

# Effects of Stress and Social Support on Mothers and Premature and Full-Term Infants

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CRNIC, KEITH A., GREENBERG, MARK T., RAGOZIN, ARLENE S., ROBINSON, NANCY M., and BASHAM, ROBERT B. *Effects of Stress and Social Support on Mothers and Premature and Full-Term Infants*. CHILD DEVELOPMENT, 1983, 54, 209-217. This study examined the relationships of stress and social support to maternal attitudes and early mother-infant interactive behavior. 52 mother-premature infant pairs and 53 mother-full-term infant pairs were seen for structured home interviews at 1 month, and behavioral interactions at 4 months. Maternal life stress, social support, life satisfaction, and satisfaction with parenting were assessed at the 1-month home visit. Although no group differences were found, both stress and support significantly predicted maternal attitudes at 1 month and interactive behavior at 4 months when data were pooled. Mothers with greater stress were less positive in their attitudes and behavior, while mothers with greater support were significantly more positive. Intimate support proved to have the most general positive effects. Additionally, social support moderated the adverse effects of stress on mother's life satisfaction and on several behavioral variables. Maternal social support was further found to have several significant effects on infant interactive behavior. Results are discussed in terms of the ecological significance of social support to parenting and infants' early development.

The impact of social support on the psychological well-being, attitudes, and behavior of parents is rapidly becoming an issue of major interest. This interest has been spurred by Bronfenbrenner's (1977) discussion of the importance of ecological variables to familial functioning. Subsequently, Cochran and Brassard (1979) have suggested that social support networks influence parents' attitudes and behavior and, in turn, have both direct and indirect effects on the child's development. Likewise, Powell (1979) has noted that the quality of a child's socialization experiences is related to the family's interaction with its social environment, and that parental social support has potential for mediating stress and serving a preventative function for parent-child relational difficulties such as child abuse (Powell 1979, Unger & Powell 1980).

Social support is generally considered to have a number of dimensions, including instru-

mental assistance, information provision, and emotional empathy and understanding. Further, as Henderson (Note 1) has proposed, social support operates on a number of ecological levels including intimate relationships, friendships, and less formal neighborhood or community contacts. This support framework theoretically provides information which leads an individual to believe that he or she is cared for and loved, valued, and a member of a network of mutual obligation (Cobb 1976).

Recent reviews of what is becoming a voluminous literature substantiate the positive effects of adequate social support systems on an individual's psychological as well as physical health (Gottlieb 1981, Haggerty 1980, Mueller 1980). The major focus of this research has been to delineate the moderating effect of social support during times of personal stress. However, while noting that social support serves as a buffer against the experi-

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ence of stress, Mueller (1980) posits that social support has independent influences on behavior and attitudes

The birth of a child and the advent of parenthood inevitably occasions a certain amount of change and stress in the lives of family members (Miller & Sollie 1980) While a birth is generally considered a positive occurrence, some of the accompanying life changes may be perceived as negative (greater financial expense, less time to self, changes in sleeping patterns, possible job and income loss, etc.) Additional stress may be present if the infant is born with an at-risk developmental status such as prematurity However, despite the growing body of research on life stress and its effect during pregnancy and the neonatal period (Gorsuch & Key 1974, Nuckolls, Cassel, & Kaplan 1972), few studies have explored the joint effects of stress and support on parental functioning

In one study of support in the transition to parenthood, Wandersman, Wandersman, and Kahn (1980) found that attending postpartum parental support groups did not have a significant positive impact on parents' postpartum adjustments, although marital emotional support from the spouse did facilitate positive postpartum adjustment Similar results were reported by Shereshchewsky and Yarrow (1973) In a study of mothers with young children (Longfellow, Zelkowitz, Saunders, & Belle, Note 2), certain types of social support and caretaking-task help were found to buffer mothers against the effects of stress and depression, although social support itself was not found to have significant effects on mothers' behavior during interaction with their children In contrast, Crockenberg (1981) found that maternal social support was significantly related to the security of the infant-mother attachment at 12 months, and that support had its strongest effects with irritable infants and their mothers.

