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The Indirect Effects of Maternal Emotion Socialization on Friendship Quality in Middle Childhood

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Abstract

Emotion development processes have long been linked to social competence in early childhood but rarely have these associations been examined in middle childhood or with relational outcomes. Guided by theories of interpersonal relationships and emotion socialization, the current study was designed to fill these gaps by examining a longitudinal process model indirectly linking emotion development to friendship quality. Data were drawn from 336 children (179 girls, 65% White), their mothers, and their teachers across 3 time points spanning the ages of 5–10 years. A path analysis model was utilized to examine the way in which maternal emotion socialization indirectly affects children's friendship quality. Results supported the hypothesized model in which maternal emotion socialization strategies used when children were age 5 were associated with changes in friendship quality from ages 7 to 10 via changes in children's emotion regulation. Findings highlight the importance of emotional processes for relational outcomes in middle childhood.

Keywords

friendship quality; emotion socialization; emotion regulation; middle childhood

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A large body of research indicates that emotional processes, such as emotion regulation and reactivity, are critical to the development of social competence and successful peer interactions in childhood (e.g., Blandon, Calkins, Grimm, Keane, & O'Brien, 2010; Calkins, Gill, Johnson, & Smith, 1999; Eisenberg et al., 1993). This research demonstrates that successful emotion management translates to greater success with peers and more positive social interactions. To date, this work has focused almost exclusively on early childhood and has generally defined social outcomes quite broadly (e.g., social competence). Yet, social development continues far beyond early childhood and becomes more complex, more personal, and central to well-being, raising questions regarding how emotional processes may shape social processes in this time of complex growth. Framed by theories of interpersonal development and emotion socialization, the current study built on previous research by examining a middle childhood process model by which mothers' emotion socialization practices influence changes in children's emotional regulation abilities, which in turn influence the quality of children's friendships.

Friendships in Middle Childhood

Developing peer competence is crucial in both early and middle childhood. However, a key advancement in social development that occurs after early childhood is the development of dyadic friendships. Indeed, of all developmental transitions in the middle childhood period, beginning at the age of 6 years and ending at ages 11–12 (Feldman, 2010), the emergence of intimate friendships may be one of the most critical due to the role of friends in social and identity development, norm socialization, social support, and psychosocial well-being (Hartup & Stevens, 1997; Huston & Ripke, 2006).

Dyadic peer relationships do not emerge suddenly at the onset of middle childhood. Even as newborns, children engage in interactions with their peers (Dondi, Simion, & Caltran, 1999), and preschoolers can develop relatively stable dyadic relationships that provide them with companionship and support (Dunn, 2004; Gunnar, Senior, & Hartup, 1984). These early peer experiences are an important component of early social development and can have long-term implications (Gottman, 1983). However, peer relationships among young children are defined primarily by proximity and shared activity (Howes, 1996; Vandell & Mueller, 1980). It is not until the end of middle childhood that dyadic peer relationships take on the qualities that most relationship researchers view as central to the definition of intimate friendship, such as affective reciprocity, mutual influence, reciprocal recognition of the relationship, a shared history, and relational commitment (Hinde, 1979; Rubin, Bukowski, & Parker, 2006).

Sullivan (1953) theorized that close, intimate friendships first appear in preadolescence and that these early friendships serve as a critical bridge from parent–child relationships to future peer relationships, including romantic relationships. Sullivan's theory particularly emphasized that preadolescent friendships are children's first experience with personally meaningful relationships that are truly voluntary, from which either partner can extract himself or herself at any time, leaving children vulnerable to the possibility of rejection. Sullivan believed that the voluntary nature of friendships is the very reason that these are the first relationships in which children experience true intimacy. Unlike familial relationships

or early peer relationships, retention of friendships in middle childhood requires that children enhance their mastery of sophisticated social and emotional skills, such as empathy, perspective-taking, and self-disclosure. Empirical work has identified middle childhood as a time when individuals begin to choose peer relationships of their own accord and with some degree of appraisal (Rubin et al., 2006), and it is also a time period during which emotional intimacy in friendships increases, just as companionship and a value for shared activities decrease in salience (Bigelow, 1977; Buhrmester & Furman, 1987; Hartup & Stevens, 1997). Further, children begin to prioritize abstract, complex values such as support, loyalty, and openness with friends as they move into preadolescence (Bigelow, 1977).

Not only do friendships grow in intensity and complexity during middle childhood, they also occupy critical roles in children's development and well-being. Friendships serve as resources for learning about oneself and others and become models for future relationships (Furman, 1996; Hartup, 1993; Hartup & Stevens, 1997). It is not just the presence of friends that is important; the quality of friendships has significant implications for the benefits that children may derive from these relationships. Friendship quality consists of positive dimensions, such as intimacy and validation, as well as negative dimensions, such as conflict and betrayal (Berndt, 2004). Previous research has demonstrated that the positive and negative dimensions of friendship quality are modestly correlated such that friendships higher in positive dimensions are lower in negative dimensions (Berndt & McCandless, 2009). However, these correlations are lower than might be expected, given that they refer to the same friendships. Also, there is evidence that these constructs may have different antecedents and outcomes (Banny, Heilbron, Ames, & Prinstein, 2011; Berndt & Keefe, 1995).

