

Impact of Marital Quality and Parent-Infant Interaction on Preschool Behavior Problems

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Abstract This study examined the relationships between parent interactions with healthy term and preterm infants at 12 months of age, marital quality, family socioeconomic status, and preschool behavior problems. Eighty mothers and 74 fathers were observed in the home during an interaction with their child (Nursing Child Assessment Teaching Scale), and this group of parents completed the Dyadic Adjustment Scale questionnaire (marital quality) 12 months after the child was discharged from the hospital. Each parent completed the Eyberg Child Behavior Inventory when their child was four years of age. The parent and infant interaction scores were not predictive of later child behavior problems. Maternal perceptions of marital quality at 12 months predicted the frequency (Eyberg Intensity score) and impact (Eyberg Problem score) of the child's problematic behaviors reported by mothers. Marital quality and family socioeconomic status predicted the impact of behavior problems for fathers. There were no significant differences between preterm and term children or between boys and girls in the frequency or impact of problematic behaviors. Mothers reported a significantly greater frequency of behavior problems than fathers of the same children. The implications of these findings for nurses who work with families and young children are discussed.

Preschool children with behavior problems have a significant impact on family life and peer relationships. Many children with behavior problems require special health care and education services. Behavior problems in early childhood have been linked to serious psychosocial disturbances in adolescence and early adulthood (Caspi et al., 1996; Offord et al., 1992). Furthermore, children with behavior problems tend to be less responsive to therapeutic intervention as they grow older and behavior patterns become well established (Grizenko, Sayegh, & Papineau, 1994). The ability to predict preschool behavior problems based on an assessment in infancy would facilitate early intervention to assist families with children at risk for behavior problems.

Previous research has shown that preschool behavior problems are a concern for parents and society in general. In a large scale epidemiological study of three year olds in Britain, researchers found that 6.7% of children have behavior problems that are moderate to severe (Richman, Stevenson, & Graham, 1975). An additional 15% of these children demonstrated mild behavior problems. Using the same measure, Earls (1980) replicated this study with a sample of American children ($N=100$) and found similar results. A national survey of Canadian children ($N=22,831$) revealed that 19.0% of children between the ages of four and seven years have one or more behavioral and emotional disorders (Statistics Canada, 1996). A clear understanding of the factors associated with preschool behavior problems has yet to be achieved.

Over the past two decades researchers have studied numerous biological and environmental factors thought to influence the development of childhood behavior problems with varying results. Biological factors, such as preterm

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birth, pose a significant risk for the development of behavior problems (Greenberg, Carmichael-Olson, & Crnic, 1992; Schraeder, Heverly, & Rappaport, 1990). Preterm infants have been shown to be less alert, less active, and less responsive in their interactions during their first few months than full term infants, even though mothers are more active and stimulating in interactions with their preterm infants (Barnard, Bee, & Hammond, 1984). Robinson, Eyberg, and Ross (1980) suggest that alterations in parent-child interaction may lead to child behavior problems, but how these variables are related is unclear. In a longitudinal study of preterm infants, the continuity of parenting behaviors and not the responsiveness of infants in interaction was associated with behavioral problems (Beckwith, Rodning, & Cohen, 1992). In addition, preterm birth is associated with higher rates of learning problems (Brandt et al. 1992). Very low birthweight, preterm children, especially boys, were more likely to have problems associated with overactive behavior and short attention span (Greenberg et al., 1992; McCormick, Gortmaker, & Sobol, 1990).

There is some evidence that gender differences in behavior problems may exist in preschool populations. Gender was a significant discriminator of behavior problems in a sample of preterm infants at four years of age (Greenberg et al., 1992) and in another sample of four and five year olds (Thomas et al., 1991). However, no gender differences in behavior problems were found in a sample of healthy two year olds (Koniak-Griffin & Verzemnieks, 1995) or in another sample at the time of attending second grade (Brandt et al., 1992).