The above research suggests that certain types of social support can have both direct and moderating effects on various aspects of parental functioning However, the effects of stress and support on maternal attitudes and behavior are as yet unclear, and no data exist on populations with developmentally at-risk infants The present study examines the effect of stress and various types of emotional social support on maternal attitudes and mother-infant behavior with groups of premature and full-term infants We hypothesized that moth-

ers of premature infants would report greater stress than mothers of full-term infants, and that adequate emotional social support would function to moderate the impact of the stress Additionally, we hypothesized that emotional social support would show positive independent effects on maternal attitudes and behavior, regardless of infant birth status

### Method

#### *Subjects*

The sample consisted of 105 mother-infant pairs Of the 105 infants, 52 were premature (less than 38 weeks gestation and birth weight less than 1,800 grams) and 53 were full-term infants (39-42 weeks gestation and birth weight greater than 2,500 grams) None of the infants had gross neurological or physical impairment Infants were case matched for family ethnicity and mother's education There were no significant differences between groups in mother's marital status or type of delivery, or in child's sex or birth order Fifty-two percent of the infants were firstborn Mothers ranged in age from 16 to 38 ( $X = 24.6$ ), and had completed 9-16 years of education ( $X = 12.6$ ) Most study families were white middle-class, two-parent families in which the mother was currently a homemaker, although one-third of the families received income from some form of public assistance

All infants had been born at, or immediately transferred to, the University of Washington Hospital During their hospital stays, families were invited to participate in a 2-year longitudinal study involving home interviews, and a series of clinic visits for observations, developmental examinations, and maternal interviews Acceptance rates were 78% for premature and 62% for full-term infants

#### *Procedures*

*Home interview*—A structured 1.5-hour home interview was conducted with the mothers when their infants had been home from the hospital 1 month Four measures were collected as part of this interview (1) life stress, (2) social support, (3) general life satisfaction, and (4) satisfaction with parenting Family demographic information was also obtained during the interview

The Life Experience Survey (LES, Sarason, Johnson, & Siegel 1978), a measure of life stress, was adapted specifically for use with mothers of newborn infants The LES involves rating a series of 46 life events as having

occurred or not occurred, whether their impact was "good" or "bad," and their degree of effect (none, some, moderate, or great) The score provided an index of negative life stress from the beginning of pregnancy to the time at which the infants had been home 1 month

The social support measure<sup>1</sup> was adapted from a scale developed by Henderson (Note 1), and involved a series of questions regarding available support sources at three ecological levels (1) intimate relationships (spouse/partner), (2) friendships, and (3) neighborhood or community support Intimate support measured the presence or absence of such relationships and mothers' satisfaction with that, while friendship and community support indices measured mothers' satisfaction with the availability of such contact Satisfaction was rated on a four-point scale (very satisfied, somewhat satisfied, somewhat dissatisfied, very dissatisfied) A separate score was obtained for each type of support All the items in the social support measure were factor analyzed, and three separate factors were found corresponding to the three types of support The intimate support variable consisted of four items, friendship support of three items, and community support of two items, with internal consistencies of .69, .65, and .50, respectively (Cronbach's  $\alpha$ )

Also incorporated into the structured interview were two maternal attitude measures (1) an index of general life satisfaction as rated by the mothers on a five-point scale from very bad to very good, and (2) a 12-item Satisfaction with Parenting Scale (SWPS) which assessed mothers' degree of pleasure in her baby and in her parenting role (Ragozin, Basham, Crnic, Greenberg, & Robinson 1982) The five-item pleasure in baby subscale tapped mother's degree of pleasure in child-care chores, doubts about maternal competence, irritation with baby, and her overall feelings toward the baby ( $\alpha = .48$ ) The seven-item role satisfaction subscale reported mother's satisfaction with amount of infant-care responsibilities, household responsibilities, time for herself, social time away from baby, nonprofessional advice about baby, and people with whom to discuss any negative feelings about baby ( $\alpha = .61$ ) For the total scale,  $\alpha = .67$  Alpha levels were somewhat depressed due to the limited number of items in the scales (Nunnally 1978)