Both positive and negative friendship quality have important implications for children's social development. Friendships high in positive qualities are sources of emotional as well as tangible support (Way, Becker, & Greene, 2006), are outlets for intimate disclosure (Newcomb & Bagwell, 1995), and provide companionship (Parker & Asher, 1993). With these relational needs met, high-quality friendships result in youths' positive psychosocial development (Hartup & Stevens, 1999; Savin-Williams & Berndt, 1990). Without these needs met, children are vulnerable to loneliness and aggression, internalizing and externalizing problem behaviors, and peer rejection and victimization (Laursen, Bukowski, Aunola, & Nurmi, 2007; Rubin et al., 2004). Moreover, friendships that are high in negative qualities, such as conflict and antagonism, are related to higher levels of children's externalizing and internalizing behavior problems (Burk & Laursen, 2005; Sentse & Laird, 2010), as well as lower levels of prosocial behavior (Cillessen, Jiang, West, & Lazkowski, 2005). Therefore, the quality of friendships is of critical importance to child well-being.

The Role of Emotion Regulation in Social Development

Social interactions and emotional experiences are intrinsically linked. Emotions are central to social experiences as part of a dynamic exchange in which emotions and emotion management are both antecedents and outcomes of social interactions and relationships (Campos, Campos, & Barrett, 1989). *Emotional competence*, which is the ability to recognize and express one's emotions in ways that facilitate rather than hinder appropriate

social interactions (Saarni, 1999), is a vital intrapersonal characteristic that can shape children's social interactions as well as the quality of specific relationships (Halberstadt, Denham, & Dunsmore, 2001). *Emotion regulation*, defined as a dynamic process of maintaining or altering the occurrence or duration of emotional states, has been conceptualized as the core component of emotional competence (Eisenberg, 2001). It is emotion regulation that allows individuals to react appropriately and effectively to their own emotions, which then aids in effective communication with others. Thus, the ability to regulate emotion appropriately is critical to children's social development because it underlies children's understanding and interpretation of social interactions, as well as children's reactions in social contexts, thereby shaping the way others perceive and respond to them.

A growing body of research indicates that emotion regulation is important to general social competence during middle childhood. Eisenberg et al. (1995) have found that maladaptive coping styles in 6- to 8-year-old boys, such as aggression or avoidance, are related to lower teacher ratings of social competence. Similarly, in a study of fifth-grade children, children's emotional intensity and constructive coping strategies, such as problem solving and support seeking, were associated with more positive teacher ratings of social behavior (Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000). However, there has been relatively little research associating emotional competence with relational outcomes, such as friendship quality. A handful of studies have examined the association between emotional development and early childhood dyadic playmate relationships (e.g., Lindsey & Colwell, 2003; McElwain, Halberstadt, & Volling, 2007), and even fewer studies have focused on emotional development in the context of adolescent friendships (e.g., Cook, Buehler, & Blair, 2013; Zimmerman, Maier, Winter, & Grossman, 2001). To our knowledge, the relation between emotional competence and friendship quality in middle childhood has not been examined in any study. This is a weakness in the literature because friendships represent a far more affective context than other peer settings (Berndt, 1982), and thus emotional competence is likely even more critical to the development of successful friendships than to general social competence. Therefore, one of our goals in the current study was to examine how changes in children's ability to regulate their emotions in the early part of middle childhood, when they are transitioning to school and experiencing new social environments, was associated with changes in friendship quality at the end of middle childhood—the age at which Sullivan (1953) suggested children begin to master intimacy in the context of dyadic peer relationships.

Emotion Socialization as a Precursor to Emotion Regulation

Given the proposed link between emotion regulation and friendship quality in middle childhood, it is important to better understand predictors of the development of advanced regulatory abilities beyond early childhood. However, compared with studies examining the development of emotion regulation in infancy and preschool, a relatively small amount of work has been conducted regarding predictors of emotion regulation during middle childhood. Thus, extending this work to encompass middle childhood is important to further our understanding of the full development of emotion regulation.

Parenting behavior has been identified as a particularly salient predictor of children's emotional development, and parenting practices related to children's expressions of emotion have been found to be a critical component in the development of emotion regulation in young children. Eisenberg, Cumberland, and Spinrad (1998) identified parents' reactions to children's emotions, parents' expression of emotion, and parent-child discussions of emotion to be primary ways in which parents directly socialize their children's emotional development and facilitate the development of emotion regulation.