Certain environmental factors (the quality of parent-child interactions, marital adjustment, and family socioeconomic status) are thought to have an impact on problem behaviors. Robinson and associates (1980) suggest that problem behavior is a manifestation of the interaction between parent and child. Koniak-Griffin, Ludington-Hoe, and Verzemnieks (1995) found children with fewer behavior problems are more likely to have mothers who score higher on measures of parent-child interaction. If either the mother or the child is partially or totally unavailable in the interaction, negative, insensitive, and unresponsive patterns of interaction result between the parent and child. The interaction pattern may lead to "acting out" and conduct problems in the child. Research is limited regarding the effect of father-infant interactions on child behaviors.

Persistent, high levels of marital conflict are related to child behavior problems although the processes are unclear (Jouriles, Pfiffner, & O'Leary, 1988). Disruption in parenting practices that are a result of parental involvement in their own conflict, as well as negative reinforcement of aggressive behaviors, may lead to childhood behavior problems. It is suggested that the specific way in which a marital dyad resolves conflict when their child is five years old

contributes to behavior problems in their children three years later (Katz & Gottman, 1993). Others have found increased reports of child behavior problems associated with parenting stress (Eyberg, Boggs, & Rodriguez, 1992). Whether suboptimal patterns of interactions within the family secondary to marital conflict predispose parents to report more child behavior problems or whether child behavior problems cause parental distress leading to marital dissatisfaction remains unclear.

Because most measures of child behavior are based on parent report, researchers seem to agree that it is the parental perception of behavior and perhaps not actual behavior that is being measured (Eisenstadt et al., 1994; Webster-Stratton, 1988). Fathers and mothers have been found to differ in their reports of behavior problems in their child (Webster-Stratton, 1988), but this difference may be related to the amount of contact each parent has with the child. Koniak-Griffin and Verzemnieks (1995) found a stronger correlation between fathers' and mothers' reports of behavior problems when mothers were employed outside the home.

Social risk conditions, such as low family income, have been found to place young children at a greater risk for behavioral problems (Adams, Hillman, & Gaydos, 1994); however, Brandt et al. (1992) found a stronger relationship between family stress levels and behavior problems than between family socioeconomic status and behavior problems. Research is inconclusive about the implications of poverty as an explanatory variable in children's behavioral outcomes.

Previous research has shown that the combined effects of biological and environmental risk factors pose a double threat to children's development (Adams et al., 1994; McCormick, Brooks-Gunn, Workman-Daniels, Turner, & Peckham, 1992). These findings are consistent with the theoretical framework used for this study. A basic premise of the Structural/Behavioral Model (Horowitz, 1990) is that individual biological differences in children interact with environmental variables in the development of children. Optimal cognitive, social, and emotional development is related to an invulnerable child and a facilitative environment. For this study, the biological variables considered were infant gender and perinatal status (term or preterm). The environmental variables were parent-infant interaction, marital quality, and socioeconomic status of the family.

The purpose of this study was to explore the relationships between parent-infant interactions and parental perceptions of marital quality at 12 months and preschool behavior problems at four years. The Nursing Child Assessment Teaching Scale (NCATS; Sumner & Speitz, 1994) was used to measure parent-infant interactions and the Dyadic Adjustment Scale (DAS; Spanier, 1989) to measure

marital quality. The Eyberg Child Behavior Inventory (ECBI; Eyberg, 1992) was used to measure child behavior problems. The following research questions were addressed:

1. What are the relationships between infant birth status, infant gender, parent-infant interactions and marital quality at 12 months, socioeconomic status, and preschool behavior problems at four years of age?
2. Do children born preterm have more behavior problems than their term counterparts?
3. Is there a difference in the number of behavior problems at four years of age between boys and girls?
4. Is there a difference between the mothers' and fathers' perceptions of their four year old children's behaviors?