*Behavioral observation*—At 4 months corrected gestational age, the mothers and infants were seen at a clinic for behavioral observations Each mother-infant pair was brought to an observation room equipped with a large stuffed chair, a table with age-appropriate toys, and a photographic essay book for adults The observation session was divided into three episodes (1) a 10-min free-play period in which mothers were asked to pretend they were in their own homes and could do whatever they wished, (2) a 5-min structured vocal elicitation period in which mothers were asked to try to get their infants to vocalize, and (3) a 3-min imitation period during which the infant was placed in an infant seat directly in front of the mother, and mothers were asked only to imitate their infants The entire interaction was observed and videotaped from behind a one-way mirror

Two mother-infant behavioral ratings were made from the videotaped free-play and vocal elicitation episodes (imitation was not included for this study) Three separate five-point ratings were made of the free-play and vocal elicitation episodes for both mother and infant on the following dimensions (1) gratification from interaction (none or averts to long periods of enjoyment, happiness), (2) responsiveness (out of sync, intrusiveness/avoidance to no intrusions, reciprocity/attention), and (3) affective tone (very angry/negative to very happy/smiling) Global ratings were chosen on the basis of persuasive arguments by Bakeman and Brown (1980), who proposed that global rating scales may offer a more fruitful approach to studying early interaction, as interaction characteristics such as responsiveness may be considered "not as frequencies or sequences of particular acts but rather as a disposition which permeates all of the mothers and/or all of the baby's interactive behavior" (Bakeman & Brown 1980, p. 445)

As a result of factor and reliability analyses, the three dimensions in the global ratings for both mother and infant were aggregated into a single score for the mother and a single score for the infant (both termed AFFECT), with  $\alpha$ 's of .90 and .83, respectively The interactions were rated by two trained observers and reliability was calculated as the percentage of exact agreements (76%) and agreements within 1 scale point (97%) The AFFECT ratings for mothers' behavior across the two behavioral episodes were highly correlated ( $r$

<sup>1</sup> Copies of this measure are available from Keith A. Crnic on request

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= 61) and were combined to provide a single summary score for analyses. In contrast, the infants' AFFECT ratings across episodes were not highly correlated ( $r = .30$ ) and were analyzed separately.

The second measure involved ratings of specific mother and infant behavior during the vocal elicitation (Barnard, Note 3). A total of 60 item behaviors were scored as present or absent during this sequence by a rater trained to 85% reliability. The 60 items comprised three parent subscales (sensitivity to infant cues, social-emotional-growth fostering, cognitive-growth fostering) and two infant subscales (responsiveness to parent, clarity of cues), and subscale scores each represented the sum of 11–17 binary items, for example, "parent praises child's successes or partial successes." Reliability and validity analyses have shown internal consistencies of the scales ranging from .61 to .86 at age 4 months, and have been shown to significantly predict later Bayley MDI, expressive language ability, and Caldwell HOME scores (King, Note 4).

### Results

Interestingly, no significant group differences were found between mother-premature pairs and mother-full-term infant pairs on any of the measures. For all subsequent analyses, data were pooled. Because of the skewed distribution, scores for each type of social support (intimate, friendship, community) were dichotomized into high versus low support, with the split made at 75% (high) and 25% (low). Similarly, scores for life stress were dichotomized at 75% (low) and 25% (high). The 75%–25% split was employed, rather than a median split, because most of the subjects reported supportive and satisfactory relationships within each category and few stressful life events, and therefore the 75%–25% split provided a more meaningful categorization.

