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Mother-Child Interactions and Emotion Regulation in Preschool Children

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Mother-Child Interactions and Emotion Regulation in Preschool Children

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Abstract

Emotion regulation is a complex and dynamic process that begins in infancy and continues through toddlerhood and childhood with the support of parents, teachers, and other caregivers. Early caregiver-child interactions shape the way children learn to manage their emotions and the range of emotions that they express. The current study seeks to examine how maternal perceptions of preschool children's emotion regulation and emotion lability are associated with mother-child interactions during free play. 30 mother-child dyads were recruited from two New England urban areas: one community sample and one sample recruited from Head Start locations. Dyads engaged in a free play session and mothers completed a set of questionnaires (including the Emotion Regulation Checklist) designed to assess the emotion regulation abilities and emotional lability of their preschool child as perceived by mothers. The results revealed group differences in maternal perceptions of one aspect of emotion regulation, emotion lability. There were a number of significant correlations between observed child outcomes and maternal behaviors during mother-child interactions. Significant group differences indicate that families receiving Head Start services and families with unmarried mothers may relate differently to their children than families not receiving Head Start services and families with married mothers. These results support the notion that families with fewer resources engage in less positive interpersonal exchanges, which may have implications on the emotion lability of preschool children in such families. Interventions that target improved mother-child interactions that foster emotion regulation techniques in the child are needed.

Mother-Child Interactions and Emotion Regulation in Preschool Children

There is disagreement among researchers regarding how best to define emotion regulation (Eisenberg, Spinrad, & Eggum, 2010); what is undisputed, however, is that emotion regulation can be intrinsic (consisting of self regulatory processes) or extrinsic (consisting of mutual regulatory processes involving help from parents, teachers, or others outside of the self; Eisenberg & Spinrad, 2004). Emotion regulation centers on the ability to modulate one's emotional reactivity or level of emotional expression in the presence of an emotionally arousing stimulus (Garner & Hinton, 2010; Kim-Spoon, Cicchetti, & Rogosch, 2013). This type of regulatory control is often a voluntary process, and one can employ a number of strategies to assist him or her self in controlling emotions (Sobanski et al., 2010). The process of controlling emotions involves both the internal experience of an emotion and the external expression of that emotion. Emotional experiences include factors such as the duration of an experience, how long an individual feels a particular emotion, and how long the individual expresses that emotion (including the length of time between the onset of an emotion-eliciting stimulus and the expression of the emotion and the length of time from the beginning of the emotional expression to the end of the emotional expression; Garner & Hinton, 2010). Regulatory control also involves managing the intensity with which an emotion is felt internally and the intensity with which that emotion is outwardly expressed.

Emotion regulation is important in the case of both positive and negative emotions, and it becomes more crucial as the intensity of a given emotion increases (Sobanski et al., 2010). The expression of emotion is guided by social norms that vary according to context, environment, and culture (Eisenberg et al., 2001; Matsumoto, Yoo, Hiramaya, & Petrova, 2005). It is these social guidelines, or display rules, that determine which emotions are appropriate in a given

situation, how these emotions should be expressed, and the intensity at which an emotion can be displayed (Garner & Hinton, 2010). These display rules, and one's ability to successfully abide by the rules, are important when considering that one's internal, felt emotions are not always congruent with one's outward expression of those emotions (Matsumoto et al., 2005). One who successfully regulates his or her emotions to meet these culturally bound maturity demands will adapt his or her emotional expression in a given situation to functionally and beneficially engage with the environment (Kim-Spoon et al., 2013; Matsumoto et al., 2005). He or she is attuned to the social norms of environmental contexts that dictate acceptable emotional expression and are motivated to organize their emotions and display these emotions in appropriate ways. This often requires a level of effortful control, or the capacity to recognize social cues and consciously redirect one's behavior in accordance with social standards (Bridgett et al., 2011). An individual with effective emotion regulation skills will employ effortful control to suppress an automatic, or natural, response to a certain stimulus if this response is not congruent with social expectations and, instead, initiate a secondary response that is more socially appropriate.

When an individual experiences frequent negative emotions at an intense level, he or she is likely to spend energy to decrease these negative emotions. In the case of negative urgency, when an individual intentionally focuses behavior on improving negative affect, a highly aroused individual will exert a great deal of effort and resources, mostly in the form of effortful control, to moderate intense negative emotions (Bruyneel, DeWitte, Franses, & Dekimpe, 2009; Dvorak, Pearson, & Kuvaas, 2013). This leaves few resources remaining to engage in socially appropriate interactions and predisposes the individual to externalizing behaviors, such as aggression and impulsivity, and internalizing symptoms, such as depression (Dvorak et al., 2013; Kim-Spoon et al., 2013). Individuals who exhaust their effortful control supply are then unable

to employ self-control, often leading to risky or impulsive behavior and poor decision-making and delay of gratification (Bruyneel et al., 2009).

The remainder of this paper will explore the development of emotion regulation in preschool children as well as correlates of effective regulatory capacities. Dyadic interactions between child and caregiver are instrumental in the early development of emotion regulation, and regulatory success is related to a number of important social, behavioral, and interpersonal outcomes. Emotion lability, characterized by intense and rapidly fluctuating emotions, will serve as an example of emotion dysregulation. The current study investigates the relationship between maternal perceptions of emotion regulation and observed maternal and child behaviors during dyadic play.

Development of Emotion Regulation

Dyadic Processes

The development of emotion regulation can be traced to prenatal environments, considering factors such as maternal cortisol levels and substance use (Bolten, Nast, Skrundz, Stadler, Hellhammer, Meinlschmidt, 2013; Wiebe, Fang, Johnson, James, Espy, 2014). Postnatal development of emotion regulation begins in infancy and continues through toddlerhood and childhood with the support of parents, teachers, and other caregivers. Emotion regulation begins as a dyadic process, or mutual regulation between an infant and a caregiver (Griesenberger, Kelly, & Slade, 2005; Trevarthen & Aitken, 2001). Children learn the social rules of interaction and first practice these rules while engaging in nonverbal communication with caregivers in a way that is specific to one's culture (Trevarthen & Aitken, 2001). Caregivers convey meaning to their infants through gestures or expressions, rhythmic exchanges, and mutual regulation of feelings and interests. Such nonverbal meaning making requires great

effort on the part of the caregiver, who serves the role as the more experienced communicator, scaffolding examples of appropriate responses according to culture-specific or situation-specific expectations (Feldman, 2003; Trevarthen & Aitken, 2001; Tronick & Beeghly, 2011). These caregivers, often mothers, must respond sympathetically and expressively to their infant and must be fully engaged in the interaction in a way that allows her to be in sync with, and attuned to, her infant, and she must be willing and motivated to engage in such interactions in order to foster effective regulatory tendencies in the child (Trevarthen & Aitken, 2001). Caregivers who can reciprocate their child's emotions, particularly positive emotions, and mutually engage in matched emotional states foster adaptive regulatory abilities in the child (Cole, Teti, & Zahn-Waxler, 2003). The process transforms from one of extrinsic, mutual regulation to one of self-regulation, intrinsic to the child (Griesenberger et al., 2005).

