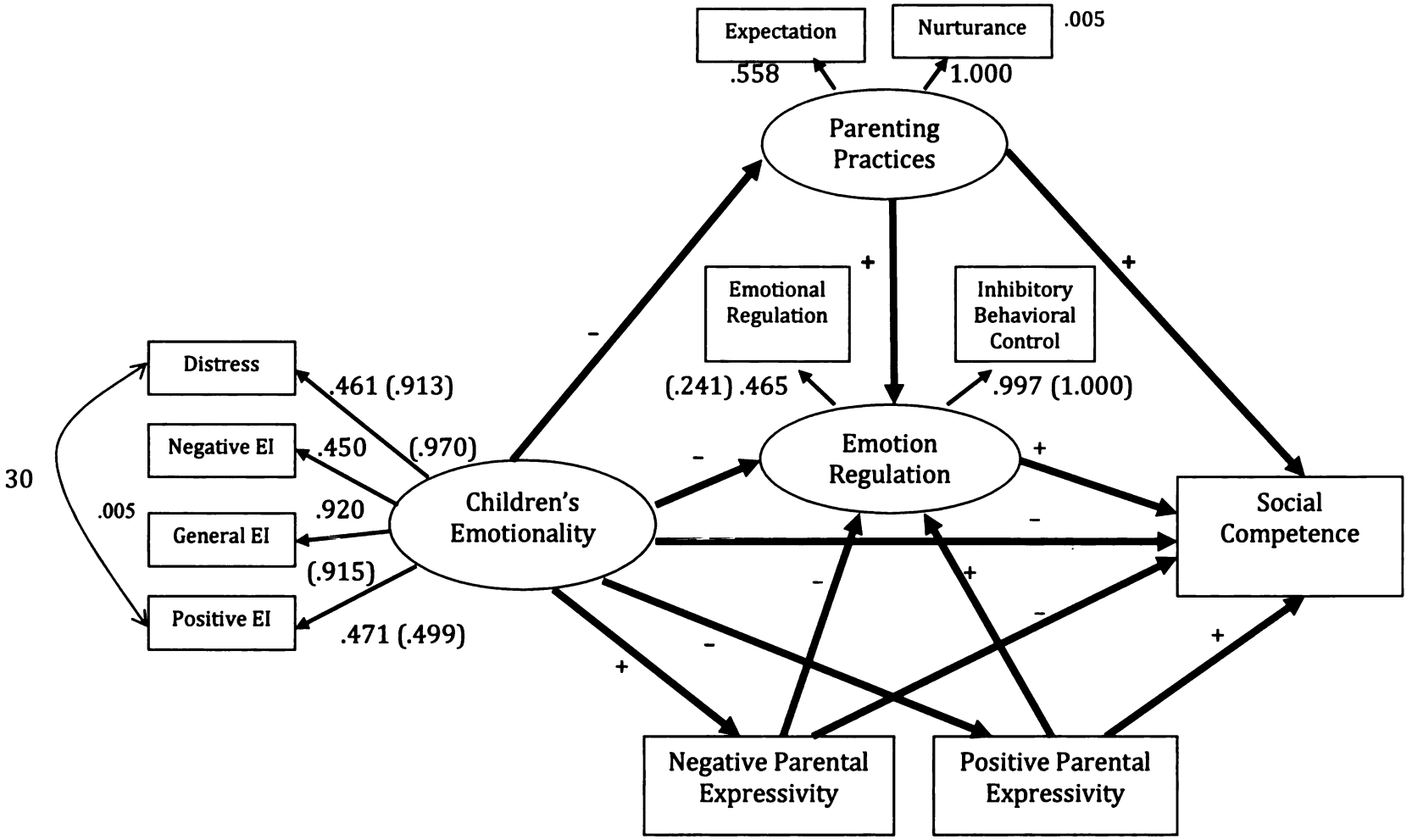

Figure 2. Measurement Model and Factor Loading (Parent-reported and Teacher-reported).

Parenthesis: Teachers' reports. '+' signs represent positive direction and '-' signs represent negative direction between variables. 0.005: error variance. EI: Emotional intensity.

CHAPTER FOUR

Results

Descriptive Analysis

Means and standard deviations were calculated for all scaled scores used in the current study as seen in Table 1.

The children reported by parents and teachers exhibited as many social skills as the average for the standardized sample comparison group, comparing parent- and teacher- reported average raw scores of 47.73 (vs. 42 - 61) and 40.76 (vs. 29 – 50.5), respectively. Parents' average Expectation T score of 47 (an average raw score of 159.94) and Nurturing T score of 54 (an average raw score of 63.29) for children were in the average range (35-65). Therefore, parents with average expectation T scores were more likely to have reasonable parental developmental expectations. The positive parental expressivity mean score of 155.66 (SD = 26.76) is higher than median score ($\simeq$ 131). So, the results showed that parents tended to respond more positively to children's emotions. Negative parental expressivity mean score of 67.94 (SD = 21.29) is lower than median score ($\simeq$ 71). The results from descriptive statistics indicated that parents were more likely to respond less negatively to children's emotions. As to general, negative, and positive emotional intensity reported by parents, children were in the above average range (Mean = 4.26, 4.20, and 5.05; SD = .93, .87, and .88, respectively). Teacher-rated positive emotionality score was in a little high average range (Mean = 4.0, SD = .87). Parent- and teacher-rated inhibitory behavior control scores were in the high average range (Mean = 4.71, SD = .92 and Mean = 4.59, SD = 1.25, respectively). However, other

scores as to emotionality and emotion regulation were in the average or below average range.

Descriptive Statistics

		N	Minimum	Maximum	Mean	Std.	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Parent-reported										
	Emotional regulation	214	15.00	32.00	24.92	3.596	-0.271	0.166	-0.458	0.331
	Inhitory behavioral control	214	2.54	6.69	4.71	0.920	-0.121	0.166	-0.703	0.331
	Distress	214	1.00	5.00	2.79	0.915	0.244	0.166	-0.386	0.331
	General Emotional intensity	214	1.68	7.00	4.26	0.925	0.291	0.166	0.209	0.331
	Positive Emotional Intensity	214	2.67	7.00	5.05	0.879	-0.212	0.166	-0.072	0.331
	Negative emotional intensity	214	1.60	6.60	4.20	0.869	0.038	0.166	0.259	0.331
	Nurturance	214	44.00	79.00	63.29	7.575	-0.400	0.166	-0.260	0.331
	Expectation	214	121.00	188.00	159.94	13.211	-0.625	0.166	0.441	0.331
	Positive expressivity	214	79.00	202.00	155.66	26.757	-0.686	0.166	-0.062	0.331
	Negative expressivity	214	17.00	124.00	67.94	21.786	0.130	0.166	-0.412	0.331
	Social skills	214	10.00	80.00	56.73	13.177	-0.533	0.166	0.747	0.331
Teacher-reported										
	Emotional regulation	214	14.54	32.00	24.83	4.042	-0.368	0.166	-0.427	0.331
	Inhitory behavioral control	214	1.46	7.92	4.59	1.253	-0.318	0.166	-0.366	0.331
	Distress	214	-0.39	5.17	2.32	1.043	0.461	0.166	-0.148	0.331
	General Emotional intensity	214	0.59	6.52	3.59	1.099	0.232	0.166	-0.077	0.331
	Positive Emotional Intensity	214	2.17	6.67	4.05	0.872	0.128	0.166	-0.125	0.331
	Negative emotional intensity	214	0.04	6.60	3.55	1.309	0.315	0.166	-0.404	0.331
	Social skills	214	11.14	63.09	40.76	10.821	-0.267	0.166	-0.373	0.331

Table 1. Means, Standard Deviations, Ranges, Skewness, and Kurtosis of Children's Emotionality, Emotion Regulation, Parenting Practices, Parental Expressivity, and Social Competence.

Correlations

In order to examine the relationships between variables, Pearson product-moment correlation coefficients were calculated for all measures used in the study. The results from the correlation matrix demonstrated the relationships between variables as seen in Table 2 and 3.

Teachers' reports showed that the general emotional intensity and distress subscales of children's emotionality were positively correlated with negative parental expressivity. All the subscales of children's emotionality were negatively correlated with children's social skills and their emotion regulation (see Table 3). However, parents' reports indicated that the positive emotional intensity subscale was positively correlated with children's emotional regulation. All the subscales of children's emotionality were positively correlated with negative parental expressivity, and the general and positive emotional intensity subscales of children's emotionality were positively correlated with positive parental expressivity (see Table 2). The distress and negative emotional intensity subscales of children's emotionality were negatively correlated with their social skills and their emotion regulation in parents' reports. Children's positive emotional intensity was positively correlated with children's social skills, positive and negative parental expressivity, and their emotional regulation (but not their behavioral regulation). Children's general emotional intensity was positively correlated with negative and positive parental expressivity.

With respect to the relationship between children's emotionality and parenting practices, the children's positive emotional intensity subscale was positively correlated with parenting practices, but their negative emotional intensity was negatively correlated

with parents' expectation subscale in parents' reports (see Table 2). The children's general emotional intensity subscale was positively correlated with the parents' nurturance subscale, but their negative and positive emotional intensity subscales were not significant correlated with parenting practices in teachers' reports (see Table 3).

As to children's emotion regulation, the results indicated that children's emotional and behavioral regulatory skills were positively correlated with parenting practices in parents' reports, but that there were no correlations between children's emotion regulation, parental expressivity, and parenting practices in teachers' reports. Parents' reports, however, demonstrated that the emotional regulation subscale of children's emotion regulation was positively correlated with positive parental expressivity, but that their behavioral regulation subscale of emotion regulation was negatively correlated with negative parental expressivity. Both parents' and teachers' reports indicated that the relationships between children's emotion regulation and social skills were positive.

Teachers' reports showed that positive expressivity and negative expressivity were not correlated with children's social skills. Parents' reported demonstrated that positive parental expressivity was positively correlated with children's social skills, but that negative parental expressivity was negatively correlated with their social skills.

In addition, parenting practices were positively correlated with children's social skills in parents' reports, but there was no evidence of correlations between parenting practices and children's social skills in teachers' reports.