In order to simultaneously examine the effects of the three support variables and life stress on the dependent measures, multiple regression was employed. A hierarchical model of regression was utilized, entering first the five covariates which controlled for infant health status (5-min Apgar score, days in hospital, birth weight, gestational age, and mother's age). The independent measures of intimate support, friendship support, community support, and stress were then entered in a hierarchical fashion, followed by the interactions of each support variable with stress. The

rationale for this hierarchical ordering developed from an ecological model in which it was our assumption that proximal (intimate) relationships may have a greater influence during early infancy than more distal (friendships, community) relationships, although each is influential. In part, the assumption is based on Belsky's (1981) proposal that the quality of the marital relationship, as it is the support most immediately available to parents, is a major support of competent parenting.

### Maternal Attitudes

*General life satisfaction*—Both mothers' perceived social support and life stress significantly predicted their general life satisfaction (see table 1). Intimate and community support were highly significant predictors, accounting for 10% and 8% of the variance, respectively. Friendship support was not significant. Mothers' life stress accounted for 9% of the variance. Each of the significant findings was in the predicted direction, indicating that mothers with greater support were more satisfied as were mothers with less stress. Further, the interaction of intimate support and stress significantly predicted life satisfaction, indicating that mothers with low support and high stress gave the lowest rating, while mothers with high support and high stress stated much higher life satisfaction. This interaction denotes a moderating effect of intimate support on stress.

To delineate which aspects of the intimate-support variable accounted for the moderator effect with stress, each of the four items of this measure—(1) presence of an intimate relationship, (2) satisfaction with that situation, (3) presence of person(s) to share private feelings with, and (4) satisfaction with that situation—was analyzed separately with a two-way analysis of covariance. Subjects were divided into four groups on the basis of high or low social support and high or low life stress, and the infant health-status variables were again used as covariates. Significant main effects were found for each of the support items and for stress; however, significant interaction effects were found only for the items reflecting the presence or absence of an intimate relationship ( $F = 9.4, p < .01$ ) and satisfaction with that situation ( $F = 4.5, p < .05$ ).

*Satisfaction with parenting*—Intimate and friendship support significantly predicted mothers' attitude toward parenting (SWPS) and community support showed a strong trend ( $p$

= .06) in predicting same Stress also proved to be a significant predictor (see table 1). Again, mothers with greater social support and less stress reported more pleasure in their infants and in their parenting roles. The three support variables accounted for a total of 18% of the variance, and stress another 4%. No significant interaction effects were found. The SWPS results indicate that both social support and life stress independently affect maternal attitudes, although none of the social support variables served to moderate the effects of stress as was found for mother's general life satisfaction.

For continuity with the life satisfaction results, all four items in the intimate-support factor were analyzed separately with two-way ANCOVAs to identify which had the greatest effects on SWPS. Surprisingly, the presence or absence of an intimate relationship was not significant, although satisfaction with this situation was significant ( $F = 8.6, p < .01$ ). Similarly, the presence or absence of someone with

whom to share private feelings was not significant, while satisfaction with this situation was ( $F = 12.8, p < .001$ ).

#### Maternal Behavior

In the regression analyses, stress produced a significant relationship to maternal behavior, predicting mothers' sensitivity to their infants' cues. Mothers reporting greater stress were rated as less sensitive, accounting for 6% of the variance. Mothers' intimate support also showed a significant relationship to maternal behavior predicting mothers' AFFECT ( $p < .05$ ), but neither of the two other support variables approached significance and no interaction effects were found. Neither the social support variables nor stress produced significant effects on mothers' social-emotional- or cognitive-growth-fostering behavior.