METHOD

Participants

The families for this study were recruited from the Parent-Infant Project, an interdisciplinary, prospective, longitudinal study of mother and father interactions with term and preterm infants (Harrison & Magill-Evans, 1996). The original sample consisted of 57 families with a healthy term infant and 57 families with a healthy preterm infant, non-randomly selected and matched at birth by infant gender and hospital of birth. Criteria for inclusion of preterm infants were as follows: gestational age 30 to 36 weeks as

assessed by the Dubowitz Scale, birthweight greater than 1,500 grams, and healthy at discharge with no major congenital anomalies. Multiple births were excluded from the sample as well as infants born to mothers with a history of confirmed or suspected substance abuse. The parents read and spoke English, were married or cohabiting, and lived within an hour drive of the university.

At four years, 51 families of term infants and 48 families of preterm infants remained in the Project. Both parents in each family were invited to answer a questionnaire on child behavior problems, although data from one parent were included in the study even if only one parent chose to participate. Eleven mothers and 19 fathers returned unanswered questionnaires indicating they did not wish to participate. Eighty-two mothers and 75 fathers returned answered questionnaires, but two mothers and one father had incomplete data. The final sample included 80 mothers and 74 fathers. There were 74 families for whom complete data were available from both parents.

A summary of the means and standard deviations for age, education, occupation, family socioeconomic status, and infant gender for the sample of mothers and the sample of fathers is shown in Table 1. All, except one child, were Caucasian. At home, English was spoken to the child 90% of the time in all but four families. The fathers of preterm and term infants did not differ significantly in terms of age, education, occupation, and family socioeconomic status. The mothers of preterm and term infants showed a

TABLE 1. *Demographic Characteristics of Parents and Infant Gender of Preterm and Term Infants in Samples of Mothers and Fathers*

	Mothers			Fathers		
	Preterm (<i>n</i> = 36)	Term (<i>n</i> = 44)	All (<i>N</i> = 80)	Preterm (<i>n</i> = 33)	Term (<i>n</i> = 41)	All (<i>N</i> = 74)
Age						
Mean	29.69	29.32	29.49	32.40	31.66	31.99
SD	5.18	4.79	4.90	6.11	5.66	5.86
Education						
Mean	14.06	14.73	14.43	14.00	14.93	14.51
SD	2.93	2.71	2.81	3.52	3.10	3.30
Occupation						
Mean	4.25	5.71	5.05 ^a	5.70	6.24	6.00
SD	2.45	2.00	2.32	2.20	2.13	2.16
SES						
Mean	42.01	45.91	44.16	41.70	46.52	44.37
SD	11.89	9.87	10.93	11.46	9.94	10.84
Infant gender						
Male	23	25	48	20	22	42
Female	13	19	32	13	19	32

Note. SES = socioeconomic status.

^a*t* (78) = 2.87, *P* = 0.006.

significant difference between the two groups, Hotelling's $T^2(3,76) = 3.17, P < 0.05$. When the univariate ANOVA result for each dependent variable was examined, the groups differed only regarding maternal occupation, $F(1,78) = 8.56, P < 0.01$. A chi-square test on the samples of mothers and fathers showed no association between group birth status (term or preterm) and infant gender.

Procedures

The study proposal was approved by the Ethical Review Committee of the University. Demographic data were collected on enrollment into the study following the birth of the infant. Twelve months after the infant's discharge from hospital, parents were visited at home and observed separately in interaction with their child (Nursing Child Assessment Teaching Scale). The parents also independently completed questionnaires on marital adjustment (Dyadic Adjustment Scale). For a detailed description of the data collection at 12 months see Harrison and Magill-Evans (1996). When the children were between the age of 42 and 54 months, the parents were mailed copies of the Eyberg Child Behavior Inventory and a letter explaining the purpose of this study. Parents consented to participate when they returned their answered questionnaires. To encourage participation, reminder letters were sent to those families who did not return questionnaires. The overall response rate for the study was 90.3%.