Empirical research substantiates the relation between nonsupportive parental emotion-socialization practices that include punitive or minimizing reactions to negative emotional displays (e.g., anger and sadness) and children's regulatory abilities. Eisenberg, Fabes, and Murphy (1996) proposed that negative reactions to children's displays of negative emotions are likely to intensify and prolong children's arousal in emotion-eliciting situations, increasing the likelihood of dysregulated behavior. Research has indicated that less accepting parental responses to emotion have been linked to children's emotional difficulties and psychopathology (O'Neal & Magai, 2005). For example, in a study of preschoolers, parental punitive reactions to children's negative emotions were associated with avoidant (i.e., avoiding rather than coping with an emotionally arousing situation) and inappropriate emotion regulation strategies (Eisenberg, Fabes, Carlo, & Troyer, 1992). Additionally, if children's negative emotions are ignored, they may have little opportunity to practice regulating their emotions and gain valuable insight into the appropriate display and management of emotion from caregivers.

Supportive reactions to children's negative emotions, such as the discussion and encouragement of negative emotion, have also been empirically linked to the regulation of emotion. Further, when parents talk about emotions, they clarify their children's emotional state, draw children's awareness to their own emotions, and instruct their children on how to respond appropriately to emotion-related experiences (Garner, Dunsmore, & Southam-Gerrow, 2008; Wang & Fivush, 2005). For example, parents who used more frequent and sophisticated language about emotions had children who were better able regulate their emotions during negative-emotion-eliciting situations (Denham, Cook, & Zoller, 1992). Cole, Dennis, Smith-Simon, and Cohen (2009) reported that 4-year-old children who received a higher level of emotional support when distressed recognized more strategies for regulating anger. The authors suggested that the mechanisms explaining this relation may include a history of experience with supportiveness such that a young child has an implicit sense that emotions are manageable and can access implicit strategies. It may be that emotion-related discussions between children and parents help children link their feelings, expressions, situations, and words into an emotion-related conceptual system that they can understand and discuss, which in turn influences children's emotion regulation skills and behaviors during social interactions (Bullock & Russel, 1986; Malatesta & Haviland, 1982).

Theoretical and empirical work has suggested that the socialization of emotion is a strong predictor of emotion regulation in early childhood; thus, it is likely that emotion socialization in middle childhood continues to predict children's development of emotion regulation. Therefore, a second goal in the current study was to examine how maternal emotion socialization at the start of middle childhood, age 5 years, was associated with

changes in emotion regulation from ages 5 to 7. Given that primary caregivers are expected to be the primary agents of emotion socialization and most primary caregivers are mothers (Eisenberg et al., 1998), we chose to focus on maternal emotion socialization.

Indirect Effects of Emotion Socialization on Friendship Quality

An additional goal in the current study was to examine the indirect effects of maternal emotion socialization on friendship quality 5 years later, via children's emotion regulation. We hypothesized that the direct effects from emotion socialization to friendship quality would not be significant due to the temporal distance from age 5 to age 10, as well as the fact that emotion socialization is a targeted parenting practice that is specifically intended to address children's emotions, not necessarily their social competence. Thus, we hypothesized an indirect effect model whereby maternal emotion socialization when children were 5 years old would directly influence children's emotion regulation at age 7, which in turn would directly influence children's positive and negative friendship quality at age 10.

Child Gender Differences

Previous research indicates that children's gender may play a role in the associations of the proposed study. For example, there is evidence girls' emotional competence is more strongly associated with parents' emotion socialization practices than is boys' (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997). There is also a substantial body of literature indicating that girls' and boys' friendships are different in terms of the content and structure of their interactions, with girls generally engaging in more conversation, including self-disclosure, and boys engaging in more play (for a comprehensive review, see Rose & Rudolph, 2006). However, there is far less conclusive evidence that the quality of boys' and girls' friendships have different relations with predictors. Nevertheless, given the qualitative differences in boys' and girls' friendships, it is reasonable to question whether emotion regulation may have differing associations with friendship quality based on child gender. Therefore, we also examined the ways in which child gender may alter our hypothesized model.

Current Study

In this study, we aimed to address several gaps in the literatures by utilizing path analysis techniques with three waves of data across a 5-year span of middle childhood to address the question of how mothers' emotion socialization practices are associated with changes in children's friendship quality via changes in children's emotion regulation. First, we hypothesized that mothers' supportive emotion socialization practices when children were age 5 would be positively associated with children's emotion regulation at age 7 and that mothers' nonsupportive emotion socialization practices would be negatively associated with emotion regulation. This association was expected to remain when controlling for emotion regulation at age 5, suggesting that emotion socialization contributes to changes in children's emotion regulation above and beyond their emotion regulation concurrent to the socialization. Second, we hypothesized that emotion regulation at age 7 would be associated positively with perceived positive friendship quality at age 10 and associated negatively with negative friendship quality, after controlling for positive and negative friendship

quality at age 7. Again, by controlling for earlier friendship quality, we were able to examine the ways the changes in children's emotion regulation were associated with changes in friendship quality. Third, we hypothesized there would be indirect effects of mothers' supportive and nonsupportive emotion socialization on positive and negative friendship quality at age 10 through children's emotion regulation at age 7.

