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Child Characteristics, Parenting Stress, and Parental Involvement: Fathers Versus Mothers

This study examined variations in the relationships among child characteristics, parenting stress, and parental involvement. Participants were 100 two-parent families with preschool-aged children. Self-report and interview data were collected to measure parental involvement, as well as perceptions of child temperament and parental stress. Analyses revealed significant, yet somewhat different, associations between child temperament and parental stress for mothers and fathers. More significant associations were found between perceptions of child temperament and involvement for fathers than for mothers. The associations between child temperament and parental stress and involvement differed on the basis of child and parent gender. Results are discussed in terms of future research on father involvement, as well as programs designed to encourage fathers to assume more active parental roles.

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Key Words: child temperament, father involvement, parenting stress, sociability.

During the 1990s, researchers, policy makers, and practitioners witnessed a resurgence of interest in the roles of fathers and the concept of contemporary fatherhood (Marsiglio, Amato, Day, & Lamb, 2000). Evidence of this renewed interest can be seen in the increased number of books, special issues of scholarly journals, and magazine articles aimed at parents that were devoted to this topic (e.g., Booth & Crouter, 1998; "Fathers," 1993; Laliberte, 2002). Ideals of fatherhood appear to be changing, as there is an increasing call for fathers to become true coparents (Pleck & Pleck, 1997). However, although father involvement has evidenced small increases over the last several decades, fathers continue to spend significantly less time than mothers caring for children (Pleck, 1997). As this area of inquiry continues to grow, mounting evidence highlights the positive effects of father involvement on children (Amato, 1998; Lamb, 1997).

CONCEPTUALIZATION OF FATHER INVOLVEMENT

This increased attention to fathers has raised questions about the ways in which fathers are involved in their children's lives and why some fathers choose to be more involved than others. One way to conceptualize father involvement is by using the multidimensional Lamb model (Lamb, Pleck, Charnov, & Levine, 1987). This model conceptualizes parental involvement as consisting of

three distinct categories: (a) *interaction* (parent interacting with child in one-on-one activities such as playing with him or her, feeding him or her, etc.); (b) *accessibility* (parent is physically and psychologically available to child); and (c) *responsibility* (parent assumes responsibility for welfare and care of child—e.g., making child care arrangements, knowing when the child needs to go to the pediatrician, etc.).

Although this conceptualization has emerged in recent years as the basis for much of the research on father involvement, it should not be treated as an exhaustive accounting of all the ways that fathers can be involved with their children. Others have examined a wider range of facets of father involvement such as cognitive and affective aspects (Palkovitz, 1997) and have examined fathering behavior from generative fathering (Dollahite, Hawkins, & Brotherson, 1997); social constructionist (Marsiglio et al., 2000); and social capital perspectives (Amato, 1998). In addition, there has been a recent call for increased attention to the quality of fathers' involvement with their children as well as the quantity of involvement within the father-involvement literature (Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000; Hawkins & Dollahite, 1997). However, a thorough understanding of the effects of father involvement on children and the family system necessitates an understanding of quantity as well as quality aspects. In addition, the fact remains that most fathers still fall short of the contemporary fatherhood ideal of father as coparent. The Lamb et al. (1987) conceptualization provides a useful way to examine aspects of father involvement that are crucial for understanding why some fathers choose to take a more active role in raising their children, whereas others approach parenting from more traditional perspectives on fatherhood (e.g., financial provider, support for the mother, etc.; see Lamb, 2000). This is the focus of the present study.

Predictors of Father Involvement

Belsky's (1984) process model of parenting has been a central component of many research efforts aimed at identifying influences on father involvement (McBride & Rane, 1998). From this perspective, paternal behaviors are shaped by three categories of influences: (a) characteristics of the father (e.g., personality, attitudes toward childrearing); (b) characteristics of the child (e.g., temperament, age, gender); and (c) contextual sources of stress and support (e.g., marital relationships, social support networks, occupational experience). This perspective has led investigators to examine the relationship between paternal involvement and such factors as men's attitudes toward the paternal role (McBride & Rane, 1997; Perry-Jenkins & Crouter, 1990); child's age (DeLuccie & Davis, 1991) and gender (Marsiglio, 1995); job-related stress factors (Grimm-Thomas & Perry-Jenkins, 1994); perceptions of marital quality (Belsky, Youngblade, Rovine, & Volling, 1991); and perceptions of shared parenting and parental alliance (McBride & Rane, 1998). As researchers attempt to identify those factors that encourage men to become more actively involved in childrearing, one piece of Belsky's model that has received little attention is the role of child characteristics in influencing paternal behavior.

Child Temperament and Parent-Child Relationships

Most of the research examining the relationship between child characteristics and parental behaviors has focused on child temperament, or biologically based individual differences in reactivity and self-regulation (Rothbart & Bates, 1998). Researchers have long been aware of the potential influences of temperament on parenting (e.g., Bell, 1968), and temperament has been implicated as having both direct (e.g., Scarr & McCartney, 1983) and interactive effects on parent-child relationships (e.g., Mangelsdorf, Gunnar, Kestenbaum, Lang, & Andreas, 1990). Although investigations of the influence of temperament on parenting have included a variety of temperamental characteristics, the focus has largely been on three aspects of temperament: difficult temperament, activity level, and sociability, which are analogous to the three temperament factors emotionality, activity, and sociability proposed by Buss and Plomin (1984).