Infants depend upon their caregivers to help them manage strong emotions, as they frequently turn to their caregiver during episodes of intense emotion, from joy or excitement to anger or frustration, and their caregivers' reaction to these emotions is crucial to the future development of self-regulatory processes for the child (Eisenberg et al., 2010; Griesenberger et al., 2005). Mothers who are themselves skilled in self-regulatory processes respond to their young children's emotional distress in a way that both mirrors and manages the child's emotional states (Griesenberger et al., 2005). The mother conveys a sense of calm during her child's emotional outbursts and effectively models successful affect containment in a way that suggests to the child that his or her distress is not overwhelming and that together, they can manage these emotions. Mothers may engage in a joint process of redirecting attention or cognitively reframing emotions (depending on the child's age and skill level), or she may facilitate the use of other coping techniques that help young children temper their intense emotional experiences

(Morris, Silk, Morris, Steinberg, Aucoin, & Keyes, 2010). Engaging in this dyadic process of emotion modulation instills confidence in the child and encourages the child to turn to his or her mother in times of distress, and it encourages the child to develop a self-regulatory capacity, which allows him or her to modulate his or her own intense emotions without the help of a caregiver. Young children who rely on their mothers to assist them in times of distress will likely display a high degree of emotional vitality, or animated emotional expressions during interactions with others (Robinson & Acevedo, 2001). He or she will share emotional states with his or her caregiver, regardless of the intensity or the nature of the emotion, and know that they can control and moderate these emotions with the help of the caregiver (Grienemberger et al., 2005; Robinson & Acevedo, 2001).

Harmony and mutual engagement are especially important in mother-infant interactions (Harding, Weissmann, Kromelow, & Stilson, 1997). When both members of the dyad share a congruent emotional state and experience a “shared mind,” it is motivating for each member of the dyad and enhances the developing regulatory abilities of the infant (Harding et al., 1997). When mother-infant interaction is characterized by rhythm and structure, it promotes the development of intentions, mutual reciprocity, and cooperative understanding of others’ intentions (Harding et al., 1997; Trevarthen & Daniel, 2005). Synchronous interactions between child and caregiver, which occur in face-to-face communication during infancy, are ones in which both partners show joint engagement, mutual gaze, reciprocity, attunement, and matching of emotional states (Trevarthen & Daniel, 2005). These interactions are intrinsically motivating for both individuals and encourage effective emotion regulation and decreased negative mood in the child (Feldman, 2003; Trevarthen & Daniel, 2005). In this study, we assessed dyadic functioning with a measure that highlights joint engagement.

A caregiver can enhance emotional competence directly by engaging in communication with the child regarding emotional states, which helps the child to skillfully identify, label, discuss, respond to, and cope with a wide variety of emotional situations (Eisenberg et al., 2001; Eisenberg et al., 2010; Morris et al., 2010; Raikes & Thompson, 2006). This helps children learn appropriate emotional expression during social interaction and fosters perspective taking in interpersonal relationships (Eisenberg et al., 2001). Caregivers who help children learn and discover what happens before emotions are aroused, the types of stimuli that prompt specific emotions, and what happens after a particular emotion is felt or displayed foster a strong sense of emotional understanding (Eisenberg et al., 2001; Raikes & Thompson, 2006). Emotionally competent children are able to express and share emotions with others and benefit from an improved ability to self regulate (Grienberger et al., 2005).

Warm, sensitive, and supportive parenting facilitates emotion regulation in that children reared in such environments show more positive affect, less negative affect, and fewer externalizing behaviors (Eisenberg et al., 2001; Kaplan, Evans & Monk, 2008). Such parents are also more successful in engaging in emotion conversations with their children, who are more receptive to, and motivated to, participate in these conversations (Eisenberg et al., 2001). Sensitivity in a caregiving environment is related to a caregiver's emotional availability, which further elicits positive engagement with the child (Kaplan et al., 2008).

Secure attachment in infancy stems from a caregiver's pattern of responsiveness to the infant that is warm, sympathetic, consistent, and reliable (Cassidy, 1994). The child learns that he or she can trust and rely on his or her caregiver to accurately interpret and meet his or her needs. A caregiver who responds appropriately, consistently, and timely to the social bids and emotional needs of the infant will promote the creation of a secure attachment relationship

(Brenning, Soenens, Braet, & Bosmans, 2012; Cassidy, 1994). An infant who has confidence in the caregiver's availability and sensitivity, and is therefore securely attached, will be more likely to freely and directly express his or her emotions to the caregiver, facilitating emotion discussions and fostering emotional competence in the child (Cassidy, 1994; Raikes & Thompson, 2006).

It is apparent that these early relationships between infant and caregiver have implications for the child's developing regulatory capacity, and this may be due to the changes in the brain that occur during this period of infancy (Matos, Pinto-Gouveia, & Costa, 2013). The human brain rapidly changes and develops early in life (Dawson, Frey, Self, Panagiotides, Hessel, Yamada, & Rinaldi, 1999; Matos et al., 2013). Before age two, and especially between six and twelve months, the frontal lobe undergoes significant change as the brain creates and amplifies neural circuits that are frequently used and prunes connections that are not often used as directed by the early experiences of the infant (Dawson et al., 1999). The caregiving environment creates a great deal of these early experiences, and thus, greatly impacts the maturation of the infant's frontal lobe (Matos et al., 2013). The brain's frontal lobe governs processes such as cognition, social interactions, and emotional competency and regulation (Matos et al., 2013). Positive caregiving environments dominated by interactions that foster effective emotion regulation tendencies will be reinforced by the selective amplification of adaptive neural circuits in the frontal lobe (Dawson et al., 1999).

Just as a caregiver's behavioral tendencies are important to the quality of interaction between the child and caregiver, so too is the caregiver's perception of the child. Caregiver perceptions of the child are shaped by past experiences of the caregiver, and may change depending on the context of the interaction with the child (Hane, Fox, Polak-Toste, Ghera, &

Guner, 2006; Weisman et al., 2010). Perceptions that caregivers have regarding the child influence his or her responses to the child (Luebbe, Kiel, & Buss, 2011). The child's behavior is then, in part, a reflection of the behaviors in which the caregiver engages during interactions with the child; therefore, caregiver perceptions have implications on the behavior of the caregiver, the child, and the interaction between the two (Hane et al., 2006; Leerkes & Crockenberg, 2003). The present study investigates children's emotion regulation as perceived by the caregiver, in this case, the mother. It is important to consider that maternal perceptions of children are often incongruent with objective observations of children (Bates & Bayles, 1984; Hubert, Wachs, Peters-Martin, & Gandour, 1982). Maternal reports that measure perceptions of a child from a caregiver's perspective add a level of subjectivity to the assessment (Bates & Bayles, 1984).