Intimate and community support were mildly correlated in the regression analyses, prompting additional separate analyses of each support variable with two-way ANCOVAs (subjects again divided into four groups on

TABLE 1  
REGRESSION STATISTICS FOR EQUATIONS PREDICTING MATERNAL  
ATTITUDES AND BEHAVIOR AND INFANT BEHAVIOR

Criterion and Predictor	R <sup>2a</sup>	F	r
<b>Maternal attitudes</b>			
General life satisfaction			
Intimate	.27	12.1****	.43
Community	.35	10.7****	.42
Stress	.44	14.4****	-.32
Intimate × stress	.51	11.9****	.11
Satisfaction with parenting			
Intimate	.21	7.1***	.29
Friendship	.28	9.0***	.33
Community	.31	3.5*	.34
Stress	.35	5.5**	-.24
<b>Maternal behavior</b>			
Sensitivity to cues			
Stress	.15	4.7**	-.21
AFFECT			
Intimate	.16	4.1**	.24
<b>Infant behavior</b>			
Clarity of cues			
Stress	.20	3.8**	-.22
Responsiveness to parent			
Intimate	.16	7.1****	.24
Stress	.20	3.0*	-.17
Intimate × stress	.24	4.2**	.06
Friendship × stress	.28	3.7**	.00
<b>AFFECT<sup>b</sup></b>			
Intimate	.13	3.8**	.23
Friendship × stress	.21	3.8**	.09

<sup>a</sup> Reflects cumulative R<sup>2</sup> values for each measure

<sup>b</sup> Reflects AFFECT ratings from episode 2 only

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

\*\*\*\*  $p < .0001$

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the basis of high or low support and high or low stress with the infant health-status variables as covariates) Intimate support again produced the main effect on mothers' AFFECT ( $F = 4.1, p < .05$ ), but in addition, community support produced main effects on mothers' social-emotional-growth fostering ( $F = 3.9, p < .05$ ) and AFFECT ( $F = 4.5, p < .05$ ) Further, two significant community support  $\times$  stress interactions were found on mothers' sensitivity to infant cues ( $F = 4.8, p < .05$ ) and social-emotional-growth fostering ( $F = 3.7, p < .05$ ), each in a direction indicative of support as a moderator of stress Similar to the regression analyses, friendship support produced no significant effects

The failure of community support to approach significance in the regression seems, then, a function of the order in which it was entered The correlation coefficients between intimate and community support in the regression analyses on the mothers' social-emotional-growth fostering and AFFECT were .31 and .27, respectively Due to the multicollinearity of these independent variables, the shared variance between intimate and community support was given to intimate support in the regression analysis as it was entered first, thereby reducing the explanatory power of community support

### Infant Behavior

Maternal intimate support and stress produced a number of significant relationships to infant behavior (see table 1) Maternal stress significantly predicted infants' clarity of cues, and showed a strong trend in predicting responsiveness to parent For both findings, the greater the stress reported by mother the less optimal was the infant's behavior Mothers' intimate support significantly predicted both the infants' responsiveness to the mother and AFFECT during the vocal elicitation episode (no significant findings occurred in the free-play episode), accounting for 8% and 5% of the variance, respectively Again, those mothers with greater intimate support had infants who were more responsive and rated higher on AFFECT

A number of maternal support  $\times$  stress interactions predicted infant behavior (see table 1) Intimate support  $\times$  stress predicted infant responsiveness, while friendship support  $\times$  stress significantly predicted infant responsiveness and AFFECT ratings These interactions were again in a direction indicative of support as a moderator of stress

To determine whether the influence of maternal social support on infant behavior (AFFECT ratings) was direct or indirect, a subsequent regression analysis was performed with maternal AFFECT ratings included as a covariate In this analysis, none of the support variables approached significance, while maternal AFFECT did significantly predict infant AFFECT ( $F = 65.7, p < .001$ ), accounting alone for 42% of the variance The effects of maternal intimate support on infant behavior appear clearly indirect Separate ANCOVAs analogous to those performed on the dependent measures of maternal behavior were performed on the measures of infant behavior Results were similar to those of the regression analyses, with the addition of a significant main effect of mothers' community support on infant AFFECT ( $F = 4.0, p < .05$ ) This result paralleled the like finding for maternal behavior