Table 2 Correlations of Parents' Assessment of Children's Emotionality, Emotion Regulation, Parenting Practices, Parental Expressivity, and Social competence

		1	2	3	4	5	6	7	8	9	10	11
	Emotion Regulation											
1	Emotional regulation	1										
2	Inhibitory behavioral control	0.464**	1									
	Emotionality											
3	Distress	- 0.159*	-0.360**	1								
4	General emotional intensity	0.091	-0.239**	0.460**	1							
5	Positive emotional intensity	0.284**	-0.024	0.111	0.470**	1						
6	Negative emotional intensity	- 0.259**	-0.444**	0.510**	0.517**	0.200.**	1					
	Parenting Practices											
7	Expectation	0.303**	0.308**	-0.092	-0.005	0.180*	-0.176**	1				
8	Nurturance	0.339**	0.333**	-0.014	0.023	0.159*	-0.105	0.558**	1			
	Parental Expressivity											
9	Positive expressivity	0.390**	0.116	0.113	0.198**	0.321**	0.046	0.417**	0.435**	1		
10	Negative expressivity	- 0.021	-0.304**	0.308**	0.251**	0.197**	0.328**	0.169*	0.019	0.272**	1	
	Social Competence											
11	Social skills	0.506**	0.625**	-.243**	-0.017	0.262**	-0.290**	0.340**	0.343	0.235**	-0.194*	1

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

Table 3 Correlations of Teachers' Assessment of Children's Emotionality, Emotion Regulation, and Social Competence

		1	2	3	4	5	6	7	8	9	10	11
	Emotion Regulation											
1	Emotional regulation	1										
2	Inhibitory behavioral control	0.490**	1									
	Emotionality											
3	Distress	-0.398**	-0.621**	1								
4	General emotional intensity	-0.355*	-0.686**	0.837**	1							
5	Positive emotional intensity	-0.013	-0.372**	0.474**	0.602**	1						
6	Negative emotional intensity	-0.504**	-0.693**	0.886**	0.887**	0.478**	1					
	Parenting Practices											
7	Expectation	-0.006	0.021	-0.052	-0.001	-0.042	-0.084	1				
8	Nurturance	0.014	-0.111	0.058	0.166*	0.098	0.090	0.558**	1			
	Parental Expressivity											
9	Positive expressivity	-0.055	-0.090	0.106	0.090	0.027	0.119	0.417**	0.435**	1		
10	Negative expressivity	-0.024	-0.063	0.175*	0.142*	0.041	0.172*	0.169*	0.019	0.272**	1	
	Social Competence											
11	Social skills	0.675**	0.490**	-0.529**	-0.480**	-0.139*	- 0.633**	-0.006	0.014	-0.003	-0.127	1

** $p < .01$ (2-tailed); * $p < .05$ (2-tailed); Parenting practices and parental expressivity were rated by parents.

Structural Equation Models

The structural equation modeling with latent and observed variables method of data analysis was used in this study. The statistical program AMOS 7.0 was designed to perform the structural equation modeling analyses.

In order to examine the relationships among children's emotionality, emotion regulation, social competence, parenting practices, and parental expressiveness, two separate models were estimated because parents and teachers measured children's emotionality, emotion regulation, and social competence. The data that teachers rated were smaller than parent-rated data by 26%.

Because the data set with incomplete values can lead to inefficient analyses, the Amelia II software package (Honaker, King, & Blackwell, 2007) was used to handle missing data. Amelia II allows users to get the results with complete cases through a bootstrapping-based EM (expectation-maximization) algorithm. Amelia II is able to "impute many more variables, with many more observations, in much less time" (p. 4). In addition, Amelia II can allow researchers to get the valid and accurate imputation for cross-sectional data. After imputation with Amelia II, the mean scores of data are much closer to original data than the mean of data after imputation with SPSS. The data was examined for distribution qualities. Skewness and kurtosis values for all the variables used in the two models can be seen in Table 1.

Model 1: Parents-report Model Specification

Amos 7.0 was used to obtain maximum likelihood estimates of the model coefficients. Confirmatory factor analyses (CFA) procedures are used in testing the validity of the indicator variables. First, children's emotionality model was designed to

test for the factorial validity of parents' reports of measurement. The CFA model of children's emotionality, which includes 7 indicators (shyness, distress, sociability, activity, and positive, negative, and general emotional intensity) represented an ill-fitting model to the data on the basis of the value of GFI = .777 and CFI = .554 which indicate a very poor fit to the data. In order to determine a model that better represents the sample data, items that loaded significantly on their factor ($p < .05$) and that standardized parameter estimates with less than .30 were removed from the model. After deleting shyness, activity, and sociability items from the CFA model, the model was improved. However, there were still misspecifications in the model. A respecification model was determined within the framework of post hoc analyses. To test the extents to which hypothesized model adequately describes the sample data (in order words, "fit"), X^2 (indicated as CMIN in AMOS output), non-significant P (probability value > .05), the goodness-of-fit index (GFI > .90), the comparative fit index (CFI >.90), and the root mean square error of approximation (.05 < RMSEA < .08) were taken into accounts (Byrne, 2001). On the basis of information of Modification Indices which indicate suggested covariances between error terms and factors and suggested regression paths among the observed variables, an initial hypothesized model was respecified. An alternative model included correlated errors (e3/e7) between the items of distress and negative emotional intensity. The maximum MIs would consider the indicators of model misspecification. However, because of Heywood cases (negative estimates of measurement error) for the item of general emotional intensity, its error had to be set to .005. When this was done, the model represented a best fit to the data on the basis of model fit indices: $X^2 = 1.339$ (df = 1), non-significant probability value (p = .247), the

goodness-of-fit index (GFI = .997), the comparative fit index (CFI = .998), and root mean square error of approximation (RMSEA = .040).

The other CFA model of parenting practices was designed to test for the factorial validity of the parenting practices which include three indicators of discipline, expectation, and nurturance. Because there were Heywood cases for the indicator of nurturance, its error had to be set to .005. When this was done, according to the procedures which delete items that loaded significantly on their factor ($p < .05$) and that standardized parameter estimates with less than .30 were removed from the model, an item of discipline was removed from the CFA model of parenting practices. The respecified model represented exactly the identified items with no degrees of freedom.

Based on these CFA models, the hypothesized model was presented in Figure 3.

The overall initial hypothesized model represented a bad fit to the data on the basis of the model fit indices: $X^2 = 244.121$ (df = 36), significant probability value (p = .000), the goodness-of-fit index (GFI = .827), the comparative fit index (CFI = .717), and root mean square error of approximation (RMSEA = .165). In addition, the rule of thumb is that an acceptable fit to the data exists if two times the degree of freedom is larger than X^2, however X^2 was larger than two times the degree of freedom [244.121 > (df = 36) x 2 = 72]. Taken all together, the model fit indices provide evidences for a very poor fit to the data.

A subset of indexes related to the covariances was included in Table 4. The alternative model included correlated errors (d1/e15) between parenting practices and parental positive expressiveness. The value of 41.004 indicated that the overall X^2 would drop by at least this amount, but in practice the overall X^2 would drop by more than the

value of 41.004. The results still represented a bad fit to the data based on the model fit indices: X^2 = 198.578 (df = 35), significant probability value (p = .000), GFI value of .854, CFI value of .778, and RMSEA value of .148.

Although the alternative model improved the initial model on the basis of the evidence [Smaller X^2 value of 198.578 (vs. 244.121), GFI value of .854 (vs. 827), CFI value of .778 (vs. 717), and RMSEA value of .148 (.165)], there still existed misspecification in the model.

Covariances: (Group number 1 - Default model)

			M.I.	Par Change
e15	<-->	d1	41.004	86.726
e15	<-->	e14	11.590	128.317
e10	<-->	e15	10.792	35.354
e8	<-->	e14	10.167	50.229
e8	<-->	e15	11.363	66.065
e5	<-->	e14	9.081	-2.857
e7	<-->	d2	13.098	-.115
e6	<-->	e15	14.726	5.325
e6	<-->	d2	9.405	.109
e6	<-->	e8	5.982	1.418
e6	<-->	e17	12.093	1.771
e3	<-->	e14	4.657	2.353
e3	<-->	d2	6.690	-.090
e13	<-->	e15	5.270	-2.702
e13	<-->	e6	5.897	-.085
e12	<-->	Children's Emotionality	14.920	.339
e12	<-->	e14	4.085	8.844
e12	<-->	e15	13.418	19.942
e12	<-->	e5	4.445	.293
e12	<-->	e7	5.486	-.338
e12	<-->	e6	6.414	.408

Table 4. Modification Indices (Hypothesized Model 1).

To further improve the model and to recover two negative estimates of measurement error (Heywood cases) for the latent constructs of parenting practices and children's

emotionality, 13 more correlated errors were added. The improved goodness-of-fit index (GFI) value of .975 (vs. .854) and comparative fit index (CFI) value of .988 (vs. .778), and the drop in root mean square error of approximation (RMSEA) value .045 (vs. .148) was better fitting than the alternative model. In addition, the ECVI (expected cross-validation index) value was .564 (vs. 1.223) indicated that the final model is the better fitting one. The ECVI value is used within a relative framework: the smaller, the better.

In addition, the final model represented the best fitting model on the basis of non-significant chi-square [$X^2 = 30.081$ (df = 21), p = .090]. The model differences are shown in Table 5.

Model	X^2	ΔX^2	DF	ΔDF	P-value	GFI	CFI	RMSEA	ECVI
Initial	244.121		36		.000	.827	.717	.165	1.428
Alter.	198.578	35.543	35	1	.000	.854	.778	.148	1.223
Final	30.081	214.040	21	15	.090	.975	.988	.045	.564

Table 5 The differences between Initial Model and Final Model.

The standardized path coefficients for model 1 are presented in Figure 3. All the relationships among variables were in the expected direction, but the relationships between children's emotionality and social competence as well as between positive parental expressiveness and children's emotion regulation were not in the expected direction. The results indicated that there were not significant paths from children's emotionality to parenting practices, from negative parental expressivity and parenting practices to children's social competence, and from positive parental expressivity to children's emotion regulation and their social competence (standardized coefficient = -.034, -.013, .029, -.091, and .046, respectively). Children's emotionality, however, was

significantly related to their emotion regulatory skills, their social competence, and positive or negative parental expressiveness. Thus, emotional intensity positively affected negative or positive parental expressivity and socially appropriate behaviors (standardized coefficient = .572, .220, and .229, respectively), but negatively affected emotion regulation (standardized coefficient = -.251). Negative parental expressivity inversely predicted children's emotion regulation. Therefore, the results showed that high levels of negative parental expressivity caused children to regulate their emotions and behaviors less (standardized coefficient = -.176). Parenting practices significantly, positively predicted emotion regulation. Therefore, more positive parenting practices was associated with high levels of emotion regulation (standardized coefficient = .562). Children's emotion regulation positively affected their social competence (standardized coefficient = .789). Thus, more positive parenting practices caused their children to regulate their emotions and behaviors better, which caused increased social competence.

In summary, children's emotionality was related directly and indirectly to their social competence by their subsequent emotion regulatory skills and negative parental expressivity. Thus, low levels of children's emotionality were associated with high levels of regulatory skills and low levels of negative parental expressivity, and low levels of negative parental expressivity was associated with high levels of regulatory skills, which resulted in more socially appropriate behaviors. Parenting practices and positive parental expressivity were not found to play any mediating role in the relationship between children's emotionality and their social competence.