Emotion Regulation Outcomes

As a child ages and neural connections are solidified, he or she practices the regulatory skills learned in his or her early dyadic relationships. The regulatory process changes from one of co-regulation to one of self-regulation (Grienberger et al., 2005; Suchman, Pajulo, DeCoste, & Mayes, 2006). Ideally, the child has learned how to employ the same regulatory strategies modeled by the caregiver to develop an effective and adaptive set of regulatory techniques (Grienberger et al., 2005). As children expand their social networks to include teachers and peers at school, they continue to practice these regulatory strategies with new social partners outside of the parent-child dyad (Kim-Spoon et al., 2013). Children who have developed a set of adaptable regulatory skills will find greater peer acceptance and enjoy greater social competency. However, emotion regulation does not become a wholly independent process, as socially competent children still elicit assistance from parents or teachers when the demands of a situation exceed their regulation capacity (Sobanski et al., 2010). Given the continued

importance that positively interacting with experienced regulators and effectively eliciting caregivers' support has on the development of emotion regulation in the child, we used a measure of child's positive engagement with mother as an observed child outcome in this study.

Effective emotion regulation has been linked with a number of positive emotional, social, and cognitive outcomes. Emotion regulation at all ages is negatively correlated with internalizing symptoms, and successful regulators are less likely to show impulsive tendencies (Kim-Spoon et al., 2013; Spinrad et al., 2006). As children age, they become more skillful in the area of emotion regulation and are less emotionally reactive (Morris et al., 2010; Spinrad et al., 2006). They are better able to employ effortful control, or the ability to suppress a dominant reaction in favor of a more socially acceptable secondary reaction, to moderate their emotional expressions (Morris et al., 2010; Spinrad et al., 2006). Children who can utilize effortful control at an earlier age are likely to show increased resiliency and a decrease in problem behaviors (Spinrad et al., 2006). There are also links between emotion regulation, effortful control and the ability to persist at a task, which is why we used a measure of child persistence with tasks as an observed child outcome in the current study (Zhou, Hofer, Eisenberg, Reiser, Spinrad, & Fabes, 2007).

Adaptive emotion regulation has also been linked to peer likeability, popularity, and social skills (Spinrad et al., 2006; Spritz, Sandberg, Maher, & Zajdel, 2010). Children who can adequately monitor their emotions are likely to form positive interpersonal relationships characterized by empathic responses when appropriate. When children develop emotion regulation in their early dyadic relationships with parents and other caregivers, they show increased understanding of emotions during school years, are able to anticipate the emotional

impact their behaviors may have on others, and respond appropriately to the facial expressions of their peers (Eisenberg et al., 2001; Spritz et al., 2010).

Emotion lability. Dysregulated emotions, i.e., emotions that are not well controlled, can be manifested in the form of emotion lability, or increased emotional reactivity (Hill & Updegraff, 2012). Emotion lability is characterized by an instability of emotions, often resulting in frequent and/or rapid shifts from one emotion to the next, increased irritability and intensity of emotional experience, or sensitivity to arousing stimuli (Hill & Updegraff, 2012; Kim-Spoon et al., 2012; Simons, Carey, & Wills, 2009; Skirrow & Asherson, 2013). Individuals who struggle with emotion lability often experience mood swings and rapid changes from positive to negative moods (Garner & Hinton, 2010; Hill & Updegraff, 2012; Sobanski et al., 2010; Spritz et al., 2010). These individuals experience frequent negative emotions at high intensity, such as anger and sadness, and find it difficult to recover from these negative mood states (Kim-Spoon et al., 2013; Sobanski et al., 2010).

Emotion lability has consequences in social interactions. An emotionally labile individual often displays culturally inappropriate levels of negative emotions and struggles to manage these emotions in a way that is expected of normally regulated individuals of a certain age or in a certain social situation (Sobanski et al., 2010). This often leads to the case in which an individual will break socially appropriate display rules and struggle to maintain positive interactions and relationships with peers (Kim-Spoon et al., 2013; Spritz et al., 2010). Spritz and colleagues (2010) have shown that emotion lability is a particularly strong predictor of poor or low peer likeability and social competence as compared to a general case of emotional dysregulation. Emotionally labile children are easily frustrated; yet they are often unable to successfully employ coping strategies, especially in social situations (Garner & Hinton, 2010).

As a result, these children are more likely to respond aggressively or angrily in social situations as they attempt to control their emotions and are more likely to engage in bullying behavior (Dvorak et al., 2013; Garner & Hinton, 2010).

Emotion lability is very strongly correlated with impulsivity and its associated behaviors, which include: urgency, premeditation, perseverance, and sensation seeking (Dvorak et al., 2013; Oliver & Simons, 2004). Individuals whose emotions fluctuate rapidly and intensely must exert a great deal of effortful control in order to regulate their emotional arousal (Dvorak et al., 2013). This leaves the individual susceptible to hasty decision-making, impulsive thoughts and behaviors, and, often, risky behavior. For example, emotionally labile individuals are prone to substance use and long-term alcohol-related problems, and this risk increases as one's level of impulsivity increases (Oliver & Simons, 2004; Simons, Carey, & Gaher, 2004; Simons et al., 2009).

Present Study

The present study investigates the relationships between maternal perceptions of preschoolers' emotion regulation and features of mother-child play. Specifically, we hypothesized that perceptions of emotion regulation would be 1) positively correlated with observed joint attention, 2) positively correlated with observed maternal sensitivity/responsivity, 3) positively correlated with observed maternal respect for child's autonomy, and 4) negatively correlated with observed maternal negative regard for child.

These relationships were hypothesized to be different from those based on maternal perceptions of emotion lability, where we anticipated 1) a negative correlation with observed joint attention, 2) a negative correlation with observed maternal sensitivity/responsivity, 3) a

negative correlation with observed maternal respect for child's autonomy, and 4) a positive correlation with observed maternal negative regard for child.