Researchers have given the most attention by far to the construct of difficult temperament (Clark, Kochanska, & Ready, 2000), which describes children with irregular biological functioning, low adaptability, high-intensity affect, and negative mood (Rothbart & Bates, 1998). Subsequent research has shown difficult temperament to be related to less positive maternal behaviors such as lower maternal responsiveness and less teaching effort (Campbell, 1979; Maccoby, Snow, & Jacklin, 1984). More recent investigations have focused on complex goodness-of-fit associations

between difficult temperament and the mother-child relationship (e.g., Clark et al., 2000; Mangelsdorf et al., 1990).

Activity level, which describes individual differences in the general energy level and frequency of movement in children, has also received research attention in terms of its potential influence on parent-child relationships. Like difficult temperament, high activity level has also been linked to less positive mother-child relationships (Buss, 1981; Webster-Stratton & Eyberg, 1982). Interestingly, the Buss investigation was one of the first to examine how aspects of temperament are associated with father-child interaction. In this study, Buss found that the father-son dyad was an exception to the general trend of the findings, in that high activity was not associated with poorer father-son relationships.

Sociability is the third major aspect of temperament that has received substantial research attention; however, little of this research has focused on sociability in relation to parent-child relationships (e.g., Kagan, 1997). Sociability, or social inhibition, can be broadly defined as the extent to which children prefer the presence of others to being alone (Buss & Plomin, 1986), or more narrowly defined as children's responses (approach vs. withdrawal) to novel social situations (Presley & Martin, 1994). Some research on sociability has focused on positive associations between parent-child attachment security and children's sociability with strangers (e.g., Kromelow, Harding, & Touris, 1990; Lamb, Hwang, Frodi, & Frodi, 1982). The more traditional interpretation of these findings is that secure attachments allow children to feel more safe engaging in social interactions, but a plausible alternative interpretation is that more temperamentally sociable children may elicit more positive caretaking behaviors from parents and others in their environments (Buss & Plomin, 1986).

Child Temperament and Parenting Stress

Another important way in which child characteristics, especially temperament, may affect parents is through increased or decreased parenting stress. In a model of parenting stress analogous to Belsky's (1984) model of the determinants of parenting, Mash and Johnston (1990) proposed that child characteristics such as temperament have an influence on parent-child interactive stress. In support of this notion, research indicates that mothers of temperamentally difficult children report higher levels of parenting stress (Gelfand, Teti, & Radin Fox, 1992); more psychosocial problems including doubts about their parenting competence and feelings that parenting is restrictive (Sheeber & Johnson, 1992); and higher levels of depression (Cutrona & Troutman, 1986). There is also evidence that children on the extreme high end of the activity dimension may increase parenting stress for mothers (e.g., Mash & Johnston, 1983). To our knowledge, no published work exists regarding any potential relationship between child sociability and parenting stress.

Child Characteristics and Fathering Behavior

With the exception of the Buss (1981) study mentioned earlier, none of the aforementioned studies has directly examined the effects of child characteristics on father-child interaction, fathers' parenting stress, or any other aspects of fathers' involvement in their children's lives. Just because we know something about how child characteristics influence maternal behavior does not mean we can simply transfer this information to the father-child relationship and assume that temperament plays the same role, especially given the evidence for less culturally scripted and determined roles for fathers as compared to mothers (Parke, 2002).

More recently, there has been research on how child temperament affects fathers' parenting and father-child relationships. Sirignano and Lachman (1985) found that across the transition to parenthood, fathers of difficult infants experienced lowered feelings of control and efficacy, whereas fathers of easy infants experienced an increased sense of control. Volling and Belsky (1991) found that fathers were observed to be less affectionate and responsive with 9-month-olds perceived as more difficult by mothers. Interestingly, their findings also indicated that more responsible fathers had more difficult infants at 3 months as rated by mothers. In contrast, two subsequent studies of the relationship between infant temperament and father-child interaction and observed involvement found no effects of infant positive versus negative emotionality on aspects of fathering (Jain, Belsky, & Crnic, 1996; Woodworth, Belsky, & Crnic, 1996). In examining the father-child attachment relationship, Volling and Belsky (1992) found that mothers rated those infants securely attached to their fathers at 13 months as more difficult at 3 months, although this difference disappeared over time. However, Belsky (1996) found that infant

temperament did not distinguish secure from insecure infant-father attachments.

Another child characteristic that has received some attention in relation to fathering behavior is child gender. Although the general conclusion drawn from studies considering the association between child gender and paternal involvement is that fathers are more involved with sons than with daughters (Lamb, 2000; Pleck, 1997), other studies have found no differences in paternal involvement on the basis of child gender (e.g., Marsiglio, 1991; Palkovitz, 1984). One reason that this association remains unclear may be that child gender influences fathering behavior in combination with other child characteristics such as temperament (e.g., Buss, 1981).

Among the few studies that have examined associations between child temperament and fathering behavior, it is striking to note that with the exception of Belsky (1996), none of the above studies examined how fathers' perceptions of child temperament are associated with aspects of fathers' parenting, father-child relationships, or father involvement. Relying on mothers' perceptions of temperament to predict fathering behavior ignores the fact that the mother-child and father-child relationships can be viewed as different developmental contexts, with children actually behaving differently with mothers versus fathers (Buur, Mangelsdorf, Friedman, & Frosch, 1999; Mangelsdorf, Schoppe, & Buur, 2000). Furthermore, the research to date on child temperament and fathering behavior has focused almost exclusively on difficult temperament, thereby ignoring the potential influences of other aspects of temperament such as activity level and sociability.