Measurement of Variables

Nursing Child Assessment Teaching Scale

The NCATS (Sumner & Speitz, 1994) assesses parent-child interaction during a novel teaching interaction. The test administrator observed the parent-child interaction directly and scored the interaction behaviors either "yes" or "no" immediately after the observation. The Parent Total score (consisting of sensitivity to cues, response to child's distress, social-emotional growth fostering, and cognitive growth fostering subscales) and the Infant Total score (consisting of clarity of cues and responsiveness to caregiver subscales) were used in this study. Studies of internal consistency (Sumner & Speitz, 1994) report a Cronbach's alpha of 0.87 for the Parent Total score, and 0.81 for the Infant Total score. Cronbach's alpha for mothers and fathers in this study ranged from 0.73 to 0.77 for the Parent Total score and 0.65 to 0.74 for the Infant Total score. An average inter-observer reliability of 89.7% was achieved for observations with mothers and 86.1% for observations with fathers (Harrison & Magill-Evans, 1996). Cohen's kappas ranged from 0.61 to 0.65.

Dyadic Adjustment Scale

The DAS (Spanier, 1989), a 32-item self-report instrument was used to measure the quality of adjustment to marriage. Four inter-related dimensions form the subscales of the

DAS: (1) dyadic consensus, (2) dyadic cohesion, (3) affectional expression, and (4) dyadic satisfaction. Low subscale scores indicate a problem with adjustment, whereas high scores indicate the absence of a problem. DAS scores correlate with measures of poor marital functioning, poor communication, and behavior problems in children (Spanier, 1989). Test-retest reliability for the DAS total score over 11 weeks is 0.96. Spanier (1989) cites a Cronbach's alpha of 0.96 for the total scale. For mothers and fathers in this study, Cronbach's alphas ranged from 0.91 to 0.92.

Eyberg Child Behavior Inventory

The ECBI (Eyberg, 1992), a parent-report questionnaire, was used to assess problem behavior in children. The 36 items assess behavior on two dimensions, the frequency of occurrence [ranging from (1) never to (7) always] and whether or not the behavior is problematic to the rater (yes/no). The frequency ratings are summed to yield an Intensity score which ranges from 36 to 252. The suggested cut-off for the clinical range on the Intensity scale is 127. The total Problem Score ranges from 1 to 36. Problem scores above 11 are considered to be in the clinical range. The scores on the ECBI correlated significantly with direct observational measures of non-compliance and negative parent child interactions (Webster-Stratton & Eyberg, 1982). The ECBI Scores were significantly correlated with both the Internalizing and Externalizing scales of the Child Behavior Checklist (Achenbach, 1978), although a higher correlation was demonstrated with the Externalizing scale (Boggs, Eyberg, & Reynolds, 1990). Reliability coefficients of 0.98 for both the Problem and the Intensity Scores indicate that both scales of the ECBI are homogeneous (Eyberg, 1992). For the mothers and fathers in this study, Cronbach's alphas ranged from 0.89 to 0.90 for the Intensity Scale and 0.87 to 0.91 for the Problem Scale. The discriminant validity of the ECBI has been supported in a study of children with behavior problems (Eyberg & Ross, 1978).

Data Analysis

The data for mothers and fathers were analyzed separately using the Statistical Package for Social Sciences (Version 6.0) software program. The level of significance was set at $P = 0.05$, except where correlations and t -tests were used. For these analyses, the confidence level was adjusted to $P = 0.01$ to decrease the possibility of obtaining spurious results. Prior to analyses, data were examined and a pattern of missing data was identified. Some mothers and fathers in single child families did not respond or wrote "not applicable" to the questions regarding behaviors toward siblings. Similar to Eyberg (personal communication, April 13, 1996), missing data for these questions were replaced with "1."