Apart from investigations of maternal reports on children's emotion regulation, we hypothesized the following relationships would be evident in observations of mother-child interactions: the child outcome of positive engagement with mother would be 1) positively correlated with observed joint attention, 2) positively correlated with observed maternal sensitivity/responsivity, 3) positively correlated with observed maternal respect for child's autonomy, and 4) negatively correlated with observed maternal negative regard for child. Finally, we hypothesized that the observed child outcome of persistence with tasks would be 1) positively correlated with observed joint attention, 2) positively correlated with observed maternal sensitivity/responsivity, 3) positively correlated with observed maternal respect for child's autonomy, and 4) negatively correlated with observed maternal negative regard for child.

Methods

Participants

Data were collected from a total of 30 mother-child dyads across two sites (15 dyads per site; see Table 1). Site 1, for which we will use the pseudonym Kingsboro, is a community sample of mothers and preschool children; while, site 2, for which we will use the pseudonym Creekwood, is a sample of mothers and preschool children who receive services from Head Start. All children were between the ages of 31 months and 57 months with a mean age of 42.43 months. The majority of children were male (18; 60.0%) and most children (25; 83.3%), including all 15 children from Creekwood, spend at least ten hours per week in childcare outside of the home. Mothers were between the ages of 20 and 47 years, with a mean age of 32.75 years. Most women (18; 60.0%), including all 15 women from Kingsboro, were married. At the

Creekwood site, 3 mothers were married, 11 (36.7%) were unmarried and never married, and 1 (3.3%) was unmarried and divorced.

Procedures

The present study took place at two state universities located in urban communities. Mother-child dyads were recruited via flyers distributed to local groups where mothers of preschool children frequent. Recruitment strategies differed between sites in an intentional effort to explore differences that naturally exist between the chosen recruitment sources. Dyads from Kingsboro were recruited from a local MOMS Club, which specifically serves at-home mothers who have chosen at-home mothering (MOMS Club, 2013). Dyads from Creekwood were recruited from local Head Start preschools. As Head Start specifically serves at-risk families (foster families, families that are below the poverty level, families that are homeless, etc.), participants from Creekwood were necessarily from low income or at-risk families (Administration for Children and Families, 2104). All English-speaking mothers over the age of 18 who responded to flyers and their preschool-aged child between three and four years old at the time of data collection were eligible to participate.

The Institutional Review Board of the two universities where this study took place approved all study procedures and study materials. Mothers and children who expressed interest in participating came to the child laboratory of the local university where all study procedures occurred at a time that was convenient for them. Data were collected from a single dyad at one time. The child laboratory at each university was a room filled with age-appropriate toys, such as puppets, books, blocks, and Lincoln Logs and a couch and a table with chairs that were the appropriate height for both adults and preschool-aged children.

After arriving at the child laboratory, the Principal Investigator or one of two Graduate Research Assistants conducted the informed consent process. After the participating mother understood the study procedures and signed the informed consent form, all researchers exited the room, leaving mother and child alone in the room. The researchers instructed mothers to “play as they normally would” with their child for a 20-25 minute free play session. Mothers and children were free to utilize the room however they chose and to use any of the toys or books in the room in whatever way they wished. However, there were two cards displayed in plain sight (on the table or on a chair) that contained a castle made of blocks and a community made of Lincoln Logs and train tracks. The scene depicted on both of these cards was intended to look colorful, exciting, and fun, and the cards were strategically displayed in an effort to encourage mother and child to use them as a guide for their play. Recreating the castle and the railroad tracks would be a difficult task for a preschool-aged child and one that would require the child to elicit assistance from his or her mother in order to successfully accomplish. Indeed, a number of participating dyads did choose to use one or both of these cards to structure their play and attempted to recreate the scenes depicted on the cards.

After 20-25 minutes of free play, one or two researchers re-entered the room. One researcher solicited the child’s assistance in cleaning the playroom. If a second researcher entered the room, she was available to assist the mother in completing questionnaires regarding demographic information and the emotion regulation of her preschool child. If only one researcher entered the room, she solicited the child’s assistance in cleaning the room and was also available to the mother if guidance was needed while answering questionnaires. A small portion of mothers completed questionnaires online through an anonymous survey distribution website prior to engaging in the free play session. Upon completion of the free play session and

all questionnaires, the researcher gave the mother a gift card and thanked the mother and child for their participation in the study. Participation lasted for 45-60 minutes for each dyad; however, mothers and children were free to terminate their participation at any point during the study. Researchers video recorded all interactions that occurred within the child laboratory and parent-child interactions were later reviewed and coded using these videos.

Measures

Demographics. A short demographic questionnaire was created for the purpose of this study. The questionnaire collected the following information: child's age, child's gender, mother's age, mother's marital status, and whether or not the child spends ten hour per week or more in care outside of the home.

Perceived emotion regulation and emotion lability. Children's emotion regulation and emotion lability were assessed via the Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997). The ERC is a 24-item other-report questionnaire that is scored on a 4-point Likert scale (1 = never; 2 = sometimes; 3 = often; 4 = almost always). It was designed to be completed by an adult who knows the child well, such as a parent (Shields & Cicchetti, 1998). As mentioned, the ERC assess maternal perceptions of the child's emotion regulation and emotion lability, which has implications on the objectivity of the measure (Bates & Bayle, 1984). The scale is divided into two subscales: Emotion Lability/Negativity, which will be labeled perceived emotion lability in this study, and Emotion Regulation, which will be labeled perceived emotion regulation in this study.

The Emotion Lability/Negativity subscale consists of 15 items (some of which are reverse scored), assessing the child's mood swings, anger, and intensity of emotions. Some example items include: "How often does your child quickly change their mood or experience

mood swings? How often is your child easily frustrated? How often is your child prone to angry outburst or tantrums?” A higher score in the possible range of 15 to 60 indicates greater emotion dysregulation, or greater emotion lability. The Emotion Regulation subscale consists of 8 items (some of which are reverse scored), assessing the social appropriateness of the child’s emotions, emotion understanding, adaptive regulation, and empathy. Some example items include: “How often is your child cheerful? How often does your child seem sad or listless? How often can your child say when he or she is feeling sad, angry or mad, fearful or afraid?” A higher score in the possible range of 8 to 32 indicates greater emotion regulation. (One item is not included in either subscale, as it has not loaded on either scale.) Both scales show high construct validity and internal consistency with internal consistency for the Emotion Lability/Negativity subscale reported with a Cronbach’s alpha of .96; and for the Emotion Regulation subscale reported with an alpha of .83 (Shields & Cicchetti, 1997). Discriminant validity with an Ego Resilience Q-Sort and an autonomy Q-Sort is also high (Shields & Cicchetti, 1997). In the current study, internal consistency for the Emotion Lability/Negativity subscale was adequate with a Cronbach’s alpha of .781. However, internal consistency for the Emotion Regulation Subscale was low, with a Cronbach’s alpha of .517.