The Present Study

Interestingly, research that has focused on child temperament and fathering behavior has exclusively attended to quality dimensions of paternal behavior such as responsiveness and affection. In these investigations, a certain quantity of involvement is assumed, much as it always has been assumed for mothers. This is strikingly different from the focus within the father-involvement literature on more quantitative measures of involvement, which has only recently been challenged (Cabrera et al., 2000; Hawkins & Dollahite, 1997). This investigation is a first step in bridging a gap between the developmental and father involvement literature in examining the influence of child characteristics on the quantity of parental involvement for both fathers and mothers.

At present, it is clear that the small amount of research examining how child characteristics are associated with fathering behavior has not provided a clear picture of the nature of these associations. Thus the purpose of the present study was to examine the associations between mothers' and fathers' perceptions of their children's temperament, the amount of stress they experience from their parental roles, and the amount of involvement they have in childrearing activities. The following three research questions were used to guide data collection: (a) What is the relationship between parents' perceptions of child temperament and parenting stress, and do these associations differ for mothers and fathers? (b) What is the relationship between parents' perceptions of child temperament and participation in childrearing activities, and do these associations differ for mothers and fathers? and (c) Does child gender play an independent or interactive role with child temperament in relation to parenting stress and involvement?

Method

Participants

Participants for this study were 100 predominantly White, middle-class families from two Midwestern communities. Participants were recruited through fliers placed in local community agencies, newspapers, day care centers, and grocery stores. Criteria for inclusion in the study were the following: age of the oldest child was between 3 and 5 years, both biological parents were living in the home with the target child, and the family was willing to have an assistant visit the home to conduct a 2-hour interview.

Mean ages for the fathers, mothers, and children were 32.8 years, 31.2 years, and 47.6 months, respectively. Fifty-two of the target children were boys and 48 were girls. Thirty-seven percent of the participating families had one child, 58% had two children, and 5% had three. Thirteen percent of the families had combined incomes of less than $15,000, 16% had incomes between $15,000 and $25,000, 28% had incomes between $25,000 and $40,000, and 43% had incomes greater than $40,000. The median education level was 16 years for fathers and 15 years for mothers. All 100 fathers and 70 of the mothers were employed outside the home.

Procedure

A combination of self-report and interview data was collected for this study. A series of questionnaires was used to collect information on parental responsibility forms of involvement in addition to perceptions of parental stress and child temperament. A time diary interview protocol was used to measure interaction and accessibility forms of involvement. An initial telephone screening was conducted with respondents to ensure that families met the criteria for inclusion in the study and to explain expectations for participation. Upon agreeing to participate, subjects were scheduled for a home visit by a research assistant. During this visit, (a) the mother was interviewed while the father completed the questionnaires, and (b) the father was interviewed while the mother completed the questionnaires. The completion of interviews and questionnaires by mothers and fathers was counterbalanced to prevent an order effect.

Measures

Involvement variables. The Interaction/Accessibility Time Diary interview protocol (McBride & Mills, 1993) was used to measure interaction and accessibility forms of involvement. Data were collected during these interviews, with each parent individually using a forced-recall technique. Data were collected for the most recent workday and nonworkday prior to the interview. For the target days, each parent was asked to recount their activities in great detail from the time they woke up in the morning until the time they went to sleep at night, including information not only about the activities they were engaged in, but also who was engaged in these activities with them or otherwise present. Parents were not aware that the researchers were most interested in the amount of time each parent was involved with the target child. For those parents who were not employed outside the home, nonworkday data were collected on days that matched their partners' most recent nonworkdays. This approach was used because of previous research indicating that single-earner families adjust their daily routines on days when the employed parent is not at work.

All interviews were audiotaped and later analyzed. Data collected were categorized as (a) interaction, (b) accessibility, or (c) no involvement at all. The final interaction score was the total number of minutes the parent interacted with the child on the workday and nonworkday combined. An accessibility total score was computed in a similar fashion. By definition, interaction forms of involvement were coded as accessibility as well (i.e., you must be accessible to your child to interact with them). Pairwise reliabilities were computed on data collected from 15 of the families. Levels of agreement for each of the coding categories ranged from 81% to 95%.

An adapted version of the Parental Responsibility Scale developed by McBride and Mills (1993) was used to measure parental responsibility. This scale lists 14 common child care tasks in which parents of preschoolers typically participate (e.g., supervising the child's personal hygiene, making baby-sitting arrangements, selecting appropriate clothes for the child to wear, etc.). Each parent completed the instrument separately and designated who had primary responsibility for each task along a 5-point scale ranging from 1 (*mother almost always*) to 5 (*father almost always*). Responsibility was defined for the parents as remembering, planning, and scheduling the task. It was assumed that a parent could have responsibility for a task without actually performing it. The possible range of scores was 14 to 70, with higher scores representing greater paternal participation in this category of involvement. Internal consistency for this scale was moderate, with Cronbach alphas of 0.77 and 0.79 for mothers and fathers, respectively.

Z-scores were computed on the time diary interview data and responsibility scores. These *z*-scores were combined to provide composite measures of total mother involvement and total father involvement to be used in subsequent analyses.

