THE RELATIONSHIP BETWEEN FAMILY COHESION, MOTHER'S PERCEPTION OF SOCIAL SUPPORT, AND MOTHER-INFANT INTERACTION

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

Background of the Problem

Significance of Mother-Infant Interaction on Child Outcome

The early months after birth have been identified as a period during which mothers and their infants form mutually adaptive patterns of interaction. Inappropriate or inadequate interactional patterns have been shown to be associated with later developmental difficulties (Sander, 1969; Ainsworth and Bell, 1969), including differences in attachment (Ainsworth, 1969), cognitive development, and language development (Bee, Barnard, Eyres, Gray, Hammon, Spietz, Snyder, and Clark, 1982). Likewise, abusive and neglecting mothers show differences in interactional patterns with their infants (Disbrow, Doerr, and Caufield, 1977).

Infants who have secure affectional attachment bonds with their mothers are confident about their mother's responsiveness, while insecurely-attached infants are not. Evidence has been accumulated to show that there are long-term effects of insecure attachments during the first year of life (Lieberman, 1977; Waters, Wippmann, and Sroufe, 1979), and that the quality of the infant-mother attachment is related to the ongoing mother-infant interactions (Ainsworth, Blehar, Waters, and Wall, 1978).

Bee et al. (1982) have found that assessments of mother-infant interaction and general environmental quality are among the best predictors of I.Q. and language at each age tested and are good measures of a child's performance at 24 and 36 months. Assessing the quality of mother-infant interaction, then, gives us important information regarding possible developmental outcomes for children.

Maternal Support Systems and Mother-Infant Interaction

There is a good deal of evidence that maternal support systems are essential to mother-infant interactive relationships (Crockenberg, 1981; Price, 1977; Egeland and Sroufe, 1981; Nuckolls, Cassell, and Kaplan, 1972; Feiring and Taylor, 1976; Pedersen, Anderson, and Cain, 1977). Many of the studies were not attempting to measure directly the effects of social support on mother-infant interaction, but often they have found social support to be the by-product which explained many of the differences relating to the mother-infant interactive relationship.

These studies find that father support during pregnancy, adequacy of the marital relationship, and various types of family and social support networks are implicated as making significant contributions to the mother-infant relationship. How the mother perceives her support system (be it husband, immediate family, or friends) may vary individually from mother to mother. Spouses, friends, and family members may only be as supportive as the mother perceives them to be. Likewise, a network may only be as supportive as the mother's ability to draw support from that network. And ultimately, the mother's ability

to find and maintain support for herself may in turn be related to the mother's own attachment issues (Bee et al., 1982).

Family Functioning and Mother-Infant Interaction

The conditions which affect the mother-infant interactive system need to be considered from a social contextual viewpoint. The most immediate social-contextual variable affecting the mother-infant relationship is the family. Although attempts have been made to look at various aspects of family influence such as inclusion of the father into the mother-infant relationship (Parke, 1979) and the effect of the marital relationship on mother-infant interaction (Belsky, 1981), there has been no research which systematically looks at the interaction of family members on mother-infant interaction. Enough evidence has been accumulated to indicate that family contextual influences on mother-infant interaction need to be examined.

The need to examine the relationship between family functioning and mother-infant interaction is addressed in a study by Price (1977) which showed differences in mother-infant reciprocity related to the availability of the father to the mother. Price noted that:

> . . . reciprocity is not a function of either maternal or infant behaviors alone. Rather, mother-infant reciprocity is part of a finely-tuned family system, and as such is powerfully influenced by factors within the family (p. 7).

Likewise, the impact of family functioning during pregnancy has been shown to be a powerful predictor of infant birth weight. A pilot study by Ramsey, Abell, and Baker (in press) looked at two aspects of family functioning: family adaptability and family cohesion. The study showed that an extreme amount of family cohesion

("enmeshment"--an abnormally closed-system family with high overidentification of family members) is a significant predictor of infant birth weight. A larger study (Ramsey, Abell, and Baker, in press) that is ongoing is beginning to address details as to why and how the interactions of these enmeshed families produce small birth weight babies. The fact that family functioning during the mother's pregnancy can significantly affect infant birth weight has implications for the relationship of family functioning and family cohesion to mother-infant interaction.

An equally interesting problem is that of defining the relationship between family cohesion and perceived maternal support. Is the issue of cohesion and perceived support one and the same? Or, does the notion of cohesion go beyond the concept of support?

Statement of the Problem and Purpose of the Study

Statement of the Problem

Research evidence establishes that in order to assess significantly developmental outcomes, researchers must continue to look to the mother-infant interactive relationship. The quality of the mother-infant relationship has been shown to be significantly related to the amount of social support available to or utilized by the mother. Family functioning, and in particular the interaction of problematic families which are high in cohesion, has been shown to have a significant impact on pregnancy outcome. It is therefore postulated that family functioning may also have an impact on mother-infant interaction. How family functioning is related to the mother-infant interactional

relationships, how families interact to provide necessary social support to the mother-infant pair, and how family functioning and social support relate to one another are as yet important unanswered questions.

Purpose of the Study

The major goal of this study was to examine and describe the relationship between family functioning (adaptability and cohesion) and mother-infant interaction and the relationship between maternal support and mother-infant interaction. Enough evidence exists to assume that the quality of the mother-infant interactive relationship is significantly related to the presence or absence of later developmental difficulties. Additional information on how adaptability, cohesion, and maternal support are related to mother-infant interaction can lead to better ways of predicting and affecting infant outcome.

The current study is part of a larger study referred to above (Ramsey, Abell, and Baker, in press) which is looking at the relationship of family functioning during pregnancy to subsequent infant birth weight. Therefore, some of the data collected during the mother's pregnancy are of interest to this study, although the major time period for purposes of this research was four-months postpartum. Because of the availability of the pregnancy data, an additional goal of this study was to look at what happens to adaptability and cohesion from pregnancy to the postpartum period.

Conceptual Framework

The major focus of this research is to look at the relationship between specific variables of family functioning and the mother-infant interactional relationship. It was hypothesized that family cohesion, family adaptability, and perceived maternal support would be related in a significant way to maternal-infant interaction. A more complete statement of the hypotheses will be given at the end of this chapter. The purpose of the present section was to give consideration to some of the theoretical constructs and assumptions which form the conceptual basis for this work.

One of the goals of this study was to link two separate, but intimately related, lines of research endeavors: family interaction and parent-infant interaction. Research on families has moved toward systems theory as a useful conceptual framework for explaining much of the behavior of the family. A system perspective focuses attention on individuals in the context of their relationships, within the family and the broader community. Developmental researchers who are studying infants have also moved conceptually toward looking at infant behavior not as an isolated phenomena but in the broader context of social and environmental relationships.

The broader conceptual assumptions and constructs of importance in linking these lines of research are:

1. General systems theory as it applies to family dynamics
2. The constructs of family cohesion and adaptability
3. The construct of parent-infant interaction

4. The concept of social support as it relates to the maternal role

5. The concept of stress as it relates to the maternal-infant relationship

General Systems Theory as it Applies to Family Dynamics

A view of the family through a systems perspective has become a conceptual framework from which to view family interaction. Bertalanffy's (1968) General Systems Theory provided the theoretical basis for the family systems perspective. A major feature of a systems perspective is that it does not interpret events in isolation from other events but rather focuses our attention on individuals in context of their relationships (Becvar, Becvar, and Bender, 1982).

"System" is defined as an invention which is used to describe regularities or redundant patterns observed between people and other phenomena (Becvar, Becvar, and Bender, 1982). Thus, from a family perspective, the pattern of relationships among family members would constitute a system--the family system. The family as a system is a component of a larger network of societal and cultural systems. Just as an individual is studied in the context of his/her family, so the family is studied in the context of its environment. "Family dynamics" refers to the behavioral interaction of the individuals within the family system.

Cohesion and Adaptability

Olson, Sprenkle, and Russell (1979) have used Bertalanffy's

General Systems Theory to provide the theoretical basis for the Circumplex Model of Marital and Family Systems--a model of family functioning. (A diagram of this model is provided in Chapter III, Figure 4.) The two component dimensions of family behavior identified by Olson, Sprenkle, and Russell from a synthesis of empirical and clinical studies are cohesion and adaptability.

"Cohesion" is defined as "the emotional bonding members have with one another and the degree of individual autonomy a person experiences in the family system" (Olson, Sprenkle, and Russell, 1979, p. 5). Cohesion deals with the aspect of family process which has to do with the degree to which an individual is physically and emotionally connected to or separated from his/her family system. Some of the variables identified with family cohesion are: emotional bonding, independence, boundaries, coalition, time, and space. There are four levels of cohesion, ranging from extremely low (disengaged), moderately low (separated), moderately high (connected), and extremely high (enmeshed). Consistent with systems theory, it is hypothesized that balanced levels of moderately low to moderately high cohesion are most viable for family functioning. The extremes of disengaged and enmeshed are seen as problematic.

"Adaptability" is defined as the ability of a marital or family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress (Olson, Sprenkle, and Russell, 1979). Adaptability focuses on the extent to which the family system is flexible and able to change. Some of the variables associated with adaptability include family power (assertiveness, control, discipline), negotiation styles,

relationship rules, and feedback. The four levels of adaptability range from rigid (extremely low), to structured (low to moderate), to flexible (moderate to high), to chaotic (extremely high). As with cohesion, it is hypothesized that moderate levels of adaptability (structured and flexible) are more conducive to marital and family functioning and the extremes (rigid and chaotic) are the most problematic.

For purposes of this study, both dimensions of cohesion and adaptability were considered. However, in light of the evidence for cohesion as a salient dimension of family functioning in predicting birth weight, cohesion was hypothesized to be a better predictor than adaptability for purposes of this study. It has also been noted elsewhere (Baker, Ramsey, and Abell, 1983) that the conceptualization of adaptability in the circumplex model is less clear than that of cohesion, which may account in part for its poorer predictive power in looking at infant birth weight. The scales which are to be used to tap the dimensions of adaptability and cohesion are the Family Adaptability and Cohesion Evaluation Scale (FACES) II (Olson, Bell, and Portner, 1983) and an enmeshment subscale created from FACES I which uses the enmeshed items from FACES and that were predictors in the pilot study on family functioning and birthweight (Ramsey, Abell, and Baker, in press).

Parent-Infant Interaction

Much of the research in the area of parent-infant interaction has been atheoretical in nature and lacking in explicit conceptual guidelines. The need for theoretical evidence to guide research has been

noted by several researchers (Yarrow and Anderson, 1979; Rheingold, 1979; and Osofsky and Conners, 1979). Most investigators have simply followed the theoretical orientation that seemed most compatible with their personal philosophy, with the result that the current theoretical position underlying most of the interactional research is an eclectic one. Osofsky and Conners (1979) pointed out that what individuals are seeing with the evolution of studies on mother-infant interaction is the movement away from the traditional socialization model which views development in a unilateral way to a bidirectional model.

In support of a theoretical basis for the view of mother-infant interaction taken in this study, the researcher feels the greatest compatibility with the ethological-evolutionary view of "attachment" (Ainsworth, 1969). "Attachment" is defined by Ainsworth as an affectional tie that one person or animal forms between himself and another specific one--a tie that binds them together in space and endures over time. The attachment perspective has led to valuable information regarding the infant-caregiver relationship.

This view suggests that the young of most animal species are born with certain preadaptive behaviors which promote the development of attachment to the primary adult caretaker, and thus, the development of the interactive relationship. Instinctive tendencies of the newborn to root, suck, grasp, follow with the eyes, and cry are all behaviors intended to gain the attention of the mother and to stimulate a maternal response. The degree of match between infant and maternal systems of behavior determines the nature of early mother-infant interaction (Ainsworth, 1969). "Interaction" can thus be

defined as a dyadic relationship in which each partner's behavior is simultaneously a response and an invitation to respond (Schaffer, 1977). One of the more widely-accepted aspects of ethological attachment theory is the notion that infant-adult attachments arise from interaction and a number of studies support the hypothesis that interaction is an important antecedent of later attachment (Blehar, Leiberman, and Ainsworth, 1977; Ainsworth, Bell, and Stayton, 1971).

The conceptual model for parent-infant interaction which forms the underlying foundation for the Nursing Child Assessment Training Teaching Scale used in this study has been developed by Barnard (1981), based upon her observation that both the parent and the infant have certain tasks to perform for the interactive system to proceed smoothly (Figure 1).

For the infant, the tasks are the ability to produce clear cues and the ability to respond to the caregiver. For the parent, the tasks are the ability to respond to the infant's cues, the ability to alleviate distress, and the ability to provide growth-fostering situations. If the infant's cues are difficult to interpret or if the parent receives very little positive feedback when trying to interact with the infant, then the adaptive process is interrupted. Conversely, if the parent does not respond to the infant's cues, fails to alleviate distress or to provide growth-fostering situations, the interactive system breaks down.

There are several assumptions underlying this interactive model: (1) that the caregiver-infant interaction provides information that reflects the nature of the child's ongoing environment, (2) that the caregiver brings a basic style and level of skill that are enduring

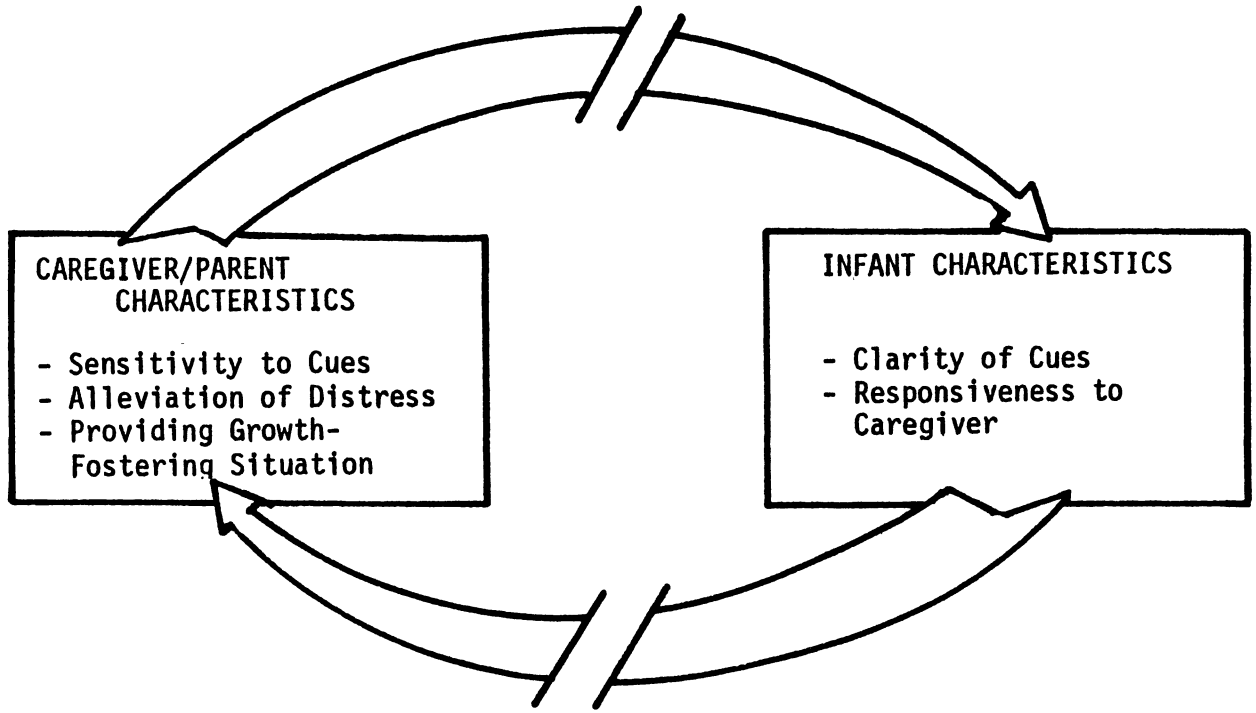


Figure 1. The Barnard Model for Parent-Infant Interaction

characteristics, (3) that there is a process of mutual modification in that the parent's behavior influences the infant and, in turn, the child influences the parent so that both are changed. Thus, the parent-infant system is influenced by the individual characteristics of each member--parent and infant--but these individual characteristics are also modified to meet the needs of the system.

Salient Features of Parent-Infant Interaction

Barnard and Bee (1983) and their colleagues viewed the mother-infant interaction system as one of a "mutually adaptive dialogue"--a "dance" between partners (p. 3). This conceptualization is similar to that of other researchers; for example, Kaye's (1977) description of "turn-taking." For the dialogue to proceed smoothly, both of the partners in the dialogue need certain features (Barnard and Bee, 1983).

The first feature is that the partners must each possess a sufficient repertoire of behaviors so that interlocking sequences are possible. The important skills that the parent must bring to the interaction are an ability to read the infant's cues, a repertoire of stimulation skills including language ability (variety of language use, clarity of instructions, and so forth), and the ability to delay responding or stimulating until the infant signals readiness. The infant, in turn, must have perceptual abilities such as seeing and hearing, the capacity for sustained mutual regard, smiling, physical adaptation of the body to holding or movement, soothability, and regularity or predictability of response. The absence of these skills

by either partner has a major impact on the quality of the mother-infant interaction pattern.

A second feature is that the responses of the partners must be contingent on one another--which means that as one partner vocalizes or tries to engage the other, that partner responds in a reciprocal fashion. Thus, the response must be appropriately related to or follow what the partner has done.

A third feature is that the quantity of stimulation of particular kinds is important. This means the amount of time spent, the amount of verbal stimulation, the degree of positive affect, and the range of complex toys. A fourth element is that specific adaptations must change over time. Adaptation refers to the act or process whereby the parent changes his/her behavior to accommodate the other. These acts are qualitatively different at different stages of development; thus, the stimulation needed by a two-year old is much different than the stimulation needed by a two-month old.

The Nursing Child Assessment Satellite Training (NCAST) Teaching Scale (Appendix D) is a measurement of parent-infant interaction which taps the above-described repertoire of behavior brought to the interaction by the two members of the dyad. In order to make use of concepts such as adaptation and contingency, it is necessary to break them down into observable behaviors. For parents, the important observable adaptive behaviors are: sensitivity to the infant's cues, ability to alleviate the infant's distress, and the ability to mediate the environment for the infant in ways that foster cognitive and social/emotional development. For infants, the primary observable adaptive behaviors are the ability to produce clear cues for the

caregiver. Within these broader categories of adaptive behavior fall more specific observable behaviors. For purposes of this study, the definition of "parent-infant interaction" refers to specific observable parent and child behaviors occurring in the interaction between the infant and the mother, as measured by the Teaching Scale.

The parent and infant behaviors represented by the Teaching Scale and defined by Barnard and Bee (1983) include the following:

Parent Behaviors. These are those behaviors necessary for the interaction by the parent as one member of the interactive dyad:

1. Sensitivity to Cues. Parents must be able to read accurately the cues given by the infant if they are to modify appropriately their behavior. Sensitivity in a teaching situation, for example, would require that the parent allow exploration and give appropriate feedback for the child's attempts to follow instructions.

2. Response to Distress. Parents must be able to recognize that distress is occurring (be sensitive to distress signals and be available to put this knowledge to work in a responsive and appropriate fashion).

3. Social-Emotional Growth Fostering. This behavior refers to more global parental behaviors such as playing affectionately with a child and providing appropriate social reinforcement for desirable behaviors. This requires that the parent be aware of the child's level of development and be able to adjust his/her behavior accordingly.

4. Cognitive Growth-Fostering. Cognitive growth fostering is provided when the parent provides sitmulation just above the child's current level of understanding. This requires that the parent have a good grasp of the child's level of understanding.

Child Behaviors. Child behaviors are those behaviors necessary for the interaction by the child as the other member of the interactive dyad.

1. Clarity of Cues. The infant must send cues to the caregiver. The skill and clarity with which these cues are sent will make it either easy or difficult for the parent to "read" the cues and make appropriate modification of his/her own behavior. Infant cues include sleepiness, hunger, alertness, satiation, and more. Ambiguous or confusing cues can interrupt a caregiver's adaptive activities.

2. Responsiveness to Parent. The infant, like the parent, must also be able to read the "cues" of his caregiver so that he/she can modify his/her behavior. If the infant is unresponsive to the behavioral cues of the caregiver, adaptation is not possible.

Concept of Family System Support as it Relates to Maternal Behavior

The amount and type of support an individual receives during a critical life change have been associated with maternal-infant interaction, mother-infant attachment, maternal adaptation, complications in pregnancy, and infant cognitive development (Cronenwett, 1980; Gordon and Gordon, 1960; Crockenberg, 1982b; Nuckolls, Cassell, and Kaplan, 1972; Sosa, Kennell, Klaus, Robertson, and Urrictiu, 1980; Egeland and Sroufe, 1981).