## Discussion

The results of this study support the ecological importance of both stress and social support to parenting and the parent-child relationship, particularly during early infancy and the transition to parenthood Further, the results offer some additional evidence to support the role of social support as a moderator of stress in a heretofore untested population

Previous research with various populations has established the deleterious effects of stress on individuals' psychological well-being and attitudes (Mueller 1980) The same appears to hold true for the reported life satisfaction and parenting attitudes of mothers of newborn infants, and to a lesser degree, maternal behavior toward an infant Stress appears to have its major impact on mothers' intrapersonal feelings and satisfaction, a finding consistent with earlier reports of the relationship between stress and depression in mothers of young children (Brown, Bhrolchain, & Harris 1975, Longfellow et al., Note 2) Such stress also had a negative impact on maternal attitudes toward parenting as well as mothers' ability to recognize and respond to their infants more subtle behavioral cues Of interest, however, was the finding that infants whose mothers were under greater stress were less responsive and less clear in the cues they provided, suggesting that a circular feedback loop may exist in such relationships Stressed mothers have less positive feelings toward their infants and are less likely to respond to infant cues Subsequently, infants

are less responsive and less clear in the cues they do provide, making it again more difficult for mothers to respond to the cues. Additionally, such mother-infant relational difficulties may add to the degree of stress experienced by the mother, further perpetuating the stress loop and perhaps generating greater relational difficulties given the cumulative effects of stress over a prolonged period.

Although a number of studies have shown that social support acts as a buffer against the experience of stress (Cobb 1976, Haggerty 1980), data from the present study indicate that buffering effects are not routine for mothers of newborn infants, but rather are found only under certain conditions. Intimate support was the one variable to act as a moderator, and this occurred only for mothers' life satisfaction and not parenting attitudes or behavior. Only community support showed buffer effects on mothers' interactive behavior in the separate ANCOVA analyses, but no buffer effects were found for mothers' parenting attitudes or affective behavior toward their infants with any type of social support. The evidence suggests some specificity in the role of social support as a moderator of stress, and this relationship may depend on the intensity of the effect of stress (for intrapersonal feelings particularly) and the proximity or intimate nature of the support relationship.

Although the quality of social support was not found to uniformly buffer mothers against the experience of stress, social support does have major positive independent effects on both the attitudes and behavior of mothers. Again, intimate support proved to have the most general positive effects, although community and friendship support appear valuable to maternal attitudes as well. Research has begun to delineate the importance of significant life attachments to the adaptation to parenthood (Bell, Johnson, McGillicuddy-Delisi, & Sigel 1980, Unger & Powell 1980, Wandersman et al 1980, Longfellow et al, Note 2). The significance of intimate support as both a moderator variable and a main effect on maternal functioning supports Belsky's (1981) notion that a positive marital relationship is a major support of competent parenting. Indeed, the findings that intimate support provided more global positive effects than either friendship or community support is likely a function of its proximity and immediate availability to mothers as Belsky suggests, as well as the probability that, with a young infant, families spend less time in outside social activities with friends and commu-

nity groups, and more time together as a family unit.

Nevertheless, each of these various support sources is important to maternal attitudes, assisting mothers in feeling more positive about their lives and their infants. Friendship and community support may provide more direct benefits to actual maternal behavior as the infant grows and the mother resumes greater social contact, but the results of this study generally support notions of Cochran and Brassard (1979) and Powell (1979) that social networks and support systems play an integral role in the development of parenting styles. Further, it appears that social support's role as a main effect is at least as critical as, and perhaps more critical than, its role as a moderator variable as Mueller (1980) had hypothesized.

Perhaps the most unexpected findings were the significant effects of mothers' social support on infants' behavior. Both Cochran and Brassard (1979) and Powell (1979) have suggested that parents' social networks and support systems have both direct and indirect effects on children's socialization and development, and this study offers some support for this notion. While certainly maternal and infant behavior are not independent during interactive play, mothers' perceived social support appears to provide significant benefits to the infant, at least as measured by the enhancement of reciprocity and mutual gratification within the relationship.