FINDINGS

Scores on DAS, NCATS, and ECBI for Mothers and Fathers

Scores for mothers and fathers of term and preterm infants on the DAS, NCATS, and ECBI are presented in Table 2. For 35.0% of the mothers and 33.8% of the fathers, the DAS scores were reported below the cutoff of 108 suggested by Sharpley and Cross (1982) as indicating distressed marital relationships. For 12.5% of the mothers and 27.0% of the fathers, NCATS Parent Total scores fell below the clinical cutoff of 34 suggested for a Caucasian sample by Sumner & Speitz (1994). None of the NCATS Infant Total scores fell below the suggested clinical cutoff of 10 (Sumner & Speitz, 1994). For 26% of the mothers and 20% of the fathers, ECBI Intensity scores were in the clinical range (more than 127, Eyberg, 1992). For 21% of the mothers and 30% of the fathers, ECBI Problem scores were in the clinical range (more than 11, Eyberg, 1992).

Mothers' and Fathers' ECBI Intensity and Problem Scores and Predictor Variables

ECBI Intensity and Problem scores for the mothers and fathers were significantly correlated ($r = 0.36$ to 0.61). Pearson product-moment correlations coefficients were used to examine the direction and strength of the relationship between the mothers' and fathers' ECBI Intensity and Problem scores and the independent variables (Table 3). Mothers' ECBI Intensity scores were significantly negatively correlated with scores of marital quality. That is, mothers who reported a higher frequency of preschool

behavior problems at four years also reported a lower level of marital quality at 12 months. There were no significant correlations between the fathers' ECBI Intensity and Problem scores and any of the independent variables. The fathers' NCATS Parent Total score was significantly correlated with group status.

Stepwise regression analyses were used to determine which variables (infant birth status, infant gender, NCATS Parent and Infant scores, marital quality, or family socioeconomic status) predicted the ECBI Intensity and Problem scores (Table 4). For mothers, marital quality alone predicted both ECBI scores. For the fathers, none of the variables were predictive of ECBI Intensity scores. Family socioeconomic status and marital quality were predictive of ECBI Problem scores for fathers.

Comparisons of Behavior Problems for Preterm and Term Groups; Boys and Girls

A two-way analysis of variance was used to examine the difference between scores for the preterm and term groups and for boys and girls on the ECBI Intensity and Problem Scales. For the mothers and fathers, there were no significant main or interaction effects for either group or gender on either the Intensity or Problem scores.

Mothers' and Fathers' Perceptions of Their Child's Behavior

For the 74 families where there were data from both the mother and father, a t -test for the comparison of paired samples was done to analyze the differences in mothers'

TABLE 2. Scores on DAS, NCATS, and ECBI in Samples of Mothers and Fathers

Instrument	Mothers ($N = 80$)			Fathers ($N = 74$)		
	Preterm	Term	All	Preterm	Term	All
DAS						
Mean	109.19	113.18	111.39	111.52	111.27	111.38
SD	16.87	11.89	14.39	14.97	11.75	13.19
NCATS parent						
Mean	37.42	39.96	38.81	35.58	39.02	37.49 ^a
SD	5.43	3.80	4.75	5.78	4.57	5.39
NCATS infant						
Mean	19.58	19.73	19.66	19.15	19.49	19.34
SD	2.38	2.64	2.51	3.03	2.31	2.65
ECBI intensity						
Mean	116.56	114.61	115.49	110.42	108.85	109.55
SD	25.40	20.93	22.92	22.00	19.13	20.33
ECBI problem						
Mean	7.28	7.25	7.26	7.79	6.27	6.95
SD	6.34	5.74	5.98	6.28	6.90	6.63

Note. DAS = Dyadic Adjustment Scale; NCATS = Nursing Child Assessment Teaching Scale; ECBI = Eyberg Child Behavior Inventory.

^a $t(72) = 2.87, P = 0.005$.