Although the need for support is significantly linked to maternal adaptation as well as to mother and infant outcomes, a cohesive concept of the type, amount, and quality of support needed to facilitate these processes is not well defined. Likewise, the concept of support

--much like the concepts of adaptability and cohesion--may have a curvilinear relationship to optimal outcome. That is, there may be a diminishing effect for support at either end of the continuum. Taking this view, no support or inadequate support represents one end of the continuum, while extreme density of support (too much or too intrusive an involvement by others) represents the other end of the continuum with a balanced, more optimal level of support in between. Supporting evidence for this view is given by Stevens (1980). In Stevens' study, the number of females in the mothers' network and availability for emergency help were positively related to infant development, but the density of the network is negatively related. In reviewing this study, Crockenberg (1982b, p. 3) noted that "a dense network demands more of the mother than it provides, thereby distracting her attention from her child." An additional support issue is the ability of the mother to draw support from that which is available to her. Individual differences may exist which facilitate or inhibit a mother's ability to actively seek and sustain necessary support.

The Maternal Support Scale (Appendix C) represents a conceptualization of social support which addresses more fully the question raised above. The Maternal Support Scale addresses four major support issues: (1) paternal support for the maternal role, (2) support for the maternal role from friends and family, (3) density of support, and (4) maternal ability to attain needed support.

An additional conceptual issue raised in looking at support which the study will attempt to address is the relationship of social support to family cohesion as it relates to the mother-infant relationship. The relationship between extreme cohesion (enmeshment) and

social support as it affects maternal behavior is as yet unclear. Can it be assumed, for example, that the extremely enmeshed family also has excessive involvement in the maternal role to the detriment of the mother-infant relationship? Is this one manner in which the enmeshed family prevents dyadic relationships from becoming too strong at the expense of the whole family?

Questions

The major questions raised are the following:

1. What is the relationship between family household cohesion and adaptability measured at midpregnancy and patterns of mother-infant interaction observed during a teaching episode at four-months postpartum?

2. What is the relationship between family household cohesion and adaptability measured at four-months postpartum and patterns of mother-infant interaction observed during a teaching episode at four-months postpartum?

3. Is there an interactional effect between family household cohesion measured at midpregnancy and at four-months postpartum which is related to mother-infant interaction measured at four-months postpartum?

4. What is the relationship between maternal support and patterns of mother-infant interaction measured at four-months postpartum?

This study is based on the theoretical constructs of adaptability and cohesion which are grounded in General Systems Theory, on a conceptualization for maternal support, and on the concept of mother-infant interaction. The construct of cohesion will be examined in a

number of ways. The original version of FACES-FACES I (Olson, Sprenkle, and Russell, 1979) was an 111-item questionnaire. It was later revised to a 30-item questionnaire--FACES II (Olson, Bell, and Portner, 1983). Family cohesion (enmeshment) will be measured by 17 items from FACES I (Olson, Sprenkle, and Russell, 1979). Household and extended family cohesion will be measured separately by 16 items in FACES II (Olson, Bell, and Portner, 1983). Adaptability will be measured by 14 items from FACES II. The Maternal Support Scale will consist of four, seven-item subscales. Of the four subscales, one scale (Support for Maternal Role From Family and Friends) was adapted from the Postpartum Self-Evaluation Scale (Lederman, Weingarten, and Lederman, 1981). Three additional seven-item scales were developed for this study--Paternal Support for Maternal Role, Density of Support and Maternal Ability to Attain Support.

Definition of Terms

For this study, the following terms were defined:

System is defined as an invention which is used to describe regularities or redundant patterns observed between people and other phenomena (Becvar and Becvar, 1982).

Family Dynamics refers to the behavioral interaction of the individuals within the family system.

Cohesion is defined as the emotional bonding members have with one another and the degree of individual autonomy a person experiences in the family system (Olson, Sprenkle, and Russell, 1979).

Adaptability is defined as the ability of a marital family system to change its power structure, role relationships, and relationship

rules in response to situational and developmental stress (Olson, Sprenkle, and Russell, 1979).

Circumplex Model is the theoretical model of family functioning using the curvilinear dimensions of adaptability and cohesion. The model provides a representation of interrelated family variables as illustrated in Figure 4 (Chapter III). There are 16 possible family system types which may range from being highly cohesive (enmeshed) to low cohesion (disengaged) while also ranging from high adaptability (rigid) to low adaptability (chaotic). The middle ranges of both family dimensions reflect the balanced or moderate family system (Olson, Sprenkle, and Russell, 1979).

Attachment is defined as an affectional tie that one person or animal forms between himself and another specific one--a tie that binds them together in space and endures over time (Ainsworth, 1969).

Interaction is defined as a dyadic relationship in which each partner's behavior is simultaneously a response and an invitation to respond (Schaffer, 1977).

Mother-Infant Interaction is defined as a mutually adaptive dialogue or "dance" between mother and infant (Barnard and Bee, 1983). For purposes of this study, the definition of mother-infant interaction refers to specific observable parent and child behaviors occurring in the interaction between mother and infant as measured by the Teaching Scale.

Summary

The need for information that will add to our knowledge of the factors affecting child outcome is self-evident. The relationship of

environmental influences such as family infuences are known to be critically important, but much more is needed to define ways in which the family interacts to provide the critical nurturing environment needed to promote healthy outcomes in children. The importance of the mother-infant relationship has also been shown to be a vital area of influence on the later development outcome of children. The coalition of studies relating family interaction and parent-infant or mother-infant interaction is long overdue. This study represents one such effort to combine these two significant and complex areas of research.

This chapter has described the need for the study and has presented questions to be answered. Chapter II presents a review of literature relating to the issues. Chapter III describes methodology appropriate to this study, followed by Chapter IV, which discusses the findings as they relate to the specific hypotheses of the study and additional issues. Chapter V will conclude with summary, recommendations, and conclusions drawn from the findings.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The goal of this study was to add to the knowledge of what happens in the broader environment and specifically the family environment, to affect the mother-infant relationship. First, it is important to understand the significance of the scientific focus on the mother-infant relationship--the factors leading to the study of mother-infant interaction and what we know about how the mother-infant relationship affects the outcome of children.

It is clear that the overall interactional quality of the mother-infant relationship is important to the developmental outcome of the child, including parent-child attachment issues, cognitive development, language development, and social-emotional development. What is less clear is how the environment interacts with the mother-infant pair so as to lead the relationship in either a positive or a negative direction--a direction which, as it will be seen, begins early and may sustain itself over a long period of time. Enough evidence has been accumulated to give important clues as to the antecedents of developmental outcome. Many social and medical fields, including family studies, nursing, medicine, psychology, and child development are ultimately being led to look at the broader environment, including the

animate environment (parents, family, and the broader social community). More importantly, it is the interaction of these variables that will lead to answers for some of the more difficult questions regarding the antecedents of developmental outcome. Of particular interest to this study is evidence which supports the notion of family interaction and social support as important variables affecting the developmental progress of young children.

Initial review of the literature will focus on the mother-infant relationship by looking at the determinants of mother-infant interaction and at the effect of the mother-infant relationship on the development of the infant. The next area for review will address those studies which deal with family influences on the mother-infant relationship. Although there have been some attempts to relate family influences to mother-infant interaction, the research emphasis has focused mainly on the inclusion of the father into the mother-infant dyad and the effect of the marital relationship on mother-infant interaction. The most significant research to be considered in terms of the present study is the research which relates family functioning to pregnancy outcome. Finally, an effort will be made to describe in some detail the meaning of family functioning and in particular a description of family cohesion as an important dimension of family functioning.

Mother-Infant Interaction

Introduction

It has taken a long time to look seriously at what happens in

infancy. It has taken a while longer to reach the conclusion that observing the dynamic interaction that occurs between mother and infants provides important information in the study of infant development. Research evidence along several separate lines led ultimately to what is now a very active, almost explosive field of parent-infant interaction research.

The proliferation of studies focusing on mother-infant interaction has come from several sources. The importance of maternal influence on the developmental outcome of young children has been accepted, due in part to the accumulating body of literature on attachment theory. There also exists a substantial body of knowledge suggesting that the most consistent correlates of infant and early childhood competence have been variables pertaining to maternal warmth and responsiveness (Bates, Olson, Pettit, and Bayles, 1982). Lewis and Coates (1980) argued that responsiveness of the parent to the infant is critical in predicting cognitive outcomes.

Research in the area of infant capacities also showed that infants are active participants in social interactions. This was a major shift from the predominant view of the infant as a passive recipient of maternal and environmental stimulation (Brazelton, Tronick, Adamson, Als, and Wise, 1975). The parent is no longer the sole influence on the child's development; rather, the infant's contribution to his own socialization is now widely-accepted (Lewis and Rosenblum, 1974). This shift came about in part because of experimental analyses of infant competencies in the 1960's which demonstrated the wide range of infant capacities (Kessen, Haith, and Salapatek, 1970), as well as studies which showed the readiness of the infant for social

interaction (Bell, 1974). These studies demonstrated that infants have more sophisticated communication skills than previously was thought. In addition, infants have other perceptual and cognitive abilities allowing them to exercise early participation and control over their environments.

Overview of Influences Affecting the Mother-Infant Relationship

The mother-infant relationship appears to be established in a positive or negative direction by about four weeks of age (Sumner and Fritsch, 1977). Less clear are the conditions which establish the direction of the mother-infant relationship. The questions directing much of the research in this field have been concerned with the variables that affect the mother-infant relationship and in the ways in which the mother-infant relationship is predictive of later developmental outcome.

What occurs between a mother and her infant in their early relationship has been shown to be affected by a number of maturational as well as environmental influences. On the maternal side, these influences include the mother's health, educational status, parity, psychosocial assets, and perceptions of infant temperament. Infant variables include sex, physical and behavioral characteristics, infant state, and health of the infant. The broader environmental influences include the mother's immediate support system, marital satisfaction, life change, and, as shall be postulated, the functioning of the mother's family.

Rutter (1979) noted five major influences which he felt to be important on early parental responses. These include: (1) the factor of the parent's own childhood experiences, (2) neonatal characteristics, (3) parental experience in bringing up children, (4) wider social environment, and (5) events in the early postnatal period. In a detailed review of the literature, Osofsky and Conners (1979) also summarized broad infant and maternal variables affecting the mother-infant interaction, including infant capabilities, sex, social class differences, auditory and visual capabilities of the infant, maternal attitudes and perceptions, and effects of maternal attitudes and behaviors.

Not only is mother-infant interaction affected by a number of intervening variables, but patterns of mother-infant interaction change over time. Developmental changes in the infant, for example, produce changes in the mother-infant relationship (Green, Gustafson, and West, 1980). Thompson, Lamb, and Estes (1982) found that the security of attachment can change between 12.5 and 19.5 months of age and that these changes are associated with changes in caregiving arrangements which were likely to affect the mother-infant interaction.

Once the basic attachment bond between mother and infant is formed, it is assumed that this bond will remain fairly enduring over time. This is true even though specific adaptive patterns between parent and child must also change over the same time period if the relationship is to be truly adaptive (Barnard and Bee, 1983). Thus, even though there are continual adaptations being made by mother and infant (that is, the mother's responsivity changes to meet developmental changes in the child), there seems to be consistency in the

overall interaction over time--especially in terms of the mother's contribution to the interaction (Barnard and Bee, 1983). Therefore, measuring the interaction between mother and infant gives important information regarding the overall status of the mother-infant relationship.

Environmental Conditions Leading to Poor Outcome

Before considering the antecedents of mother-infant interaction, it will be necessary to consider first some of the environmental conditions thought to contribute to poor developmental outcome in children. In a longitudinal study (Barnard and Douglas, 1974; Barnard and Eyres, 1979; and Eyres, Barnard, and Gray, 1980), children who had poor developmental outcomes at the end of the four-year study were looked at in terms of a number of early infant assessments completed prenatally, again at birth, and at several time periods during the first year and yearly thereafter. Children with poor outcomes were those who: (1) scored lower than 90 on the Stanford-Binet, (2) had low scores in motor development, (3) had language problems, or (4) had high deviant behavior. Families of these children were characterized by problems in the parent's environment such as low income, low psychosocial assets, low father involvement, and high life change. The mothers tended to be young and unmarried. The quality of the Home Observation Measurement of the Environment (HOME) scores were low in multiple areas as early as four months and more areas of the HOME deteriorated relative to the rest of the sample as time passed. There were also signs of problems in the mother-infant interaction as early as one month.

Barnard and Eyres (1979) concluded that there were three major facets of the environment that make a difference in the child's development: (1) the overall family milieu, including, most importantly, the degree of support available to the mother, (2) the inanimate enrichment of the environment, including availability of toys and materials and opportunity for variety of stimulation, and (3) the mother's typical mode of responding to the child, whether supportive and loving or hostile and restrictive.

In order to adequately appreciate the importance of looking at the antecedents of mother-infant interaction, one must look at a broader conceptualization of the conditions leading to poor outcome. It is now generally accepted that single early experiences do not lead to irreversible damage (Yarrow, 1979; Rutter, 1979), and it is in fact recognized that children have remarkable ability to overcome depriving experiences (Yarrow, 1979; Rutter, 1979) provided that the circumstances of the defeating environment change to a more optimal one (Rutter, 1971). A deprived environment does not in and of itself produce poor child outcome. Nor does infant vulnerability, poor maternal psychosocial assets, nor any other individual material or infant variable. Rather, it is an interaction of both vulnerability and risk on a sustaining basis which leads to poor outcome.

For the purpose of definition, "vulnerability" refers to the weaknesses, deficits, or defects of the child or mother, whereas "risk" refers to the interaction of the environment and the child (Solnit and Provence, 1979). Either child or mother may be vulnerable and, if so, the created environment becomes risky by virtue of the added vulnerability.

Conditions which lead to a poor outcome can become cumulative. When the child is vulnerable (highly irritable with extreme reactions and decreased responsivity to the parent), the environment automatically becomes risky. The infant behaves in ways that elicit responses from the parent that may in turn reinforce his vulnerability (Yarrow, 1979). If the mother is vulnerable (low psychosocial assets, lack of marital support) she may fail to respond to the infant, who in turn decreases his responsivity to the mother. The interactions may then become cyclical--leading to a poor sustaining environment. The risk factor also goes up when there is more than one stress. Rutter (1979) found that there is no one single isolated chronic stress which causes appreciable psychiatric risk. However, when two or more stresses occur together, the risk factor goes up significantly. Thus, a combination of stresses provides more than an additive effect.

Just as parents and children bring vulnerabilities with them to the interaction, they also bring assets. A competent, temperamentally easy infant may draw out a depressed or unresponsive mother. Likewise, a mother with high self-esteem and good marital support can better cope with an inconsolable, difficult infant. Sources of infant, parental, and environmental vulnerability and support will be outlined further in looking at the variables affecting the mother-infant relationship.

Factors Affecting Mother-Infant Interaction

Early Contact. Some of the earliest studies of mother-infant interaction looked at the relationship of early mother-infant contact in a hospital setting as a determinant of the quality of the

mother-infant relationship (Klaus and Kennell, 1976). It was felt by these researchers that a critical period may exist during the early hours following birth that could, if interrupted, lead to later child abuse and neglect (Klaus and Kennell, 1976). Subsequent studies (Leiderman and Seashore, 1975) have shown that early contact, in and of itself, is not predictive of subsequent interaction (Ainsworth et al., 1978), although the early weeks of mutual adaptation between mother and infant may be important in increasing the affective components of the mother's behavior toward her infant (Grossman and Grossman, 1981).

Maternal Psychosocial Assets. Studies in maternal deprivation give some clues to the maternal psychosocial factors affecting mother-infant interaction. A number of investigations have shown that a majority of parents who abuse their children tend to have been abused themselves (Parke and Collmer, 1975; Steel and Pollock, 1968). The processes underlying this transfer are not clear, however, since there is a percentage of battered parents who do not abuse their children. Differences in mother-infant interactional patterns have also been found among mothers who abused their infants. Disbrow, Doerr, and Caufield (1977) indicated in their research that mothers who abused their infants differed significantly from the controls. Using the Nursing Child Assessment Satellite Training (NCAST) Teaching Scale as a measure for mother-infant interaction, Bee, Disbrow, Johnson-Crowley, and Barnard (1981) found significant differences between abusing and nonabusing families on mother-infant interaction.

Maternal Parity. A variety of studies have indicated that maternal parity may affect the behavioral functioning of the newborn. Thoman, Barnett, and Leiderman (1971) found significant differences in maternal feeding behaviors between primiparous and multiparous mothers, with mothers of firstborns being less responsive to infant cues. The primiparous mothers in this study took longer to feed their infants and spent more time in both feeding and nonfeeding activities than did multiparous mothers. Lewis and Krietzberg (1979) found that mothers of firstborns spent more time feeding their infants and also stimulated them more. Although parity research does seem to support differences in social stimulation between multiparous and primiparous mothers, some authorities question the importance of parity in terms of the major qualities of caregiving (Bates et al., 1982).

Infant Development and Infant Physical Characteristics. Maturational changes in social and motor capabilities of the infant result in concurrent changes in mother-infant interaction in one study (Green, Gustafson, and West, 1980). The physical characteristics of the infant also affect the mother's behavioral responses. Wolff (1971) found that the infant's posture and muscle tone affect the mother's movements and way of handling the infant, as well as affecting how the mother may feel toward the infant. For example, an infant who is stiff and jerky in his movements may make the mother feel rejected. Infants who are noncuddlers can be so extreme in their physical preferences that the mothers may resort to feeding them on pillows, limiting the amount of physical contact that the mother has with the infant (Lourie, 1971).

Sex of the Infant. Moss (1974) found a number of distinct trends in parental treatment of the sexes. In general, he found that males tend to function at a less well organized and less efficient level than do females. Males were generally more irritable, less facile in responding to social stimuli and more difficult to calm. Mothers and fathers in Moss's study showed greater investment in the social behavior of their daughters than of their sons. They were more inclined to use social stimulation in attempting to quiet their daughters. The sex differences in this study were not at a significant level but rather represented correlational trends. Several researchers (Horowitz, Self, Paden, Culp, Laub, Boyd, and Mann, 1971) have found males to be less responsive to auditory stimuli than females.

Although a number of research projects control for sex differences, the findings are fairly scanty in terms of any strong relationships of sex differences to mother-infant interaction. Sex differences do not seem to play a major role in terms of overall quality of caregiving. Bates et al. (1982) found that sex differences of the infant had no appreciable loadings on a number of variables examined that were thought to be descriptive of the mother-infant system.

Social Class. Socioeconomic status has been frequently associated with infant competence at later ages (Hess, Shipman, Brophy, and Bear, 1969; Ramey, Farran, and Campbell, 1979). Social class differences related to infant behavior have been reported predominately in the area of maternal stimulation of language and social development (Tulkin and Kagan, 1972). These differences in infant behavior, more than likely, may be due to maternal class differences.

Lower-class mothers believe they have little control over their children's development (Tulkin and Kagan, 1972). There also appear to be differences in the ways that lower and higher socioeconomic mothers vocalize with their infants. Middle-class mothers are more likely to talk to their infants when they vocalize and to respond to their crying with touch. Lower-class mothers reverse this process by talking to their infants when they cry and by more touching when the infants vocalize (Tulkin and Kagan, 1972; Lewis and Wilson, 1972). Ivanans (1975) noted that the higher the mother's educational level, the higher the scores on the infant's development test.

Differences in interactional patterns have also been noted between high education and low education mothers (Bee et al., 1982). In measuring mother-infant interaction (through the use of the HOME and an early version of the Teaching Interaction Scale) it was noted that mothers who were more involved and responsive during the teaching and home observation were better educated, had high developmental expectations (that is, expected their infants to learn earlier), were overall less restrictive, were more sensitive during feeding, and had husbands who were involved prenatally. In contrast, the mothers who were restrictive or intrusive during teaching and during the HOME were less educated, had less involved husbands, and were less involved with their children.

From studies that have attempted to predict which children would have problems, one of the best single predictors of later difficulties has been the mother's years of education (Smith, Flick, Ferris, and Sellman, 1972; Werner, Bierman, and French, 1971). However, when looking at variables that discriminate within educational levels, Bee

et al. (1982) found that those mothers with less education, but with supportive husbands, stable life circumstances, and accurate perceptions of their infants, were more likely to have infants who developed optimally.

Infant State of Awareness. Infant state refers to the level of conscious awareness of the infant during the early months of life. There are six states, each with a group of definable characteristics. The states are: deep sleep, light sleep, drowsy, quiet alert, active alert, and crying. The characteristics which define these states, include distinguishing eye movements, breathing patterns, body activity, and response to external and internal stimuli (Parmelee and Stern, 1972).

The relationship of infant state to subsequent parent behavior is one of the more powerful of parental influences. An infant capable of only two states, such as deep sleep and intense crying, for example, can be devastating to his caregivers (Brazelton, 1961).