Method

Participants

The current study utilized data from an ongoing longitudinal study that includes three cohorts of children. The goal for recruitment was to obtain a sample of children who were at risk for developing future externalizing behavior problems that was representative of the surrounding community in terms of race and socioeconomic status (SES). All cohorts were recruited through child day care centers, the county health department, and the local Women, Infants, and Children (WIC) program. Potential participants for Cohorts 1 and 2 were recruited at 2 years of age (Cohort 1: 1994–1996, Cohort 2: 2000–2001) and screened using the Child Behavior Checklist (CBCL 2–3; Achenbach, 1992) completed by the mother to oversample for externalizing behavior problems. Efforts were made to obtain approximately equal numbers of boys and girls. A total of 307 children were selected. Cohort 3 was initially recruited when infants were 6 months old (in 1998) for their level of frustration based on laboratory observation and parent report and followed through the toddler period (see Calkins, Dedmon, Gill, Lomax, & Johnson, 2002, for more information). Children whose mothers completed the CBCL at 2 years old were included in the current study ($n = 140$). There were no significant demographic differences between cohorts with regard to child gender, $\chi^2(2, N = 447) = 0.63, p = .73$; race, $\chi^2(2, N = 447) = 1.13, p = .57$; or 2-year SES, $F(2, N = 444) = 0.53, p = .59$. Cohort 3 had a significantly lower average 2-year externalizing T score ($M = 50.36$) compared with Cohorts 1 and 2 ($M = 54.49$), $t(445) = -4.32, p = .00$.

At age 5 years, 365 families participated. Families lost to attrition included those who could not be located, moved out of the area, declined participation, or did not respond to phone and letter requests to participate. There were no significant differences between families who participated in this wave of data compared with those who did not in terms of child gender, $\chi^2(1, N = 447) = 0.76, p = .38$; race, $\chi^2(1, N = 447) = 0.17, p = .68$; 2-year SES, $t(424) = 1.93, p = .06$; or 2-year externalizing T score, $t(445) = -1.73, p = .09$. At age 7 years, 356 families participated, including 21 families that did not participate in the 5-year assessment. Again, there were no significant differences between families who did and did not participate in terms of child gender, $\chi^2(1, N = 447) = 2.15, p = .16$; race, $\chi^2(3, N = 447) = 0.61, p = .90$; or 2-year externalizing T score, $t(445) = 1.43, p = .15$. Families with lower 2-year SES, $t(432) = -2.31, p < .05$, were less likely to continue participation at the 7-year assessment. At age 10 years, 357 families participated, including 31 families that did not participate in the 7-year assessment. No significant differences were noted between families who did and did not participate in terms of child gender, $\chi^2(1, N = 447) = 2.51, p = .11$; race, $\chi^2(3, N = 447) = 3.95, p = .27$; 2-year SES, $t(432) = 0.22, p = .83$; or 2-year externalizing T -score, $t(445) = -0.56, p = .58$.

In the current study, we analyzed a sample that included 336 children (157 boys, 179 girls) with data for all independent variables as well as the demographic variables utilized as covariates in the model. The ethnic background of the sample was 65% European American, 30% African American, and 5% other. Families were economically diverse based on Hollingshead (1975) scores at the 5-year assessment ($M = 43.02$, $SD = 10.45$).

Procedures

Children and their mothers participated in an ongoing longitudinal study beginning when the children were 2 years old. The current analyses include data collected when children were 5, 7, and 10. Consent from mothers and assent from youths were obtained before their participation in the study. At each laboratory visit, mothers completed questionnaires regarding family demographics, their own parenting, and their child's functioning. At the 7- and 10-year visits, children also answered questionnaires, which were read aloud by an experimenter. For this study, we also utilized data collected from kindergarten and second-grade teachers regarding children's behavior. Mothers and teachers were compensated for their time with gift cards. Children received small gifts for their participation.

Measures

Maternal emotion socialization—When children were 5 years old, mothers completed the Coping with Children's Negative Emotions Scale (CCNES; Fabes, Eisenberg, & Bernzweig, 1990), which is designed to assess the ways in which mothers respond to their children's emotional distress. Mothers are provided with 12 scenarios in which their child experiences a negative emotion (e.g., angry or sad) and are asked to indicate the likelihood they would respond in ways listed for each item. Mothers are asked the likelihood of responding in a minimizing, punishing, dismissing, problem-focused, emotion-focused, or expressive way. Each response is rated on a 7-point scale ranging from 1 (*very unlikely*) to 7 (*highly likely*). This measure yields six subscales: Distress Reactions, Punitive Responses, Minimization Reactions, Expressive Encouragement, Emotion-Focused Reactions, and Problem-Focused Reactions. Higher scores in each subscale indicate more frequent use of that particular response. Following previous research, we calculated two aggregates, supportive and nonsupportive reactions, by averaging the items from the subscales (Denham & Kochanoff, 2002). Nonsupportive reactions include the Minimizing, Punitive, and Distress Reaction subscales, while supportive reactions include the Encouraging, Emotion-Focused, and Problem-Focused Reaction subscales. In this sample, there was high internal reliability for both subscales (supportive $\alpha = .88$; nonsupportive $\alpha = .83$).