TABLE 3. Correlations Between the ECBI Intensity and Problem Scores and Independent Variables

	ECBI Intensity	ECBI Problem	Group	Sex	NCATS Parent	NCATS Infant	DAS	SES
<i>Mothers (N = 80)</i>								
ECBI intensity	—	0.57 ^b	-0.04	-0.05	-0.04	-0.01	-0.33 ^a	-0.16
ECBI problem		—	-0.00	0.16	-0.03	-0.07	-0.23	-0.10
Group			—	0.07	0.27	0.03	0.14	0.18
Sex				—	-0.08	-0.03	-0.08	-0.12
NCATS parent					—	-0.03	0.15	0.24
NCATS infant						—	-0.06	0.09
DAS							—	0.23
SES								—
<i>Fathers (N = 74)</i>								
ECBI intensity	—	0.45 ^b	-0.04	-0.03	-0.03	-0.02	-0.17	0.07
ECBI problem		—	-0.12	-0.01	0.02	-0.19	-0.22	-0.25
Group			—	0.07	0.32 ^a	0.06	-0.01	0.22
Sex				—	0.03	0.06	-0.09	-0.15
NCATS parent					—	0.06	-0.16	0.20
NCATS infant						—	0.12	0.05
DAS							—	-0.06
SES								—

Note. ECBI = Eyberg Child Behavior Inventory; NCATS = Nursing Child Assessment Teaching Scale; DAS = Dyadic Adjustment Scale; SES = socioeconomic status.

^a $P < 0.01$. ^b $P < 0.001$.

TABLE 4. Summary of Stepwise Regression Analyses for Variables Predicting the ECBI Intensity and Problem Scores for Mothers (N = 80) and Fathers (N = 74)

Predictor Variable	B	Beta	T	P
ECBI Intensity Scale				
A. Mothers				
Marital quality	-0.52	-0.33	-3.05	0.003
Adjusted $r^2 = 0.10$				
ECBI Problem Scale				
A. Mothers				
Marital quality	-0.10	-0.23	-2.10	0.039
Adjusted $r^2 = 0.04$				
B. Fathers				
Marital quality	-0.11	-0.23	-2.09	0.040
Family SES	-0.16	-0.26	-2.37	0.020
Adjusted $r^2 = 0.09$				

Note. ECBI = Eyberg Child Behavior Inventory; SES = socioeconomic status.

and fathers' reports of the same child. Mothers reported significantly higher ECBI Intensity scores than fathers, $t(73) = 3.20$, $P = 0.002$. The mothers' and fathers' scores on the ECBI Problem Scale were not significantly different.

DISCUSSION

The results of this study support previous research in which an association between marital quality and child behavior

problems was found. In 60 mother-toddler dyads, Jouriles et al. (1988) reported that marital conflict was positively correlated with observations of misbehavior and maternal reports of conduct problems. Using observational measures, Katz and Gottman (1993) also found that negative marital interaction patterns predicted later behavior problems in four to five year old children. One explanation for these findings is that parents who experience high levels of marital quality may feel supported in the marital relation-

ship and more able to provide an environment for consistent, positive, and responsive parenting practices.

Previous research indicates that quality of parent-child interactions within the family was able to discriminate between school aged children with behavior problems and those without (Brandt et al., 1992). In this study, parent-infant interactions at 12 months, as measured by the NCATS, did not predict behavior problems at four years. The research by Brandt and associates involved the use of multiple measures of family interactive quality between eight months and eight years. The use of multiple measures of parent-child interaction may be more predictive of behavior problems than a single observation. Koniak-Griffin, Ludington-Hoe, and Verzemnieks (1995) found a significant relationship between mothers' interaction scores on both the frequency and impact of child behavior problems measured concurrently when the child was two years of age. It may be speculated that the rapid development of the child in the early years reduces the predictive ability of isolated measures.

For the fathers in this study, lower family socioeconomic status predicted a greater number of problematic behaviors that had an impact on the father. It may be speculated that fathers of lower socioeconomic status experience increased stress related to economic pressures, and therefore reduced tolerance for misbehavior. However, this does not account for the finding that family socioeconomic status did not predict mothers' reports of the impact of problematic child behaviors.