A number of researchers have recognized the importance of infant state of awareness on mother-infant interaction (Osofsky and Danzger, 1974; Ashton, 1973; Moss, 1974). Osofsky and Danzger observed mothers during a feeding episode with their infants in order to evaluate relationshps between neonatal style and the early mother-infant relationship. Recorded infant behaviors included initial and predominant states, quantity and quality of eye contact, quantity and quality of infant responsivity to auditory stimuli, and responsivity to holding and handling tactile responses. Maternal behaviors included quality and frequency of auditory and visual stimuli, facial and head

movements, and quality and quantity of tactile stimulation. The infant was also assessed using the Brazelton Neonatal Behavioral Assessment Scale (BNBAS) (1973).

The researchers found that similarity in infant behavioral styles across the two situations--infant state and responses during the feeding interaction--were related to responses during the Brazelton assessment. Thus, state behaviors tended to be consistent across behavioral situations. The researchers also found that the mother's behavior and the infant's behavior were related in logical ways. The attentive, sensitive mother tended to have a more responsive baby. Likewise, the responsive baby tended to elicit attentive, sensitive behavior from the mother.

In another study, Moss (1974) observed that the amount of time an infant was awake and crying was also important in modifying the mother's response to the infant. Infant state is important in terms of understanding the infant's availability for contact with his caregiving environment and thus has very important implications for mother-infant interaction. How well the mother can modulate or control infant states also has important implications for the overall interaction. A mother who can calm her crying infant in a fairly reasonable period of time feels that she has been able to meet the infant's needs, which adds greatly to her feelings of competence and confidence. There are high individual differences among infants in terms of their state behaviors and maternal competency is highly related to these variables.

Infant Temperament. The recognition of individual temperamental characteristics in early infancy is now generally recognized. Much of

the early focus on temperament came from an in-depth, longitudinal study by Thomas, Chess, and Birch (1968). These authors devised a classification system of behavioral characteristics, including activity level, rhythmicity, approach-withdrawal, adaptability, intensity of reaction, threshold of responsiveness, quality of mood, distractability, attention span, and persistence. Clusters of these characteristics determined whether a child was "difficult" or "easy" to care for. It has been suggested by Thomas, Chess, and Birch, 1968) that "difficult" infants are more likely than "easy" infants to develop problems requiring psychiatric intervention.

Individual differences in infant temperament, as perceived by the mother, do have an effect on parent caregiving. Measurements of temperament, however, tend to be unstable in early infancy (Carey, 1972; Kronstadt, Oberklaid, Ferb, and Swartz, 1979). Kronstadt et al. found that infants identified as difficult were found to change considerably across three time periods (between five weeks and six months). Temperament is determined by the mother's perception of the infant and her perception may be influenced by a number of factors, including her own temperament, confidence, previous experience, and the availability of support from family and friends (Kronstadt et al., 1979). Campbell (1977) believed that maternal expectations partially influence a mother's perception of her infant, independent of actual infant behavior. Other researchers (Tulkin and Cohler, 1973; Moss and Robson, 1968; Dunn, 1977; Crockenberg, 1982a) have also found that maternal expectations, beliefs, and attitudes affect how the mother responds to the infant.

The studies on the mother's perceptions of her neonate also reveal some interesting inconsistencies. Broussard and Hartner (1970) reported that primiparous mothers' perceptions of their infants at one month of age were predictive of the children's later social-emotional development. The one-month perceptions were based upon the mothers' responses to the Neonatal Perception Inventory (NPI), a 12-item rating scale.

In the study by Bee et al. (1982), several of the ecological/parent perception measures were related to later development. For example, the mother's perception of social support was related to receptive language at 36 months and to I.Q. at 48 months. Likewise, the mother's developmental expectations were related to receptive language development at 36 months. However, in looking at outcomes for the NPI, Bee et al. found a negative relationship of the mother's perception of her neonate to later I.Q. That is, mothers who thought their neonates were better than average later had children with lower I.Q.'s. Likewise, Palisin (1980) was unable to replicate Broussard's finding that mothers who rated their infants as equal to or worse than average have children with later higher risk of emotional disturbances.

Because of the instability with respect to temperament difficulty in the first six months, one cannot make assumptions that early maternal concerns will continue at a later date. Bates, Olson, and Pettit (1982) showed that findings on the effects of difficult temperament are mixed and that those studies clearly showing adverse effects are of limited generalizability, owing to small or demographically restricted samples. According to Bates et al. (1982), if difficult

temperament does contribute to later problems via disturbed mother-child transactions, it probably occurs after six months of age.

Again, the degree to which child characteristics (such as difficult temperament) interact with parenting styles to determine developmental outcome should be considered in terms of what we know about vulnerability and risk. That is, a difficult infant is vulnerable. And yet a sensitive, supportive family may well predict a more optimal outcome for the infant.

Effect of Prematurity on Mother-Infant Interaction. Several research studies have shown differences in mother-infant interaction between full-term and preterm infants. Karger (1979) found that synchrony between maternal-infant pairs were distinguishable between preterm and full-term groups at three months and that synchrony predicted below average on the HOME scores at nine months for dyads in which mother-infant behavioral rates were inversely related. Perinatal status in general has not been a good predictor of later problems (Sameroff and Chandler, 1975). Assessments of the environment, even at birth, are better predictors of I.Q. than are assessments of the child (Bee et al., 1982).

Maternal Support Systems. A number of researchers are calling for a closer look at the support systems that assist parents in their caregiving roles (Bronfenbrenner, 1979a; Garbarino and Sherman, 1980). Price (1977) found that scores on mother-infant interaction declined in families in which: (1) fathers had lost jobs during the study, creating family stress, (2) fathers were seldom around because of long work hours, and (3) fathers who were rated as ambivalently available.

What seemed to be in operation in these circumstances was situations which seemed to take the form of competition with the infant for the mother's time and attention. In sharp contrast, mother-infant pairs with fathers who were available to the mother showed dramatic improvement in reciprocity. Price postulated that the mother's ability to enjoy her infant and regard it with affection may be in part a function of the quality of her relationship with her husband.

Egeland and Sroufe (1981) studied mother-infant attachment outcomes in 31 maltreatment cases. In this study, the researchers found that changes from insecure to more secure attachments were related to the presence of a supportive family member, less chaotic lifestyle, and, in some instances, a more robust infant.

Bee et al. (1982) found an important relationship in the overall supportiveness and harmony of the environment for the mother in terms of the child's cognitive outcome. In this four-year, longitudinal study it was concluded that what the mother does with her infant is less useful as a predictor than the nature of her overall support system.

In looking at the four-year data on only those children with behavior problems, correlations with early infant and mother assessments were weak. Among the low education group, however, the father's involvement and life change still appeared as significant correlates.

Social support has been an important finding in a number of studies. Gottlieb and Garveth (1977) linked social support with the amelioration of developmental crises. Nuckolls, Cassel, and Kaplan (1972) related measures of stress to complications in pregnancy. Women experiencing high levels of stress had low complication rates if

they had higher kinship support and marital solidarity. Sosa, Kennell, and Klaus (1980) reported that the presence of a support person during labor and delivery reduced perinatal complications.

Crockenberg (1981) studied the effect of social support systems on mother-infant attachment in a sample of mothers with irritable infants. It was hypothesized that infant irritability constituted a stress for the mother and that social support would be related to secure attachment.

Mothers in Crockenberg's (1981) study were interviewed about sources of support and stress and the infant and mother were then observed in the Ainsworth and Wittig Strange Situation (Ainsworth and Bell, 1969) near the infant's first birthday. Each infant was then assigned to one of three attachment categories: (1) securely attached, (2) anxiously attached/avoidant, and (3) anxiously attached/resistant. The results showed that the adequacy of the mother's social support was clearly and consistently associated with the security of the mother-infant attachment relationship. Support had its strongest effect on the irritable babies and their mothers, suggesting that availability of social support is particularly critical when the family is under particular stress.

Cochran and Brassard (1979) have referred to the support systems available to parents as "personal social networks" and have argued that an effective social network is vital to the parents and to the child, both directly and indirectly. Lewis and Weinraub (1976) also stressed the importance of the broader social context.

Hetherington, Cox, and Cox (1979) found that after a divorce, those mothers who had an effective network of support from friends,

neighbors, and relatives were better able to interact with their children in a loving and consistent way than those with less effective social networks. Also at issue is the mother's ability to locate and maintain support for herself. Eyres and Barnard (1980) speculated that the mother's ability to find support may be related to the security of her own basic attachments. That is, if a mother has emerged from a secure, stable attachment with her own parent(s), she may be more likely to enter a secure attachment with friends, spouse, and children.

Not all studies found support to be significant to the mother-infant system. Bates et al. (1982) did factor analysis on a wide range of variables thought to be descriptive of the mother-infant system. The largest of the factors involving maternal reports about personality, social support, and family adjustment was a factor called "maternal satisfaction." These were mothers who, in the interview, gave an impression of higher father involvement and family unity, described themselves as having a good social support network and as being satisfied with their postpartum adjustments. These researchers found only slight relevance of this factor to their molecularly coded observation of mother-infant interaction.

An additional support issue not well addressed by the literature pertains to the notion of density of support. According to this conceptualization, perceived maternal support may behave in a curvilinear fashion. That is, rather than "the more support the better," there may be a point at which the supportive environment is perceived as oppressive to the mother. In supporting this view, a study by Stevens (1980) pointed out that the numbers of females in the mothers'

network and availability for emergency help was positively related to infant development, but the density of the network was negatively related. In reviewing this study, Crockenberg (1982a, p. 3) noted that "a dense network demands more of the mother than it provides, thereby distracting her attention from the child."

Influence of Family Interaction on Mother-Infant Interaction

Family Interaction Studies

Increasingly, studies in the area of family have shifted from a study of the individual to the relationships in which the individual is embedded (Haley, 1971). According to some family researchers, systems theory probably holds the greatest potential for providing the conceptual framework in the family field (Haley, 1963). There is accumulating research support for the hypotheses that families operate as systems--demonstrating reciprocity and feedback--and that abnormal families have different interactional patterns than do normal families (Alexander, 1973).

Family interaction studies have been numerous and detailed reviews of family interaction research and theory have been published by Mishler and Waxler (1965), by Riskin and Faunce (1972), and by Winter and Ferreira (1969). A review of both family and developmental literature, however, has produced little research which looks at the effect of family interactive influences on the early mother-infant relationship, although the need for such research has been expressed by several authorities (Belsky, 1981; Yarrow, 1979).

With the emphasis on finding contextual and environmental influences, the search for determinants of mother-infant interaction should have led naturally to family functioning. The road to discovery, however, often follows a circuitous route.

Father-Infant Studies

The wealth of studies looking at mother-infant interaction led eventually to a rather obvious gap in the information concerning the father-infant relationship. An effort has been made in recent years to fill that gap by focusing on the father-infant relationship by using the same paradigms as have been used in the mother-infant studies--still looking at the dyadic relationship patterns (Belsky, 1981; Clarke-Stewart, 1978). These studies have found significant differences between mother-infant and father-infant pairs. Important to a number of the studies was the introduction of second-order effects noted by the introduction of the father to the mother-infant unit (Pederson, Yarrow, Anderson, and Cain, 1978; Clarke-Stewart, 1977; Belsky, 1979). Second-order effects refer to reductions in parent-infant interactions associated with the presence of a second person.

Eyres and Barnard (1980), in their four-year longitudinal study, found that the amount of father involvement prenatally was important for the mother-infant relationship. General environmental support (including level of life change, amount of father involvement, and mother's psychosocial assets) were predictive of the child's four-year functioning. Mothers in this study whose husbands were involved prenatally generally had higher psychosocial assets.

Parke and O'Leary (1976) discovered that mothers were less inclined to hold, change position, rock, touch, or vocalize to their newborns when the father was introduced into a hospital room containing the mother and infant. Belsky (1979) reported that fathers more frequently vocalized to, played with, stimulated, and held their 15-month olds when they were alone with their toddlers than when in the presence of the other parent.

Some of the research on fathers would indicate that it is primarily maternal sensitivity with appropriate responsiveness to infant cues that appears to foster optimal development (Lamb and Easterbrooks, 1980). It is proposed that paternal influences may be more indirect; that is, mediated by the wife in her capacity as mother (Lewis and Weinraub, 1976; Parke, 1979). Parke (1979) and others (Ahammer, 1973; Hartup and Lempers, 1973; Schaffer, 1977), however, have noted the need to recognize that this is a developmental orientation of all members of the interactive network--mother, father, and infant.

Father-Mother-Infant Studies

Parke (1979) felt that insufficient attention has been given to developmental shifts that occur as adults become parents. In recognizing the need for a multiple set of assessment strategies, Parke has conceptualized a systems approach of studying the family triad of mother-father-infant as a focus of analysis, represented by the conceptualization in Figure 2. Parke noted that the indirect effects of the father are not restricted to mother-infant relationships and that the father does indirectly influence his infant through interaction

(A) DYAD

Direct-Effect Model

$F \longleftrightarrow I$

$M \longleftrightarrow I$

(B) TRIAD

(i) Impact of father modification of mother's behavior on infant

$F \longrightarrow M \longrightarrow I$

(ii) Impact of father-infant relationship on mother-infant interaction

$F\text{-}I \longrightarrow M\text{-}I$

(iii) Impact of father modification of infant's behavior on mother-infant interaction

$F \longrightarrow I \longrightarrow M\text{-}I$

(iv) Impact of father-mother relationship on infant

$F\text{-}M \longrightarrow I$

(v) Impact of father-infant relationship on mother-infant relationship

$F\text{-}I \longrightarrow F\text{-}M$

Source: R. D. Parke, "Perspectives on Father-Infant Interaction," Handbook on Infant Development (1979).

Figure 2. Direct and Indirect Effects in Father-Infant (Dyadic) and Mother-Father-Infant (Triadic) Interaction

patterns with other members of the family network. Feiring and Taylor (1976) demonstrated that high maternal-infant involvement was positively related to the mother's perception of support from a secondary parent or individual not necessarily the father.

Pedersen et al. (1978) gathered data on the mother-father interaction in naturally occurring dyadic and triadic situations and found that reductions in parental behavior occurred primarily in intervals in which spouses were talking with one another. That is, it was not the presence of the spouse as much as it was the marital interaction that effected parent response.

Effect of Marital Relationships on Mother-Infant Interaction

Until recently, many of the studies looking at the effect of the marital relationship on child outcomes focused on research that looked at the effects of the marital relationship (in particular, separation from the parent as a result of marital discord) on the development of aggressive or antisocial behavior (Johnson and Lobitz, 1974; Kimmel and Van der Vern, 1974; Rutter, 1971).

Belsky (1981) noted with regret the "lack of crossfertilization" (p. 5) between family sociologists and developmentalists--with each field remaining largely ignorant of the achievements of the other. Belsky suggested overcoming this gap by his conceptualization of the family which highlights circular influences of the marital relationship, infant behavior, and parenting (Figure 3). Belsky's model assumes that parenting affects and is affected by the infant, who

both influences and is influenced by the marital relationship, which in turn both affects and is affected by parenting.

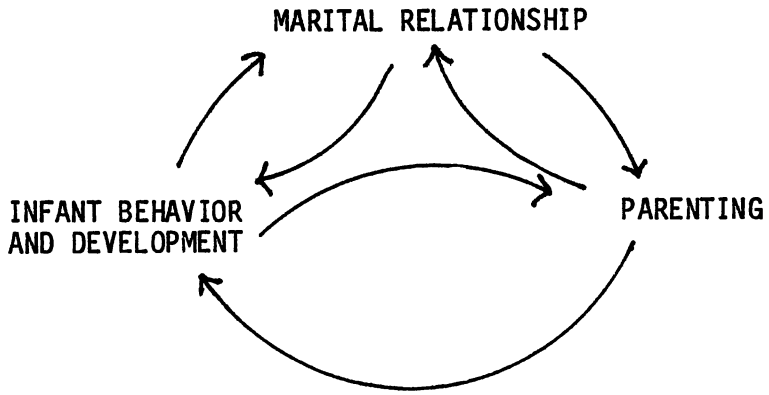


Figure 3. Scheme for Integrating Disciplines of Family Sociology and Developmental Psychology During Infancy Years

Pedersen et al. (1978) found that tension and conflict between husband and wife (as reported by fathers) strongly and negatively correlated with independent observational evaluations of maternal feeding competence. The husband's esteem for the wife as a mother was positively related to her feeding skill. Price (1977) also reported data linking marital support and maternal feeding ability. Price noted that "the mother's ability to enjoy her infant and regard it with affection may be in part a function of the quality of her relationship with her husband" (p. 7). Pedersen, Anderson, and Cain

(1977) found that the more husbands criticized and blamed their wives, the more these mothers were negatively oriented toward their five-month olds.

Likewise, research by Cook (1979) suggested that disorganized infant functioning, as assessed by the BNBAS, was related to nonsynchronous patterns of mother-infant and father-infant interaction only when marriages were evaluated as low in marital statisfaction. Belsky (1980), in summation, noted that there is no theoretical guidance in the infancy literature for dealing with the complex issues of joint influence on infancy.

Home Environment and Cognitive Outcomes

In looking at the home environment as having an effect on child outcome, many studies have focused on the relationship of stimulation in the environment as a predictor of cognitive development (Yarrow, Rubenstein, Pedersen, and Janowski, 1972). Yarrow et al. has shown that the variety and amount of animate and inanimate stimulation in the home were predictors of the child's cognitive development. Wyler, Masuda, and Holmes (1971) showed that the overall conditions of family life circumstances, stresses, and emotional support are related to cognitive outcomes. Other measurements of stimulation in the home environment (Bradley and Caldwell, 1976) have also shown significant differences in mental test performances related to the quality of stimulation in the home environment.

Family Functioning

A great deal of effort has been spent in the last 10 years in

family studies to describe marital and family dynamics. The underlying base for many of these attempts has been the general systems theory (Bertalanffy, 1968).

From the conceptual clustering of the dimensions of family dynamics, two major family dimensions have emerged--cohesion and adaptability--which have formed the basis of a model for assessment of family functioning known as the circumplex model and family systems (Olson, Sprenkle, and Russell, 1979). Cohesion, as described by the circumplex model in Chapter III, will be a major focus of the current study. The combining of the two dimensions of adaptability and cohesion into a circumplex model has enabled its users to develop 16 types of marital and family systems.

Cohesion

The definition of family cohesion used for the purpose of this study is "the emotional bonding members have with one another and the degree of individual autonomy a person experiences in the family system" (Olson, Sprenkle, and Russell, 1979, p. 5). At the extreme of high family cohesion, enmeshment, there is an overidentification with the family that results in extreme bonds and limited individual autonomy. At the low extreme, disengagement is characterized by low bonding and high-autonomy from the family. It is hypothesized by Olson, Sprenkle, and Russell (1979) that a balanced degree of family functioning is the most optimal level of functioning and the least problematic for the family. Because of the implication of enmeshment as a significant aspect of family functioning which can be related to pregnancy outcome (Baker, Ramsey, and Abell, 1983), it is worthwhile

to examine in greater detail the characteristics of the enmeshed family.

Enmeshment. Although it is generally assumed that balance between either extreme of enmeshment or disengagement is the healthiest, healthy families may, over short-term periods, experience extreme cohesion; for example, over a death or birth of a child. If this pattern of relating becomes a predominant style, however, then it is assumed to be problematic for the family (Olson, Sprenkle, and Russell, 1979). The model is also dynamic in that it assumes that changes can and do occur in family types over time.

Minuchin (1976) reported that enmeshment and disengagement refer to a transactional style or preference for a type of interaction, not to a qualitative difference between functional and dysfunctional. According to Minuchin, most families have enmeshed and disengaged subsystems. The mother-child subsystem may tend toward enmeshment while the children are small, with the father taking a disengaged position toward the children. Operations at the extreme, however, indicate areas of possible pathology. A highly-enmeshed subsystem of mother and children, for example, can exclude the father, who becomes disengaged in the extreme.

Conflict Resolution in Enmeshed Families. Minuchin, Montalvo, Guerney, Kosman, and Schumer (1967) and Minuchin (1976) noted that in enmeshed families, dyadic groups have difficulty functioning in enmeshed family systems because of interference from another party. Enmeshed families have low tolerance for conflict and/or inadequate mechanisms for conflict resolution. Hoffman (1975) noted that

families may continually avoid conflict through the use of third parties. When two people disagree, a third party intervenes.

Need for Control. Minuchin et al. (1967) called attention to constant "engagement maneuvers" (p. 358) in enmeshed families, most of which, they noted, are in response to controlling operations on the part of the mother. Minuchin et al. wrote that in such families there is virtually no possibility of developing any language of affection and concern--that all interchanges, whether positive or not, are simply variations of power maneuvers. In the enmeshed family profile, any evidence of loss of control of the mother over her children makes her anxious. The predominate fear, according to Minuchin, is that of becoming helpless. Included in this is the mother's often overwhelming need for a continual hold on the children. Minuchin et al. found that at both ends of the extreme (enmeshment and disengagement), mothers tended to assume absolute responsibility for their children's behavior and to discourage autonomous exploration and mastery of the environment.