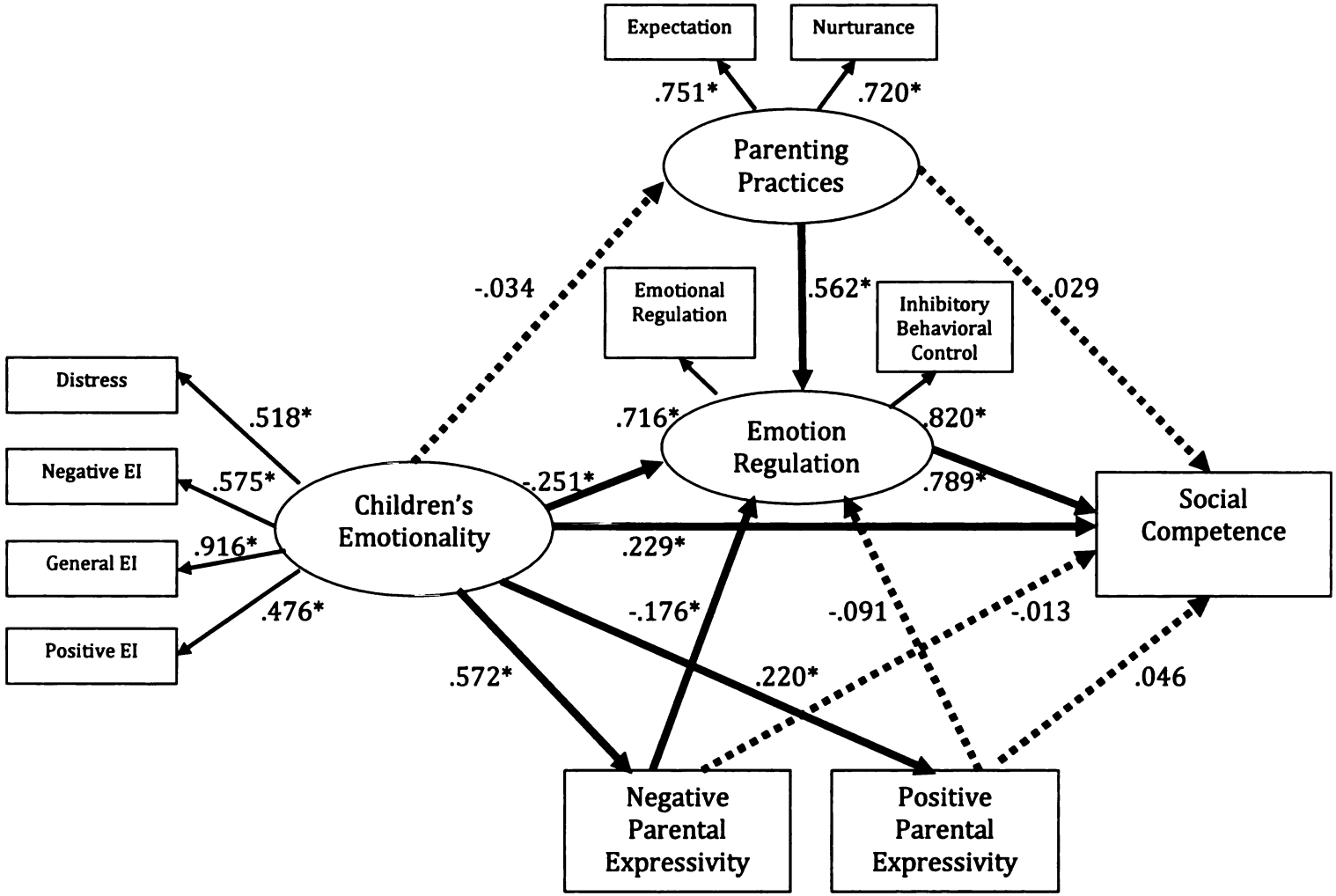

Figure 3. Hypothesized Final Model 1 (Parent-reported)

EI: Emotional Intensity; Dotted line: Non-significant Paths; Dark-solid line: Significant Paths; *: Significant regression coefficient.

Model 2: Teacher-report Model Specification

On the basis of the same procedures as the parent-rated hypothesized model 1, model 2 was designed with parents' reports of parenting practices and parental expressivity and teachers' reports of children's emotionality, their emotion regulation, and their social competence. Unlike the parent-rated hypothesized initial model 1, an observed variable, general emotional intensity, did not have a negative error variance. The initial model 2 represented a bad fit to the data, resulting in $X^2 = 216.054$ (df = 36), significant probability value (p = .000 < .05), GFI = .842, RMSEA = .153, and CFI = .875. To acquire the better fitting model, modification indices were reviewed. The final model 2 was subsequently respecified on the basis of modification indices as seen in Table 6.

Covariances: (Group number 1 - Default model)

			M.I.	Par Change
e15	<-->	d1	38.969	85.244
e15	<-->	e14	14.140	146.421
e10	<-->	e15	10.961	37.390
e8	<-->	e14	10.264	51.433
e8	<-->	e15	11.189	66.459
e5	<-->	d1	7.317	.638
e5	<-->	e17	20.071	.893
e7	<-->	d2	15.626	-.070
e7	<-->	e8	7.394	-.943
e7	<-->	e17	15.679	-.797
e6	<-->	d2	11.843	.096
e6	<-->	e5	9.770	.069
e13	<-->	e5	25.041	-.117
e13	<-->	e7	9.515	.072
e12	<-->	d2	5.890	.286
e12	<-->	e10	4.398	2.692
e12	<-->	e8	5.588	-5.341
e12	<-->	e5	4.561	.202
e12	<-->	e6	10.849	.489

Table 6 Modification Indices (Hypothesized Initial Model 2: Teacher-rated)

After the specification of 11 more correlated error terms to get a better fitting model, the final model 2 exhibited improvement in model fit: $X^2 = 36.954$ (df = 25), non-significant probability value (p = .058 > .05), the GFI value of .969 (vs. 842), RMSEA value of .047 (vs. .153); the ECVI value was .558 (vs. 1.296), and CFI value of .992 (vs. 875). In addition, two times the degree of freedom was larger than X^2 [(df = 25) x 2 = 50 > 36.954]. Taken all together, the alternative final model represented a good fit to the data. Comparison of the hypothesized initial model 2 to the final model 2 was seen in Table 7.

Model	X^2	ΔX^2	DF	ΔDF	P-value	GFI	CFI	RMSEA	ECVI
Initial	216.054		36		.000	.842	.875	.153	1.296
Final	36.954	179.100	25	11	.058	.969	.992	.047	.558

Table 7. Comparison of the Hypothesized Initial Model 2 to the Final Model 2.

The standardized path coefficients for model 2 are presented in Figure 4. The relations of children's emotionality to parenting practices (positive vs. negative) and their social competence (positive vs. negative) were not in the expected direction. The relations of negative parental expressivity (positive vs. negative), positive parental expressivity (negative vs. positive), and parenting practices to children's emotion regulation (negative vs. positive) were not in the expected direction, either. Consistent with the hypothesized model 1, children's emotionality was significantly, directly related to their emotion regulation, their social competence, and negative parental expressivity. Their emotion regulation was significantly, directly related to their social competence. Furthermore, the relationships between children's emotionality and parenting practices, between parenting

practices and their social competence, between positive parental expressivity and their emotion regulation, and between positive parental expressivity and their social competence were not significant. Unlike the model 1, while negative parental expressivity was significantly associated with children's social competence, negative parental expressivity was not significantly related to their emotion regulation. Moreover, the relationships between children's emotionality and positive parental expressivity and between parenting practices and their emotion regulation were not significant. The results indicated that children's emotionality negatively predicted emotion regulation (standardized path coefficient = -.804), but positively predicted negative parental expressivity (standardized path coefficient = .197) and children's social competence (standardized path coefficient = .518). And children's emotion regulation positively predicted their social competence (standardized path coefficient = 1.345). Thus, high levels of children's emotion regulation caused children to behave well socially, which resulted in mediating effects of their emotionality on social competence. In order words, low levels of children's emotionality were associated with high levels of emotion regulatory skills, which predicted more socially competent behaviors. Furthermore, negative parental expressivity also played a mediating role in the relationships between children's emotionality and their social competence. That is, children's emotionality was positively associated with negative parental expressivity, which negatively predicted social competence for children (standardized path coefficient = -.140).

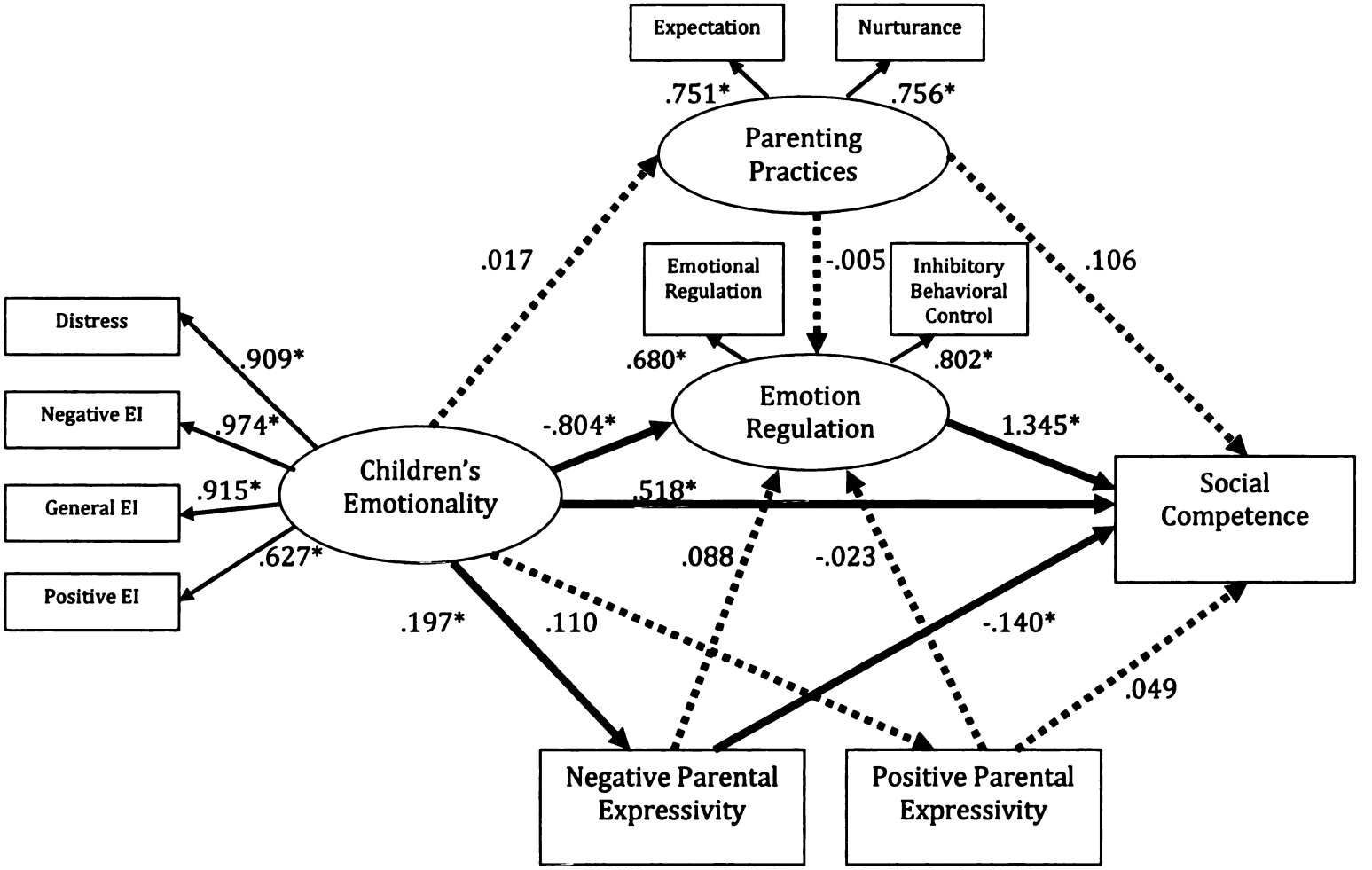

Figure 4. Hypothesized Final Model 2 (Teacher-reported)

EI: Emotional Intensity; Dotted line: Non-significant Paths; Dark-solid line: Significant Paths; *: Significant regression coefficient. Parents assessed parenting practices, negative, and positive expressiveness.

In summary, children's emotion regulation and negative parental expressivity played mediating roles in the relationships between children's emotionality and their social competence. Therefore, high levels of children's emotionality positively predicted negative parental expressivity, which negatively predicted their social competence whereas high levels of children's emotionality negatively predicted their emotion regulation, which positively predicted their social competence.

Alternative Models

The importance of parental expressivity and parenting practices are considerably argued in the child development literature. The hypothesized models (parent- and teacher-reported models) failed to identify positive parental expressivity and parenting practices as mediators of the deleterious effects of children's emotionality on their social competence. Alternative models with post hoc analyses were conducted in an attempt to understand why parent expectation and nurturance and negative parental expressivity did not mediate the relationship between children's emotionality and their social competence through children's emotion regulation. All alternative models used parent-reported data.