Indeed, the effects of maternal social support on infant behavior were indirect in this case, as no support effects were found on infant behavior when mothers' behavior was partialled out. It seems most likely that the indirect nature of the maternal support is a function of the infants' age. At age 4 months, infants have had relatively little extended contact with other than their primary caretaker (uniformly mothers in this study), and the opportunities to gain from such contact are limited by their scarcity, as well as by the infants' developmental capabilities. As the child ages and becomes more developmentally competent, the potential to benefit directly from maternal or familial social support systems becomes greater, and one might not expect to find direct contributions to child development until early preschool ages. Nonetheless, the maternally mediated indirect effects of support found in this study, in combination with similar previous findings that greater maternal social support is related to more secure infant attachment (Crockenberg 1981), indicate that maternal social support does specifi-

cally influence the development of infant social competence. Whether other spheres of infant development will also be affected remains an important empirical question.

The effects of maternal intimate support on mothers' attitudes and behavior, and subsequently infant behavior, fit well the model proposed by Belsky (1980), explicating the bidirectional patterns of influence within a family which center on the marital relationship. The availability of and satisfaction with the support offered by the fathers affects mothers' caregiving attitudes and behavior, which in turn affects social behavior. Given the generally accepted influence of infants on their caregivers, the resulting infant social behavior then influences both parenting behavior and ultimately the marital relationship. As such, these influences can be conceptualized in much the same way as the stress feedback loop, differing only in that support has a positive influence on mothers' parenting and infant behavior, and coming full circle, the marital relationship.

Research on parental social support systems must consider support as a multidimensional concept (Wandersman et al 1980), as varying types of social support appear to produce specific effects on specific outcome variables. This necessitates the measurement of differing individual support systems, as well as a multitude of outcomes. Further, the results of the present study suggest that social support measures should include not only an indication of the amount of support available, but also an index of the quality of that support. Mother's satisfaction with the status of their intimate support, rather than the amount of support, produced the significant positive effects on satisfaction with parenting. It may be that the indices of satisfaction within the support measure at least partially account for the significant effects on maternal behavior in this study, in contrast to their absence in previous research (Longfellow et al., Note 2).

That no premature-full-term group differences were found was surprising and somewhat counterintuitive, as it was expected that mothers of prematures would have reported greater stress and possibly have less positive attitudes and behavior. However, the lack of group differences may have been a function of the generally healthy status of the premature infants in the sample, and the fact that groups were carefully matched on variables other than infant birth status. The lack of differences may also have been related to the times at which

the measures were collected. The questionnaire measures were collected once the infant had been home 1 month, and their health was no longer in jeopardy. Further, the month at home may have allowed sufficient time for the initial neonatal crisis to stabilize and for the mother and infant to subsequently establish comfortable interactive patterns and routines in the ensuing 3 months. Such an interpretation is consistent with the findings of Trause and Kramer (Note 5), who found no difference between parents of preterm and term infants in difficulty of adjustment to the infant once the infant was at home. In addition, the support available to the families of the premature infants at the hospital may have obviated many of the potential difficulties these families face.

In summary, social support appears to be a meaningful ecological variable influencing parenting attitudes, mother-infant interaction, and infant development. Although data are only beginning to be collected, social support from various sources facilitates more positive child-rearing attitudes, as well as more positive behavioral interactions. Further, the benefits of maternal social support also accrue to the infant, as infant responsiveness, reciprocity, and gratification during interaction are increased, and the infant is more socially competent. Such transitive influences (Lewis & Weinraub 1976) are likely to also become circular, as a more competent infant influences the attitudes and behavior of his or her parent. Further research is needed on the ecological boundaries and characteristics of parental support systems, as well as their effects on a greater range of children's developmental characteristics.

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