Emotion regulation—Mothers and teachers completed the Emotion Regulation Checklist (Shields & Cicchetti, 1997). Mothers completed the measure when their children were 5 and again when they were 7; kindergarten teachers completed the measure, as did second-grade teachers. This measure assesses reporters' perception of the child's emotionality and regulation and includes 23 items rated on a 4-point Likert scale indicating how frequently the behaviors occur (from 1 = *almost always* to 4 = *never*). The Emotion Regulation subscale includes eight items that assess aspects of emotion understanding and display, while the Lability/Negativity subscale assesses negative affect, dysregulation of emotion, and emotion intensity. In the current study, we focused on emotion regulation and therefore

utilized only the Emotion Regulation subscale, which contains items such as “Displays appropriate negative affect in response to hostile, aggressive, or intrusive play” and “Can say when he or she is sad, angry, mad, fearful, or afraid.” We utilized mean composites of mothers’ and teachers’ reports at ages 5 and 7, which were positively correlated at both time points (5-year: $r = .23, p < .01$; 7-year: $r = .26, p < .001$) and had adequate internal reliability at both ages ($\alpha = .74$, and $\alpha = .78$, respectively). This composite across two informants was chosen in order to capture a measure that encompassed children’s emotion regulation across the two primary contexts in which friendships are maintained—at school and at home. At each age, more mother reports were obtained than teacher reports. We conservatively chose to create these composites utilizing listwise deletion to ensure that the measure reflected both mothers’ and teachers’ perceptions of children’s emotion regulation.

Friendship quality—At ages 7 and 10, children completed the Friendship Quality Questionnaire (FQQ; Parker & Asher, 1993) to assess their perceptions of their closest friendship. This 40-item measure includes items such as “Always tell each other our problems” and “Makes me feel good about my ideas,” rated on a 5-point Likert scale (from 0 = *not at all* to 4 = *always*). The FQQ contains five subscales of positive friendship quality including Caring/Validation, Companionship/Recreation, Intimate Disclosure, Conflict Resolution, and Help/Guidance. These subscales were used to create mean composites of positive friendship quality (33 items, $\alpha = .92$). The single negative subscale of the FQQ, Conflict and Betrayal, was used to represent negative friendship quality (seven items, $\alpha = .74$) and included items such as “This friend and I fight a lot.” Reports of positive and negative friendship quality at age 7 were utilized as controls in the model.

Covariates—Mothers provided demographic information at each visit. We utilized mothers’ reports of their own educational attainment when children were age 5 on a 5-point Likert scale (from 1 = *some high school* to 5 = *advanced degree*). Mothers also indicated child gender (1 = *boy*, 2 = *girl*). Table 1 displays the correlations among the model variables.

Results

We conducted a path analysis to examine the associations between maternal emotion socialization and children’s perceived friendship quality through children’s emotion regulation utilizing Mplus (Version 7; Muthén & Muthén, 2012). The model included missing data due to attrition after the 5-year wave of data collection and limited teacher participation; however, there was adequate covariance coverage with a range from .49 to 1.0. We utilized full information maximum likelihood to address this missingness. The model controlled for child gender, maternal education, emotion regulation at age 5, and friendship quality at age 7.

The hypothesized model fit well, $\chi^2(17, N = 336) = 26.31, p = .07$, comparative fit index (CFI) = .96, root-mean-square error of approximation (RMSEA) = .04, confidence interval (CI) [.01, .07]. As expected, direct paths from supportive and nonsupportive emotion socialization to positive ($\beta = .09, p = .10$; $\beta = -.08, p = .19$) and negative ($\beta = .02, p = .77$; $\beta = .07, p = .26$) friendship quality were not significant, and removing these direct paths from

the model did not significantly change model fit, $\chi^2(4, N = 336) = 5.50, p = .20$. Therefore we interpreted the model, shown in Figure 1, in which these paths were dropped. This model fit well, $\chi^2(21, N = 336) = 32.07, p = .06$, CFI = .95, RMSEA = .04, CI [.00, .07] (standardized coefficients are presented in Figure 1; unstandardized coefficients and confidence intervals are presented in Table 2). Mothers' supportive emotion socialization at age 5 was positively associated with child emotion regulation at age 7 and nonsupportive emotion socialization at age 5 was negatively associated with emotion regulation at age 7, when controlling for emotion regulation at age 5. Emotion regulation, in turn, was associated with children's positive as well as negative friendship quality 3 years later at age 10, after controlling for earlier friendship quality. These results indicated that mothers' supportive and nonsupportive emotion socialization independently predicted changes in children's emotion regulation, and these changes then predicted changes in children's friendship quality, both positive and negative.

In order to test the indirect pathways leading to 10-year perceived friendship quality, we conducted tests of the indirect effects in the model using a bias-corrected bootstrapping procedure (10,000 draws). This approach has been shown to generate the most accurate CIs for indirect effects, reducing Type 1 error rates and increasing power over other similar tests (MacKinnon, Lockwood, & Williams, 2003). All four hypothesized indirect paths were significant (Table 2), indicating that supportive and nonsupportive emotion socialization predicted later changes in friendship quality via changes in emotion regulation.