Alternative Model 1. An alternative model 1 was designed to test indirect effects of children's emotionality on social competence through parenting practices, parental expressivity, and children's emotion regulation. The alternative initial model 1 represented a poor fit to the data on the basis of the model fit indices: $X^2 = 303.598$ (df = 40), significant probability value ($p = .000 < .05$), the goodness-of-fit index (GFI = .786), root mean square error of approximation (RMSEA = .176), and comparative fit index (CFI = .642). In addition, two times the degree of freedom was not larger than X^2 [(df = 40) x 2 = 80 < 303.598]. The alternative final model was respecified on the basis of the

modification indices as seen in Table 8. The final model was subsequently respecified with the specification of 17 more correlated error terms and factors to get a better fitting model and to improve the negative error variance of parenting practices.

Covariances: (Group number 1 - Default model)

			M.I.	Par Change
e15	<-->	d1	41.012	86.739
e15	<-->	e14	11.591	128.324
d2	<-->	d1	27.121	2.253
d2	<-->	e15	11.301	5.035
e8	<-->	e14	10.169	50.234
e8	<-->	e15	11.362	66.064
e7	<-->	d2	22.917	-.190
e6	<-->	e15	14.737	5.328
e6	<-->	e17	11.870	1.776
e3	<-->	e14	4.654	2.352
e3	<-->	d2	7.039	-.115
e13	<-->	Children's Emotionality	15.416	-.079
e13	<-->	d1	6.439	.910
e13	<-->	e14	9.146	-3.020
e12	<-->	e15	24.695	27.534
e12	<-->	e6	8.787	.486

Table 8. Modification Indices (Alternative Initial Model 1).

The alternative final model exhibited improvement in model fit: $X^2 = 31.940$ (df = 22), non-significant probability value (p = .078 > .05), the GFI = .974, RMSEA = .046; the ECVI value was .563, and CFI = .987. In addition, two times the degree of freedom was larger than X^2 [(df = 22) x 2 = 44 > 31.940]. Taken all together, the alternative final model represented a good fit to the data. Comparison of the alternative initial model to the model was seen in Table 9.

Model	χ^2	$\Delta\chi^2$	DF	ΔDF	P-value	GFI	CFI	RMSEA	ECVI
Initial	303.598		40		.000	.786	.642	.176	1.669
Final	31.940	271.658	22	18	.078	.974	.987	.046	.563

Table 9. Comparison of Alternative Initial Model 1 to Final Model 1.

The standardized path coefficients for the alternative model 1 are presented in Figure 5. The relationship between children's emotionality and their emotion regulation was not in the expected direction (positive vs. negative), but the others in the model were in the expected direction. The paths from children's emotionality to negative and positive parental expressivity were found to be statistically significant. In addition, the paths from children's emotion regulation and negative parental expressivity to their social competence were found to be statistically significant. However, the paths from children's emotionality to their emotion regulation and parenting practices as well as from parenting practices and positive parental expressivity to children's social competence were found to be non-significant. Children's emotionality was positively associated with negative and positive parental expressivity (standardized coefficient = .269 and .188, respectively). Negative parental expressivity was negatively associated with children's social competence (standardized coefficient = -191), but children's emotion regulation was positively associated with their social competence (standardized coefficient = .653). Comparing this final model 1 to the hypothesized final model, there were non-significant and lower standardized direct effects of children's emotionality on their emotion regulation (.077 vs. -.251) but significant and lower standardized direct effects of their emotion regulation on their social competence (.653 vs. .789). Furthermore, this model was not able to explain the role of children's emotion regulation, positive parental expressivity, and parenting practices in predicting children's social competence.

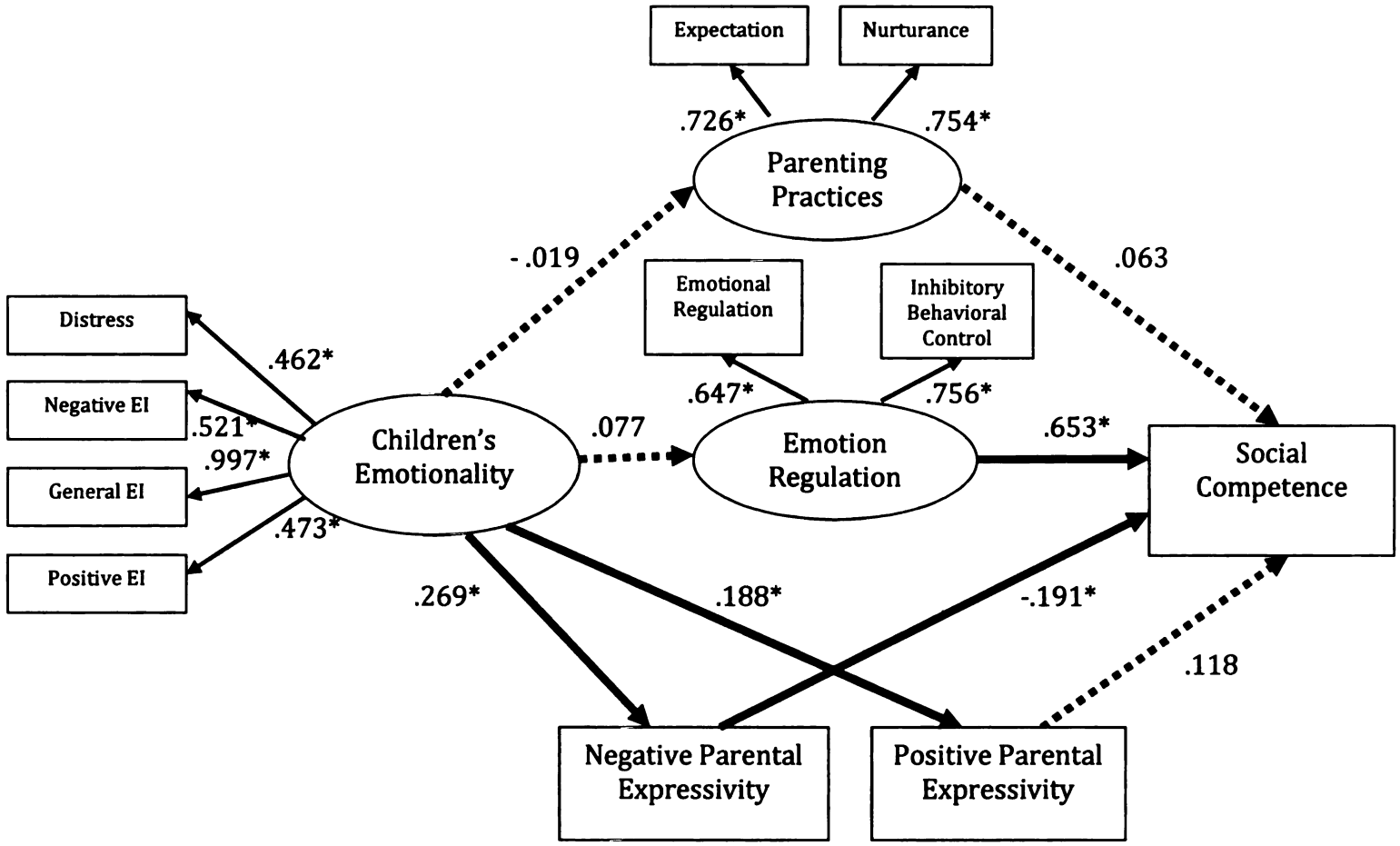

Figure 5. Alternative Final Model 1 (Parent-reported)

EI: Emotional Intensity; Dotted line: Non-significant Paths; Dark-solid line: Significant Paths; *: Significant regression coefficient.

Therefore, additional exploration was conducted. Model comparison was seen in Table 10.

Model	X^2	ΔX^2	DF	ΔDF	P-value	GFI	CFI	RMSEA	ECVI
Hypothesized 1	30.081		21		.090	.975	.988	.045	.564
Alternative 1	31.940	-1.859	22	-1	.078	.974	.987	.046	.563

Table 10. Comparison of Hypothesized Model 1 to Alternative Model 1.

Alternative Model 2. An alternative model 2 was designed to test the indirect effects of parenting practices and parental expressivity on children's social competence through their emotion regulation, because alternative model 1 failed to explain the direct effects of parenting practices and positive parental expressivity on children's social competence.

The alternative initial model 2 represented a bad fit to the data on the basis of the model fit indices: $X^2 = 251.394$ (df = 40), significant probability value ($p = .000 < .05$), the goodness-of-fit index (GFI = .823), root mean square error of approximation (RMSEA = .158), and comparative fit index (CFI = .713). In addition, two times the degree of freedom was not larger than X^2 [(df = 40) x 2 = 80 < 251.394]. Therefore, to improve the model fit, the alternative initial model 2 was respecified on the basis of the modification indices as seen in Table 11.

Covariances: (Group number 1 - Default model)

			M.I.	Par Change
e15	<-->	d1	41.004	86.726
e15	<-->	e14	11.590	128.317
e8	<-->	e14	10.167	50.229
e8	<-->	e15	11.363	66.066
e8	<-->	d2	10.180	1.680
e7	<-->	e14	6.106	2.467
e7	<-->	d2	14.093	-.125
e6	<-->	e15	14.727	5.325
e12	<-->	e6	6.396	.401
e6	<-->	e8	5.980	1.418
e6	<-->	e17	11.908	1.781
e3	<-->	e14	4.656	2.353
e3	<-->	d2	6.725	-.094
e13	<-->	Children's Emotionality	18.385	-.084
e12	<-->	e15	13.045	19.360
e12	<-->	e6	6.396	.401

Table 11. Modification Indices (Alternative Initial Model 2).

The final model was subsequently respecified with the specification of 15 more correlated error terms and factors to get a better fitting model. Alternative final model 2 represented the best fit to the data on the basis of the model fit indices: $X^2 = 36.482$ (df = 25), non-significant probability value (p = .065 > .05), the goodness-of-fit index (GFI = .969), root mean square error of approximation (RMSEA = .046); the ECVI value of .556, and comparative fit index (CFI = .984). In addition, two times the degree of freedom was larger than X^2 [(df = 25) x 2 = 50 > 36.482]. Model comparison was seen in Table 12.

Model	X^2	ΔX^2	DF	ΔDF	P-value	GFI	CFI	RMSEA	ECVI
Initial	251.394		40		.000	.823	.713	.158	1.424
Final	36.482	214.912	25	15	.065	.969	.984	.040	.556

Table 12. Comparison of Alternative Initial Model 2 to Final Model 2

The standardized path coefficients for this alternative model 2 are presented in Figure 6. The paths from children's emotionality to their emotion regulation and parenting practices were found to be non-significant, but the other paths were found to be significant. As in alternative model 1, there were still significant direct effects of children's emotionality on negative and positive parental expressivity. Negative and positive parental expressivity and parenting practices were significantly associated with children's emotion regulation. Children's emotion regulation was significantly related to their social competence. Therefore, children's emotionality positively predicted negative parental expressivity (standardized coefficient = .254), which negatively predicted children's emotion regulation (standardized coefficient = -.362). However, children's emotionality positively positive parental expressivity (standardized coefficient = .198), which caused children to regulate their emotions and behaviors well (standardized coefficient = .173). Parenting practices positively predicted children's emotion regulation (standardized coefficient = .320), which led children to have more socially competent behaviors (standardized coefficient = .745).