Mother and child behavior during free play. Behavior during free play was assessed using the Parent-Child Interaction Rating Scales (PCIRS; Sosinsky, Carter, & Marakovitz, 2004). The PCIRS is an unpublished coding scheme that has been created based on previously validated schemes for coding mother-child interactions, such as The Mother-Child Interaction Rating Scale (MCIRS; Owen, 2009), The Caregiver-Child Affect, Responsiveness, and Engagement Scale (C-Cares; Tamis-LeMonda, Ahuja, Hannibal, Shannon, & Spellman, 2002), and The Parent-Child Early Relational Assessment (PCERA; Clark, 1999). It assesses dyadic,

parent, and child interactions in a 10-15 minute semi-structured play session. In the present study, coding was obtained by viewing the middle 10-15 minutes of the videotaped free play session that took place with mother and child alone in the child laboratory. The PCIRS consists of a Dyadic Rating scale containing 4 items, a Parent Rating scale containing 11 items, and a Child Rating scale containing 9 items. Rather than using a composite score for each of the three subscales of the PCIRS, individual items were used for this study, which aims to uncover the specific qualities of mother-child interactions that are related to maternal perceptions of emotion regulation. The item chosen from the Dyadic Rating Scale was joint attention. Coding for this item considers whether the dyad is mutually engaged, whether they are paying attention to the same object or task, and how coordinated and purposeful the interaction is (Sosinsky, Carter, & Marakovitz, 2004). Previous research indicates that mothers and children who are in sync and who can mutually attend to the same object or task are likely to function well as a dyad, and such children are likely to develop effective social competence and become skilled and intentional communicators (Chawarska, Macari, & Shic, 2012; Harding et al., 1997; Trevarthen & Daniel, 2005). Parent items used in this study to assess maternal behavior included: sensitivity/responsivity (timely and developmentally appropriate responses to the child's needs), respect for child's autonomy (lack of intrusiveness, allows child to make decisions and express individuality), and negative regard for the child (hostility, blame, rejection, or a lack of emotional support). Items used in this study to assess child outcomes included: positive engagement with mother (social connectedness with mother, positive responses to mother's initiations) and persistence with tasks (ability to focus and stay engaged in toys or tasks, especially difficult ones).

Two graduate students coded each of the videotaped free play sessions according to the 7-point Likert scale used for each item outlined in the PCIRS (1 = very low; 2 = low; 3 = moderately low; 4 = moderate; 5 = moderately high; 6 = high; 7 = very high). 13% of the data was coded for reliability. Raters were in agreement when their scores were within 1 point on the 7-point scale. Inter-rater reliability with this criterion as measured by Cohen's kappa was high ($k = .833$, $p = .000$), though kappa is a conservative measure of inter-rater reliability that underestimates the agreement between two raters (Strijbos, Martens, Prins, & Jochems, 2006).

Data Analysis

Correlations were used to assess the relationship between perceived emotion lability and perceived emotion regulation and joint attention. Similarly, correlations were used to assess the relationship between perceived emotion lability and perceived emotion regulation and the maternal behaviors of sensitivity/responsivity, respect for autonomy, and negative regard for child. A final set of correlations was used to assess the relationship between child outcomes (positive engagement with mother and persistence with tasks) and joint attention and maternal behaviors. Given the demographic differences between the two research sites, site differences in perceived regulation, joint attention, maternal behavior, and child outcomes were expected. Therefore, separate correlations assessed the relationship between variables at each site. The size of the correlations were converted to z-scores according to Fisher's Z-transformation and compared to determine if there was a significant difference in correlations by site. T-tests were also used to determine if site and other group differences existed.

Though the typical alpha level used to determine significance is .05, the present study used an alpha level of .10 (Cohen, 1992). An alpha level of .10 is recommended for exploratory studies and studies with small samples considering the low level of power (Cohen, 1992). In

studies with small sample sizes, trends that are significant at an alpha level of .10 will likely become significant at the more traditional alpha level of .05 in a study with a larger sample size (Cohen, 1977).

Results

Means and Site Differences

There were significant site differences for a number of demographic variables. As a whole, children were between the ages of 31 months and 57 months old with a mean age of 42.43 months. Children from Kingsboro were significantly younger ($\bar{x} = 38.5$ months) than children from Creekwood ($\bar{x} = 46.4$ months; $t = -3.496, p = .00$). Mothers, as a whole, were between the ages of 20 and 47 years old, with a mean age of 32.75 years. Mothers from Kingsboro were older ($\bar{x} = 34.2$ years) than mothers from Creekwood ($\bar{x} = 30.8$ years), though the difference was not significant ($t = 1.451, p = .159$).

As a whole, mothers in this sample reported that their preschool children were well regulated and did not experience a great deal of emotion lability, with a mean perceived emotion regulation score of 26.53 ($SD = 2.675$; range of 22-31) and a mean perceived emotion lability score of 30.60 ($SD = 5.164$; range of 22-47). There were no significant findings regarding maternal perceptions of emotion regulation, but there were significant findings related to maternal perceptions of emotion lability, one aspect of emotion regulation. For example, mothers reported preschool children from Kingsboro as significantly less labile than preschool children from Creekwood ($t = -1.839, p = .077$). Overall scores for child positive engagement with mother were relatively high, with a mean of 5.17/7 ($SD = 1.085$). Children from Kingsboro showed significantly higher positive engagement with mother than children from Creekwood ($t = 1.936, p = .063$). Scores for child persistence with tasks were similarly high, with a mean of

5.33/7 ($SD = .758$). Children from Kingsboro showed significantly greater persistence with tasks than children from Creekwood ($t = 2.027, p = .052$).

There was a significant difference in maternal perception of children's lability based on mother's marital status dichotomized to indicate whether the mother was married or unmarried. Unmarried mothers reported their children to be significantly more labile than did married mothers ($t = 2.037, p = .051$). There was no difference in children's observed behavior based on mother's dichotomized marital status. Similarly, there was a significant difference in maternal perception of child's lability, but not child's observed behavior, based on whether or not the child spends at least ten hours per week in care outside of the home. Children who do spend at least ten hours per week in care outside of the home had significantly higher perceived emotion lability than children who do not ($t = -1.992, p = .056$). There were no differences in perceived emotion lability or observed child behavior based on any other demographic variables, including mother's age, child's age, or child's gender.

As a whole, dyads scored well on joint attention. The mean score for joint attention was 5.50/7 ($SD = 1.253$). There was not a significant site difference in joint attention ($t = 1.329, p = .195$), nor was there a significant difference in joint attention between married and unmarried mothers. Dyads with a child who does not spend at least ten hours per week in care outside of the home displayed significantly greater joint attention ($t = 2.306, p = .029$) than dyads with a child who does spend at least ten hours per week in care outside of the home. There were no significant correlations between measures of joint attention and mother's age, child's age, or child's gender.