Parental stress. The Parenting Stress Index—Short Form was used to assess the perceived stress mothers and fathers were experiencing as a result of their parental roles. This measure is a 36-item screening instrument designed to provide an indication of the overall level of parenting stress an individual is experiencing (Abidin, 1990). Items from this measure examine stressors associated specifically with the parental role and do not include stresses associated with other life roles and events. The Parenting Stress Index consists of three subscales. The Parental Distress subscale consists of 12 items that tap the distress parents experience in their roles as parents as a function of personal factors that are directly related to parenting (e.g., "Having a child has caused more

problems than I expected in my relationship with my spouse."). The Parent-Child Dysfunctional Interaction subscale consists of 12 items that focus on parents' perceptions that their children do not measure up to their expectations and that their interactions with their children are not reinforcing to them as parents (e.g., "My child rarely does things for me that make me feel good."). The Difficult Child subscale includes 12 items that focus on some of the basic behavioral characteristics of children that make them either easy or difficult to manage (e.g., "My child turned out to be more of a problem than I had expected."). Although characteristics on this subscale are often rooted in the temperament of the child, they also include learned patterns of defiant, noncompliant, and demanding behavior, thus distinguishing these items from assessments of temperament (Abidin, 1990). Parents respond to each of the items on the Parenting Stress Index along a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Items were reverse scored before creating the subscales and total scores, so higher scores reflect higher levels of parental stress. Internal consistency for the three subscales was relatively high, with Cronbach alphas ranging from 0.81 to 0.86 (M = 0.84).

Child temperament. The parent form of the Temperament Assessment Battery for Children was used to assess mothers' and fathers' perceptions of their child's temperament. This measure consists of 48 items describing behaviors of children as they occur in the home and is intended for use with children between 3 and 7 years of age (Martin, 1988). Parents respond to each item along a 7-point scale ranging from 1 (*hardly ever*) to 4 (*sometimes*) to 7 (*almost always*). Mothers and fathers completed separate versions of this measure because of previous research suggesting that child behavior may differ depending on the relationship context (Buur et al., 1999; Mangelsdorf et al., 2000). Furthermore, different persons, including mothers and fathers, can even view the same behavior in the same context and interpret it differently (Martin, 1988).

Six dimensions of temperament were measured using the Temperament Assessment Battery for Children: (a) activity (the tendency to engage in gross motor movement, particularly vigorous, fast movement); (b) adaptability (the ease and speed with which a child adjusts to new social situations); (c) approach/withdrawal (the tendency to approach versus withdraw from new social situations); (d) emotional intensity (the tendency to express emotions, particularly negative emotions); (e) distractibility (the ease with which a child could be distracted away from inappropriate behavior toward appropriate behavior by an adult caretaker); and (f) persistence (attention span and the tendency to continue attempting to solve a difficult learning or performance problem). Internal consistency was moderately high for the six subscales, with Cronbach alphas ranging from 0.55 to 0.88 (M = 0.69). Agreement between mothers and fathers on these six subscales ranged from $r(100)$ = 0.15 to 0.68 (M = 0.34).

These six subscales were originally developed to parallel the Thomas and Chess (1977) model of temperament, and were created on the basis of factor analytic work at the subscale level only (not at the item level) to build accumulated research in this area (Martin, 1988). Following the strategy proposed by Machida, Taylor, and Kim (2002) and others (e.g., Presley & Martin, 1994), an exploratory factor analysis using our own data was conducted to identify other possible dimensions of temperament not captured by the six presented in the original formulation. The factor analysis procedures were run separately with data from mothers and fathers. Similar to the Machida et al. (2002) findings, our principal components factor analysis yielded a two-factor solution, with the second factor reflecting sociability. Only items that loaded at 0.45 or greater on this sociability factor were included in the formation of a sociability subscale. The same 13 items loaded onto this subscale for both mothers and fathers, and were thus used in computing sociability for each target child. An example of a sociability subscale item is "My child is immediately friendly with and approaches unknown adults who visit our home." Internal consistency for the sociability subscale was high, with a Cronbach alpha of 0.81 for mothers, 0.83 for fathers, and 0.88 for mothers and fathers combined. A relatively high level of agreement between mothers and fathers on items comprising this subscale was also evident ($r[100]$ = 0.62, $p < .001$). This sociability factor is almost identical to the first factor identified by Presley and Martin (1994) in their analysis of Temperament Assessment Battery for Children data, which they called social inhibition. No clear patterns of relationships or themes could be identified in the 35 items loading onto the second factor.

For the purposes of this investigation, we focused on the newly computed sociability scale, as well as the original activity level and emotional

TABLE 1. CORRELATIONS BETWEEN TEMPERAMENT AND PARENTAL STRESS AND INVOLVEMENT FOR FATHERS AND MOTHERS

Temperament Dimensions	Difficult Child	Parent-Child Dysfunctional Interaction	Parental Distress	Total Stress	Accessibility	Responsibility	Interaction	Total Involvement
Fathers								
Activity level	0.24*	0.10	0.09	0.18	0.00	0.01	−0.05	−0.02
Emotional intensity	0.48**	0.32**	0.10	0.37**	−0.01	−0.22*	−0.05	−0.13
Sociability	−0.30**	−0.31**	−0.01	−0.25*	0.22*	0.20*	0.12	0.25*
Mothers								
Activity level	0.29**	0.12	0.18	0.25*	0.15	0.01	0.00	0.09
Emotional intensity	0.47**	0.34**	0.18	0.41**	−0.14	−0.01	−0.06	−0.11
Sociability	−0.01	0.04	−0.05	−0.02	0.11	0.04	−0.09	0.03

Note: $n = 100$.
$^*p < .05$. $^{**}p < .01$ (two-tailed).

intensity scales from the Temperament Assessment Battery for Children to measure fathers' and mothers' perceptions of child temperament. Examples of items from the activity level and emotional intensity scales are "When my child moves about in the house or outdoors, he/she runs rather than walks" and "My child cries and screams so hard he/she gets red in the face and short of breath," respectively. By using these three scales we felt that we could best tap the three major aspects of child temperament in the Buss and Plomin (1986) model, and best reflect aspects of temperament associated with parent-child relationships in previous research.