In summary, children's emotionality was indirectly related to their social competence through negative or positive parental expressivity and children's emotion regulation. And parenting practices were indirectly associated with children's social competence through their emotion regulation.

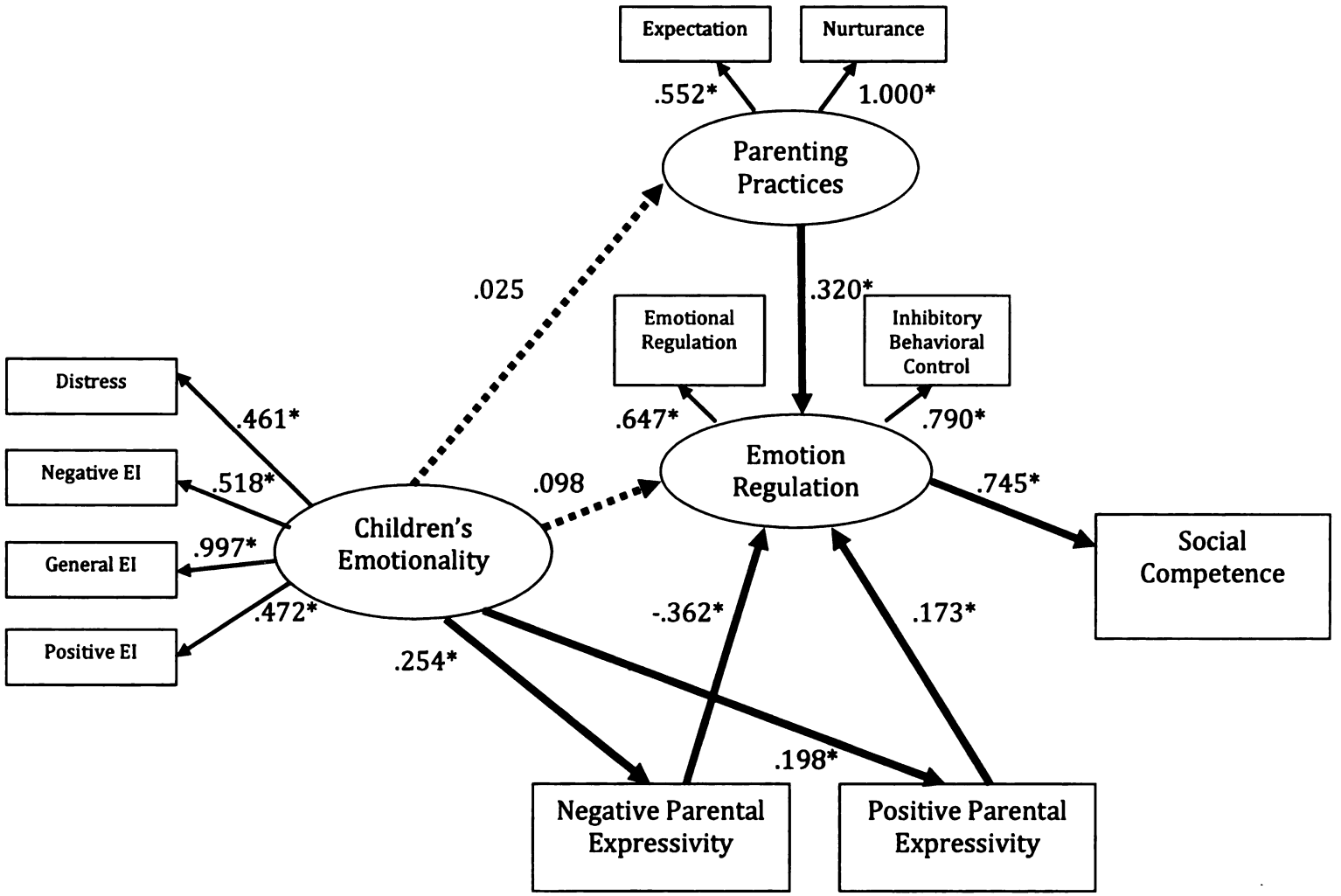

Figure 6. Alternative Final Model 2 (Parent-reported)

EI: Emotional Intensity; Dotted line: Non-significant Paths; Dark-solid line: Significant Paths; *: Significant regression coefficient.

Alternative Model 3. Because previous models failed to identify the original hypotheses of parenting practices and parental expressivity as mediators, alternative model 3 was designed. The mediating effects of children's emotion regulation on the relationships between children's emotionality and their social competence and of parenting practices and negative or positive parental expressivity and on the relationships between children's emotion regulation and their social competence were tested. The alternative initial model 3 represented a poor fit to the data on the basis of the model fit indices: $X^2 = 266.928$ (df = 39), significant probability value (p = .000 < .05), the goodness-of-fit index (GFI = .809), root mean square error of approximation (RMSEA = .166), and comparative fit index (CFI = .691). In addition, two times the degree of freedom was not larger than X^2 [(df = 39) x 2 = 78 < 266.928]. To improve the alternative initial model 3 the modification indices were reviewed as seen in Table 13.

Covariances: (Group number 1 - Default model)

			M.I.	Par Change
e14	<-->	Children's Emotionality	13.611	2.318
e15	<-->	Children's Emotionality	8.407	2.237
e15	<-->	d1	40.260	87.719
e15	<-->	e14	15.722	157.637
e8	<-->	e14	7.768	45.384
e7	<-->	d2	13.089	-.115
e6	<-->	e15	14.231	5.343
e6	<-->	e17	12.087	1.771
e3	<-->	e14	4.390	2.361
e3	<-->	d2	6.682	-.090
e12	<-->	Children's Emotionality	14.861	.338
e12	<-->	e14	8.597	13.262
e12	<-->	e15	18.991	24.209
e12	<-->	e5	9.867	.450
e12	<-->	e6	6.441	.409

Table 13. Modification Indices (Alternative Initial Model 3)

The final model was subsequently respecified with the specification of 15 more correlated error terms and factors in Table 12 to get a better fitting model. The alternative final model exhibited improvement in model fit: $X^2 = 30.968$ (df = 23), non-significant probability value (p = .124 > .05), the GFI = .974, RMSEA = .040; the ECVI value was .549, and CFI = .989. In addition, two times the degree of freedom was larger than X^2 [(df = 23) x 2 = 46 > 30.968].

Taken all together, the alternative final model 3 represented a best fit to the data. Comparison of the alternative initial model with final model is found in Table 14.

Model	X^2	ΔX^2	DF	ΔDF	P-value	GFI	CFI	RMSEA	ECVI
Initial 3	266.928		39		.000	.809	.691	.166	1.507
Final 3	30.968	235.960	23	16	.124	.974	.989	.040	.549

Table 14. Comparison of Alternative Initial Model 3 to Final Model 3.

The standardized path coefficients for the alternative final model 3 are presented in Figure 7. All paths were in the expected direction and significant except the paths from parenting practices to children's social competence and from negative and positive parental expressivity to children's social competence. The results indicated that children's emotionality had direct effects on their social competence. Children's negative emotionality was negatively associated with emotion regulatory skills (standardized coefficient = -.199), but positively associated with socially competent skills (standardized coefficient = .194). Children's emotion regulation also had direct effect on their social competence. That is, children's emotion regulation positively related to their social competence (standardized coefficient = .818). Thus, the relationships between children's emotionality and their social competence were mediated by their emotion regulation. In addition, parenting practice had a direct effect on children's emotion regulation

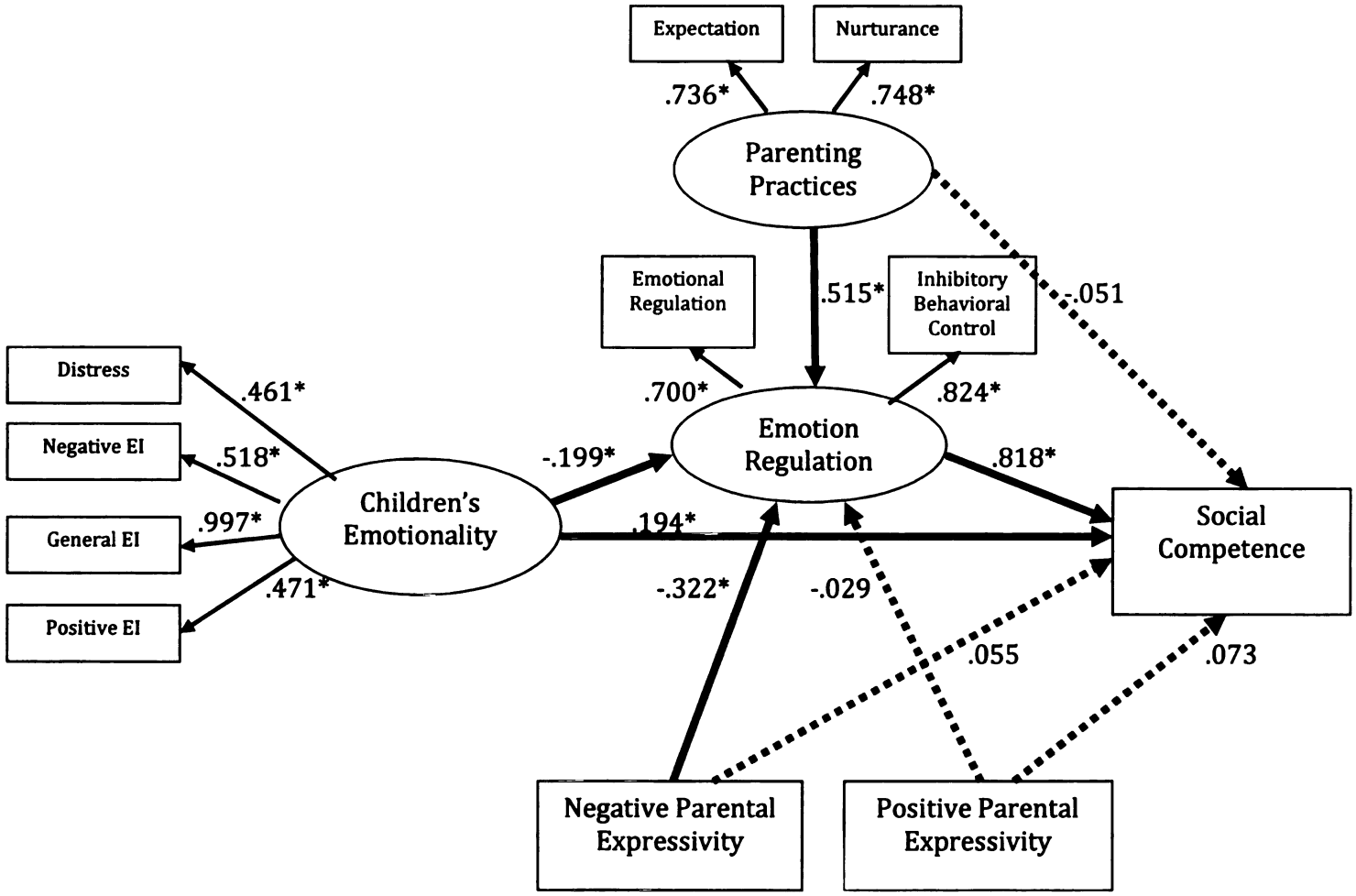

Figure 7. Alternative Final Model 3 (Parent-reported)

EI: Emotional Intensity; Dotted line: Non-significant Paths; Dark-solid line: Significant Paths; *: Significant regression coefficient.