Mean scores for maternal behaviors out of a possible 7 points were as follows:

Sensitivity/responsivity 4.80/7 ($SD = 1.324$), respect for child's autonomy 4.90/7 ($SD = 1.605$), and negative regard for the child 2.03/7 ($SD = 1.217$). There were a number of site differences in maternal behaviors such that mothers from Kingsboro were significantly more sensitive and responsive ($t = 1.709, p = .098$), had greater respect for their child's autonomy ($t = 2.941, p = .006$), and showed significantly less negative regard for their child ($t = -2.433, p = .022$) than mothers from Creekwood. Mothers of children who do not spend at least ten hours per week in care outside of the home showed significantly more respect for their child's autonomy ($t = 1.736, p = .094$) than mothers of children who do spend at least ten hours per week in care outside of the home. Maternal respect for child's autonomy was significantly correlated with both maternal age ($r = -.394, p = .038$) and child's age ($r = -.401, p = .028$). Maternal sensitivity/responsivity was significantly correlated with child's age ($r = -.386, p = .035$). There were no significant differences in maternal behaviors based on mother's dichotomized marital status or based on child's gender. See Table 2 for more descriptive data for each variable, and See Table 3 for more information on all significant group differences.

Hypothesis Testing

The present study investigated the link between maternal perceptions of emotion regulation and emotion lability and observed mother and child behaviors during free-play. There were no significant results involving maternal perceptions of emotion regulation as measured by the emotion regulation subscale of the ERC. Though there were group differences related to perceived emotion lability as indicated above, there were no significant correlations between perceived emotion lability and joint attention or any of the observed maternal behaviors in the full sample of 30 dyads.

Child's observed positive engagement with mother was correlated with joint attention ($r = .368, p = .046$). Maternal sensitivity/responsivity was significantly related to child's positive engagement with mother ($r = .456, p = .011$). When divided by site, ($n = 15$ dyads per site), the relationship between maternal sensitivity/responsivity and child's positive engagement with mother remained significant in Creekwood ($r = .454, p = .089$), while the relationship was not significant in Kingsboro ($r = .248, p = .374$). Maternal respect for child's autonomy was also significantly related to child's positive engagement with mother ($r = .386, p = .035$). Finally, maternal negative regard for child was significantly and inversely related to child's positive engagement with mother, as predicted ($r = -.370, p = .044$).

When considering the full sample of 30 dyads, child's observed persistence with tasks was only significantly correlated with joint attention ($r = .327, p = .078$) and not significantly related to any maternal behaviors. However, when divided by site, the relationship between child's observed persistence with tasks and joint attention remained significant in Creekwood ($r = .589, p = .021$), but became non-significant in Kingsboro ($r = -.245, p = .379$). When converted to z-scores using Fisher's Z-transformation, the difference in the relationship between child's persistence with tasks and joint attention between the two sites was significant ($z = -2.27, p = .023$). Similarly, when divided by site, child's persistence with tasks became significantly correlated with maternal negative regard for child in Kingsboro ($r = .484, p = .067$), while in Creekwood, the correlations was not significant ($r = -.251, p = 3.66$). When converted to z-scores with Fisher's Z-transformation, the difference in the relationship between mother's negative regard for child and child's persistence with tasks between the two sites was significant ($z = 1.92, p = .055$). See Table 5 for a full list of site differences using Fisher's Z-Transformation.

Discussion

Some study hypotheses were supported. The hypotheses that the child outcomes of positive engagement with mother and persistence with tasks are positively correlated with joint attention were supported. Similarly, the hypothesis that positive engagement with mother would be correlated with maternal behaviors was supported. Maternal sensitivity/responsivity and maternal respect for child's autonomy were positively correlated with child's positive engagement with mother; while, maternal negative regard for child was negatively correlated with child's positive engagement with mother. There were no significant relationships between maternal behavior and preschool children's perceived emotion lability or perceived emotion regulation.

One potential explanation for the lack of significant results regarding perceived emotion regulation and perceived emotion lability in this study is that the sample as a whole was very highly regulated and not very labile according to mother's perceptions of their children's emotional tendencies. The range of perceived emotion regulation scores was 21 to 31 out of a possible 32 points. This means that at least one child in this sample (who scored a 31/32) was reported by his or her mother to be nearly as regulated as the ERC can assess. Even the most poorly regulated child in the sample scored a 21 out of 32, a score that still indicates a relatively regulated child. Similarly, the range of perceived emotion lability scores was 22-47 out of a possible 60, though only one participant scored a 47. Excluding this participant, the range of scores was 22-39. The mean perceived emotion lability score was 30.60 ($SD = 5.164$). It is clear that the majority of the sample did not experience a great deal of emotion lability or negativity in their daily lives as reported by maternal perceptions of their children's emotions.

The high scores for perceived emotion regulation and low scores for perceived emotion lability may be the result of the maternal-report nature of the ERC. Maternal perceptions of

children often differ from observations of that child, as perceptions incorporate mothers' own beliefs, past experiences, and other characteristics that confound objectivity (Bates & Bayles, 1984; Hane et al., 2006; Hubert et al., 1982; Weisman et al., 2010). It may be the case that mothers responded to questions regarding their preschool child's emotions differently than a researcher would or another individual, such as a teacher, who sees the child interact with peers on a daily basis. Perhaps mothers who experience a great deal of emotion lability themselves may have had a difficult time recognizing and reporting these behaviors in their children. This study did not assess the emotion regulation of mothers, though a mother's emotional experiences may shape her responses to questions about her child's emotions on the ERC (Han & Shaffer, 2013). Further, mothers may have had different definitions or perceptions of a temper tantrum, a mood swing, and other behaviors that comprise the items of the ERC, which may have led to the mother unintentionally over-reporting her child's regulatory capacity or underreporting the frequency of her child's emotion lability. Perhaps social desirability was also a factor, as mothers may have responded to questions on the ERC in a way that they thought would help portray their child as positively and socially adjusted as possible.

Mother-child dyads scored well on joint attention, which was used as a measure of dyadic interactions for this study. According to the PCIRS coding manual, the joint attention variable is used to describe how mutually engaged the mother and child are during their interaction and how often they pay attention to the same things or cooperatively and harmoniously engage in the same task or goal (Sosinsky et al., 2004). Indeed, previous research indicates that harmony and simultaneous engagement by children and caregivers are characteristics of well-functioning child-caregiver dyads (Harding et al., 2007; Trevarthen & Daniel, 2005).