Results suggested that the path from supportive emotion socialization to emotion regulation might be stronger than the path from nonsupportive emotion socialization to emotion regulation. Therefore, we further explored the model by testing a model that held these two paths equivalent. The model was on the lower bounds of adequate fit, $\chi^2(22, N = 336) = 41.15, p = .00$, CFI = .91, RMSEA = .06, CI [.03, .08], and fit significantly worse than the original model that allowed these parameters to vary, $\chi^2(1, N = 336) = 9.34, p = .00$. This test supported the fact that the paths were significantly different. To further support this examination of difference in path strength, we conducted a Wald chi-square test of parameter constraints, which was significant, $\chi^2(1, N = 336) = 9.54, p = .00$, indicating that the path from supportive emotion socialization to emotion regulation was indeed stronger than the path from nonsupportive emotion socialization to emotion regulation.

Similarly, we examined whether the associations between emotion regulation and friendship quality were equivalent for positive and negative friendship quality. When the direct paths from emotion regulation to positive friendship quality and emotion regulation to negative friendship quality were constrained to be equal, the model was on the lower bounds of adequate fit, $\chi^2(22, N = 336) = 43.45, p = .00$, CFI = .90, RMSEA = .05, CI [.03, .08], and was a significantly poorer fit than the model that allowed these paths to vary, $\chi^2(1, N = 336) = 11.64, p = .00$. In addition, the Wald chi-square test of the difference between the two parameters was significant, $\chi^2(1, N = 336) = 12.20, p = .00$. Together these tests indicated that the path from emotion regulation to positive friendship quality was significantly stronger than the path from emotion regulation to negative friendship quality, suggesting that children's changes in emotion regulation were a stronger predictor of changes in positive friendship quality than negative friendship quality.

We followed up our analyses with an examination of the ways that our model may differ by child gender. We began these multiple group path analyses with a fully unconstrained model, allowing all parameters to vary by child gender, $\chi^2(38, N = 336) = 47.89, p = .13$, CFI = .94, RMSEA = .04. Next, we constrained model paths to be equal across the two groups, $\chi^2(42, N = 336) = 49.22, p = .21$, CFI = .96, RMSEA = .03, which did not differ significantly from the unconstrained model, $\chi^2(4, N = 336) = 1.33, p = .86$. Thus, this model worked in similar ways for boys and girls.

Due to the sampling procedures of this study, we also tested whether the model differed by cohort. A fully unconstrained model was estimated, $\chi^2(63, N = 336) = 104.92, p = .00$, CFI = .86, RMSEA = .08, and compared with a model in which paths were constrained to be equal across the three cohorts, $\chi^2(71, N = 336) = 111.89, p = .00$, CFI = .86, RMSEA = .07. The chi-square difference test was not significant, $\chi^2(8, N = 336) = 6.97, p = .54$, indicating that constraining the cohorts to equality did not significantly reduce the fit of the model. We also conducted similar analyses to consider the effects of initially oversampling for high externalizing scores. Children were grouped into those above the clinical cutoff of 60 and those below the cutoff when they were 2-years old. The fully unconstrained model fit well, $\chi^2(42, N = 336) = 56.45, p = .07$, CFI = .94, RMSEA = .05; however, constraining the model paths to be equal across the two groups did not significantly change the fit of the model, $\chi^2(46, N = 336) = 61.67, p = .06$, CFI = .93, RMSEA = .05, $\chi^2(4, N = 336) = 5.22, p = .27$. Together, these analyses provide evidence that the final model did not vary by subgroups within the sample.

Discussion

Guided by theoretical hypotheses and empirical findings drawn from early childhood research, the current study contributes to the growing body of literature connecting emotional and social development in middle childhood. Recently, a comprehensive review of the friendship literature noted that there are currently far more questions than answers regarding the role of emotional competence in friendships (Bagwell & Schmidt, 2011). In this study, we aimed to fill this gap by examining a longitudinal process model of emotional and social development across middle childhood in which maternal emotion socialization is associated with children's later friendship quality through children's emotion regulation. Findings suggest meaningful connections between emotion development processes early in middle childhood and the quality of children's friendships at the culmination of middle childhood.

Consistent with previous research, we found that mothers' emotion socialization practices play a role in the development of children's emotional regulation in middle childhood. As with studies that have examined this association in early childhood (Eisenberg, Fabes, Schaller, & Carlo, 1991), our findings suggest that children who received higher levels of supportive emotion socialization from mothers at the outset of middle childhood demonstrated higher levels of emotion regulation 2 years later, above and beyond earlier levels of emotion regulation. Supportive socialization includes accepting children's negative emotional displays, validating negative emotional states, and helping children cope with their negative emotions by focusing on reconciling the problem that caused them distress.

Therefore, mothers who provide this kind of support likely make it possible for children to practice ways in which they can reduce arousal with caregiver assistance, resulting in increased regulation when encountering emotionally charged situations independently. Similarly, children who received more nonsupportive emotion socialization at age 5 were reported to have lower levels of emotional regulation at age 7. Minimizing children's distress reactions and punishing negative emotional displays give children fewer opportunities to practice emotional control and learn appropriate strategies to deal with high negative arousal, resulting in lower self-regulatory abilities.