(standardized coefficient = .515) and an indirect effect on social competence through children's emotion regulation. Therefore, parenting practices positively predicted children's emotion regulation, which positively predicted socially competent behaviors for children. In addition, low levels of children's emotionality and negative parental expressivity resulted in high levels of emotion regulation, which led to high levels of socially competent behaviors. Therefore, parenting practices and negative parental expressivity were indirectly related to children's social competence through emotion regulation.

In summary, low levels of children's negative emotionality and more positive parenting practices were associated with high levels of children's emotion regulation, which predicted more socially competent behaviors. The results indicated that children's emotion regulation as a mediator was a potential buffer of children's emotionality and negative parental expressivity on their social competence. The results also indicated that the effects of children's emotionality on their social competence were moderated by parenting practices and negative parental expressivity.

Alternative Model 4. Alternative model 4 was designed to test the bi-directional effects of children's emotion regulation on parenting practices and parental expressivity. Alternative initial model 4 generally represented a poor fit to the data on the basis of the model fit indices: $X^2 = 231.838$ (df = 36), significant probability value (p = .000), the goodness-of-fit index (GFI = .831), root mean square error of approximation (RMSEA = .160), and comparative fit index (CFI = .734). In addition, two times the degree of freedom was not larger than X^2 [(df = 36) x 2 = 72 < 231.838]. To improve the alternative initial model 4, the modification indices were reviewed as seen in Table 15. The final

model was subsequently respecified with the specification of 9 more correlated error terms and factors in Table 14 to achieve a better fitting model. The Alternative final model exhibited improvement in model fit: X^2= 35.990 (df = 27), non-significant probability value (p = .116> .05), the GFI = .971, RMSEA = .040; the ECVI value was .535, and CFI = .988. In addition, two times the degree of freedom was larger than X^2 [(df = 27) x 2 = 54 > 35.990]. Taken all together, the alternative final model 4 represented a good fit to the data.

Covariances: (Group number 1 - Default model)

			M.I.	Par Change
e15	<-->	d1	11.568	34.260
e15	<-->	e14	22.321	158.333
e8	<-->	d2	7.864	1.390
e8	<-->	e14	11.956	54.245
e8	<-->	e15	5.930	42.608
e5	<-->	e14	13.259	-3.422
e5	<-->	e15	9.019	-3.160
e7	<-->	d2	17.069	-.130
e6	<-->	d2	22.972	.168
e6	<-->	e8	5.979	1.418
e6	<-->	e17	10.640	1.668
e13	<-->	Children's Emotionality	7.419	-.055
e13	<-->	e14	16.153	-4.024
e13	<-->	e15	13.132	-4.040
e13	<-->	e6	5.486	-.087
e12	<-->	Children's Emotionality	12.116	.300
e12	<-->	e5	10.274	.435
e12	<-->	e7	6.914	-.372

Table 15. Modification Indices (Alternative Initial Model 4).

Comparison of the alternative initial model to the final model is seen in Table 16.

Model	X^2	ΔX^2	DF	ΔDF	P-value	GFI	CFI	RMSEA	ECVI
Initial 4	231.838		36		.000	.831	.734	.160	1.370
Final 4	35.990	195.848	27	9	.116	.971	.988	.040	.535

Table 16. Comparison of Alternative Initial Model 4 to Final Model 4.

The standardized path coefficients for the alternative final model 4 are presented in Figure 8. All paths in the model were significant, but the direct paths from children's emotionality to parenting practices and their social competence, from parenting practices and positive family expressiveness to children's social competence, and from children's emotion regulation to negative family expressivity were not in the expected direction. Children's emotionality was positively associated with negative and positive parental expressiveness, parenting practices, and their social competence (standardized coefficient = .676, .797, .578, and 1.447, respectively), but negatively associated with children's emotion regulation (standardized coefficient = -.707). In addition, children's emotion regulatory skills was positively related to parenting practices, negative and positive parental expressivity, and their social competence (standardized coefficient = 1.104, .410, 1.049, and 2.434, respectively). Parenting practices and negative and positive parental expressivity were negatively associated with children's social competence (standardized coefficient = -.544, -.311, and -.631, respectively). The results indicated that when comparing the parents' report hypothesized model 1 to the alternative model 4: the effects of parenting practices and negative parental expressivity on children's emotion regulation and of children's emotion regulation on parenting practices and negative parental expressivity were found to be significant and the latter was much stronger (standardized coefficient = .562 vs. 1.104, and -.176 vs. .410, respectively).

In summary, the relationships between children's emotionality and their social competence were mediated by their emotion regulation, negative and positive parental expressivity, and parenting practices. The associations between children's emotionality, parenting practices, and negative and positive family expressiveness were mediated by

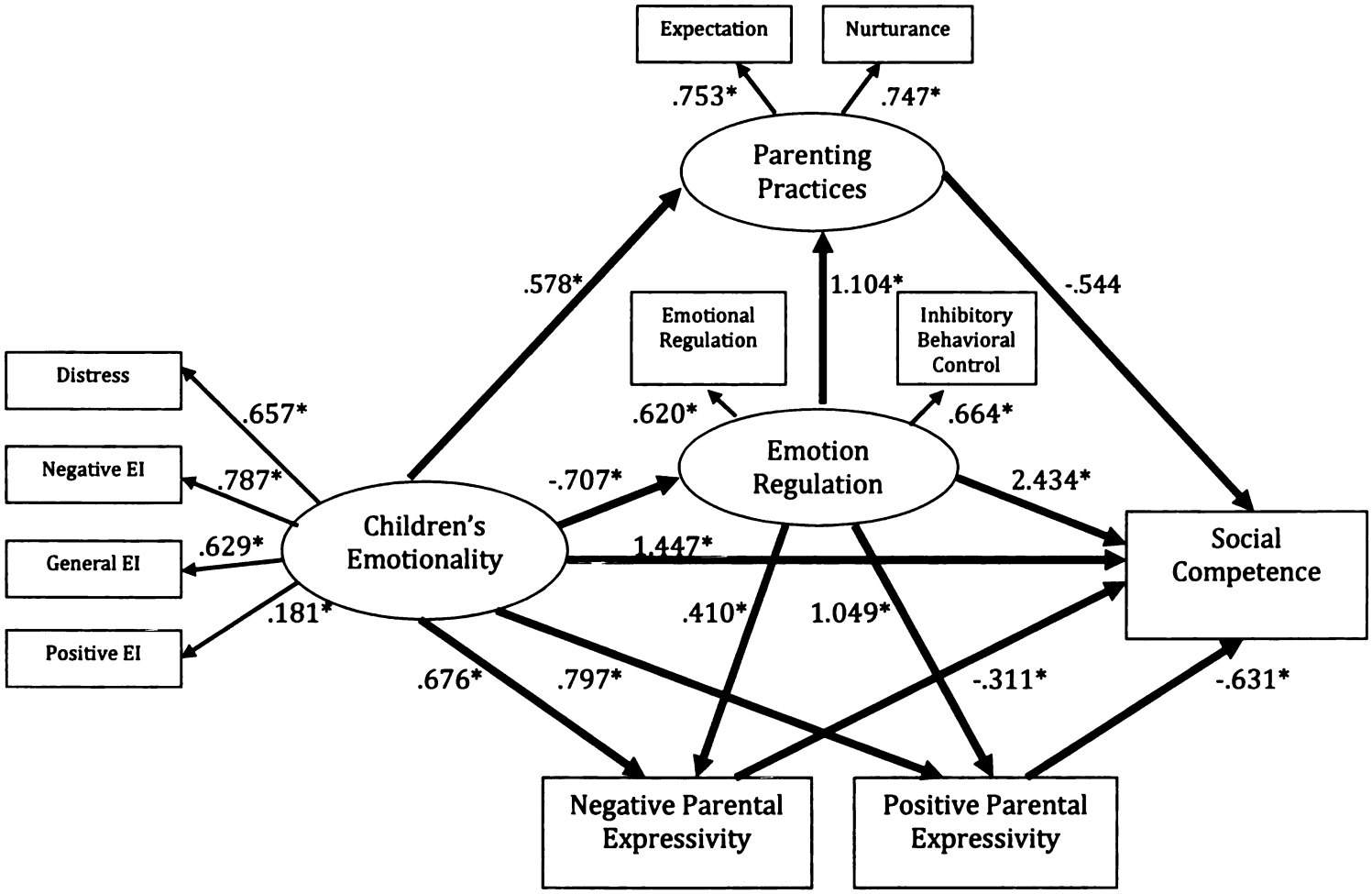

Figure 8. Alternative Final Model 4 (Parent-reported)

EI: Emotional Intensity; Dotted line: Non-significant Paths; Dark-solid line: Significant Paths; *: Significant regression coefficient.

their emotion regulation. The relationships between children's emotion regulation and their social competence were mediated by negative and positive parental expressivity and parenting practices.

Alternative Model 5. Taking all significant paths in the alternative models together, alternative model 5 was designed to test that the effects of children's emotionality on their social competence were mediated by parenting practices, children's emotion regulation, and parental expressivity, and that the relation between parenting practices and children's emotion regulation was bi-directional. However, the bi-directional relationships between negative parental expressivity and positive parental expressivity were not included in this model because the existing research could not find any evidence that the relationships between positive parental expressivity and children's emotion regulation were bi-directional.

Alternative initial model 5 represented a bad fit to the data on the basis of the model fit indices: $X^2 = 207.201$ (df = 35), significant probability value (p = .000 < .05), the goodness-of-fit index (GFI = .849), root mean square error of approximation (RMSEA = .152), and comparative fit index (CFI = .766). In addition, two times the degree of freedom was larger than X^2 [(df = 35) x 2 = 70 <207.201]. Still alternative initial model 5 was needed to improve and achieve a better fitting model, modification indices were reviewed as seen in Table 17. On the basis of MIs in Table 17, the final model was subsequently respecified with the specification of 12 more correlated error terms and factors to get a better fitting model and not to have negative error variances of two observed indicators, nurturance and general emotional intensity. The Alternative final model exhibited improvement in model fit: $X^2 = 24.868$ (df = 21), non-significant

probability value (p = .253 > .05), the GFI = .980, RMSEA = .029; the ECVI value was .539, and the CFI = .995. In addition, two times the degree of freedom was larger than X^2 [(df = 21) x 2 = 42 > 28.868].

Covariances: (Group number 1 - Default model)

			M.I.	Par Change
e8	<-->	e14	10.170	50.233
e8	<-->	e15	11.361	66.058
e5	<-->	d2	4.694	-.810
e7	<-->	e15	6.100	2.466
e7	<-->	e5	9.590	-.145
e6	<-->	e8	14.725	5.325
e6	<-->	d2	6.267	.131
e6	<-->	e5	5.980	1.418
e3	<-->	e14	4.654	2.352
e3	<-->	d1	6.077	1.046
e12	<-->	Children's Emotionality	14.770	.333
e12	<-->	e5	4.038	.258

Table 17 Modification Indices (Alternative Initial Model 5).

Taken all together, the alternative final model 5 represented an adequate fit to the data. Comparison of the alternative initial model to the final model is seen in Table 18.

Model	X^2	ΔX^2	DF	ΔDF	P-value	GFI	CFI	RMSEA	ECVI
Initial 5	207.201		35		.000	.849	.766	.152	1.264
Final 5	24.868	182.333	21	14	.253	.980	.995	.029	.539

Table 18. Comparison of Alternative Initial Model 5 to Final Model 5.