RESULTS

The results are presented in several sections. First, possible child gender differences in the measures of temperament were examined. Second, we examined the intercorrelations among the three aspects of child temperament (sociability, activity level, and emotional intensity); parenting stress; and parental involvement (interaction, accessibility, responsibility, and total involvement) separately for fathers and mothers. Third, a series of regressions were conducted to examine the contributions of child characteristics to parental stress and involvement for fathers and mothers separately.

Preliminary Analyses

Student's t tests revealed no significant child gender differences in the three aspects of temperament for fathers. However, mothers' temperament reports did reveal one gender difference: mothers of girls reported a lower level of emotional intensity in their children ($t(98) = 2.77$, $p < .01$) than did mothers of boys.

Intercorrelations among the three aspects of temperament and measures of parenting stress and involvement for fathers and mothers are presented in Table 1. For fathers, many associations between the temperament dimensions and aspects of parenting stress and involvement emerged as significant. For mothers, intercorrelations revealed some significant associations between aspects of temperament and different facets of parenting stress. In terms of maternal involvement, no significant associations were found between the three aspects of temperament and measures of interaction, accessibility, responsibility, and total involvement for mothers. These associations are explored further in subsequent analyses.

Regression Analyses

Next, regressions were conducted to examine the contributions of child characteristics (perceptions of child temperament, child gender) to parental stress and involvement for fathers and mothers separately. Before the regression equations were computed, all independent variables were centered according to procedures outlined by Aiken and West (1991). First, we examined regressions predicting parenting stress from the three aspects of temperament. Second, regressions predicting involvement (interaction, accessibility, responsibility, total) from the three aspects of temperament were inspected. For each regression analysis, maternal employment was entered first to control for this factor. Maternal employment is entered as a control variable in all regression analyses because

TABLE 2. SIGNIFICANT PREDICTORS

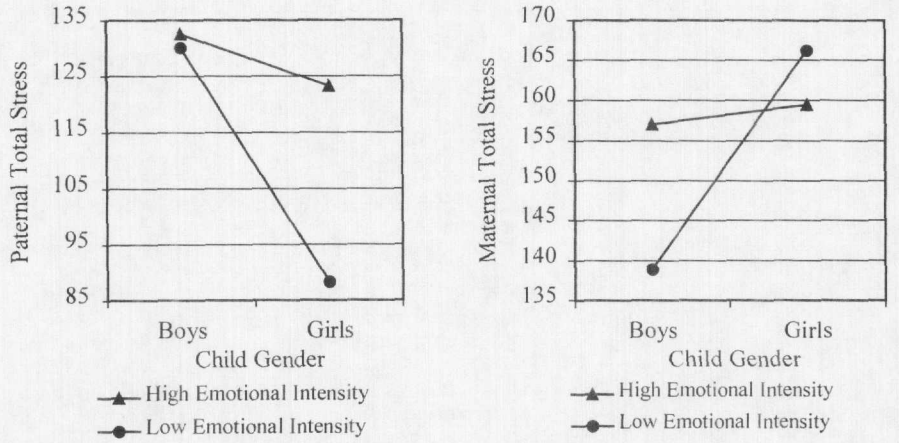
Dependent Variable	Fathers	Mothers
Parenting stress		
Total parenting stress	Emotional intensity × child gender	Activity level Emotional intensity × child gender
Difficult child	Child gender Emotional intensity	Child gender Activity level Emotional intensity
Parent-child dysfunctional interaction	Sociability Emotional intensity × child gender	Emotional intensity
Parental distress	Maternal employment	
Parental involvement		
Total involvement	Maternal employment Sociability × child gender	Maternal employment
Interaction	Sociability × child gender	Maternal employment Activity level × child gender
Accessibility	Sociability × child gender	Maternal employment
Responsibility	Maternal employment Sociability × child gender	Maternal employment

of the large body of research indicating that levels of maternal and paternal involvement are in part constrained by maternal employment (i.e., when mothers work more, fathers are more involved; Pleck, 1997). Similarly, we thought maternal employment could influence parenting stress (e.g., employed mothers could experience more or less parenting stress than nonemployed mothers), and thus controlled for this variable in analyses predicting parental stress. To best isolate the contributions of child temperament to parental stress and involvement, for the regressions predicting stress total involvement was also entered as a control variable (it is possible that more involved parents could experience more stress), and for regressions predicting involvement total parenting stress was entered as an additional control variable (it is possible, for example, that parenting stress could decrease involvement). In all equations child gender was entered next to investigate its individual importance for predicting parental stress and involvement, followed by the three aspects of child temperament (sociability, activity level, and emotional intensity) entered together as a block. Finally, two-way interactions between child gender and each aspect of temperament were also entered as a block to examine any combined effects of these variables. If a significant interaction was obtained, it was graphed according to procedures detailed in Aiken and West (1991). For ease of interpretation, the significant predictors for each equation are listed in Table 2.