Both supportive and nonsupportive emotion socialization by mothers contributed uniquely to the development of children's emotion regulation. However, supportive emotion socialization had a stronger association with the changes in children's emotion regulation than nonsupportive socialization. This finding suggests that mothers' strategies of coping with children's negative emotions in an encouraging manner, focusing on assisting children with the positive management of their emotions, contribute actively to the development of children's emotion regulation during middle childhood, whereas punitive or minimization strategies play a lesser role. We focused exclusively on mothers' emotion socialization in this study, but future research should consider whether fathers' strategies of socializing emotion result in similar outcomes.

In addition, we found that children's emotion regulation at age 7, after controlling for emotion regulation at age 5, predicted their positive and negative friendship quality 3 years later at age 10. The possibility of experiencing negative interactions with friends is likely to be increased when children are not able to effectively manage their emotions of frustration and anger in interpersonal settings. Interestingly, though, our results indicate that changes in children's emotion regulation have a greater association with changes in positive friendship quality than negative friendship quality. Children who are high in emotion regulation may experience more positive friendship quality for a number of reasons. Emotions are not solely intrapersonal experiences; they are also intrinsically interpersonal because emotions are often expressed, and these expressions commonly occur within the context of relationships (Reis & Collins, 2004). The emotions of an individual are felt by that individual, but they may also trigger a cyclical process involving emotional expression and social interaction. Individuals' emotions are often expressed to observers, who then use those expressions to infer the emotions of the individual and may react based on these inferences, which can then alter the emotional state of the individual who initiated the cycle. In this way, emotions and social interactions are highly interrelated (Van Kleef, 2009). Therefore, as children develop more advanced emotion regulation skills, they are more likely to have friendships high in positive quality because they are better able to express their emotions effectively and also better able to interpret others' emotional expressions and respond appropriately. These skills aid children as they are initiating and maintaining intimate friendships based on affective reciprocity, relational commitment, and mutual influence. Conversely, children who are low in emotional regulation are likely to have difficulty expressing their emotions in ways that lead to positive interactions with friends (Saarni, 1999). For example, children who have difficulty regulating negative emotions are likely to struggle with games that include an element of competition due to their inability to respond appropriately when faced with strong negative emotions associated with losing, such as disappointment or embarrassment.

Similarly, children who have difficulty regulating positive emotions such as excitement are likely to struggle with positive relational interactions such as self-disclosure when a friend reveals interesting, but private, information. Such children may be overwhelmed by their own excitement and thus fail to recognize that the information was intended to be kept a secret; thereby putting themselves at risk of betraying a friend's trust.

It should be noted that due to the inherently dyadic nature of friendship, there are always two individuals who contribute to a friendship. Therefore, the emotion regulation abilities of both members of the dyad are likely critical to predicting the quality of friendships. Future research should consider the dyadic effects on the associations between emotion regulation and friendship quality, as well as the dyadic effects on the indirect associations between emotion socialization and friendship quality. It may be that there are additive or buffering effects when the emotion regulation of both friends is considered.

Moving beyond the direct effects found in the current study, the indirect effects linking emotion socialization practices to friendship quality have interesting implications for the ways in which emotional development processes translate to relational contexts. There is a vast body of literature linking parenting practices to children's peer interactions, and yet relatively few studies have attempted to examine the mechanisms within this link. Several researchers have suggested that components of emotional competence may be primary mechanisms in explaining this association (Contreras & Kerns, 2000; O'Neil & Parke, 2000). This study provides further support for that hypothesis and extends it by focusing specifically on friendships rather than generalized peer interactions.

From a developmental perspective, the findings of this study add to the current knowledge of emotional and social development processes in middle childhood. Middle childhood has often been regarded as a time of stability, a developmental period in which few critical transitions occur, and this has been suggested as one of the likely reasons middle childhood is often neglected in the developmental literature (Huston & Ripke, 2006). This study adds to a growing body of research suggesting that in fact there are important processes occurring during this developmental period. This matters because it means that there is still room for individuals to change beyond early childhood; also, there is evidence that individuals' competence with peers in middle childhood can be a better predictor of adolescent and adult outcomes than social competence in early childhood (Collins & van Dulmen, 2006).

Strengths and Limitations

It was our aim to examine a longitudinal process model based on theoretical foundations from emotional and social developmental origins; however, certain limitations should be recognized in the interpretation of these results. This study examines a finite set of paths by which emotional development relates to later friendship quality throughout middle childhood. It is likely that other components of emotional competence, such as emotion knowledge or emotion understanding, may have unique contributions to the development of positive friendships. Additionally, 10 years old is the age at which friendships are just beginning to take on the intimate features of mature friendship, which made it an excellent age at which to examine predictors of this emergence. However, future research should consider in what ways the findings of this study extend into adolescence, when friendships

are more mature and reach their peak in salience to individuals' daily lives (Bagwell & Schmidt, 2011). Finally, the effect sizes in the model are relatively small, particularly for negative friendship quality, suggesting this model provides evidence for one piece of a complex process leading to the quality of children's friendships.