Loss of Individuality. When cohesion is high there is overidentification so that loyalty to and consensus within the family prevent individualization. At the other extreme, disengaged family members have only limited attachment or commitment to their families. According to Minuchin et al. (1967), the quality of the connectedness was such that attempts on the part of one member to change elicited fast complementary resistance on the part of the other.

Coalitions do form--usually parent-child coalitions. However, any coalition is threatening to the other members of the family, and

if dyadic relationships threaten other family systems, there is even more of a sanction against them. Thus, although coalitions form, they are unable to remain stable.

The extremes of being disengaged and enmeshed are highly problematic and indicative of those who most often come for family treatment. It is important to remember that the pathology resulting from these families is a result, not of one person's pathology in a family, but rather a dynamic interaction on the part of the whole family. Thus, in looking to the family as a source of influence on mother-infant interaction, one must look at the whole interactive family system. The enmeshed family is an extreme example of the "chain reaction" nature and interrelatedness of interactive processes as such--synchrony gone awry. Since many problematic families fall along the cohesion continuum, it seems extremely worthwhile to examine in greater detail the relationship of family cohesion to the mother-infant relationship.

Family Cohesion and Pregnancy Outcome

Of particular relevance to this study is research by Ramsey, Abell, and Baker (in press), which looked at the relationship of family functioning to pregnancy outcome. Family functioning was assessed for 101 mother-infant pairs using the Family Adaptability and Cohesion Evaluation Scale. Infant birth weight and birth weight/weight/gestational age were regressed on a number of medical, anthropometric, risk-behavior, sociodemographic, and life event variables. Together, these variables explained 45% of the variance in birth weight and 40% of the variance in birth weight/gestational age. Family functioning contributed an additional 15% of the variance in each

case. The variables related to family enmeshment proved to be a particularly powerful determinant of birth weight. Other significant social variables included marital status. Four categories of marital status were coded, including husband present, single parent living alone, extended family present, and extended family present without husband. Whether the mother identified herself as married had more to do with birth weight than the fact of who lived in her home. It was suggested by Ramsey, Abell, and Baker (in press) that marital status may reflect the mother's perception of support during the pregnancy period. The finding of a significant relationship of family functioning to medical outcome has significance for the relationship of family functioning to mother-infant interaction.

Adaptability

Adaptability, the second dimension of the circumplex model, is defined as the "ability of a marital or family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress " (Olson, Russell, and Sprenkle, 1979, p. 12).

The concepts embodied by this dimension include family power (assertiveness, control, discipline), negotiation styles, role relationships, relationship rules, and feedback (negative and positive). The four levels of adaptability range from rigid (extremely low), to structured (low to moderate), to flexible (moderate to high), to chaotic (extremely high). As with cohesion, it is hypothesized that balanced levels are more conducive to marital and family functioning, while extremes are the most problematic.

It is obviously difficult to find simple, linear relationships of any single variables to child outcome. The interaction of the mother and infant (both prenatally and after birth), with the broader animate and inanimate supporting environment, must be considered together in order to address the issue of child outcome. The evidence seems clear that it is the complex interaction of maternal, infant, family, and environmental variables which determine outcome. The real task for future research is to further refine research designs which can adequately measure contextual interaction.

In summary, a review of the literature supports the notion that the quality of mother-infant interaction is related to the subsequent development of the child. In reviewing those facets of the environment that made a difference in the child's development, it was clear that the overall family milieu and degree of support available to the mother were important variables affecting subsequent child development. How the family operates to promote an optimal nurturing environment for the child, and how the notion of maternal support functions in relationship to the mother-infant relationship, is yet unclear. A goal of this study will be to help clarify these issues.

CHAPTER III

METHODOLOGY

Introduction

The purpose of this study was to examine and describe the relationship between family functioning and mother-infant interaction and between maternal support and mother-infant interaction. In addition, this study sought to describe the effects of cohesion over time, from midpregnancy to four-months postpartum. A review of current literature supports the notion that significant relationships between these variables exist.

Cohesion and adaptability are viewed as independent variables influencing mother-infant interaction. Cohesion and adaptability are two dimensions of the Circumplex Model of Family Functioning. Subjects in the study were measured on these two dimensions and resulting scores were grouped in two ways for purpose of analysis: (1) three groups using cutoff points established by the original authors' norms (Olson, McCubbin, Barnes, Larsen, Muxen, and Wilson, 1982; and (2) three roughly equivalent groups determined by the variance of the groups sampled in this study. The three groups determined by sample variance were included because, after grouping by cutoff points established by the original authors, the number of cases was too small for selected independent variables to provide meaningful statistical analysis.

It is hypothesized that there will be a significant relationship between family functioning (cohesion and adaptability) and mother-infant interaction over two time periods (midpregnancy and four-months postpartum) and that cohesion at midpregnancy and at four-months postpartum will have a significant relationship with mother-infant interaction. Maternal support is also an independent measure for this study and is hypothesized to show a significant relationship with mother-infant interaction.

The first section of this chapter describes the research methodology or approach used for this study. The second section deals with the research design and gives an overview of the current study in the context of the larger study of which it is a part.

Additional sections include the Selection of Subjects (Sample and Population); Preparation for Data Collection; Methods of Data Collection; Instrumentation, including three major instruments used in the study: (1) The Family Adaptability and Cohesion Scale (FACES II and FACES I Enmeshment Subscale), (2) The Teaching Scale (NCAST), and (3) The Maternal Support Scale; Reliability and Validity of Instruments; Data Collection Methods; and the statistical analysis, including an operational restatement of the conceptual hypotheses.

Description of Research Methodology

The methodology used in this study is somewhat descriptive in nature, but also has characteristics of developmental research. The purpose of descriptive research is to collect factual information, to identify problems, and to make comparisons and evaluations. The longitudinal aspect of this study is designed to examine the effect of

family influences on mother-infant interaction across an eight- to nine-month time period. An attempt was made to relate findings to a larger population through hypothesis testing. One of the major purposes of the current study was to examine and describe behavioral aspects of family functioning, maternal-infant interaction, maternal support, and relationships among the three.

The research methodology for this study also contains elements which resemble quasi-experimental research. The purpose of quasi-experimental research is to approximate the conditions of the true experiment in a setting which does not allow the control and/or manipulation of all relevant variables. One goal of this study was to investigate the relationship of cohesion and adaptability to mother-infant interaction but under conditions which would not allow the selection of the subjects at random. This type of research is characterized by methods of partial control based upon a careful identification of factors influencing both internal and external validity.

The weakness of such research is the same as in any research where random assignment has not been applied--the equivalence of the groups is less likely because random selection or assignment offers the best control over independent variables. Internal validity is weakened because anything that affects the controls of a design becomes a problem of internal validity.

Research Design

The present study is part of a larger study being conducted by the Department of Family Medicine at the University of Oklahoma School of Medicine, which will hereafter be referred to as the "Pregnancy

Study." (For further information related to the Pregnancy Studies, refer to Ramsey, Abell, and Baker, in press; Baker, Abell, and Ramsey, 1983; and Baker, Ramsey, and Abell, 1983). The larger Pregnancy Study looks at the relationship of family functioning during pregnancy to infant birth weight (Ramsey, Abell, and Baker, in press). Table I describes how the present study fits into the Pregnancy Study.

As indicated in Table I, there are two time periods for the purpose of this study. Time One is midpregnancy, during which socio-demographic data were collected, as well as descriptive data about family function through FACES II and FACES I Enmeshment Subscale.

At Time Two, when the infant is four months old, FACES II and FACES I Enmeshment Subscale was used again with the addition of two more instruments: (1) NCAST Teaching Scales and (2) the Maternal Support Questionnaire. The Teaching Scale presents a measure of the interactive quality of the mother-infant relationship as it revolves around a developmentally appropriate teaching task. The Maternal Support Scale looks at four aspects of the mother's support system: (1) partner support for the maternal role, (2) parent, relative, and friend support for the maternal role, (3) density of support, and (4) maternal ability to attain support.

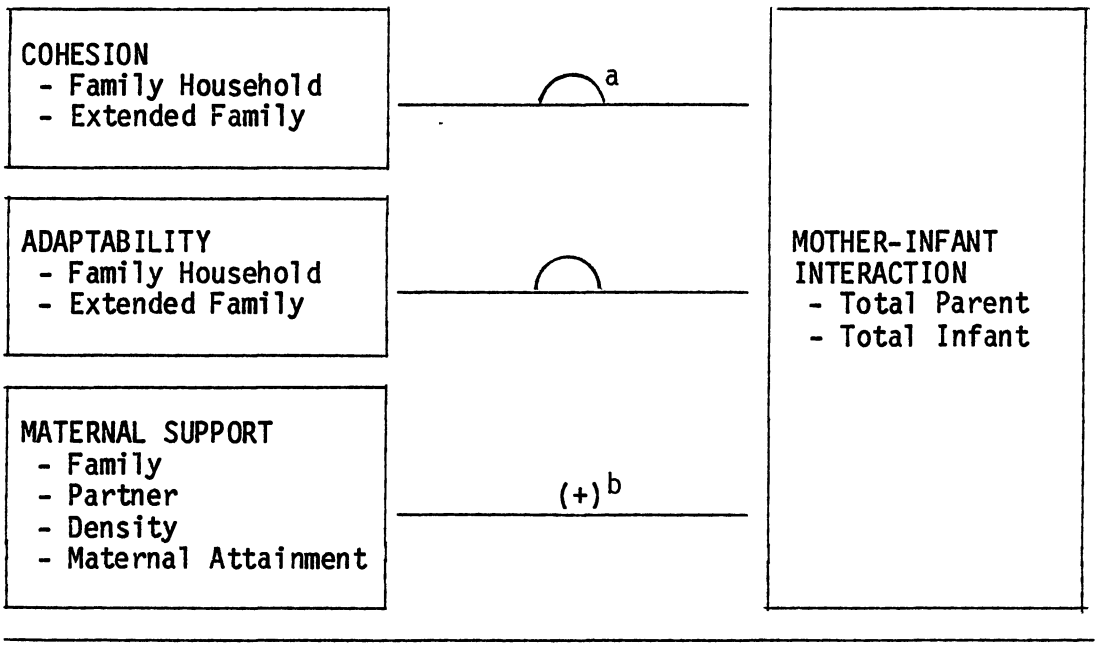
As can be inferred from Table I, numerous questions can be answered by the collected data, many of which will not be addressed by the present study. As was previously stated, the current study utilized a descriptive approach, designed to examine and describe behavioral aspects of family functioning, maternal-infant interaction, maternal support, and relationships between the three. Figure 4 represents a conceptual model of the independent and dependent variables.

TABLE I

OVERVIEW OF RESEARCH PROJECT AND INSTRUMENTATION
IN RELATION TO PREGNANCY STUDY

Time One			Time Two
Midpregnancy (4-5 Months)	Pre-Delivery (36 Weeks to Delivery)	Birth	Four Months Postpartum
*			
FAMILY **- FACES**	FAMILY - Kvebaek	BABY - Birth Measurements - Delivery Information APGAR - Dubowitz	**FAMILY** **- FACES** - Kvebaek
MOTHER **- Sociodemographic** - Lifestyle - Family Support - Attitude Pregnancy - Life Stress	MOTHER - Support (emotional, tangible assistance) - Life Stress - Pregnancy Planning	MOTHER - Maternal Discharge Summary - Prenatal Chart Summary	**MOTHER** **- Support for Maternal Role** **MOTHER-INFANT INTERACTION** **- NCAST Teaching Scales**

*Boxed areas represent variables and time periods used in the current study.



[a]Symbol (⌒) represents a curvilinear relationship.

[b]Symbol (+) represents a positive, linear relationship.

Figure 4. Conceptual Model

Preparation for Data Collection

Instrument Selection

The instruments for this study were selected based on reliability and validity established in previous studies and because of their usefulness in understanding the complexities of family interaction and parent-infant interaction research. The major instruments used in this study were: (1) FACES II and FACES I Enmeshment Subscale; (2) the NCAST Teaching Scales; and (3) the Maternal Support Scale. FACES II and the Teaching Scales have been tested and revised in numerous

studies and field tests. (For further information on FACES II, refer to Olson, Sprenkle, and Russell, 1979; Sprenkle and Olson, 1978; and Olson, Russell, and Sprenkle, 1980. For further information on the NCAST Teaching Scale refer to Barnard and Bee, 1983; Barnard, 1981; Barnard and Douglas, 1974; Barnard and Eyres, 1979; Bee et al., 1982). The Maternal Support Scale was designed by this researcher for use in this study and, except for one subscale, is previously untested. The subscale for Parent, Relative, and Friend Support was used in a previous study (Lederman, Weingarten, and Lederman, 1981) and was shortened to seven items for this study. The Maternal Support subscales were revised several times following input on readability from faculty members. A detailed discussion of each of the instruments used in the present study is provided in the description of instruments section in this chapter.

Selection of Subjects--Sample and Population

Over 337 mothers have participated in the ongoing Pregnancy Study. Mothers in the Pregnancy Study were recruited during their initial prenatal visit at the University Family Medicine Clinics in Oklahoma City, Shawnee, and Enid, Oklahoma.

Data collection for the current study began in mid-February, 1984, and ended August 29, 1984. The mothers in the current study were recruited from the larger population by telephone in order of their dates of delivery; that is, mothers were approached in the order that their babies neared four months of age. Requirement for participation was age of the infant and full-term delivery of a healthy infant. Eighty subjects were approached to participate in the study.

Fifty-nine were reached by telephone and 46 agreed to participate; 25 could not be contacted, either because their telephones had been disconnected or because they had moved and left no forwarding address. Of the mothers who did not participate, five refused, stating that they were no longer interested; two were willing to participate but were unable to because of work schedules; one was unmarried, living at home, and was not allowed to participate by her mother. Mothers' scores on midpregnancy cohesion and adaptability were calculated and listed to help researchers determine when enough cases were available to represent the full range of values on the key independent variables. Data collection ended when data indicated that scores in the sample would adequately represent enough variance for group comparisons.

From the mother's composite cohesion and adaptability scores on FACES, each was classified either as "enmeshed," "balanced," or "disengaged" on the cohesion continuum and as "chaotic," "balanced," or "rigid" on the adaptability continuum. The 46 postpartum mothers were a subgroup which is fairly representative of the larger population of mothers in the Pregnancy Study. Descriptive statistics comparing this sample and the larger Pregnancy Study population are discussed in Chapter IV.

Methods of Data Collection

Recruitment Procedures

Mothers were recruited during their prenatal clinic visit and were asked to answer questions posed by the interviewer during their

clinic visit. At four-months postpartum, mothers were called by telephone and asked to participate in a follow-up home visit. The mothers were asked during the telephone call if a follow-up interview could take place in the home at a convenient time for the mother and baby. The mothers were told that they would need approximately 30 to 60 mintues and that they would be asked questions similar to those they had been asked in previous interviews. In addition, they were told that the interviewer would observe a five-minute interaction between the parent and the infant. The interviews at the home ranged from 30 to 120 minutes and averaged approximately 50 minutes.

Data-Gathering Procedures

The instrument used in this study for collecting information on family functioning was the FACES II and FACES I Enmeshment Subscale. The 30-item FACES II is the most current revision of the FACES instrument developed by the original authors. The FACES I Enmeshment Subscale was used in the Pregnancy Study and contains the 17 enmeshment items from the original 111-item FACES I.

Field and pilot studies on over 2,000 mother-infant pairs have led to the current data collection procedures which were used for this instrument. The instruments used to gather data for the current study are the the Maternal Support Scale (Appendix B), the NCAST Teaching Scale (Appendix C), and FACES II and the FACES I Enmeshment Subscale (Appendix D). The instruments took approximately 45 minutes to one hour to complete. Forty-six questionnaires were collected and were used to test the reliability of the scales.

At the first time period (midpregnancy), during the prenatal recruitment visit, clinic mothers were given FACES II, FACES I Enmeshment Subscale (the enmeshed items from the original FACES I), and a questionnaire gathering demographic data, including household composition, family type, previous births, ethnicity, economic and educational status, and family support. FACES II is a 30-item Likert-type scale and FACES I Enmeshment Subscale is a 17-item, Likert-type scale (Appendix D).

At the second time period (four months postpartum), the mothers were visited in their home. FACES I Enmeshment Subscale and FACES II, were administered again during this second time period. For the NCAST Teaching Scale, the mothers were observed teaching the infant a task. The task was selected from items of the Bayley Scale of Infant Development (or similar scales) involving some type of psychomotor response from the child, which was appropriate to a four-month old infant, such as attempting to reach for a ring. To score a teaching interaction, the interviewer watched an entire teaching episode (lasting from one to five minutes) and scored a "yes" or "no" on a binary scale for each of the 73 items. The final instrument given was the Maternal Support Scale, which required the mother to answer 28 questions with Likert-type responses posed by the interviewer.

The mothers were allowed time to finish an activity interrupted when the interviewer arrived. Tasks required by the interviewer were taken in the order in which they appeared in the data booklet, with the exception of the NCAST Teaching Scales. The order of the teaching observation was changed if the interviewer determined another time during the visit to be more convenient for the mother and infant. The

mothers were asked each question by the interviewer and were given time at the beginning to read the directions. The majority of the questionnaires required that the mother look at and read aloud a Likert-type response.

Instructions for the NCAST Teaching Scales were similar to the following:

> I would like for you to teach (name) to do something. I will explain what I would like and you can help him/her in any way you want. You can move around, change positions, do whatever you need and take as much time as you need. Just let me know when you are through. See if you can teach (name) to reach toward the ring.

Responses for all questionnaires were coded in numerical form for ease of transfer to computer handling.

Instrumentation

Family Adaptability and Cohesion Evaluation Scale (FACES) II

Table II provides an operational summary of the independent and dependent variables used in the study, including a summary of instruments used, general content, and reliability coefficients of scales. A great deal of research effort was spent in finding a methodology that adequately tapped family interactive processes. In looking for antecedents to mother-infant behavior, it was of interest to find measures of family interaction that contributed to knowledge of the effect of environmental influences on the mother-infant relationship. FACES II provided a useful measure of family influence on the mother and infant (Appendix D).

TABLE II

OPERATIONAL SUMMARY OF DEPENDENT AND INDEPENDENT VARIABLES USED IN THE STUDY

Source Category Content	No. Scale Items	Range of Scores	Alpha Reliabilities Original Scale	Alpha Reliabilities Current Study	General Contents
Dependent Variables					
NCAST Teaching Scales	73	0-73	--	.89	
Sensitive to cues	11	0-11	--	--	Parent sensitivity to infant cues
Response to distress	11	0-11	--	--	Ability to alleviate infant distress
Soc-emo growth foster	11	0-11	--	--	Mediating environment to foster soc-emo development
Cog growth foster	17	0-17	--	--	Mediating environment to foster cog development
TOTAL Parent	50	0-50	.83	.88	Total parent sensitivity, responsivity, growth foster
Clarity of cues	10	0-10	--	--	Ability to produce clear cues for caregiver
Response to parent	13	0-13	--	--	Ability to respond to caregiver
TOTAL Child	23	0-23	.68	.74	Total infant cue clarity, responsivity
Independent Variables					
Maternal Support Scale[a]					
Partner support maternal	7	7-28	--	.78	Partner support of maternal role
Partner, family, friends	7	7-28	--	.62	Friends/family support of maternal role
Density of support	7	7-28	--	.67	Density of help/support network
Maternal ability to attain	7	7-28	--	.08	Mother's ability to seek and maintain own support
TOTAL Support	28	28-112	--	.74	Total partner, friends, density support
FACES II[b]	30	30-150			
Cohesion	16	16-80			Emo bonding, degree of autonomy of individual family members
Household				.87	Family members living in same house with mothers
Extended				.76	Larger kin network living outside mother's household
Adaptability	14	14-70	.78	.65	Ability of family system to change roles, structure
Household				.78	
Extended				.68	
FACES I Subscale	17	17-68	--	.75	Emo bonding, degree of autonomy of individual family members

[a]Specific item listings are in Appendix B.

[b]Specific item listings are in Appendix D.

As explained in Chapter I, cohesion and adaptability emerged as a conceptual cluster of the major dimensions of family functioning. These two dimensions were combined into a circumplex model and identified 16 types of marital and family systems (Figure 5). FACES II is designed with four groups of items which indicate either enmeshed or disengaged and chaotic or rigid family function. The items are to be weighted and summed for two total cohesion and adaptability scores. Items from FACES II appear in Appendix D.