The standardized path coefficients for the alternative model 5 are presented in Figure 9. The paths from children's emotionality to parenting practices and their social competence, from parenting practices and negative parental expressivity to their emotion regulation, and from positive parental expressivity to their social competence were not in the

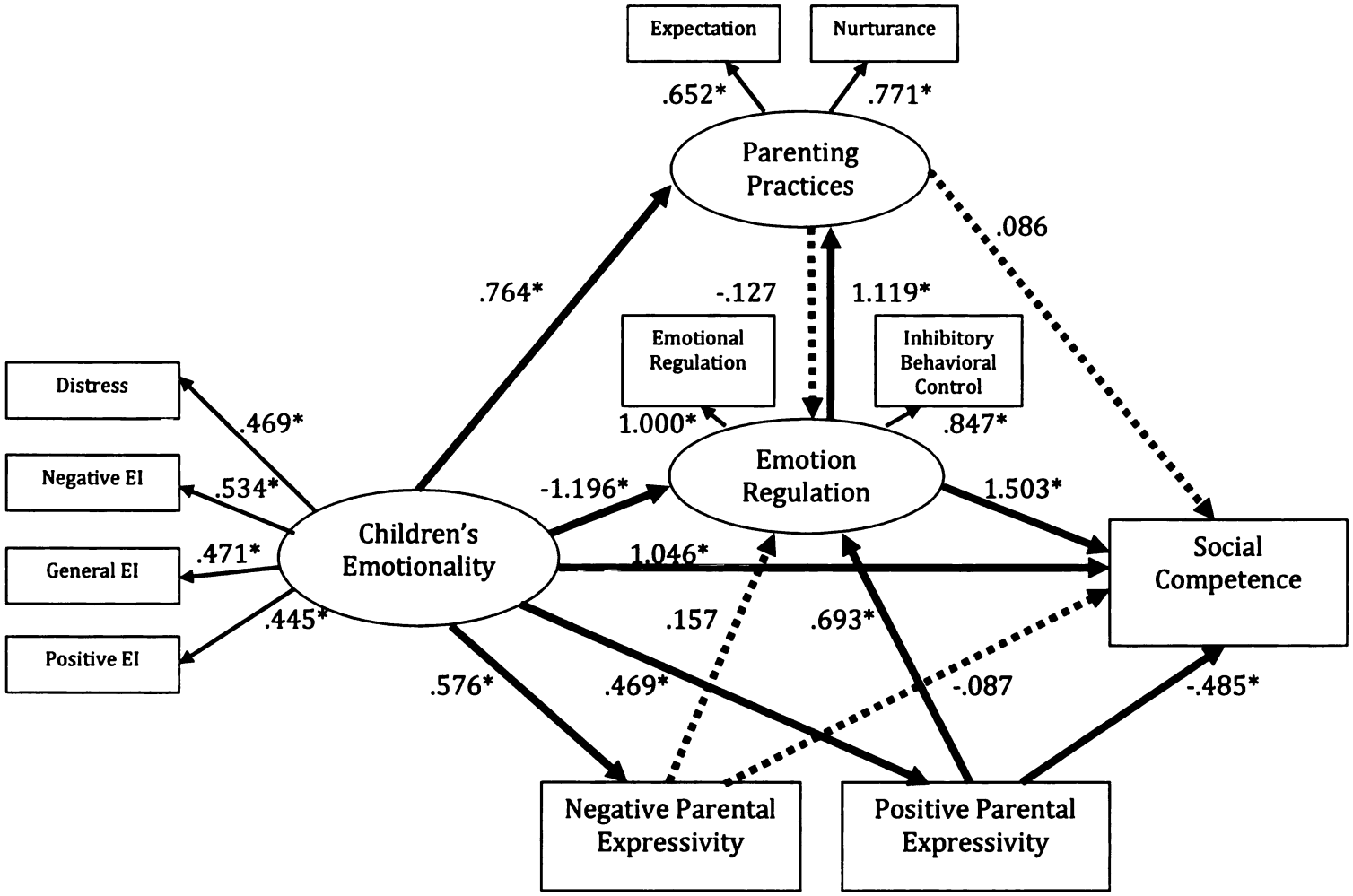

Figure 9. Alternative Final Model 5 (Parent-reported)

EI: Emotional Intensity; Dotted line: Non-significant Paths; Dark-solid line: Significant Paths; *: Significant regression coefficient.

expected direction. The results indicated that the paths from parenting practices and negative parental expressivity to children's emotion regulation and social competence were found to be non-significant (standardized coefficient = -.127, .086, .157, and -.087, respectively). Children's emotionality, however, directly affected their emotion regulation, their social competence, negative and positive parental expressivity, and parenting practices. Thus, children's emotionality positively predicted parenting practices, negative and positive parental expressivity, and socially competent behaviors (standardized coefficient = .764, .576, .469, and .1046, respectively), but negatively predicted emotion regulation (standardized coefficient =-1.196). Furthermore, there were significant direct effects of children's emotion regulation on parenting practices and their social competence (standardized coefficient = 1.114 and 1.503, respectively). The path from parenting practices to children's emotion regulation is not significantly related and much weaker (-.127 vs. 1.119). Whereas negative parental expressivity was not significantly associated with children's emotion regulation and social competence, positive parental expressivity was significantly associated with their emotion regulation and social competence (standardized coefficient = .693 and -.485, respectively). Thus, positive parental expressivity positively predicted children's emotion regulation, which positively predicted more socially competent behaviors for children. However, positive parental expressivity negatively predicted children's social competence.

In summary, the relationships between children's emotionality and their social competence were indirectly affected by positive parental expressivity and their emotion regulatory skills. Thus, children's emotionality was positively associated with positive parental expressivity, which predicted high levels of emotion regulatory skills.

In addition, children's emotionality was negatively associated with their emotion regulatory skills, which positively predicted children's socially competent behaviors.

Best Fitting Model

In order to determine which of the six models is best fit to the data, Chi-square, the expected cross-validation index (ECVI, the model having the smallest ECVI value exhibits the best fit to the data), and the RMSEA comparisons were conducted among the models as seen in Table 19.

Model	X^2	ΔX^2	DF	ΔDF	P-value	GFI	CFI	RMSEA	ECVI
Hypothesized 1	30.081		21		.090	.975	.988	.045	.564
Alternative 1	31.940	-1.859	22	-1	.078	.974	.987	.046	.563
Alternative 2	36.482	-6.401	25	-4	.065	.969	.984	.040	.556
Alternative 3	30.968	-0.887	23	-2	.124	.974	.989	.040	.549
Alternative 4	35.990	-5.909	27	-6	.116	.971	.988	.040	.535
Alternative 5	24.868	5.213	21	0	.253	.980	.995	.029	.539

Table 19. Comparison of Hypothesized Model 1 to Alternative Models.

Taken all together, the alternative model 5 with the lowest X^2 and RMSEA represented the non-significantly best fit to the data. Compared to the alternative model 4, the alternative model 5 had a little bit larger ECVI value (.539 vs. .535). The model fit indices except the ECVI value represented the best fit to the data. That is, adding the paths between children's emotion regulation and parenting practices to the parent-reported hypothesized model 1 significantly improved the model's fit, and in consequence the alternative model 5 turned out to be the best fitting one.

Parent-rated hypothesized model 1 indicated that children's emotionality was related directly and indirectly to their social competence. Parenting practices and positive parental expressivity were not found to play any mediating role in the relationship between children's emotionality and their social competence.

The results from the alternative model1 supported evidence that children's emotionality was indirectly related to their social competence through negative parental expressivity. However, children's emotion regulation, parenting practices, and positive parental expressivity were not indirectly related to their social competence in this model.

In addition, the findings from the alternative model 2 showed that children's emotionality was indirectly related to their social competence through negative or positive parental expressivity and children's emotion regulation. And the relationships between parenting practices and children's social competence were indirectly affected by children's emotion regulation.

The findings from the alternative model 3 demonstrated that the associations between parenting practices, negative parental expressivity, and children's social competence were mediated by children's emotion regulation. And the relationships between children's emotionality and their social competence were indirectly affected by emotion regulation.

The findings from the alternative model 4 indicated that the effects of children's emotionality on their social competence were indirectly affected by positive parental expressivity and their emotion regulatory skills. However, children's emotion regulation did not have any mediating effects on parental expressivity and parenting practices.

The alternative model 5 showed that the relationships between children's emotionality and their social competence were mediated by their emotion regulation, negative and positive parental expressivity, and parenting practices. The associations between children's emotionality, parenting practices, and negative and positive parental expressiveness were mediated by children's emotion regulation. The effect of children's

emotion regulation on their social competence was indirectly affected by negative and positive parental expressivity, and parenting practices.

In summary, taken all together, the findings indicated that children's emotionality was directly or indirectly related to social competence through emotion regulation, parental expressivity, or parenting practices.

CHAPTER FIVE

Discussion

The results of this study are consistent with the evidence from several studies, including many longitudinal studies. Children's social and emotional development has been linked to individual, family, and social contexts (Bronfenbrenner, 1989). In regard to the familial environmental influences, as the family is the primary context where children first learn about social and emotional interactions, one of the more broad and consistent findings is that children who have warm and supportive parents are more likely to be learned emotionally and socially competent behaviors through interactions with parents (Davidove & Grusec, 2006; Eisenberg et al., 2003). According to Spinrad et al. (2007), children's emotion regulation mediated the relation between warm and supportive parenting and high social competence, thus the supportive family environment is likely to serve as a fostering factor on children's social outcome. However, a familial factor, alone, is not sufficient to predict socially competent behaviors (Eisenberg et al., 1997; Rothbart & Bates, 2006; Spinrad et al., 2007). The view that individual differences in familial interactions and emotion-related regulations play an important role in children's socioemotional functioning is included in the research.

The main purpose of this study was to examine the hypotheses that children's emotion regulation mediates the relationships among children's emotionality, parenting practices, and parental expressivity, and their social competence and that parenting practices and parental expressivity mediate the relationships between children's emotionality and their social competence.

Overall, the findings from all of the hypothesized and alternative models support the notion that the relationships among children's emotionality, their emotion regulation, and their social competence are mediated by parenting practices and parental expressivity.

First, the findings from the parent- and teacher- reported hypothesized models or parent-reported alternative models (alternative 1 & 2 were excluded because they were designed to test only indirect relationships between children's emotionality and their social competence) support the hypothesis that children's emotionality and their regulatory skills are directly or indirectly related to their social competence, thus the relationships between children's emotionality and their social competence are mediated by their emotion regulation. The findings indicate that children with low levels of emotionality demonstrate high levels of emotional and behavioral regulation, and consequently, children with high levels of emotional and behavioral regulation show high levels of social competence. In turn, children's emotionality negatively predicts their emotion regulation, and their emotion regulation positively predicts their socially competent behaviors as expected.

Consistent with these findings, researchers have indicated that toddlers and preschoolers or school-aged children who demonstrate high levels of emotion control are those with high levels of social competence (Eisenberg et al., 2003; Spinard et al., 2006). As suggested by Eisenberg et al. (2003), children who can manage or regulate their emotions and behaviors are more likely to have the skills to manage to get along with others, whereas children who have low levels of emotion regulatory skills are less likely to behave inappropriately. Eisenberg et al. (1997) have demonstrated that children's social competence is predicted by children's negative emotionality and their emotion

regulation. Children with low levels of negative emotionality demonstrate high levels of emotion regulation and social competence. Combination of children's emotionality and their emotion regulation may be a robust predictor of children's socially competent behaviors. Consistent with this study, parents' and teachers' reports of emotionality and emotion regulation are more likely to predict children's social competence better in combination than in separation (Eisenberg et al., 1997).