As a whole, mothers scored just above average on measures of sensitivity/responsivity and respect for child's autonomy. They also had low scores for negative regard for the child. Previous research supports the notion that a high degree of caregiver sensitivity, responsivity, and respect for autonomy combined with a low level of negative regard for the child characterize optimal maternal behaviors in interactions with their children (Cassidy, 1994; Eisenberg et al., 2001; Kaplan et al., 2008; Raikes & Thompson, 2006). It is possible that the mothers who chose to participate in this study are different than the "typical" mother of a preschool child. This may be especially true for mothers from Creekwood, where flyers were distributed at a Head Start preschool. It is likely that mothers who chose to participate in the study are those mothers who are engaged in their child's academics and frequently visit their child's school. Previous research indicates that mothers who are more engaged in their child's academic lives tend to also have more positive interactions with their children characterized by warmth and support, likely due to the higher level of education that academically involved mothers have and the greater resources available to such mothers (Horton, Bleau, & Drwecki, 2006; Steinberg, Blatt-Eisengart, & Cauffman, 2006).

It is not surprising that there were a number of site differences regarding maternal behaviors during dyadic interactions. Though no information was explicitly collected regarding family income and socioeconomic status, this information can be inferred based on recruitment procedures. Dyads from Kingsboro were recruited via flyers posted at local MOMS clubs, while dyads from Creekwood were recruited via flyers posted in local Head Start preschools, which, by nature, serve low-income families. In fact, the particular preschools that were chosen as recruitment sources for Creekwood serve the highest proportion of impoverished families in the city of Creekwood; therefore, it can be reasonably assumed that dyads from this site were low-

income families, as they must meet income-based enrollment requirements to receive Head Start services. Low income is frequently found to be a risk factor for less than optimal parenting practices (Bøe, Sivertsen, Heiervang, Goodman, Lundervold, & Hysing, 2013; Fallon, Ma, Black, & Wekerle et al., 2011). Low-income mothers tend to have less emotional competence, and they are less likely to experience matched affective states with their child (Spritz et al., 2010). Due to low-income mothers' high degree of stress and lack of resources, mothers from low-income families tend to engage in behaviors that lead them to interact insensitively, be unresponsive, and be more intrusive than mothers in middle class families (Spritz et al., 2010). Low income or low resource mothers are more likely to be depressed, less likely to engage in emotion conversations with their children, and experience a high number of stressors, including lack of child care, financial strain, and unstable housing, all of which are risk factors for impaired parenting (Clausen, Aguilar, & Ludwig, 2012; Dawson et al., 1999). Such mothers are more likely to respond inconsistently and intrusively, rather than respectfully, to their children, to match negative, rather than positive, emotional states with their children, and to fail to encourage the development of emotion regulation in their children (Clausen et al., 2012; Dawson et al., 1999; Feldman, 2007; Raikes & Thompson, 2006). The same may true for unmarried mothers, who may have fewer resources available to them and more demands on their time than married mothers (Radey & Padilla, 2009).

It is also not surprising that children from Kingsboro and Creekwood scored significantly differently on perceived emotion lability and measures of child outcomes given the site differences that exist in maternal behavior. Supportive and sensitive mothers who are emotionally available to their children facilitate not only positive engagement with the child, but also the development of positive, adaptive, and effective emotion regulation (Cassidy, 1994;

Kaplan et al., 2008; Raikes & Thompson, 2006). It makes sense that children in this study who have unmarried mothers and children who spend at least ten hours per week in care outside of the home scored higher on perceived emotion lability than their counterparts. One explanation is that children with married mothers and children who do not spend at least ten hours per week in care outside of the home spend more time with their mothers, who are likely to be less stressed and more available during interactions with their children. This provides more time and resources for the caregiver, the mother in this situation, to engage in warm and supportive caregiving techniques, to engage in behaviors that are respectful of their child's autonomy, and to offer emotional support to decrease the prevalence of emotion lability in their children (Kaplan et al., 2008). These dyads also have more time to practice mutually engaging in the same task, as evidenced by the higher joint attention scores of caregivers and children who do not spend ten or more hours in care outside of the home. Given the demographic differences that exist between the sites in terms of inferred income, marital status, and childcare, it is not surprising that there were significant differences in perceived emotion lability and maternal behaviors. Mothers from low income families are likely to have fewer resources, more stressors, and less stable living conditions, which make it more challenging to engage in the types of sensitive, supportive, and positive behaviors that foster emotional stability in their children (Bernier, Carlson, & Whipple, 2010).

What is surprising is the negative correlation that was found between maternal respect for child's autonomy and child's age. Based on previous research, we expected that this relationship would be positive, as children tend to demand, and generally receive, greater autonomy as they grow older (Carrasco, Rodríguez, del Barrio, & Holgado, 2011; Lanz, Scabini, Vermulst, & Gerris, 2001). Perhaps mothers in this study prioritized the child's compliance with her demands

over the development of autonomy in the child. Particularly in a videotaped laboratory scenario, mothers may have wished to appear in control of their child.

Limitations

There are several important limitations to the current study. First, with a total of 30 mother-child dyads, the sample size is very small. Given the significant site differences with regard to demographic variables for both mothers and children, correlations were tested using the whole sample as well as separately for each of the two sites, reducing each sample to just 15 dyads for some correlations.

Another limitation is the lack of demographic data collected and the limited exclusionary criteria for the study. IRB concerns regarding the protection of participants' anonymity in such extremely small samples precluded the collection of some demographic data, such as participants' ethnicity. Therefore, the only demographic data that were collected for this study were maternal age, maternal marital status, child age, child gender, and whether or not the child spends at least ten hours per week in care outside of the home. Data on family income can be inferred based on recruitment source, though this information was not explicitly collected.

Future research regarding dyadic and maternal correlates of emotion lability and emotion regulation in preschoolers should collect more information about maternal experience with children (whether through parenting siblings of a child, working with children in a professional setting, and the like), number of siblings in the home, and whether or not the mother or child have a diagnosed mental health disorder. If it is determined that mother or child has a diagnosed mental health condition (such as depression or bipolar disorder for the mother or Attention Deficit Hyperactivity Disorder or Autism for the child), it may be wise to exclude their participation in such a study that aims to determine parent and child correlates of developing

emotion regulation in normative dyads. Of course, it is necessary to study developing emotion regulation in atypical dyads as well; previous research indicates that maternal depression (Campbell, Matestic, von Stauffenberg, Mohan, & Kirchner, 2007; Clausen et al., 2012; Dawson et al., 1999; Feldman, 2007; Raikes & Thompson, 2006) and child diagnosis of autism (Chawarska et al., 2012; Trevarthan & Aitken, 2001; Trevarthan & Daniel, 2005), among other diagnoses, creates very different mother-child interactions than interactions that occur in the absence of a diagnosis. Therefore, it may be best to investigate the development of emotion regulation in such dyads in a separate study.