The dimensions of cohesion and adaptability were hypothesized to be curvilinearally related to healthy outcomes. The extremes of cohesion (enmeshed and engaged) are theorized to be unhealthy, while the midrange is thought to be healthy. The same is hypothesized for adaptability, with the extreme ends being labeled as rigid and chaotic.

Part one of FACES II gathered information on the participant's household and extended family members. In part two, subjects responded to 30 questions (14 relating to adaptability and 16 to cohesion). Each item required two responses--one for household members and the other for extended family members. Respondents were asked to respond to how true each statement was for their family. Response choices for each statement were: (1) almost never, (2) once in awhile, (3) sometimes, (4) frequently, and (5) almost always.

The final 30-item scale has two items for each of the following eight concepts related to cohesion: emotional bonding, family boundaries, coalitions, time, space, friends, decision making, and interest and recreation. Families scoring extremely high on cohesion are perceived to be very close (limited individual autonomy), while those scoring extremely low on cohesion are perceived as having low

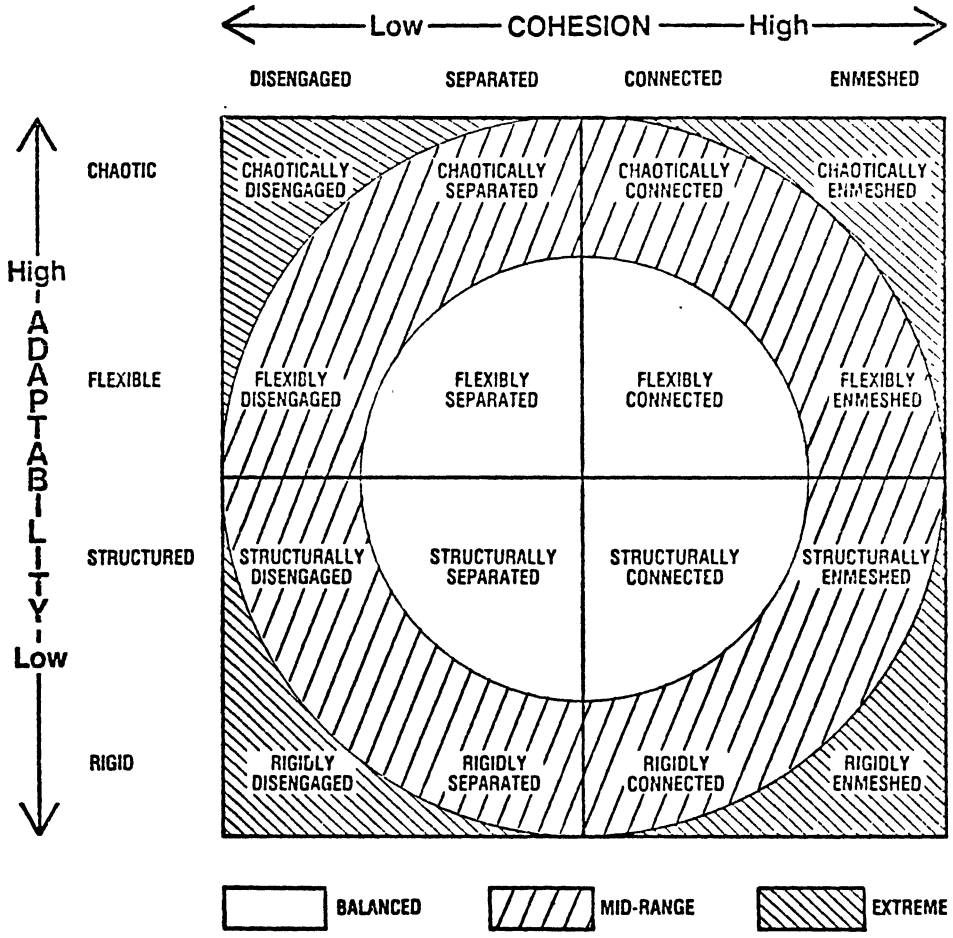


Figure 5. Circumplex Model of Family Functioning

emotional bonding (high individual autonomy). Those families scoring in the middle ranges on cohesion were scored as having a balance between separateness and connectedness. Cohesion subscale items and scoring direction are included in Appendix D.

There are two or three items for the six concepts related to family adaptability. These included: assertiveness, discipline, leadership, negotiation, rules, and roles. Families scoring extremely low on adaptability were considered chaotically organized with inconsistent rules, roles, and power structure, while those scoring extremely high were considered rigidly organized. Those families with a middle range score were characterized as having a balance between stability and change. Subscale items and scoring direction for adaptability are included in Appendix D.

FACES I Enmeshment Subscale

The FACES I Enmeshment Subscale includes 17 items from the original FACES I designed to measure items at the enmeshed end of the cohesion continuum. Possible response choices included: (1) true none of the time, (2) true some of the time, (3) true most of the time, and (4) true all of the time. Families scoring extremely high were perceived as being extremely close (enmeshed), while those scoring extremely low were perceived as low in emotional bonding--but not disengaged. The FACES I Subscale is a linear measure of enmeshment, representing low to high enmeshment. For purposes of this study, enmeshment will represent an additional measure of cohesion. The items used in the FACES I Enmeshment Subscale were taken verbatim from FACES I. The enmeshment items in FACES II were revised from FACES I.

Therefore, enmeshment items in FACES II and in the FACES I Subscale differ slightly in form and content from each other.

NCAST Teaching Scale

The major objectives of the NCAST Teaching Scales are to describe the repertoire of behavior brought to the interaction by both members of the mother-infant dyad, to describe the contingency of their response to one another, and to provide a parallel look at the mother-infant pair. The NCAST Teaching Scales (Appendix C) are each made up of 73 binary items organized into six subscales, four of which describe the adult's behavior (usually the mother) and two of which describe the child's. Parent subscales include parent sensitivity to cues, parent response to child's distress, social-emotional growth fostering, and cognitive growth fostering. Child subscales include the child's clarity of cues and the child's responsiveness to the parent.

The NCAST Teaching Scales are brief, taking only one to five minutes to administer. Tasks from the Teaching Scales for the infant have come from motor performance items on the Bayley Infant Scales (or similar scales). An example of a task item at four months would be to ask the parent to teach the infant to "reach for a cube."

A normative sample has been derived from observations made by over 2,000 participants in the NCAST Project. Participating observers were trained and certified in the use of the Teaching Scales. Certification in use of the scales required a minimum of 85% agreement on the scales with a partner on observation of parent-infant interaction in five different families.

Data collected on the NCAST Teaching Scales in home visits in over 19 western states showed the following characteristic differences: (1) married mothers tend to have higher scores than unmarried mothers across all educational and ethnic groups; (2) Caucasian mothers tend to score higher on social-emotional and cognitive growth fostering; (3) the younger the child, the lower the average score; and (4) the greater the number of years of education a mother has had, the higher her average score. The relationship between education and the mother's scores appear to be extremely linear (Barnard and Bee, 1983). The five subscales in the Teaching Scale include four parent subscales: sensitivity to cues, response to distress, social-emotional growth fostering, and cognitive growth fostering. The subscales also include two child subscales: clarity of cues and responsiveness to parent. The NCAST Teaching Scales are binary scales requiring a "yes" or "no" response to each item. High scores on the teaching interaction generally reflect high positive messages, good task facilitation (timing and sensitivity), low negative messages, and low levels of intrusive techniques (Bee et al., 1982).

Maternal Support Scale

The Maternal Support Scale (Appendix B) has been developed by this researcher for use in the current study to provide a measure of factors frequently cited in the literature as relevant to maternal support. The conceptual basis for this scale was described in Chapter I. The four subscales of the 28-item questionnaire (seven items for each subscale) include: (1) partner support of maternal role; (2) support for maternal role from parents, friends, and relatives; (3)

density of support; and (4) maternal ability to attain support. One of the subscales (support from 12 to 7 items for maternal role from parents, friends, and family) was shortened and used as otherwise reported in the Postpartum Self-Evaluation Questionnaire: Measures of Maternal Adaptation (Lederman, Weingarten, and Lederman, 1980). An alpha reliability of .76 at three weeks and .84 at six weeks (age of the infant) was reported for the original 12-item scale. The remaining three subscales were developed by this researcher to make up the total Maternal Support Scale. The Subscale for Partner Support of the Maternal Role was designed to measure emotional support for the mother in terms of her maternal role. Does the partner (husband, father of the baby, boyfriend) encourage the mother in her maternal role and let her know that he feels her role as a mother is important?

The Maternal Ability to Attain Support Subscale was designed to see if the mother was able to reach out to friends or family for needed support. The Density of Support Subscale was designed to measure extreme involvement of other family members in decisions about and care of the infant. Items for these subscales are included in Appendix B.

Alpha reliability coefficients were run on all of the subscales for the current study and results for the current study are reported in Table II. The four subscales, containing seven items each, were scored on a Likert-type scale with four possible responses: (1) very much so, (2) moderately so, (3) somewhat so, and (4) not at all. High scores represent high perceived support and low scores indicate low perceived support. High scores on each subscale were expected to show a positive relationship with high scores on mother-infant interaction.

Reliability and Validity of Instruments

To what extent are cohesion, adaptability, and mother-infant interaction, as defined in this study, accurately measured? Reliability refers to the accuracy (consistency and stability) between measurements in a series. The measures in this study were evaluated by calculating reliability coefficients. The purpose of reliability procedures is to relate the extent that measuring procedures yield the same results on repeated trials (Carmines and Zeller, 1979). Measurement consistency increases the likelihood that an instrument is reliable. An appropriate test for reliability for this study would be the coefficient of Internal Consistency (split-half), which involves dividing a test into two equivalent halves as a basis for comparison.

Cronbach's alpha was the statistic used to establish reliability and was generated by the reliability subprogram in SPSS. Cronbach's alpha provides a simple and widely-used measure of internal consistency (Nie, Hall, Jenkins, Steinbrenner, and Bent, 1975). Alpha varies from .0 to 1.0 and indicates whether items within the instrument have no relationship with each other or are perfectly related.

Reliability coefficients between .35 and .59 are considered to represent moderate association (Tittle and Hill, 1967). Those above .60 can be considered reliable. It is unnecessary to achieve reliability coefficients of a greater magnitude to determine scale reliability for research purposes.

Interobserver reliability for the NCAST Teaching Scales is established using the following procedure: two observers are to first achieve 65% agreement with the official videotaped-teaching

developed at the University of Washington School of Nursing, and then with each other. Following the videotape, the partners will observe five live teaching interactions in the home and must achieve 85% agreement on at least three of them. In order to maintain inter-observer reliability, the partners will simultaneously observe and come to 85% agreement on two or more teaching interactions after approximately every tenth visit, until completion of the data collection or until 10% of the sample has been observed in this manner.

Other sources of reliability for the NCAST Teaching Scales include repeated measures on a group of 30 cases which were scored and a generalizability coefficient computed. The statistic reflected the stability of scores over all ages studied and was fairly high for the total parent score (.85) and lower for the infant scores (.55) (Barnard and Bee, 1983).

In assessing validity of the scales, a number of outcome measures have been used to validate the predictivity of the NCAST Teaching Scales. Some of the outcome measures included the Bayley Scale of Infant Development, the HOME, the McCarthy Scales, and the Stanford-Binet. The findings indicated that measures of parent-infant interaction were associated with later performance. Additional information on the above sources of reliability and validity and information on other sources of concurrent, predictive, and construct validity and factor analysis completed for the scales may be found in Barnard and Bee (1983).

Statistical Analyses

Descriptive Statistics

Descriptive statistics were used to summarize the data collected.

Frequencies were tabulated in order to determine how characteristics of the data were distributed. Descriptive statistics were computed for each variable. These statistics provided information on the distribution, variability, and central tendencies of each variable. Specific statistics produced included the mean, median, mode, standard error, standard deviation, variance, kurtosis, skewness, range, minimum, and maximum.

Analysis of Variance

Analysis of variance is a statistical method for testing the significance between variances of two or more groups (Kerlinger, 1973). Like other inferential procedures, analysis of variance is used to test the null hypothesis which allows one to draw inferences about differences between population means. Analysis of variance is used to statistically answer the question "Is the variability between groups large enough in comparison with the variability within groups to justify the inference that the means of the population from which the different groups were sampled are not all the same?" If the differences between group variances are notably large, a significant difference is present. The test of significance for analysis of variance which determines significant relationships is the F-ratio. scale item. Analysis of variance was used to test the difference among groups in this study.

The Tukey Honestly Significant Difference (HSD) statistic was be employed to test for significant differences between all possible pairs of group means. The Tukey will indicate group pairs that are significantly different from each other at the $p = .05$ level.

Two-way analysis of variance permits the examination of a richer set of evaluation and research questions than does one-way analysis of variance by classifying each independent variable in two ways rather than one. Two-way analysis of variance is an inferential procedure, as is one-way. It makes use of data collected from several samples to test hypotheses about the parameters of the population from which the samples were drawn. Three null hypotheses can be tested: (1) that one of the independent variables has no main effect, (2) that the other independent variable has no main effect, and (3) that there is no interaction effect between the two independent variables. An example of main effects can be considered in the case of a two-way analysis between cohesion at midpregnancy and at four months' postpartum. In this instance, main effects would ask the question "Is the independent variable (midpregnancy cohesion) related to scores on mother-infant interaction after adjusting for the other independent variable (four-month cohesion)?" In other words, main effects looks at the effect of one independent variable while controlling for another independent variable.

Using the same example with interaction effects, the question to be asked is: "when midpregnancy and four-months postpartum cohesion scores are considered together, do they interact to produce a separate effect?" In one-way analysis of variance, the F-test is used to test for significant differences between groups.

Pearson Correlation Coefficient

The goal of correlation (*r*) is to establish the relationship between two variables. As such, it can indicate the generally

"goodness of fit" to a regression line and it also provides evidence of the strength in a linear relationship between the independent and dependent variables in a regression analysis. The independent and dependent variables are usually interval level.

A Pearson correlation coefficient can range in value from a +1.0 to a -1.0. A positive r indicates a positive correlation, meaning that the independent variable (X) and dependent variable (Y) will increase or decrease in the same direction. A negative r suggests an inverse relationship in which the independent variable (X) will increase or decrease as the dependent variable (Y) decreases or increases, respectively.

The strength and direction of a relationship is easily determined by Pearson's r. Therefore, a value approaching zero signifies that there is little or no relationship between the independent variable (X) and dependent variable (Y). As Pearson's r approaches either +1.0 or -1.0, a strong linear relationship is proposed.

Analysis of Hypotheses

The operational hypotheses for this study were:

Hypothesis 1. Mothers who score extremely high or extremely low on family household cohesion at four-months postpartum will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers who have more balanced family cohesion scores.

Hypothesis 2. Mothers who score extremely high or extremely low on family cohesion at midpregnancy will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers who have more balanced family cohesion scores.

Hypothesis 3. Cohesion scores at midpregnancy and at four months postpartum will significantly influence mother-infant interaction at four months postpartum.

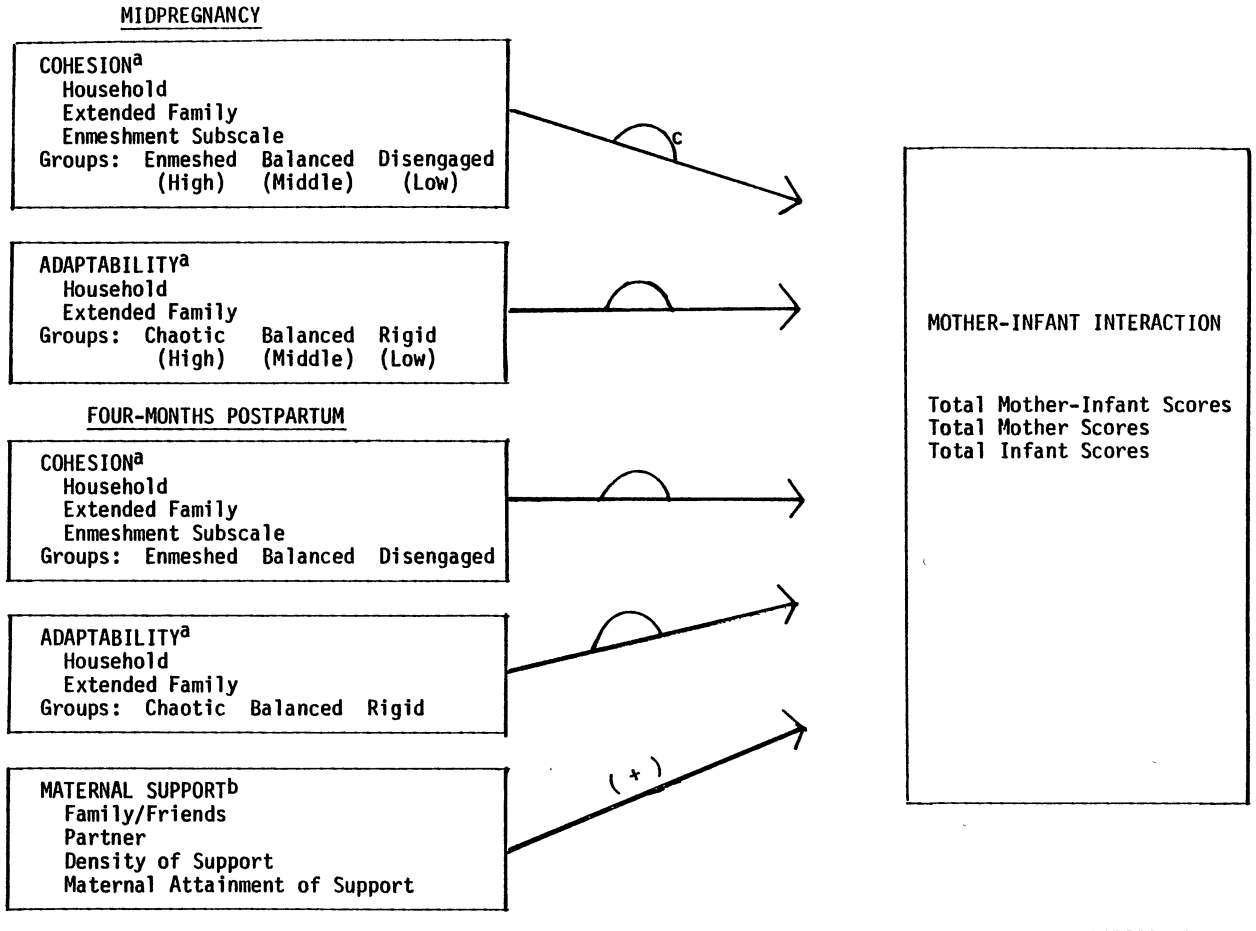
Hypothesis 4. Mothers who score extremely high or extremely low on family adaptability at four-months postpartum will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers with more balanced family adaptability scores.

Hypothesis 5. Mothers who score extremely high or extremely low on family adaptability at midpregnancy will have lower scores on the mother-infant interaction scales at four months postpartum than mothers who have more balanced family adaptability scores.

Hypothesis 6. Mothers scoring high on scales of perceived maternal support will have higher scores on the mother-infant interaction scales than mothers scoring low on perceived maternal support.

For purposes of statistical analysis, mother-infant interaction scores were treated as continuous variables. Scores on cohesion were grouped in two ways: (1) according to cutoff points established by Olson, Bell, and Porter (1983) for cohesion (enmeshed, balanced, and disengaged) and adaptability (rigid, balanced, and chaotic), and (2) by using groups determined by sample variance. Figure 6 gives an overview of variable groups and time periods used in the statistical analysis of the data.

Since there are no established guidelines for the Maternal Support Scales, a median split was used to determine high and low scores. In addition, scores were divided into three groups of equal number in order to look at high, medium, and low scores. Reliability analysis was done on the Maternal Support Scale. Minimum reliability was



[a]Three group comparisons; groups determined in two ways: (1) by sample variance and (2) by original authors' norms (Olson et al., 1982).

[b]Groups for maternal support were determined using three group comparisons determined by sample variance.

[c]Symbol ( ) = curvilinear relationship hypothesized; (+) = linear relationship hypothesized.

Figure 6. Overview of Variable Groups and Time Periods Used in Statistical Analysis

established as an alpha greater than .55 (Cronbach's alpha). Null hypotheses were assumed for purpose of statistical analysis. A minimum probability level was established at $p = .05$.

For Hypotheses 1 and 2, a one-way analysis of variance was used to determine differences among group means on the independent variables. In these two hypotheses, the relationship was examined among three groups of cohesion at four-months postpartum (Hypothesis 1) and at midpregnancy (Hypothesis 2) with mother-infant interaction at four-months postpartum. Once statistical differences were determined among all groups on the independent variables, the Tukey Honestly Significant Difference Analysis was used to test each pair of group means for statistical significance.