For the same child, mothers reported a greater frequency of behavior problems than fathers. Others have also found that mothers report a significantly greater frequency of behavior problems than fathers (Eisenstadt et al., 1994; Webster-Stratton, 1988). Koniak-Griffin and Verzemnieks (1995) found that mothers reported a greater frequency of behavior problems than fathers, although the difference in scores in their study was not statistically significant. One possible explanation for these findings is that mothers are usually the primary caregivers and spend more time with their children than fathers. Consequently, mothers may be exposed to more situations where problem behaviors occur or may experience more disruption and stress when behavior problems occur.

Several explanations may be offered for the failure to find any relationships between infant birth status and preschool behavior problems. The preterm infants in this sample were healthy at birth. Behavior problems may be more frequent in children who were very preterm or small for gestational age at birth (Schothorst & Engeland, 1996). Healthy preterm children may experience subtle behavior problems that do not become evident until school age when learning abilities and peer interactions play an important role in development. Second, Beckwith and Cohen (1984)

suggest that the effects of preterm birth on outcome measures diminish between 12 and 24 months of age, and thereafter environmental variables become more potent predictors of developmental outcomes. The mothers and fathers in this study were in the working to middle socioeconomic class and on average were better educated than the general Canadian population. As a result, it is difficult to compare the findings from this study with other research on samples from disadvantaged populations. Third, an alternative measure of child behavior may identify subtle behavior problems in preterm children not evident using the ECBI. The ECBI was designed to measure conduct disorder that would be manifest in externalizing behaviors (Boggs et al., 1990; Schothorst & Engeland, 1996). The ECBI does not measure internalizing behaviors such as depression. Preterm infants and those with chronic illness may exhibit more internalizing disorders (Adams et al., 1994), and thus the ECBI may not be sensitive to some of the behavior problems experienced by children born preterm.

Although Robinson and associates (1980) reported gender differences in the ECBI standardization database of two to 12 year old children, gender differences on ECBI Intensity and Problem scores were not found in this sample. The lack of gender differences in this sample is consistent with another study using the ECBI in non-clinic referred samples of preschool children (Koniak-Griffin & Verzemnieks, 1995). It may be that gender differences in behavior problems, as measured by the ECBI, do not become apparent until middle childhood.

In summary, the findings of this study suggest that a couple's marital relationship during their child's infancy is related to the child's behavior during the preschool years. Mothers and fathers who reported lower levels of marital adjustment in the first year also reported more frequent behavior problems when their child was four years old, regardless of the child's birth status or gender. Parent responsiveness to the infant during the teaching interaction and preterm birth were not predictive of later child behavior problems. However, the study included only healthy term and preterm infants and birth status may be more predictive of later behavior problems for ill or very low birthweight infants or infants in single parent families.

Implications for Nursing

A number of findings from this study have implications for practitioners. Identification of marital quality as a predictor of behavior problems in three out of the four ECBI measures suggests that nurses who are working with parents and infants should be aware of the importance of the quality of marital relationships for the development of children. A supportive marital relationship may assist couples to develop parenting skills and to respond appropri-

ately to children's behaviors. Nurses can provide support to parents of new infants to help them maintain a positive relationship and encourage couples in conflict to seek appropriate counseling. The NCATS Parent and Infant Total scores did not prove to be predictors of preschool behavior problems. The results, however, were based on a single measure of parent-infant interaction. The findings from this study suggest that it would be premature for nurses to use NCATS scores from one observation of parent-infant interactions to predict those children who are at risk for later preschool behavior problems.

It is important for nurses to address concerns about children's behavior during family contacts in the early preschool years. An awareness of the differing perceptions of their child's behaviors between mothers and fathers should encourage nurses to consider both parent's reports whenever possible. Further research is needed to determine why parents have different perceptions of their child's behavior. It is also worthwhile to continue to investigate the variables that predict preschool behavior problems, as the amount of variance explained in this study was limited. The significance of marital quality as a predictor of preschool behavior problems is poorly understood. Researchers need to identify the attributes of parental interactions associated with low marital quality which may be associated with subsequent preschool behavior problems.

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