Predicting parenting stress from child characteristics. Regressions predicting parenting stress using the three aspects of temperament and child gender were examined. First, equations predicting total stress were computed. For fathers, emotional intensity ($\beta = 0.30$, $p < .01$; $\Delta R^2_{adj} = 0.13$) and the emotional intensity × child gender interaction ($\beta = 1.09$, $p < .05$; $\Delta R^2_{adj} = 0.02$) were significant predictors of total stress. The significant emotional intensity × child gender interaction is depicted in Figure 1. This interaction indicates that fathers of less emotionally intense girls experienced lower levels of parenting stress relative to fathers of more emotionally intense girls. Emotional intensity was not linked to stress for fathers of boys. For mothers, activity level ($\beta = 0.22$, $p < .05$); emotional intensity ($\beta = 0.40$, $p < .01$; $\Delta R^2_{adj} = 0.18$ for both variables together); and the emotional intensity × child gender interaction ($\beta = -0.79$, $p < .05$; $\Delta R^2_{adj} = 0.01$) were significant predictors of total parenting stress. Overall, mothers who perceived their children as more active experienced more parenting stress. In contrast to the results for fathers, the emotional intensity × child gender interaction for mothers (see Figure 1) indicates that mothers of less emotionally intense boys experienced lower levels of parenting stress relative to mothers of more emotionally intense boys. Emotional intensity was not clearly linked to stress for mothers of girls.

Second, regressions predicting to the three parenting stress subscales (difficult child, parent-child dysfunctional interaction, and parental distress) were also examined. In predicting to difficult child, child gender ($\beta = -0.26$, $p < .01$; ΔR^2_{adj}

FIGURE 1. INTERACTIONS BETWEEN EMOTIONAL INTENSITY AND CHILD GENDER IN PREDICTING PATERNAL AND MATERNAL TOTAL STRESS



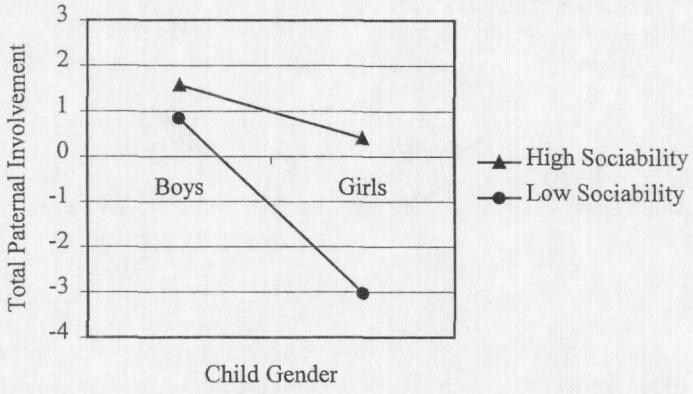
= 0.06) and emotional intensity ($\beta = 0.40$, $p < .01$; $\Delta R^2_{adj} = 0.22$) were significant predictors for fathers. Thus fathers of boys and fathers who perceived their children as emotionally intense reported that their children exhibited more difficult behaviors. For mothers, child gender ($\beta = -0.25$, $p < .05$; $\Delta R^2_{adj} = 0.06$); activity Level ($\beta = 0.24$, $p < .01$); and emotional intensity ($\beta = 0.42$, $p < .01$; $\Delta R^2_{adj} = 0.21$ for both temperament variables together) predicted difficult child scores, such that mothers of boys and mothers who perceived their children as active or emotionally intense reported that their children exhibited more difficult behaviors.

In predicting to parent-child dysfunctional interaction, sociability ($\beta = -0.27$, $p < .01$); emotional intensity ($\beta = 0.27$, $p < .01$; $\Delta R^2_{adj} = 0.15$ for both variables together); and the emotional intensity × child gender interaction ($\beta = 1.46$, $p < .01$; $\Delta R^2_{adj} = 0.06$) were significant predictors for fathers. Thus fathers reported less stress overall from negative interactions with their children when they perceived their children as more sociable. Resembling the interaction for fathers in Figure 1, this significant emotional intensity × child gender interaction in predicting parent-child dysfunctional interaction indicates that fathers of less emotionally intense girls experienced lower levels of parenting stress relative to fathers of more emotionally intense girls, a difference that did not emerge for fathers of boys. For mothers, emotional intensity predicted parent-child dysfunctional interaction ($\beta = 0.36$, $p < .01$; $\Delta R^2_{adj} = 0.10$), such that mothers who reported more stress from negative interactions with their children had children whom they perceived as more emotionally intense.

When predicting parental distress for fathers, only hours of maternal employment emerged as a significant predictor ($\beta = -0.22$, $p < .05$; $\Delta R^2_{adj} = 0.04$). Thus fathers whose wives worked more experienced less personal stress associated with the parental role. For mothers, no variables emerged as significant predictors of parental distress. In summary, aspects of temperament were found to be associated with both fathers' and mothers' perceptions of parenting stress. Interestingly, although these findings indicate that perceptions of emotional intensity are associated with aspects of parenting stress for both fathers and mothers, perceptions of activity level were linked only to maternal stress, whereas perceptions of sociability were linked only to paternal stress. In addition, the interactive effects of emotional intensity and child gender on stress were different for fathers versus mothers.