For Hypotheses 4 and 5, a one-way analysis of variance was used to determine differences among group means on the independent variables. In these two hypotheses, the relationship was examined among three groups of adaptability at midpregnancy (Hypothesis 4) and at four-months postpartum (Hypothesis 5) with mother-infant interaction at four-months postpartum. Once statistical differences were determined among all groups on the independent variables, the Tukey Honestly Significant Difference Analysis was used to test each pair of group means for statistical significance.

For Hypothesis 3, a two-way analysis of variance was used to determine differences among group means on the independent variables at midpregnancy at at four-months postpartum. In this hypothesis, the relationship was examined among three groups of cohesion at midpregnancy and at four-months postpartum with mother-infant interaction at four-months postpartum.

In Hypothesis 6, a one-way analysis of variance was used to determine the differences among group means on Maternal Support. In this hypothesis, the relationship was examined among three groups of Maternal Support at four-months postpartum with mother-infant interaction at four-months postpartum. A Tukey Honestly Significant Difference Statistical Analysis was used to test for differences between pairs of group means. Additional descriptive statistics were also used in further analysis of the data collected for this study.

CHAPTER IV

FINDINGS

Chapter IV is divided into three sections. The first and second sections describe the sample and reports reliability coefficients for the sample. The third section reviews the hypotheses, describes the theoretical rationale for expected findings, and reports findings as they relate to specific hypotheses and the instruments used. The fourth section presents additional findings of secondary interest to the study and a narrative summary of the findings.

Description of Sample

The 46 mothers who took part in this study were from Oklahoma City, Shawnee, and Enid, Oklahoma. The mothers ranged in age from 17 to 38, with a mean age of 25.7 years. The family income ranged from $3,884 per year to $50,000 (N=45) per year. The mean income was $12,698 per year. Black mothers comprised 32.6% of the sample and white mothers comprised 67.4% of the sample. Married respondents comprised 65.2% of the sample; 17.4% were single and 17.4% were divorced or separated. The mothers' education ranged from 8 years to 18 years, with a mean of 12.9 years of education. In general, the mothers were white, married, from moderate to low income families, and had completed a high school education (Table III). Demographic characteristics of the larger population is also included in Table III. A

TABLE III

CHARACTERISTICS OF MOTHERS

Characteristics	Population (N=337) Mean	Population (N=337) % of Population	Sample (N=46) Mean	Sample (N=46) % of Sample
Age (in years)	23.5		25.67	
Race				
White		62.8		67.4
Black		35.6		32.6
Other		1.6		--
Education (in years)	11.9		12.9	
Marital Status				
Single		27.9		17.4
Married		61.0		65.2
Divorced		6.4		13.1
Separated		4.7		4.3
Widowed		--		--
Family Income (per year)	$12,963		$12,698	
Religion				
Protestant		82.3		80.4
Catholic		6.6		13.0
Other		11.1		6.6

comparison of the means for this sample and the larger population show that the sample mothers for the current study (N=46) were slightly higher in age and education, with a moderately higher percentage of white and married mothers than the larger population. Family income for sample and population were the same. Any generalization to a larger population should consider the specific characteristics of the sample for this study and the differences noted between this sample and population.

Normative data for the Teaching Scale comes from Barnard (1979). Additional comparative data of interest to this study, summarized from a number of studies (Table IV) generated in a four-year longitudinal study, was reported by Barnard as follows: Total Mother scores for all subjects, mean=41.9; mothers of one- to six-month-old infants, mean= 38.8; mothers with high-school degrees, mean=39.0; married mothers, mean=41.3; unmarried mothers, mean=37.2; whites, mean=41.3; and blacks, blacks, mean=39.4.

Mean scores for Household Cohesion (Table V) were: 64.10 (range 42-73) at midpregnancy and 65.94 (range 40-80) at four-months postpartum. For Extended Family Cohesion, means were 58.79 (range 42-73) at midpregnancy and 58.43 (range 33-59) at four-months postpartum. The mean for scores on mother-infant interaction were 50.89 for Total Mother-Infant Interaction and 37.52 for Total Mothers scores (Table IV).

Reliabilities for Current Study

The reliability statistics reported in Table II (Chapter III) were done for all items in each scale reported. In developing or

TABLE IV

COMPARISON OF MEANS: MOTHER-INFANT INTERACTION

Variable	Mean Current Study	Mean Normative[a]
Total Mother-Infant Interaction	50.89	56.3
Total Mother	37.52	41.9
Total Infant	13.37	15.3

[a]Source: K. E. Barnard, Nursing Child Assessment Training Instructor's Learning Resource Manual (1979).

TABLE V

COMPARISON OF MEANS: COHESION AND ADAPTABILITY

Variable	Mean Scores	
	Midpregnancy	Four-Months Postpartum
Household Cohesion	64.10	65.94
Extended Cohesion	58.79	58.43
Household Adaptability	49.98	51.91
Extended Adaptability	45.56	47.41
Enmeshed Subscale	38.54	39.76

revising an instrument, items can be deleted by eliminating the worst items defining a particular measure. Because of the high alpha coefficients, none of the items in any scale were deleted. One whole subscale (maternal ability to attain support) was deleted because alpha reliability failed to meet minimum standards for research (alpha=.08).

The alpha reliability for FACES has been established by the authors as .83 for the cohesion scale and .75 for the adaptability scale. For the current study, reliability was established as .86 for Household Cohesion, .76 for Extended Cohesion, .65 for Household Adaptability, and .67 for Extended Adaptability.

For the NCAST Teaching Scales, Cronbach's alpha indicates that the total scores, rather than subscores, provide a reliable basis for comparing groups. From normative studies (Bee et al., 1982), alpha for the total parent score was reported as .83 at 1-12 months, .82 at 13-14 months, and .83 at 25-36 months. For the child scores, the alpha was reported as .60 at 1-12 months, .77 at 13-24 months, and .84 at 25-36 months, thus showing increasing stability of child subscores with age. For the current study, reliabilities listed in Table II (Chapter III) show Total Mother-Infant Interaction to be .89; Total Parent, .88; and Total Child, .74.

Reliability analysis was run for the Maternal Support Scale. Reliability coefficients are reported in Table II (Chapter III). For the four support scales, alpha reliability coefficients were as follows: Density of Support (.67), Partner Support (.78), Support of Friends and Family (.62), Maternal Attainment of Support (.08), and Total Support (.79). Maternal Attainment of Support was dropped from the analysis because of poor reliability. Intercorrelations (Table

VI) among the scales indicate, for the most part, that the scales are significantly related to each other. Taken separately, the scales provide unique information. However, Total Support appears to provide a more accurate of support than do the subscales taken separately.

TABLE VI

INTERCORRELATIONS AMONG THE FOUR SUBSCALES OF THE MATERNAL SUPPORT SCALE[a]

	Partner Support	Family Support	Density Support	Total Support
Partner Support		.10 n.s.	.39 *	.77 **
Family Support			.33 *	.55 **
Density Support				.82 **

[a]Correlation coefficients (r) using Pearson Correlation.

*p<.01; **p<.001; n.s.=not significant.

Findings Related to Hypotheses

Findings related to the hypotheses will be reported in this section; specifically, findings related to cohesion, adaptability, and

total scores on the Mother-Infant Interaction Scale. Null hypotheses were assumed for purposes of statistical analyses.

Hypothesis 1. Mothers who score extremely high or extremely low on family cohesion at four-months postpartum will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers who have more balanced family cohesion scores.

According to the Circumplex Model of Marital and Family Systems, families with extreme cohesion scores are more likely to have less functional patterns of behaviors during certain life situations. The transition to parenthood is an example of a family system behavior which could be affected by cohesion. Thus, it was expected that the extremes of cohesion would show a significant relationship to mother-infant interaction.

Since cohesion is considered to be a potential factor influencing mother-infant interaction, multiple assessments of cohesion were used. This allows a more detailed analysis for exploratory purposes. A null hypothesis is assumed for testing differences among group means.

Findings from Hypothesis 1 indicated that the differences among group means on Total Mother-Infant scores for three levels of household cohesion determined by sample variance were significant using one-way analysis of variance $F(2,43)=3.19$, $p<.05$ (Table VII). Differences among group means on Total Mother Scores for household cohesion using groups determined by sample variance were also significant $F(2, 43)=4.38$, $p<.02$ (Table VII). In comparing differences between pairs of groups, the groups with more balanced cohesion scores scored higher than both extreme groups (enmeshed and disengaged), but significantly higher than the disengaged group of mothers. There were no

TABLE VII

RELATIONSHIP BETWEEN HOUSEHOLD COHESION AT FOUR-MONTHS POSTPARTUM AND MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY SAMPLE VARIANCE

NCAST Teaching Scales	Household Cohesion Groups: Disengaged (N=14) $\bar{X}$	Disengaged (N=14) S.D.	Balanced (N=16) $\bar{X}$	Balanced (N=16) S.D.	Enmeshed (N=16) $\bar{X}$	Enmeshed (N=16) S.D.	F Ratio	p	Significant Group Pairs Tukey Honestly Significant Differences 1v2	1v3	2v3
Total Mother-Infant (N=46)	46.4	8.88	54.1	8.29	51.7	8.28	3.2	.05	*	--	--
Total Mother	33.6	6.88	40.3	6.51	38.2	5.18	4.4	.02	*	--	--
Total Infant	12.71	3.50	13.8	2.95	13.5	4.44	.4	.70	--	--	--

*Tukey Significant Differences are at least $p<.05$.

significant differences between groups on other measures of cohesion (extended family and FACES I Enmeshment Subscale) (Tables VIII, IX, and X). An analysis of the means showed no meaningful trends on other measures of cohesion.

Results indicated that this hypothesis was partially supported. The more balanced mothers on cohesion did score significantly higher than disengaged mothers, but not significantly higher than enmeshed mothers on mother-infant interaction at four-months postpartum.

Hypothesis 2. Mothers who score extremely high or extremely low on family cohesion at midpregnancy will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers who have more balanced family cohesion scores.

As was noted under Hypothesis 1, the Circumplex Model does predict less functional patterns of behavior in families with extreme cohesion scores during certain life situations such as transition to parenthood. It was expected that families exhibiting extreme cohesion scores during the mother's pregnancy would continue to operate in a dysfunctional way after the infant was born. The goal for this hypothesis was to see if family functioning during midpregnancy could predict later problems for families after the entrance of the child into the family.

As with Hypothesis 1, multiple assessments of cohesion were used to allow for a more detailed analysis of the data. A null hypothesis was assumed for testing differences among groups means. Differences among group means on Total Mother scores for three levels of household cohesion determined by sample variance showed moderate significance using one-way analysis of variance $F(2,37)=2.67$, p .08 (Table XI).

TABLE VIII

RELATIONSHIP BETWEEN EXTENDED COHESION AT FOUR-MONTHS POSTPARTUM AND MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY SAMPLE VARIANCE

NCAST Teaching Scales	Extended Cohesion Groups								Significant Group Pairs Tukey Honestly Significant Differences		
	Disengaged (N=14)		Balanced (N=14)		Enmeshed (N=16)						
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	F Ratio	p	1v2	1v3	2v3
Total Mother-Infant (N=44)	53.21	9.59	48.86	8.15	51.0	9.10	.95	.40	--	--	--
Total Mother	39.0	8.11	35.93	5.80	38.2	6.13	.90	.41	--	--	--
Total Infant	14.21	3.84	12.93	3.29	12.8	3.71	.71	.50	--	--	--

TABLE IX

RELATIONSHIP BETWEEN HOUSEHOLD COHESION AT FOUR-MONTHS POSTPARTUM AND MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY AUTHORS' NORMS[a]

NCAST Teaching Scales	Household Cohesion Groups: Disengaged (N=6) $\bar{X}$	Disengaged (N=6) S.D.	Balanced (N=30) $\bar{X}$	Balanced (N=30) S.D.	Enmeshed (N=10) $\bar{X}$	Enmeshed (N=10) S.D.	F Ratio	p	Significant Group Pairs Tukey Honestly Significant Differences 1v2	1v3	2v3
Total Mother-Infant (N=46)	48.67	9.07	50.0	9.0	54.9	7.97	1.38	.26	--	--	--
Total Mother	34.83	8.80	37.3	6.6	39.7	5.21	1.04	.36	--	--	--
Total Infant	13.83	1.83	12.66	3.5	15.2	4.34	1.96	.15	--	--	--

[a]Household cohesion groups determined by original authors' norms (Olson et al., 1982).

TABLE X

RELATIONSHIP BETWEEN ENMESHMENT AND MOTHER-INFANT INTERACTION AT FOUR-MONTHS POSTPARTUM[a]

NCAST Teaching Scales	Enmeshment Groups: Low (N=9) $\bar{X}$	Low (N=9) S.D.	Medium (N=27) $\bar{X}$	Medium (N=27) S.D.	High (N=10) $\bar{X}$	High (N=10) S.D.	F Ratio	p	Significant Group Pairs Tukey Honestly Significant Differences 1v2	1v3	2v3
Total Mother-Infant (N-46)	46.78	8.86	51.59	8.97	52.7	8.37	.81	.45	--	--	--
Total Mother	34.89	7.49	38.88	6.69	37.7	5.76	.51	.60	--	--	--
Total Infant	11.89	3.22	13.26	3.28	15.0	4.55	.86	.43	--	--	--

[a]Enmeshment groups determined by sample variance.

TABLE XI

RELATIONSHIP BETWEEN HOUSEHOLD COHESION AT MIDPREGNANCY AND MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY SAMPLE VARIANCE

NCAST Teaching Scales	Household Cohesion Groups								Significant Group Pairs Tukey Honestly Significant Differences		
	Disengaged (N=13)		Balanced (N=14)		Enmeshed (N=13						
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	F Ratio	p	1v2	1v3	2v3
Total Mother-Infant (N=40)	47.77	8.13	51.14	10.47	52.31	7.50	.93	.41	--	--	--
Total Mother	33.77	5.67	38.29	7.46	38.85	4.99	2.67	.08	--	--	--
Total Infant	14.00	3.63	12.86	4.11	13.46	3.76	.30	.74	--	--	--

Differences among group means on Total Mother-Infant scores for three levels of household cohesion determined by authors' norms (Olson et al., 1982) were statistically significant using one-way analysis of variance $F(2,37)=3.48$, $p<.04$ (Table XII). Differences among group means on Total Mother scores for the three levels of household cohesion determined by authors' norms (Olson et al., 1982) were statistically significant using one-way analysis of variance $F(2,37)=4.93$, $p<.01$ (Table XII). A test of significant difference between pairs of groups using the Tukey Honestly Significant Differences test indicated that enmeshed mothers scored significantly higher than disengaged mothers on both Total Mother and Total Mother-Infant comparisons (Table XII).

Findings for group comparisons using extended family cohesion were nonsignificant for all measures and no apparent trends were noted. Findings for group comparisons using the FACES I Enmeshment Subscale were also nonsignificant, with no trends apparent (Table XIII).

Hypothesis 2 stated that mothers with more balanced cohesion scores at midpregnancy would score significantly higher than either extreme group. Since enmeshed mothers scored higher than either extreme group, and significantly higher than disengaged mothers, this hypothesis was not supported.

These results would seem to indicate that extreme enmeshment during pregnancy does not contribute to lower scores on mother-infant interaction and that, in fact, extreme enmeshment may contribute to higher scores on mother-infant interaction. By four-months postpartum, however, mothers' scores on cohesion must move to a more balanced level for mother-infant interaction to remain at a significantly high level of functioning.

TABLE XII

RELATIONSHIP BETWEEN HOUSEHOLD COHESION AT MIDPREGNANCY AND MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY AUTHORS' NORMS[a]

NCAST Teaching Scales	Household Cohesion Groups: Disengaged (N=8) $\bar{X}$	Disengaged (N=8) S.D.	Balanced (N=25) $\bar{X}$	Balanced (N=25) S.D.	Enmeshed (N=7) $\bar{X}$	Enmeshed (N=7) S.D.	F Ratio	p	Significant Group Pairs Tukey Honestly Significant Differences 1v2	1v3	2v3
Total Mother-Infant (N=40)	45.38	9.23	50.28	8.51	56.71	6.16	3.48	.04	--	*	--
Total Mother	32.13	5.87	37.28	6.16	41.57	4.47	4.93	.01	--	*	--
Total Infant	13.25	4.53	13.0	3.50	15.14	3.93	.89	.42	--	--	--

[a]Household cohesion groups determined by authors' norms (Olson et al., 1982).

*Tukey Significant Differences are at least $p<.05$.

TABLE XIII

RELATIONSHIP BETWEEN EXTENDED COHESION AT MIDPREGNANCY AND MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY SAMPLE VARIANCE

NCAST Teaching Scales	Extended Coehsion Groups								Significant Group Pairs Tukey Honestly Significant Differences		
	Disengaged (N=13)		Balanced (N=12)		Enmeshed (N=13)						
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	F Ratio	p	1v2	1v3	2v3
Total Mother-Infant (N=38)	49.23	9.30	53.75	8.18	50.23	9.43	.86	.43	--	--	--
Total Mother	35.62	5.99	39.58	7.03	37.84	6.01	1.23	.30	--	--	--
Total Infant	13.62	4.59	14.17	2.37	12.39	4.33	.68	.51	--	--	--

Hypothesis 3. Cohesion scores at midpregnancy and at four-months postpartum will significantly influence mother-infant interaction at four-months postpartum.

It is hypothesized that cohesion at midpregnancy and at four-months postpartum will show significant main effects on mother-infant interaction. In addition to the main effects of cohesion at these two time periods, it will be possible to determine whether these factors will interact significantly with each other to impact scores of mother-infant interaction. A null hypothesis was assumed for this analysis.

Results suggested that there was only moderate significance for the main effect of household cohesion at four months, with Total Infant scores using cohesion groups determined by authors' norms $F=2.64$, $p<.09$ (Table XV). Household cohesion at midpregnancy and four-months postpartum did not interact significantly with each other. There was moderate significance for the main effect of household cohesion at four-months using cohesion groups determined by sample variance $F=273$, $p<.08$ (Table XVI).

Results showed only moderate significance for the main effect of extended cohesion at midpregnancy using groups determined by sample variance $F=2.78$, $p<.08$ (Table XVII), but showed significance for the main effect of extended cohesion at four-months postpartum using the same groups $F=3.81$, $p<.03$ (Table XVII). The results from the FACES I Enmeshment Subscale showed that scores at midpregnancy and four-months postpartum did interact significantly with each other to affect mother-infant interaction, $F=2.79$, $p<.04$ (Table XVIII).

In examining the means for the above significant finding, several trends were noted (Table XVIII): (1) low scoring mothers (disengaged)

TABLE XIV

RELATIONSHIP BETWEEN ENMESHMENT AT MIDPREGNANCY AND MOTHER-INFANT INTERACTION

NCAST Teaching Scales	Enmeshment Groups[a] Low (N=16) $\bar{X}$	S.D.	Medium (N=15) $\bar{X}$	S.D.	High (N=15) $\bar{X}$	S.D.	F Ratio	p	Significant Group Pairs Tukey Honestly Significant Differences 1v2	1v3	2v3
Total Mother-Infant (N=46)	48.94	10.40	52.67	8.65	51.20	7.52	.69	.51	--	--	--
Total Mother	36.06	8.02	38.73	6.03	37.87	5.72	.64	.53	--	--	--
Total Infant	12.88	3.54	13.93	3.97	13.33	3.56	.32	.73	--	--	--

[a]Enmeshment groups determined by sample variance.

TABLE XV

MAIN EFFECTS AND INTERACTION EFFECTS OF HOUSEHOLD COHESION AT MIDPREGNANCY AND FOUR-MONTHS POSTPARTUM ON MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY AUTHORS' NORMS

NCAST Teaching Scales	Household Cohesion Groups[a] Low	Medium	High	Main Effects: Midpregnancy F Ratio	Midpregnancy p	Four Months F Ratio	Four Months p	Two-Way Interaction F Ratio	Two-Way Interaction p
	Means								
Total Mother-Infant									
Midpregnancy	45.38 (n=8)	50.28 (n=25)	56.71 (n=7)	.87	.43	1.27	.29	.72	.55
Four-Months Postpartum	45.0 (n=4)	49.85 (n-27	54.56 (n=9)						
Total Mother									
Midpregnancy	32.13 (n=8)	37.28 (n=25)	41.57 (n=7)	1.68	.20	1.27	.29	.24	.87
Four-Months Postpartum	30.75 (n=4)	37.19 (N=27)	39.22 (n=9)						
Total Infant									
Midpregnancy	13.25 (n=8)	13.00 (n=25)	15.14 (n=7)	.28	.76	2.64	.09	1.63	.20
Four-Months Postpartum	14.25 (n=4)	12.67 (n=27)	15.33 (n=9)						

[a]Household cohesion groups determined by authors' norms (Olson et al., 1982).