Though the recruitment sources in this study allowed for an estimation of family income information, future studies would benefit from recruiting from a wider variety of sources, rather than simply MOMS Clubs and Head Start preschools. Mothers who attend MOMS clubs are at-home mothers who are connected in the community and benefit from the social support that comes with membership to a structured organization. Head Start offers parents the chance to socialize with each other through regular parent education opportunities. Indeed, when parents have access to support and have a chance to engage in interactions that reinforce positive parenting and social exchanges, they feel more confident in their ability as a parent and are more supportive and sensitive in their relationships with their children (Wade, Llewellyn, & Matthews, 2011). Gathering data from a greater number of recruitment sources would help to generalize the trends found in this study to a wider variety of families.

Implications

Trends in the current study support previous research findings that low-income mothers relate differently to their children than higher income mothers. These findings also support a need for intervention programs that aim to improve maternal behaviors in low-income families.

According to the current results, such intervention programs should focus on improving the sensitivity and responsiveness of mothers and should encourage these mothers to respect the autonomy of her child and allow her child to drive the interaction, rather than being intrusive and dominating in interactions with her child. Such interventions may also benefit families and improve mother-child interactions by encouraging mothers to decrease their negative regard for their children by helping them to be less hostile, less rejecting, and more available to their children.

These results are congruent with previous research that emphasizes the importance of maternal caregiving behaviors in the development of emotion regulation in children. Perhaps interventions that target improved regulatory skills in preschool children could focus on improving maternal behaviors in interactions with the child. Mothers who react sensitively to the needs of their children will have more positive interactions with their children, which are related to effective emotion regulation skills. These positive interactions between children and caregivers in which the mother respects the autonomy of the child and shows little negative regard for the child facilitate the development of a socially appropriate and adaptive regulatory capacity in the child.

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Table 1. Participant Demographics

Participant Group	Variable	Total	Site 1	Site 2
Dyads	n	30	15	15
Children	Average Age (months)***	42.4	38.5	46.4
	Gender			
	Male	18 (60%)	9 (60%)	9 (60%)
	Female	12 (40%)	6 (40%)	6 (40%)
	10+ Hours in Care Outside Home			
	Yes	25 (83%)	10 (67%)	15 (100%)
	No	5 (17%)	5 (33%)	0 (0%)
Mothers	Average Age (Years)	32.4	34.2	30.8
	Marital Status			
	Married	18 (60%)	15 (100%)	3 (20%)
	Unmarried (never married)	11 (37%)	0 (0%)	11 (73%)
	Divorced	1 (3%)	0 (0%)	1 (7%)

Note: *** significant $p < .01$; ** significant $p < .05$; * significant $p < .10$

Table 2. Means

Participant Group	Variable	n	Mean	SD	Actual Range	Possible Range
Dyad	Joint Attention	30	5.50	1.253	2-7	1-7
Mother	Sensitivity/Responsivity	30	4.80	1.324	2-7	1-7
	Respect for Autonomy	30	4.90	1.605	1-7	1-7
	Negative Regard for Child	30	2.03	1.217	1-6	1-7
Child	Perceived Emotion Lability	30	30.60	5.164	22-47	15-60
	Positive Engagement with Mom	30	5.17	1.085	2-7	1-7
	Persistence with Tasks	30	5.33	.758	3-6	1-7

Table 3. Significant Group Differences

Group		Mean (SD)	Mean (SD)	t	p
Site		Kingsboro	Creekwood		
	Perceived Emotion Lability	28.93 (3.283)	32.27 (6.204)	-1.839	.077
	Positive Engagement	5.53 (.640)	4.80 (1.320)	1.936	.063
	Persistence with Tasks	5.60 (.507)	5.07 (.884)	2.027	.052
	Sensitivity/Responsivity	5.20 (1.082)	4.40 (1.454)	1.709	.098
	Respect for Autonomy	5.67 (1.175)	4.13 (1.642)	2.941	.006
Marital Status		Unmarried	Married		
	Perceived Emotion Lability	32.83 (6.337)	29.11 (3.692)	2.037	0.051
Care Outside of the Home		<10 hrs/week	>10 hrs/week		
	Perceived Emotion Lability	26.60 (2.702)	31.40 (5.196)	-1.992	0.056
	Joint Attention	6.60 (.548)	5.28 (1.242)	2.306	0.029
	Respect for Autonomy	6.00 (.707)	4.68 (1.651)	1.736	0.094

Table 4. Correlations

Full Sample	1)	2)	3)	4)	5)	6)
Joint Attention						
Sensitivity/Responsivity	.520***					
Respect for Autonomy	.678***	.786***				
Negative Regard for Child	-.260	-.445**	-.563***			
Perceived Emotion Lability	-.288	-.123	-.134	.084		
Positive Engagement with Mom	.368**	.456**	.368**	-.370**	-.308*	
Persistence with Tasks	.327*	-.034	.227	-.237	-.239	.391**
Kingsboro	1)	2)	3)	4)	5)	6)
Joint Attention						
Sensitivity/Responsivity	.657***					
Respect for Autonomy	.865***	.786**				
Negative Regard for Child	-.388	-.371	-.602**			
Perceived Emotion Lability	-.141	.145	.105	-.322		
Positive Engagement with Mom	.141	.248	.158	.128	.018	
Persistence with Tasks	-.245	-.364	-.240	.484*	-.317	.264
Creekwood	1)	2)	3)	4)	5)	6)
Joint Attention						
Sensitivity/Responsivity	.358					
Respect for Autonomy	.526	.754***				
Negative Regard for Child	-.106	-.378	-.420			
Perceived Emotion Lability	-.294	-.092	.003	-.001		
Positive Engagement with Mom	.430	.454*	.310	.349	-.281	
Persistence with Tasks	.589**	-.078	.190	-.251	-.082	.318

Note: *** significant $p < .01$; ** significant $p < .05$; * significant $p < .10$

Table 5. Difference in Correlations by Site using Fisher's Z-Transformation

	1) Z (p)	2) Z (p)	3) Z (p)	4) Z (p)	5) Z (p)	6) Z (p)
Joint Attention						
Sensitivity/Responsivity	1.01					
Respect for Autonomy	1.78 *	.19				
Negative Regard for Child	-.74	.02	-.61			
Perceived Emotion Lability	.39	.58	.25	-.82		
Positive Engagement with Mom	-.78	-.58	-.39	-.58	.75	
Persistence with Tasks	-2.27**	-.74	-1.07	1.92*	-.60	-.14

Note: *** significant $p < .01$; ** significant $p < .05$; * significant $p < .10$