Predicting parental involvement from child characteristics. Regressions predicting involvement from the three aspects of temperament and child gender were also examined. First, equations predicting total involvement were computed. For fathers, maternal employment ($\beta = 0.29$, $p < .01$; $\Delta R^2_{adj} = 0.07$); sociability ($\beta = 0.23$, $p < .05$; $\Delta R^2_{adj} = 0.03$); and the sociability × child gender interaction ($\beta = 0.62$, $p < .01$; $\Delta R^2_{adj} = 0.37$) emerged as significant predictors of total involvement. Generally, fathers who had wives who

FIGURE 2. INTERACTION BETWEEN SOCIABILITY AND CHILD GENDER IN PREDICTING TOTAL PATERNAL INVOLVEMENT

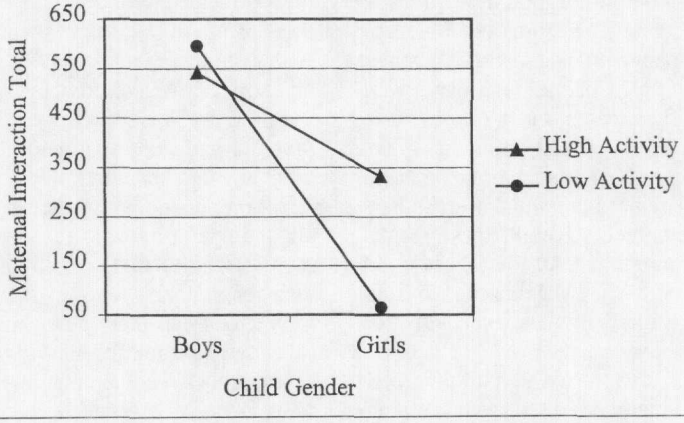


worked many hours per week evidenced the most total involvement. The sociability × child gender interaction (see Figure 2) indicates that fathers of less sociable girls were less involved with them than were fathers of more sociable girls. Fathers' involvement with boys did not differ on the basis of child sociability. For mothers, only maternal employment ($\beta = -0.26$, $p < .01$; $\Delta R^2_{adj} = 0.06$) was a significant predictor of total involvement, with mothers who worked more hours evidencing lower levels of involvement.

Second, regressions predicting specific aspects of involvement (interaction, accessibility, responsibility) using the three aspects of temperament and child gender were examined. In predicting amount of interaction, only the sociability × child gender interaction emerged as a significant predictor for fathers ($\beta = 0.49$, $p < .01$; $\Delta R^2_{adj} = 0.22$). This interaction took the same form as that depicted in Figure 2, indicating that fathers of less sociable girls were less involved with them than were fathers of more sociable girls. Maternal employment ($\beta = -0.24$, $p < .05$; $\Delta R^2_{adj} = 0.05$) and the activity level × child gender interaction ($\beta = 1.11$, $p < .05$; $\Delta R^2_{adj} = 0.04$) were significant for mothers. Thus overall mothers who worked more engaged in less direct interaction with their children. The activity level × child gender interaction is depicted in Figure 3 and indicates that mothers who perceived their girls as less active spent less time directly interacting with them relative to mothers who perceived their girls as more active. The same was not true for mothers of boys.

In predicting accessibility, sociability ($\beta = 0.26$, $p < .05$; $\Delta R^2_{adj} = 0.03$) and the sociability

FIGURE 3. INTERACTION BETWEEN ACTIVITY LEVEL AND CHILD GENDER IN PREDICTING MATERNAL INTERACTION TOTAL



× child gender interaction ($\beta = 0.49$, $p < .01$; $\Delta R^2_{adj} = 0.23$) were significant predictors for fathers, such that (similar to above findings; see Figure 2) fathers of less sociable girls were less accessible to them, with this same difference not existing for fathers of boys. For mothers, maternal employment ($\beta = -0.58$, $p < .01$; $\Delta R^2_{adj} = 0.33$) was the only significant predictor of accessibility, such that mothers who worked more were less accessible to their children.

For fathers, maternal employment ($\beta = 0.37$, $p < .01$; $\Delta R^2_{adj} = 0.13$) and the sociability × child gender interaction ($\beta = 0.37$, $p < .01$; $\Delta R^2_{adj} = 0.13$) were significant predictors of responsibility. Thus fathers with wives who worked more hours took on more responsibility. In addition, similar to results discussed above, fathers of girls they perceived as less sociable assumed less responsibility relative to fathers of girls they perceived as more sociable (see Figure 2). For mothers, maternal employment ($\beta = 0.32$, $p < .01$; $\Delta R^2_{adj} = 0.09$) emerged as the only significant predictor of responsibility. Thus mothers who worked more reported that their husbands took on more responsibility. Taken together, the findings predicting paternal and maternal involvement suggest that aspects of temperament may be more strongly associated with involvement for fathers than for mothers. In addition, the interactive effects suggest that paternal perceptions of child sociability may be particularly important for understanding father involvement, especially for fathers of girls.

Discussion

The purpose of the present study was to explore variations in the relationships between child characteristics, the amount of stress parents experience from their parental roles, and the amount of involvement parents have in childrearing activities. Associations were found between parents' perceptions of child temperament and parenting stress for both fathers and mothers, although there were some interesting differences in the nature of these associations for fathers versus mothers. Also, some evidence for stronger associations between temperament and parental involvement for fathers than for mothers emerged. Overall, these results lend support to the importance of the role of child characteristics in both the Mash and Johnston (1990) and Belsky (1984) models, especially for predicting paternal behavior.

For both fathers and mothers, children perceived as less emotionally intense were less stressful. However, the difference in stress associated with low versus high levels of emotional intensity appeared to exist mainly for mothers of boys and fathers of girls. This may be because opposite-sex parent-child relationships are more challenging and less scripted. In addition, whereas sociable children were perceived as less stressful by fathers, no relationship between sociability and parenting stress emerged for mothers. In contrast, less active children were less stressful for mothers, but no relationship between activity level and stress was found for fathers. These findings suggest that different aspects of temperament alone and in combination with child gender may be linked to stress depending on the gender of the parent.