TABLE XVI

MAIN EFFECTS AND INTERACTION EFFECTS OF HOUSEHOLD COHESION AT MIDPREGNANCY AND FOUR-MONTHS POSTPARTUM ON MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY SAMPLE VARIANCE

NCAST Teaching Scales	Household Cohesion Groups			Main Effects				Two-Way Interaction	
	Low	Medium	High	Midpregnancy		Four Months			
	Means			F Ratio	p	F Ratio	p	F Ratio	p
Total Mother-Infant									
Midpregnancy	47.77 (n=13)	51.14 (n=14)	52.31 (n=13)	.02	.98	2.16	.13	1.38	.27
Four-Months Postpartum	45.18 (n=11)	53.47 (n=15)	51.29 (n=14)						
Total Mother									
Midpregnancy	37.77 (n=13)	38.29 (n=14)	38.85 (n=13)	.13	.88	2.73	.08	.84	.48
Four-Months Postpartum	32.09 (n=11)	39.67 (n=15)	38.00 (n=14)						
Total Infant									
Midpregnancy	14.00 (n=13)	12.86 (n=14)	13.46 (n=13)	.69	.51	.50	.61	1.95	.14
Four-Months Postpartum	13.09 (n=11)	13.80 (n=15)	13.29 (n=14)						

TABLE XVII

MAIN EFFECTS AND INTERACTION EFFECTS OF EXTENDED COHESION AT MIDPREGNANCY AND FOUR-MONTHS POSTPARTUM ON MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY SAMPLE VARIANCE

NCAST Teaching Scales	Extended Cohesion Groups Means			Main Effects				Two-Way Interaction	
				Midpregnancy		Four Months			
	Low	Medium	High	F Ratio	p	F Ratio	p	F Ratio	p
Total Mother-Infant									
Midpregnancy	49.23 (n=13)	53.75 (n=12)	50.64 (n=11)	1.33	.28	2.57	.09	.08	.98
Four-Months Postpartum	55.78 (n=9)	49.77 (n=13)	51.36 (n=14)						
Total Mother									
Midpregnancy	35.62 (n=13)	39.58 (n=12)	38.73 (n=11)	2.78	.08	3.81	.03*	.51	.73
Four-Months Postpartum	41.00 (n=9)	35.15 (n=13)	38.43 (n=14)						
Total Infant									
Midpregnancy	13.62 (n=13)	14.17 (n=12)	11.91 (n=11)	.44	.65	.62	.54	.31	.87
Four-Months Postpartum	14.78 (n=9)	12.62 (n=13)	12.93 (n=14)						

*Significant differences between groups at $p=<.05$ level.

TABLE XVIII

MAIN EFFECTS AND INTERACTION EFFECTS OF ENMESHMENT AT MIDPREGNANCY AND FOUR-MONTHS POSTPARTUM ON MOTHER-INFANT INTERACTION[a]

NCAST Teaching Scales	Means			Main Effects				Two-Way Interaction	
				Midpregnancy		Four Months			
	Low	Medium	High	F Ratio	p	F Ratio	p	F Ratio	p
Total Mother-Infant									
Midpregnancy	48.94 (n=16)	52.67 (n=15)	51.20 (n=15)	.27	.77	.10	.90	2.49	.06
Four-Months Postpartum	46.78 (n=9)	51.59 (n=27)	52.70 (n=10)						
Total Mother									
Midpregnancy	36.06 (n=16)	38.73 (n=15)	37.87 (n=15)	.27	.76	.08	.92	2.79	.04*
Four-Months Postpartum	34.89 (n=9)	38.33 (n=27)	37.70 (n=10)						
Total Infant									
Midpregnancy	12.88 (n=16)	13.93 (n=15)	13.33 (n=15)	.12	.89	.42	.66	.93	.46
Four-Months Postpartum	11.89 (n=9)	13.26 (n=27)	15.00 (n=10)						

[a]Enmeshment groups determined by sample variance.

*Significant differences at p=<.05.

at midpregnancy improved their mother-infant interaction scores if they moved to a balanced group at four-months postpartum; (2) mothers who were balanced in cohesion at midpregnancy stayed high on mother-infant interaction if they stayed in a balanced position on cohesion; (3) none of the mothers went from balanced to disengaged; and (4) mothers from disengaged families who stayed disengaged remained low on mother-infant interaction.

Hypothesis 4. Mothers who score extremely high or extremely low on family adaptabaility at four-months postpartum will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers with more balanced family adaptability scores.

To summarize, main effects for cohesion showed only moderate significance, in general, at either time period. The FACES I Enmeshment Subscale did interact significantly at midpregnancy and four-months postpartum to affect mother-infant interaction.

It was expected that family adaptabaility will show a significant effect with mother-infant interaction at four-months postpartum. From research based on the Circumplex Model (see Figure 5, Chapter III), it has been hypothesized that extremely rigid or chaotic families would not do well adjusting to a developmental transition in the family life cycle, such as childbirth. It was also predicted by Olson, Russell, and Sprenkle (1979) that the birth of the first child, on average across all families, would lead first to chaotic adaptability scores and later to more structured and rigid adaptability scores. It was hypothesized in this study that the extremes of adaptability would show up in lower scores on mother-infant interaction, although the relationship between mother-infant interaction and adaptability is

theoretically not as clear as between mother-infant interaction and cohesion.

A one-way ANOVA was used to measure mean differences between high, medium, and low groups on adaptability. Groups were determined by sample variance. Cutoff points established by authors' norms (Olson et al., 1982) could not be used for most measures because the number of cases was too small to make accurate statistical comparisons. Comparison of group means for adaptability scores showed no significant differences across all measures. Means are compared in Tables XIX and XX.

Hypothesis 5. Mothers who score extremely high or extremely low on family adaptability at midpregnancy will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers who have more balanced family adaptability scores.

Although it is predicted by Olson (1979) that families would be more chaotic soon after the entrance of the first infant into the family, it is assumed that by four months most of the early transitional issues will be resolved and the families, in general, could be expected to move towards the structured, rigid end of the adaptability continuum (Table XXI). Comparison of group means for adaptability showed no significant differences across all measures. Reported means at midpregnancy and four-months postpartum (see Table X) indicate that scores did appear to be somewhat more toward the more rigid end for both household adaptability (49.98 to 51.91) and extended adaptability (45.56 to 47.41).

TABLE XIX

RELATIONSHIP BETWEEN HOUSEHOLD ADAPTABILITY AT MIDPREGNANCY AND MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY AUTHORS' NORMS

NCAST Teaching Scales	Household Adaptability Groups[a] Rigid (N=8) $\bar{X}$	S.D.	Balanced (N=25) $\bar{X}$	S.D.	Chaotic (N=8) $\bar{X}$	S.D.	F Ratio	p	Significant Group Pairs Tukey Honestly Significant Differences 1v2	1v3	2v3
Total Mother-Infant (N=41)	49.00	10.77	49.60	8.40	46.00	7.70	1.81	.18	--	--	--
Total Mother	35.88	8.63	36.60	5.66	40.88	6.88	1.53	.23	--	--	--
Total Infant	13.13	4.33	13.00	3.96	15.13	1.73	1.02	.37	--	--	--

[a]Household adaptability groups determined by authors' norms (Olson et al., 1982).

TABLE XX

RELATIONSHIP BETWEEN HOUSEHOLD ADAPTABILITY AT FOUR-MONTHS POSTPARTUM AND MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY SAMPLE VARIANCE

NCAST Teaching Scales	Household Adaptability Groups[a] Rigid (N=22) $\bar{X}$	S.D.	Balanced (N=16) $\bar{X}$	S.D.	Chaotic (N=8) $\bar{X}$	S.D.	F Ratio	p	Significant Group Pairs Tukey Honestly Significant Differences 1v2	1v3	2v3
Total Mother-Infant (N=46)	49.0	9.13	54.69	7.40	48.5	9.4	.21	.81	--	--	--
Total Mother	36.5	7.20	40.00	5.98	35.4	5.4	.21	.81	--	--	--
Total Infant	12.5	3.39	14.69	2.84	13.1	5.2	.09	.92	--	--	--

[a]Household adaptability group determined by sample variance.

TABLE XXI

RELATIONSHIP BETWEEN HOUSEHOLD ADAPTABILITY AT FOUR-MONTHS POSTPARTUM AND MOTHER-INFANT INTERACTION USING GROUPS DETERMINED BY AUTHORS' NORMS

NCAT Teaching Scale	Household Adaptability Groups[a] Rigid (N=22) $\bar{X}$	S.D.	Balanced (N=16) $\bar{X}$	S.D.	Chaotic (N =8) $\bar{X}$	S.D.	F Ratio	p	Significant Group Pairs Tukey Honestly Significant Differences 1v2	1v3	2v3
Total Mother-Infant (N=46)	46.57	10.60	52.12	8.56	47.33	9.61	1.26	.29	--	--	--
Total Mother	35.00	9.31	38.35	6.18	36.67	6.81	1.13	.33	--	--	--
Total Infant	11.57	2.40	13.76	3.73	10.67	3.05	1.16	.32	--	--	--

[a]Household adaptability groups determined by authors' norms (Olson et al., 1982).

Hypothesis 6. Mothers scoring high on scales of perceived maternal support will have higher scores on the mother-infant interaction scales than mothers scoring low on perceived maternal suport.

A number of studies have supported the notion that the quality of the interaction between mothers and infants is improved by mothers who have more involved fathers, prenatally and postnatally, and by a better support network of family and friends. What constitutes support for the mother, the definition of support, and how to measure it, becomes more complicated for the researcher. The goal of this hypothesis was to address another method for defining and measuring support in hopes of clarifying the issue. Maternal Support was measured by four subscales, a total of which would represent a wider support network than either scale individually. Maternal Attainment of Support, while not previously studied, has been suggested as a possible issue effecting the mother-infant relationship. The Density of Support scale was designed as a way of looking at the curvilinear issue pertaining to support. That is, does greater support reach a point of diminishing returns so that at this point the mother may feel overwhelmed by her support system? (In this case, the mother's household and extended family comprise the mother's support system and the Density of Support subscale measures her perception of extreme physical and emotional involvement from this system.) A significant finding in favor of high scores on Partner Support would further substantiate other studies which indicate that high support and involvement on the part of the father is reflected in better mother-infant interactive relationships. Likewise, significant findings for mothers scoring high on Support From Relatives and Friends would indicate that support of

friends and family, both inside and outside of the household can make a difference in the quality of the mother-child relationship. A one-way ANOVA was used to measure differences among means for groups scoring high, medium, and low on support with mother-infant interaction.

Density of Support. The items on the Density of Support subscale sought to measure the perceived density of involvement in child care by other family members. A large number of mothers felt that family members were more than moderately involved in the care of the baby ($\bar{X}$=24.32, range 7-28). Sample items included: "I feel that I get too much advice from members of my family about caring for the baby," and "Other members of my family want to take the baby over."

Split into high, medium, and low density of support groups (Table XXII), there was a significant difference among the Total Mother scores for the three groups $F(2,43)=4.02$, $p=.03$. The Total Mother-Infant scores for the three groups $F(2.43)=3.08$; $p=.06$ approached significance.

In looking at high, medium, and low groups, the mothers scoring highest on Density of Support also scored highest on mother-infant interaction. Mothers who scored the lowest on Density of Support also scored the lowest on mother-infant interaction. This occurred even though a high score on Density of Support was considered by the researcher as negative involvement on the part of the family members (see sample items above).

Partner Support. The items on this subscale sought to measure the mother's perception of emotional support of her maternal role from her husband or partner. Again, a large number of mothers ($\bar{X}$=24.76,

TABLE XXII

EFFECTS OF MATERNAL SUPPORT ON MOTHER-INFANT INTERACTION

Maternal Support	GPS[a]	Mother-Infant Interaction: Total Mother $\bar{X}$	S.D.	F Ratio	P	1v2	1v3	2v3[b]	Total Infant $\bar{X}$	S.D.	F Ratio	P	1v2	1v3	2v3[b]	NCAST Teaching Scales: Total Mother-Infant $\bar{X}$	S.D.	F Ratio	P	1v2	1v3	2v3[b]
Density of Support	Low	34.81	6.10						13.44	4.62						48.25	8.80					
	Middle	36.71	6.41	4.01	.03	--	*	--	12.36	3.13	.94	.39	--	--	--	49.07	8.40	3.08	.06	--	--	--
	High	40.94	6.23						14.19	2.86						55.13	8.30					
Partner Support	Low	36.85	7.80						12.08							48.90	9.46					
	Middle	37.80	5.60	.47	.63	--	--	--	13.20	1.44	.25		--	--	--	51.00	7.73	.97	.39	--	--	--
	High	39.29	6.47						14.43							53.71	9.68					
Family and Friends Support	Low	37.18	7.09						13.65	.37	.69					50.82	8.51					
	Middle	36.08	3.29	.65	.53	--	--	--	13.83	.37	.69		--	--	--	49.92	5.55	.65	.53	--	--	--
	High	38.88	7.93						12.76							51.65	11.26					
Total Support	Low	38.00	7.39						13.85	4.26						51.85	9.88					
	Middle	34.63	4.06	5.88	.006	--	--	*	12.00	3.33	1.64	.21	--	--	--	46.63	5.99	5.18	.01	--	--	*
	High	42.15	6.08						14.23	3.14						56.38	8.39					

[a]Maternal support groups determined by sample variance for three-group comparison.

[b]Paired group comparisons using Tukey Honestly Significant Differences.

*Significant at .05 level.

range 7-28) felt that they were supported in their role as mother. The relationship between Partner Support and Mother-Infant Interaction was nonsignificant for all of the group comparisons.

Family Support. The items on this subscale were designed to measure perceived support for the maternal role from family, friends, and relatives. Most of the mothers indicated that they perceived themselves as having good support for their maternal role from family and friends ($\bar{X}$=25.44, range 7-28). The relationship between the Family Support Scale and Mother-Infant Interaction was nonsignificant for all of the group comparisons (see Table XXII). Means indicated that mothers scoring highest on family support also scored highest on mother-infant interaction.

Maternal Attainment of Support. The items on this scale were expected to measure maternal ability to attain support for the maternal role. However, a reliability of .08 for the subscale indicated that the items in the scale were not holding together; that is, that internal consistency of the items was poor. Because of the poor reliability coefficient, the subscale was dropped from the analyses.

Total Support. The items on Total Support represent a sum total of the subscales and are expected to give a stronger indication of maternal support than the subscales taken separately. The mean Total Support score for a majority of the mothers was high ($\bar{X}$=74.52, range 21-84). Results in Table XII indicated that there were significant differences between Total Support and Total Mother scores $F(2,39)=5.88$, $p=.006$. The differences between Total Support and Total Mother-Infant scores were also significant $F(2,39)=5.18$, $p=.01$.

Comparison of the three paired Total Support Groups indicated that mothers who scored the highest on total support also scored highest on Mother-Infant Interaction. This difference was significant between high and medium scoring mothers but not between high and low scoring mothers. Mothers who had the lowest scores on perceived Total Support scored higher on Total Mother and Total Mother-Infant Interaction scores than mothers with more moderately perceived scores on support, but not higher than mothers with in-between scores.

Additional Findings

Intercorrelations among the cohesion variables (Table XXIII) showed that the Household and Extended family cohesion variables were positively and highly correlated with each other, the highest being r=.70 between household cohesion at midpregnancy and extended cohesion at midpregnancy and r=.66 between extended cohesion at four-months postpartum and extended cohesion at midpregnancy.

Correlation analysis was run on household and cohesion between midpregnancy and four-months postpartum in order to see if there was a relationship between cohesion at these two time periods (Table XXIII). The correlation for household cohesion at the two time periods was r=.64. The correlation for extended cohesion for the same time periods was r=.66. These results indicate that there is a strong relationship between cohesion at midpregnancy and four-months postpartum.

In addition, correlations were run for enmeshment as measured by FACES I Subscale and cohesion as measured by FACES II. Enmeshment at four months showed a significant positive relationship with household cohesion at midpregnancy (r=.28) and a significant positive

correlation with household cohesion at four months (r=42). Enmeshment showed a negative correlation (r=-.22) with household cohesion at four months and extended cohesion at four months (r=-.30). Enmeshment at midpregnancy related significantly (r=.35) with enmeshment at four-months postpartum.

TABLE XXIII

INTERCORRELATIONS COHESION VARIABLES

	Cohes House Midpreg	Cohes House 4-Mos	Cohes Exten 4-Mos	Cohes Exten Midpreg	Enmesh Midpreg	Enmesh 4-Mos
Cohes House Midpreg		.64 ***	.40 **	.70 ***	.21 n.s.	.28 *
Cohes House 4-Mos			.46 **	.41 **	-.22 n.s.	.42 **
Cohes Exten 4-Mos				.66 ***	-.30 *	-.03 n.s.
Cohes Mid-Preg					-.03 n.s.	.07 n.s.
Enmesh Midpreg						.35 *
Enmesh 4-Mos						--

Correlation coefficients (r) using Pearson Correlation Coefficient.

*p .05; **p .01; ***p .001; n.s.=not significant.

The correlation results for enmeshment and extended family cohesion are not unexpected, due to the fact that the original enmeshment items were designed by the original authors for the nuclear family. At four months, enmeshment and cohesion appear to be measuring the same thing, and at midpregnancy, enmeshment and cohesion are in the same direction, though nonsignificant. There does appeare to be a moderate relationship between the two scales, at least at four-months postpartum.

Correlation coefficients were also run to determine the existence of a relationship between cohesion and maternal support (Table XXIV). Results showed a majority of significant positive correlations between cohesion and the support scales, with total support showing the highest correlations. Total support was correlated with household cohesion at midpregnancy (r=.37); with household cohesion at four-months postpartum (r=.40); with extended cohesion at four-months postpartum (r=.29); and with extended cohesion at midpregnancy (r=.41).

Correlations between Maternal Support and cohesion variables showed that the results for correlation between household and extended cohesion are mixed for the individual Maternal Support Subscales. Total Support, however, is significantly related to household and extended cohesion at both time periods. It would appear that the concept of cohesion and maternal support as it is used in this study may be similar in terms of what they are measuring.

Summary

Descriptive statistics, one-way and two-way analysis of variance and Pearson correlation coefficients, were used to analyze the data

collected in the FACES II, FACES I Enmeshment Subscale, Maternal Interview, and the NCAST Teaching Scale. The statistical techniques were utilized to test six hypotheses at the .05 level of significance.

The findings were based on 46 mother-infant pairs from Oklahoma City, Shawnee, and Enid, Oklahoma. The results from this particular study are generalizable to a similar population of university clinic obstetric patients, but will be used for purposes of this study, be used to describe in greater detail the relationship between the variables involved and to make recommendations for future research.

TABLE XXIV

CORRELATIONS BETWEEN MATERNAL SUPPORT AND COHESION VARIABLES[a]

	Cohes House Midpreg	Cohes House 4-Mos	Cohes Exten 4-Mos	Cohes Exten Midpreg
Partner Support	.34 *	.39 **	.18 n.s.	.28 n.s.
Family Support	.16 n.s.	.25 n.s.	.25 n.s.	.28 *
Density Support	.29 *	.29 *	.28 *	.22 n.s.
Total Support	.37 *	.40 **	.29 *	.41 **

[a]Correlation coefficient (r) using Pearson Correlation Coefficient.

*$p<.05$; **$p<.01$; n.s.=not significant.

The mothers who took part in the study can generally be described as mothers approximately 25 years of age, two-thirds of whom were white and one-third black, low to moderate income, with a high school education. Independent variables for this study were Cohesion, Adaptability, and Maternal Support. Cohesion and Adaptability were classified as either Extended or Household Cohesion and were grouped for purposes of analysis in two ways: (1) using cutoff points determined by original authors' norms (Olson et al., 1982) and (2) by sample variance. Maternal Support was grouped using three groups determined by sample variance. The dependent variable mother-infant interaction was treated as a continuous variable and was looked at in terms of: (1) Total Mother-Infant Interaction scores, (2) Total Mother scores, and (3) Total Infant scores.

Results varied somewhat, depending on which cutoff points were used and which total scores on mother-infant interaction were considered. Generally, the total mother and total mother-infant scores were significantly related more often than were total infant scores. Results comparing the two different cutoff points, where comparable, were not the same.

Comparisons of the means from this study with the means from normative studies show that cohesion and adaptability were somewhat higher from midpregnancy to four-months postpartum, which would be expected for families with a new child in the family. The means for mother-infant interaction show that the sample for this study scored lower on mother-infant interaction than the norm and similar to other low education, low income families, or families that are more problematic.

Results indicated that mothers with more balanced cohesion scores at four-months postpartum scored highest on mother-infant interaction. The more balanced mothers scored significantly higher than mothers who were disengaged, but not significantly higher than mothers who were enmeshed.