Surprisingly, the relationships between children's emotionality and their social competence are consistently in the positive direction. However, in the correlation matrix of teachers' reports, the relationships among children's distress, negative and general emotional intensity, and their social competence are in a negative direction (see Table 3). The correlations between children's positive emotional intensity and their social competence are positive, but the correlations between the distress and negative emotionality subscales of children's emotionality and their social competence are negative in parents' reports as seen Table 2. Unlike other studies, the findings from this study demonstrate that parents' and teachers' reports of children's emotionality have significantly positive effects on their socially competent behaviors. But, in existing studies, researchers have indicated that children with a temperamental proneness to negative and internalizing emotional intensity displayed lower levels of social competence (Denham, 1991; Eisenberg et al., 1997). For example, Eisenberg et al. (1997) have reported in their longitudinal study that parents' reports of negative emotionality are negatively correlated with school-based social competence. That is, low negative emotionality predicts an increase in social competence for children. The discrepancy between past findings and those from the current study may be attributed to cultural

differences in racial/ethnic groups and in additional ecological risk factors such as low socioeconomic status and coming from a single family household whereas prior studies used middle-income status and European American children residing in a two-family household. Mesquita (2007) suggested that cultural models of self and relating, which are defined as the meanings and practices of relationships that vary across cultures, should explain that emotions are culturally situated and thus function within a specific social context. Also, the status of being economic disadvantaged is related to various behavioral problems as suggested by Ackerman, Brown, & Izard (2003). In their study, factors that may contribute to maintain maladjustment were addressed with children from economically disadvantaged families. Moreover, Mendez, Fantuzzo, and Cicchetti (2002), in their study to investigate relationships among multiple dimensions of preschoolers' social competence in African American children who were attending Head Start, indicated that children who more likely refrained from overexcitement or overactivity had higher scores on the Prosocial-Resilient profile. The constructs of approach/ withdrawal temperament were positively correlated to play interactions, which consist of items that represent "creative, cooperative, and helpful behaviors that facilitate successful peer play interactions" (Mendez, Fantuzzo, & Cicchetti, 2002, p. 1089-1090). In addition, the approach/withdrawal construct was also positively loaded both on interactive competence and overactive-disruptive pair (.81 and .47, respectively). Therefore, the results showed that the approach/withdrawal construct was cross-loaded on Interactive competence and Overactive-Disruptive pair (Mendez, Fantuzzo, & Cicchetti, 2002).

Second, the findings from this study support partial evidence of the hypothesis that parenting practices mediate the relationships between children's emotionality and

their social competence through their emotion regulation. Unlike other studies (Eisenberg, Fabes, Shepard, Guthrie, Murphy, & Reiser, 1999; Spinrad et al., 2007), the results from the alternative model 4 and 5 indicate that children's emotionality negatively predict parenting practices. It is noteworthy that the correlations between children's positive emotional intensity and parents' expectation and nurturance are found to be significant and positive (see Table 2). Also, the correlations between negative emotional intensity and parent's expectation subscale are found to be significant but negative in parents' reports as seen in Table 2. The results show that general emotional intensity is positively correlated to parents' nurturance subscale (see Table 3). However, the remainder of the correlations among children's general emotional intensity, distress, and parent's expectation and nurturance are non-significant and negative, or non-significant and positive.

Consistent with many researchers' findings that the family context affects children's social and emotional development (Brody et al., 1996; Eisenberg, Fabes, Shepard, Guthrie, Murphy, & Reiser, 1999; MacDonald & Parke, 1984; Morris, Silk, Steinberg, Myers, & Robinson, 2007; Karrass & Walden, 2005; Spinrad et al., 2007; Putallaz, 1987), the findings from this study support that more positive parenting practices predicted high levels of emotion regulatory skills, which caused children to behave more socially competently toward others. Therefore, parenting practices had indirect effects of children's emotion regulation on their social competence. For example, Karrass & Walden (2005) indicated that warm, responsive care-giving was likely to enhance trust and a sense of reciprocity in the children, which helped children learn how to interact with other people inside as well as outside family, showing that warm,

responsive, nurturing care-giving affects social behaviors: positive emotion (e.g., happiness). Furthermore, Spinrad et al. (2007) in their longitudinal study found that the effects of mother's supportive behaviors on children's social competence were mediated by effortful control. MacDonald & Parke (1984) reported that moderate control, high expectations, high nurturance, high responsiveness, and the use of reasoning were positively related to children's emotion regulation and social competence. Therefore, parents may foster an increase in children's effortful control, which may contribute to children displaying socially competent behaviors: as models for ways to handle with emotions and behaviors, maternal supportive, sensitive, and warm reaction to their children may provide opportunities for them to learn skills to manage and modulate their emotions and behaviors (Spinrad et al., 2007).

In terms of the effect of children's emotionality on their social competence, there was evidence of a moderating effect of parenting practices on the relationships between children's emotionality and their social competence. Use of more positive parenting practices increased the effect size on children's emotion regulation to their social competence, which strengthened the relationships between two variables.

Contrary to findings in other studies, there is no evidence of a positive and direct effect of parenting practices on children's social competence. However, the findings from parent-rated alternative model 4 illustrate that the effects of parenting practices on socially appropriate behaviors are negative. The findings from the correlation study indicate that the correlations among parent's expectation, nurturance, and children's social competence are significant and positive. Although parent's expectation and nurturance are supportive and positive, children behave less socially toward others. This

unique relation between parenting practices and social competence is taken into account by their racial/ethnic differences which may be explained by differences in cultural variation in terms of parenting practices (McAdoo, 1999). With respect to parenting, McAdoo (1999) mentioned that Hispanic parents who had traditional values of respect for males and the elderly were more likely to practice authoritarian or permissive child-rearing styles. In addition to a cultural variation, exposure to an additional ecological risk, such as a single parent household or living in poverty, was associated with negative effects of parenting practices on social competence (Li-Grining, 2007; McLoyd, 1990; Mistry, Vandewater, Huston, & McLoyd, 2002). According to McLoyd (1990), in black female-headed households, the tendency of parents to be nonsupportive of their children was increased under conditions of economic hardship, which affected children's socioemotional functioning. Furthermore, Mistry, Vandewater, Huston, & McLoyd, (2002) studied the linkage of economic well-being to child well-being in ethnically diverse, low-income elementary school-age children. They found that lower levels of family economic well-being influenced parenting behaviors characterized as low in responsiveness and discipline efficacy, which resulted in less socially competent behaviors for children.

Interestingly, the findings in this study demonstrate that there is a reciprocal relationship between children's emotion regulation and parenting practices. High levels of emotion regulation promote more positive parenting practices and vice versa. The findings also support evidence that the effects of children's emotionality and their emotion regulation on social competence are more likely to be mediated by parenting practices. This is consistent with findings of Belsky (1984) who found that the child's

characteristics of individuality influenced parental functioning. Children's emotional intensity and their emotion regulation shaped parenting practices, which in turn influenced their social competence. On the other hand, parenting practices influenced children to regulate their emotions and behaviors well, which also affected their social competence. Because most of mothers live in a single household, they do not have enough support from husbands, which results in undermining parenting practices, and thus negatively influences children's social competence.

Finally, the findings from this study partially support the hypothesis that parental expressivity has mediating effects of emotionality and emotion regulation on social competence for children. Consistent with other studies, the findings from the teacher-reported hypothesized model 2 and parent-reported alternative model 4 demonstrate that children's emotionality positively predicted negative family expressivity, which predicted low levels of social competence for children. Therefore, the effects of emotionality on social competence for children are indirectly affected by negative parental expressivity. In addition, there is evidence of the direct effects of children's emotionality on negative and positive parental expressivity on children's emotion regulation in parent-reported hypothesized model 1. Therefore, the findings illustrate that children's emotionality positively predicted negative parental expressivity, which negatively predicted children's emotion regulatory skills. In other words, the relationships between children's emotionality and their emotion regulation are mediated by negative parental expressivity. With respect to the effects of parental expressivity on children's social competence, Eisenberg et al. (2003) found in the longitudinal study that the relationships between maternal negative expressiveness and children's social competence were marginally

mediated by emotion regulation, and that negative expressivity was negatively related to emotion regulation and social competence for children. Similarly to used instruments, the Self-Expressiveness in the Family Questionnaire (SEFQ) and the CBQ were used to assess parental expressivity and children's emotion regulation, respectively. Unlike the participants of this study, their participants were children residing in European American working- and middle-income families, but the findings that negative family expressiveness was negatively related to children's emotion regulation and their social competence are consistent with other studies (Eisenberg et al., 2003). However, inconsistent with other findings, there is evidence that children's emotionality positively predicts positive parental expressivity, which negatively predicts socially competent behaviors for children in parent-reported alternative model 4 and 5. For example, Eisenberg et al. (2003) have found that positive maternal expressivity was positively related to children's social competence. It is unclear why this was true, but perhaps ethnicity could explain the discrepancy between this study and others.

Limitations of the Study and Implications for Future Directions

The measurement model included self-reports of the parents' behavior, which may result in method bias in parents' outcomes. By not using multiple informants such as interviewer's observations and self-reports of the parents' behaviors prevent from maximizing outcomes and avoiding bias. Also, because cross-sectional research design has certain limitations in generalizing results, a longitudinal design may be required to capture more completely the dynamic interplay between contextual factors and family and child functioning. Although there are limitations to this study, the findings make a unique contribution to the existing research on the impact of parenting practices and

family expressiveness on children's socioemotional development in diverse low-income families. Also, the findings suggest that intervention programs for parents and teachers should be designed to increase the skills of rearing practices and expressivity, because these factors help low-income minority children to promote social competence in the home and school environments.

Conclusions

The main goal of this study is to investigate the relations of children's emotionality on their social competence as mediated by their emotion regulation, parenting practices, and family expressiveness. The present study indicates that family as a proximal environment plays an important role in children's socioemotional development. The findings from correlational analyses support all relationships depicted in the hypothesized model. Furthermore, the findings from structural equation modeling analyses demonstrate that the relationships between children's emotionality and their social competence are indirectly affected or mediated by their emotion regulation. In other words, children's emotionality is negatively associated with their emotion regulatory skills, which positively predicted more socially competent behaviors for children.

In addition, the results indicate that parenting practices and family expressiveness are potential buffers or accelerators of children's emotionality on their social competence. The findings support evidence that the effects of children's emotion regulation on their social competence are mediated by parent practices, and that the relationships between parenting practices and children's emotion regulation are reciprocity. With respect to

familial expressivity, the findings demonstrate that negative and positive parental expressivity played mediating roles in the associations between emotionality, emotion regulation, and social competence for children.

Taken all together, these findings support that children's social and emotional development should take into account individual, family, and social contextual factors (Bronfenbrenner, 1989). Furthermore, combining characteristics of the person, process, and context leads to a more accurate picture of the complexity of children's socioemotional development. To illustrate the findings from this study, children with high levels of emotional intensity regulated their emotions and behaviors less, and are more negatively associated with parenting practices. Parenting practices and parental expressivity exert a more powerful influence on individual differences (e.g., highly nurture and responsive vs. less nurture and responsive) in children's socio-emotional development in more stable, resource-rich environments (e.g., a two-family household with more than middle income, as suggested by other studies) than in a less stable and resource-rich environments (e.g., a single-family household with low income). Also, the levels of parental expressivity and parenting practices vary across ecological niches (e.g., ethnicity and family structure), yet the benefits to children's emotion regulation and social competence are relatively constant.

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