More differentiated patterns emerged in the current sample when examining the relationship between child temperament and parental involvement. Less sociable female children consistently had less involved fathers. There was no difference in involvement in relation to sociability for fathers of boys. Perhaps for some fathers, parenting sons is a more integral part of their identity than parenting daughters, such that fathers feel that they have more discretion in the degree to which they become involved with their daughters than with their sons. Thus child characteristics may be more strongly associated with the amount of father involvement with daughters than with sons. Another contributing explanation may be that the playful, sometimes rough-and-tumble style that has been found to characterize father-child interaction (Parke, 2002) may be more well suited to interactions with sociable girls than interactions with less sociable girls (whose fathers' playful styles may be overstimulating).

For mothers, there were fewer associations between child temperament and involvement. Less active girls experienced lower levels of maternal involvement than more active girls. This was not true for boys. One interpretation of these findings is that mothers' roles require that they keep tabs on more active children by spending more time with them. Whereas boys are viewed as needing more supervision regardless of their temperamental characteristics, girls may need more or less interaction depending on their temperaments. Overall, though, it appears that temperament may be more strongly linked to involvement for fathers than for mothers.

Societal expectations for maternal and paternal roles may account for the differential relationships revealed between temperament and parental involvement. Mothers are expected to adopt an ac-

tive role in raising their children. As such, their levels of involvement are less open to choice, and thus less likely to be influenced by their children's characteristics (although temperament may play a role in influencing the quality and form of this involvement). However, similar expectations and standards are not applied to fathers. Fathers have been afforded more discretion in defining their parental roles and responsibilities (Cabrera et al., 2000). As a result, their levels of involvement may be more influenced by their child's characteristics.

Because of the correlational nature of the data reported here, no definitive causal statements can be made concerning the relationships between child characteristics, parenting stress, and parental involvement. For example, it could be argued that the more involved a father is with his children, the greater the likelihood that they will exhibit sociable temperaments. Longitudinal studies including assessments of child temperament and father involvement in infancy and at several time points beyond will be needed to resolve this concern. In addition, considering a variety of temperamental and other child characteristics (e.g., sociability) has proven valuable in this investigation, and we urge other researchers to do the same.

Limitations of the conceptualization of father involvement as reflected in the Lamb et al. (1987) model must be acknowledged. Although useful in guiding research on father involvement by capturing a range of activities that influence children's development (Marsiglio et al., 2000), this model fails to acknowledge other important dimensions of fathering (e.g., providing financially for children, cognitive monitoring) that may also influence children's development (Palkovitz, 1997). There is also growing acknowledgment that the quality of interaction between fathers and their children may be more important for child outcomes than the quantity of interaction (Cabrera et al., 2000; Hawkins & Dollahite, 1997). For example, Amato and Gilbreth (1999) found that frequency of contact with nonresident fathers was not related to child well-being, but more qualitative dimensions of the father-child relationship (e.g., feelings of closeness) were. Although we assert that it is still important to understand why some fathers choose to become more actively involved in childrearing than others, future investigations of father involvement should consider a variety of operationalizations of involvement and consider quality as well as quantity of involvement.

New theoretical perspectives have begun to emerge in the literature such as generative fathering (Hawkins & Dollahite, 1997); identity theory (Rane & McBride, 2000); social constructionism (Marsiglio et al., 2000); and social capital (Amato, 1998), which hold promise for informing research on fatherhood. For example, identity theory would suggest that the salience of a father's identity as a parent and what this identity consists of will dictate how he approaches childrearing. With reference to our findings, it is possible that child characteristics may influence the salience or content of a father's parental identity, thereby influencing the nature and amount of his involvement. Future research drawing on these different theoretical perspectives is needed to more fully understand how and why fathers are involved with their children.

It is also important to note that the present study relied on self-report and interview measures to assess child temperament, parenting stress, and parental involvement. Although each of these methods in themselves is valid, there is the danger that shared-method variance has resulted in some overestimation of these findings. Future studies could reduce this potential problem by using multiple reports and observations of temperament, as well as by employing both interview and observational assessments of parental involvement. Caution must also be used in generalizing results from the present study to other populations. Participants for this study were predominantly White, middle-class, two-parent families with preschool-aged children. The relationships between child characteristics and parental stress and involvement may differ in other ecological contexts (e.g., low-income families, minority families, families with older children, divorced families, dual-earner versus single-earner families). Future research should explore potential variations in these associations in different family types and situations.

Notwithstanding these cautions, the present findings have important implications for future research on father involvement, as well as programs designed to encourage fathers to assume more active parental roles. To encourage involvement and to understand the different ways in which fathers are involved, researchers and practitioners must begin exploring a wide variety of factors that may influence such involvement, including characteristics of the child (Tamis-LeMonda & Cabrera, 1999). The father-child relationship is a transactional process (i.e., a father's involvement and stresses will be affected by his child's character-

istics, and the child's responses and behaviors will be affected by the father's characteristics and behaviors). Only by more fully understanding this process will researchers and practitioners be best able to encourage fathers to engage in behaviors that will be most beneficial to their children.

Note

This research was supported in part by a grant from the Illinois Agricultural Experiment Station (Project 60-0329) to B.A.M. Some findings from this study were presented at the 1997 Biennial Meeting of the Society for Research in Child Development, Washington, DC.

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