The initial sampling strategy of this study, which was designed to oversample for externalizing behaviors and resulted in somewhat different levels of externalizing by cohort, created the possibility of selection bias as a threat to the validity and generalizability of our findings (Shadish, Cook, & Campbell, 2002). We expected our model to apply across all the children in the sample and tested this assumption empirically by examining cohort and early externalizing behavior as moderators of the final model. The results supported our expectation, showing invariance across subgroups, and therefore provide some limited evidence in support of the generalizability of our findings.

This study highlights the importance of moving social development research toward further examination of the intersections of social and emotional development processes, particularly in middle childhood. Interpersonal relationships are inherently emotion-laden, and positive relationships require individual competence in recognizing, managing, and expressing these emotions in ways that benefit the individual and the relationship. In addition, mothers are important socialization agents in developing these complex intra- and interpersonal skills, and the effects of this socialization indirectly influence social outcomes well into middle childhood.

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Figure 1.

Standardized estimates for the indirect effects model predicting friendship quality. Italicized wording delineates variables included for the purposes of controlling for previous levels. The analyzed model also includes child gender and maternal education as covariates and within-time correlation among variables, including covariates. These are not displayed for the sake of parsimony. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 1

Descriptive Statistics and Correlations Among Model Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Supportive emotion socialization (age 5)	—									
2. Nonsupportive emotion socialization (age 5)	.08	—								
3. Emotion regulation (age 5)	.07	-.19**	—							
4. Emotion regulation (age 7)	.18**	-.19**	.49***	—						
5. Positive friendship quality (age 7)	-.06	-.04	.06	.01	—					
6. Negative friendship quality (age 7)	.15*	.13*	.02	-.02	-.23***	—				
7. Positive friendship quality (age 10)	.09	-.12*	.22***	.27**	.30***	-.08	—			
8. Negative friendship quality (age 10)	.01	.14*	.00	-.18*	-.00	.11	-.39***	—		
9. Child gender (1 = boys, 2 = girls)	-.04	-.07	.19**	.08	.27**	.03	.30***	.00	—	
10. Maternal education	.04	-.04	.01	.14*	-.02	.02	-.00	-.14*	-.03	—
Mean	5.46	2.66	3.26	3.32	2.33	.93	3.00	.97	1.53	3.57
Standard deviation	0.62	0.56	0.30	0.32	0.66	0.68	0.57	0.36	0.50	0.91
N	336	336	215	245	234	233	264	263	399	336

*
 $p < .05$.**
 $p < .01$.***
 $p < .001$.

Table 2

Unstandardized Model Estimates and 95% Bias-Corrected Bootstrap Confidence Intervals

Variable	Estimate	Confidence interval	
		Lower	Upper
Intercepts			
Supportive emotion socialization (age 5)	5.36		
Nonsupportive emotion socialization (age 5)	2.75		
Emotion regulation (age 5)	3.06		
Emotion regulation (age 7)	1.50		
Positive friendship quality (age 7)	1.78		
Negative friendship quality (age 7)	0.89		
Positive friendship quality (age 10)	0.80		
Negative friendship quality (age 10)	1.48		
Covariances			
Supportive emotion socialization (age 5) ↔Nonsupportive emotion socialization (age 5)	0.03	−.012	.069
Supportive emotion socialization (age 5) ↔Emotion regulation (age 5)	0.01	−.009	.034
Nonsupportive emotion socialization ↔Emotion regulation (age 5)	−0.03	−.057	−.009
Emotion regulation (age 7) ↔Positive friendship quality (age 7)	0.01	−.024	.003
Emotion regulation (age 7) ↔Negative friendship quality (age 7)	−0.01	−.043	.014
Positive friendship quality (age 7) ↔Negative friendship quality (age 7)	−0.11	−.182	−.050
Positive friendship quality (age 10) ↔Negative friendship quality (age 10)	−0.07	−.097	−.050
Stability paths			
Emotion regulation (age 5) → Emotion regulation (age 7)	0.49	.321	.630
Positive friendship quality (age 7) → Positive friendship quality (age 10)	0.22	.098	.334
Negative friendship quality (age 7) → Negative friendship quality (age 10)	0.05	−.020	.118
Focal direct paths			
Supportive emotion socialization → Emotional regulation	0.08	.010	.139
Nonsupportive emotion socialization → Emotional regulation	−0.07	−.137	−.003
Emotional regulation → Positive friendship quality	0.38	.153	.608
Emotional regulation → Negative friendship quality	−0.17	−.334	−.009
Indirect paths			
Supportive emotion socialization → Emotional regulation → Positive friendship quality	0.03	.004	.072
Nonsupportive emotion socialization → Emotional regulation → Positive friendship quality	−0.03	−.070	−.003
Supportive emotion socialization → Emotional regulation → Negative friendship quality	−0.02	−.037	−.001
Nonsupportive emotion socialization → Emotional regulation → Negative friendship quality	0.02	.001	.036