At midpregnancy, mothers who were extremely enmeshed scored higher on mother-infant interaction than did more balanced mothers, and significantly higher than disengaged mothers. In a two-way analysis of variance to compare cohesion at midpregnancy and at four-months postpartum, there were no significant main effects or interactional effects for household cohesion, although some main effects did approach significance. Extended cohesion at midpregnancy and at four-months postpartum showed significant main effects. Enmeshment measured by the enmeshment subscale showed significant interaction between the two time periods. Adaptability was nonsignificant for all measures.

In looking at Maternal Support, only one subscale showed significance as an individual subscale--Density of Support. This subscale showed a significant relationship to mother-infant interaction, indicating that the higher the perceived density of support (extreme involvement on the part of the family members), the higher the mother-infant interaction. The other subscales were nonsignificant. There were significant differences between Total Support and mother-infant interaction. The mothers who indicated the highest total support also had the highest mother-infant interaction. Mothers who perceived themselves as having the highest support scored significantly higher than the more balanced mothers, but not significantly higher than the mothers who perceived themselves as having the lowest support.

Pearson correlations were used to show that positive correlations existed between cohesion and maternal support and between cohesion at midpregnancy and four-months postpartum. Mothers who scored high on cohesion were significantly more likely to score high on maternal support. The higher the mothers scored on cohesion at midpregnancy, the more likely they were to score high on cohesion at four-months postpartum.

To summarize, Hypothesis 1, which postulated that mothers with more balanced cohesion scores at four months would score significantly higher than either extreme group, was partially supported. The more balanced mothers did score higher, and significantly higher than disengaged mothers, but not significantly higher than enmeshed mothers. Hypothesis 2 suggested that mothers with more balanced cohesion scores at midpregnancy would score significantly higher than either extreme group and was not supported, since enmeshed mothers scored highest and significantly higher than disengaged mothers. Again, it should be noted that significant results for Hypotheses 1 and 2 were achieved using different cutoff points.

No significant main effects or interactional effects were found for Hypothesis 3, which suggested that cohesion at midpregnancy and four-months postpartum would have significant main effects or interaction. Therefore, this hypothesis was not supported.

Hypotheses 4 and 5 were also not supported. These hypotheses postulated that mothers with more balanced adaptability at midpregnancy and at four months would score higher on mother-infant interaction than either extreme group. None of the adaptability results were significant at the .05 level, and no apparent trends were found.

Hypothesis 6 was supported. Mothers scoring high on scales of perceived maternal support did have higher scores than mothers scoring low. This was true for total support and for one of the support subscales (Density of Support).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The field of infancy research has increased dramatically in the last 20 years. This is due to an increased understanding of the infant and an appreciation of the importance of looking at the earliest influences in an infant's environment. A major area of interest to developmentalists who study infants is the interaction of the infant with his environment; in particular, the immediate social environment. The field of Family Studies has also been actively involved in the study of family functioning which looks at the complex interaction among family members and their relationships to one another. It seems only reasonable that the two fields of study be merged in an effort to understand the effect of family functioning and family support systems on maternal-infant behavior.

The purpose of this study was to examine and describe the relationship between family functioning (specifically, family cohesion and adaptability) and mother-infant interaction and between maternal support and mother-infant interaction.

More specifically, answers to the following questions were sought:

1. What is the relationship between family household cohesion and adaptability measured at midpregnancy and patterns of mother-

infant interaction observed during a teaching episode at four months postpartum?

2. What is the relationship between family household cohesion and adaptability measured at four-months postpartum and patterns of mother-infant interaction observed during a teaching episode at four-months postpartum?

3. Are there main effects between household cohesion measured at midpregnancy and at four-months postpartum which is related to mother-infant interaction measured at four-months postpartum?

4. What is the relationship between maternal support and patterns of mother-infant interaction measured at four-months postpartum?

The following hypotheses were tested:

Hypothesis 1. Mothers who score extremely high or extremely low on family cohesion at four-months postpartum will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers who have more balanced family cohesion scores.

Hypothesis 2. Mothers who score extremely high or extremely low on family cohesion at midpregnancy will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers who have more balanced family cohesion scores.

Hypothesis 3. Cohesion scores at midpregnancy and at four-months postpartum will significantly influence mother-infant interaction at four-months postpartum.

Hypothesis 4. Mothers who score extremely high or extremely low on family adaptability at four-months postpartum will have lower scores on the mother-infant interaction scales at four-months postpartum than mothers with more balanced family adaptability scores.

Hypothesis 5. Mothers who score extremely high or extremely low on family adaptability at midpregnancy will have lower scores on the mother-infant interaction scales at four months than mothers who have more balanced family adaptability scores.

Hypothesis 6. Mothers scoring high on scales of perceived maternal support will have higher scores on the mother-infant interaction scales than mothers scoring low on perceived maternal support.

Summary of Methods

The type of research involved in this study was mainly descriptive and developmental in nature. The population sample for the study included mothers with the mean age of 25 years who were patients of the University of Oklahoma Family Medicine Center in Oklahoma City. The sample was similar in characteristics to the larger population but tended to be slightly older, with more married and Causasian mothers.

Data were collected during the spring and summer of 1984 on mothers of four- and five-month old infants. Pregnancy data from these mothers, collected for a separate study, was matched with the four-month data in order to make comparisons from the midpregnancy to postpartum period. The instruments used to collect data for this study included: (1) the Family Adaptability and Cohesion Scale and Enmeshment Subscale, (2) the Nursing Child Assessment Training Teaching Scale, and (3) the Maternal Support Scale.

Summary and Discussion of Findings

Demographic Characteristics

Demographic characteristics of this sample of mothers indicated

that the majority of mothers (67.4%) were white mothers, 25.67 years of age, with high school degrees. Some mothers were first-time mothers, while others had experienced multiple births. Sixty-five percent of the mothers were married at the time of delivery and their families had a mean income of $12,698 per year. A number of demographic factors are known to affect mother-infant interaction teaching scores. Significant educational differences have been found in previous studies. Generally, the higher the mother's education, the higher her scores were on the mother-infant interaction scale.

The mother-infant interaction scores of the mothers in this study are similar to those in other studies of samples with similar background characteristics. In general, mothers of low education and low income groups and unmarried mothers tend to score lower on mother-infant interaction measures than do married mothers with higher education and incomes.

Summary of Findings Related to Hypotheses

For Hypothesis 1, using groups determined by sample variance as criteria, there were significant differences between household cohesion and mother-infant interaction at the p=.05 level. The mean differences between household cohesion and total mother scores was significant at the p=.02 level. Mothers who had more balanced cohesion scores scored higher on mother-infant interaction than did either of the extreme groups, and significantly more so than mothers who were highly disengaged. Mothers who scored their families as more balanced in cohesion were observed to have fewest problems interacting with their infants. Mothers who were disengaged at four-months postpartum

exhibited significantly more problems in interacting with their infants than did enmeshed mothers. Circumplex theory does predict an increased amount of enmeshment (high emotional bonding and low individual autonomy of family members) during certain life event (birth of a child or a death in the family). It was assumed by this researcher that even though an increased amount of family enmeshment was expected, extreme enmeshment would still have a negative influence on mother-infant interaction. This does not appear to be the case. Although the means do indicate that balanced mothers scored higher than enmeshed mothers, the difference was not significant. Extreme disengagement does appear, however, to play a more significant role for the mother-infant pair. It could be postulated that extreme disengagement, which is characterized by low emotional bonding of family members and a high degree of autonomy of individual family members, may be particularly disruptive to the new mother and her infant who needs greater involvement of other family members during this period.

In Hypothesis 2, using cutoff points established by Olson et al. (1982) as criteria, mothers who came from extremely enmeshed families scored higher than either moderate or disengaged mothers on mother-infant interaction, and significantly more so than disengaged mothers at midpregnancy. Differences between household cohesion and total mother scores were significant at the $p=.01$ level. Differences between household cohesion and total mother-infant interaction were significant at the $p=.04$ level. Using groups determined by sample variance, the effect of household cohesion on total mother-infant interaction scores approached significance at the $p=.08$ level.

These findings would appear to indicate that a greater degree of enmeshment in the family during pregnancy would predict higher scores on mother-infant interaction after birth. Thus, the dysfunctional aspects of the enmeshed family would appear to be negated by the need of the mother for greater family enmeshment during her pregnancy. This finding was not expected in light of the results of the pilot Pregnancy Study, which found enmeshment during pregnancy to be highly related to low birthweight infants. Generally, mothers of premature and low birthweight infants score lower on mother-infant interaction than do mothers of full-term infants.

In comparing the findings of Hypothesis 1 with Hypothesis 2, it would appear that a greater degree of enmeshment (even extreme enmeshment) during pregnancy may be predictive of better mother-infant interaction after birth. At four-months postpartum, however, while a higher degree of enmeshment still appears to be beneficial to the mother and infant, movement towards a more balanced family cohesion is optimal. Thus, although high enmeshment is not detrimental and perhaps beneficial during pregnancy, the movement should be away from enmeshment and towards more balanced cohesion by four-months postpartum. At both time periods, midpregnancy and four-months postpartum, the extreme of disengagement is considered significantly dysfunctional for the mother-infant pair.

The goal for Hypothesis 3 was to see if cohesion scores at midpregnancy and at four-months postpartum would significantly influence mother-infant interaction at four-months postpartum. The results did not show significant main effects or interaction effects for cohesion at the two time periods.

Extended family cohesion did show significant main effects (p=.03) at four-months postpartum for Total Mother scores. Main effects approached significance (p=.08) at midpregnancy for Total Mother Scores and p=.09 for main effects at four-months postpartum for Total Mother-Infant scores. Extended family members were those family members defined by the respondent as living outside of the household but considered by the respondent to be part of her wider network of family.

The enmeshment subscale (FACES I Subscale) showed interactional effects from midpregnancy to four-months postpartum for Total Mother scores (p=.04). There were no significant main effects for this analysis. The enmeshment subscale is a linear measure of enmeshment. That is, high scores on this subscale would indicate high enmeshment, while low scores would indicate low enmeshment (not disengagement). This finding would ordinarily indicate that the effects of enmeshment on mother-infant interaction at midpregnancy and at four-months postpartum are measuring two different concepts. Enmeshment at four-months postpartum correlates well with enmeshment at midpregnancy (r=.35).

In Hypotheses 4 and 5, adaptability did not appear to play a significant role in either the midpregnancy or postpartum period. Although it was hypothesized that there would be significant differences between the mothers' scores on adaptability and mother-infant interaction, it has been noted that the conceptualization of adaptability does not appear to hold together as well as the concept of cohesion in so far as it relates to pregnancy outcome. This would also appear to be the case with this study's measure of mother-infant interaction.

For Hypothesis 6, reliabilities for most of the Maternal Support Subscales would indicate that they were sufficient to show their value in collecting information on maternal perception of support. One scale, Maternal Attainment of Support, was dropped due to poor reliability. Paternal Support and Support of Family and Friends did not show a significant difference with mother-infant interaction, as did Density of Support. In the three-group comparison, Total Mother scores were significant at the p=.03 level and the Total Mother-Infant scores were significant at the p=.05 level. Results in Hypothesis 6 indicated that the mothers who scored highest on Density of Support also scored highest on mother-infant interaction. Likewise, those scoring the lowest on Density of Support also scored lowest on mother-infant interaction. That is, mothers who perceived their families as most involved scored higher on mother-infant interaction. This finding would indicate that the mother's perception of extreme involvement on the part of family members did not appear to outweigh the value of their involvement in providing necessary support for the mother. Results on the partner Support and Friends and Family Support Scale did not show significant differences. Means on the three group comparison, though nonsignificant, did indicate that the higher the mother's perceived support from partner and family, the higher were her scores on the mother-infant interaction scales.

The Total Support score showed a significant relationship with mother-infant interaction at the p=.006 level (Total Mother) and the p=.01 level (Total Mother-Infant). The mothers who scored the highest on Total Support also scored highest on mother-infant interaction. This difference was significant between high and medium scoring

mothers but not between high and low scoring mothers. Mothers who perceived themselves as having low support scored better on mother-infant interaction than did mothers who perceived themselves as having a moderate amount of support.

Limitations

The following limitations were noted for this study:

1. The total number of cases was 46 for the four-month comparisons, which meant that after splitting into three groups, the number of cases was approximately 15. Because of missing cases in the mid-pregnancy data, the number of cases was even lower (N=38, or 12.6 per group). The small numbers in these groups would increase the possibility of sampling error and would affect group comparisons, particularly with two-way analysis of variance.

2. The dependent variables for the study were based upon the mother's perception of her family's functioning and the support they provided. Beneficial information could have been added to the study had independent sources been used to verify the mother's perception of these events.

3. The make-up of the families was widely varied--from one child to many--some mothers had one-parent families and some mothers were living with their own parents or their spouse's parents. A more homogeneous sample would have added strength to the study.

4. As was previously discussed in the section on research methods, the type of research in this study was descriptive and ex post facto in nature--leading to a less vigorous type of research.

5. Although the two major instruments used in the study have been thoroughly field tested (FACES and NCAST Teaching Scale), the instruments were not pilot tested specifically for this study. Also, the new instrument, Maternal Support Scale, has not been pilot tested.

6. Although the instrumentation was generally considered to be highly reliable, one subscale of maternal support (Maternal Attainment of Support) was dropped, due to poor reliability.

7. Although the sample came from similar family medicine clinics, the inclusion of samples from three different Oklahoma communities (Shawnee, Enid, and Oklahoma City) may have resulted in responses representing three different populations.

8. Because groups were designed to obtain extreme scores which involved a second testing, statistical regression to the mean also became a limitation for this study.

Conclusions

Based on the data analyses for this study and limited by the extent to which data resulting from research procedures were both valid and reliable, the following conclusions were drawn. These conclusions must be read with the knowledge that limitations as discussed do exist within the study.

The goal of this study was to examine and describe the relationship between family functioning (adaptability and cohesion) and mother-infant interaction and the relationship between maternal support and mother-infant interaction. It can be concluded that family functioning, in particular family cohesion, appears to play a significant role in mother-infant interaction at four-months postpartum. Adaptability,

as one dimension of the circumplex model, does not seem to be as conceptually clear in so far as it relates to mother-infant interaction.

Family cohesion plays a significant role, both at midpregnancy and at four-months postpartum. During the pregnancy period, the effects of extreme family cohesion do not appear to be detrimental to the mother-infant relationship, if family cohesion moves to a more balanced level by four-months postpartum. That is, the perception of extreme enmeshment by the mother during pregnancy does not appear to predict problems for the mother-infant pair. After her pregnancy, by four-months postpartum, a more optimal level of family cohesion for the mother-infant pair would be a movement away from enmeshment towards more balanced levels of cohesion. In either time period, disengagement, characterized by high individual autonomy of family members and low emotional bonding, appears to negatively affect the mother-infant pair.

Maternal Support is concluded to be a significant factor affecting the mother-infant relationship. The more ways that maternal support can be identified, the stronger that effect appears to become. Of particular interest in the results on Maternal Support was the finding of significant differences between Density of Support and Mother-Infant Interaction. It is concluded from these findings that a mother's perception of excessive involvement on the part of her family during the four-month postpartum period does not appear, from these findings, to interfere in a negative way with the mother-infant relationship. The reasons for this finding are not clear. It could be that while the mother perceives this as negative involvement, she does not transfer this perception to her own parenting skills. It could

likewise be that the items chosen for the subscale were not perceived as negative to the mother. The fact that the mothers in general indicated high support on the other scales from family, friends, and partner indicates that the mother perceived her support system in a generally positive way.

Recommendations and Problems for Further Study

Based on the findings and conclusions of this study, the following recommendations are made:

Family cohesion appears to be an important indicator in determining the outcome for mother-infant relationships. While enmeshment varies over time, disengagement appears to remain a consistent and negative influence on mother-infant interaction from midpregnancy to four-months postpartum. Professionals who deal with pregnant mothers or mothers and their newborn infants may wish to familiarize themselves with the characteristics of the enmeshed and disengaged family in order to add to their assessment those factors which may influence the mother-infant relationship.

As a result of this study, several related problems appear to merit investigation:

1. Further investigation should take steps to refine the conceptual link that has been established between family functioning and mother-infant interaction. Researchers from both fields should pool their expertise in these separate but highly related areas of research. Multi-method assessment of both independent and dependent variables should be emphasized.

2. Efforts should be made to refine measures of family functioning which can specify the prenatal conditions conducive to optimal mother-infant interaction. For example, are there specific characteristics of the disengaged family that lead to less optimal mother-infant interaction? Similarly, further study is needed to clear up the role of enmeshed families during pregnancy and the postnatal period. Does a greater degree of enmeshment during pregnancy indeed predict better mother-infant interaction during the first four months?

3. Measures of family functioning should be refined and field-tested in current prenatal and infant mental health programs which regularly utilize a variety of child outcome measures. Comparisons can be made between family functioning, mother-infant, and other measures of child outcome. Such outcome measures should include cognitive development of the young child.

4. The issue of density of support should be investigated more thoroughly in future studies to examine in greater detail how the degree of family involvement relates to mother-infant interaction. Specifically, at what point, if any, and under what conditions does extreme involvement exhibit a detrimental effect on mother-infant outcome?

This study represents an attempt to describe the relationship between family functioning and mother-infant interaction. These early suggested findings indicate that researching the area of family functioning, especially during the pregnancy period, is of great importance in predicting an optimal outcome for mother and infant.

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APPENDIXES

APPENDIX A

CONSENT FORM

ID - / - / - - -

CONSENT TO PARTICIPATE IN A PROJECT ON FAMILIES

AND INFANTS

1. Mothers who have participated in the University Family Medicine Clinic Study on pregnancy are invited to participate in a follow-up study to see if family relationships and stress have any effect on the infant.

   As before, you will be asked questions about your family and home life. You will also be asked to arrange family figurines on a board which will represent the relationship of family members to one another. In addition, your infant will be taught a learning task and observed for his/her reactions.

2. The information which you give us will be completely confidential and read only by doctors and workers on this project. After the information is gathered, we will code it with a number so that it will not be associated with your name.

3. You may withdraw from this project at any time without affecting your future medical care in any way.

4. You may ask questions you desire concerning this project by contacting Susan Sturm, (405) 271-8063.

I have read the information provided and understand the proposed project. My signature below indicates my agreement to participate in this study. By signing this consent form I have not waived any of my legal rights or released this institution from liability for negligence.

_____ Signature of Patien' or Patient/Gardian

_____ Patient Name Printed

_____ Address

_____ Phone Number

_____ Date

_____ Witness

_____ Principal Investigator

APPENDIX B

MATERNAL SUPPORT SCALE

ID - / - / - - -

MATERNAL INTERVIEW

DIRECTIONS

The statements below have been made by mothers of young infants. Read each statement and decide which responses best describe your feelings. Then circle the appropriate number next to each statement.

		Very Much So	Moder-ately So	Some what So	Not At All	
1.	I feel that I get too much advice from members of my family about caring for the baby.	4	3	2	1	1.____
2.	My partner thinks I am a good mother.	4	3	2	1	2.____
3.	My family is my only source of help or advice with the baby.	4	3	2	1	3.____
4.	I have friends or relatives who encourage me to care for the baby in my own way.	4	3	2	1	4.____
5.	Decisions about the baby involve too many family members.	4	3	2	1	5.____
6.	I don't involve other people when I have a problem with the baby.	4	3	2	1	6.____
7.	My partner criticizes the way I handle the baby.	4	3	2	1	7.____
8.	I am able to handle all of the baby's needs myself without assistance.	4	3	2	1	8.____
9.	My parent(s) criticize me as a mother.	4	3	2	1	9.____
10.	My partner blames me when anything goes wrong with the baby.	4	3	2	1	10.____
11.	I can rely on friends or relatives to talk to or help me with the baby.	4	3	2	1	11.____
12.	I have family members who think they can care for the baby better than I can.	4	3	2	1	12.____
13.	I don't hesitate to call on friends or relatives if I need help.	4	3	2	1	13.____
14.	I have friends or relatives who reassure me as a mother.	4	3	2	1	14.____
15.	I don't trust other people to take care of my baby.	4	3	2	1	15.____

ID - / - / - - -

		Very Much So	Moder-ately So	Some what So	Not At All	
16.	My partner is understanding about the amount of time the baby requires.	4	3	2	1	16.____
17.	There are times when I must impose on other people to help me with the baby.	4	3	2	1	17.____
18.	My parent(s) seem to like the way I care for the baby.	4	3	2	1	18.____
19.	Other members of my family want to take the baby over.	4	3	2	1	19.____
20.	I have friends or relatives who think I am a good mother.	4	3	2	1	20.____
21.	My parent(s) make me feel there is little that I can do right with the baby.	4	3	2	1	21.____
22.	A mother should be able to take care of her baby without depending on other people.	4	3	2	1	22.____
23.	I feel that I have too much help with the baby.	4	3	2	1	23.____
24.	My partner could support me more as a mother.	4	3	2	1	24.____
25.	I don't ask other people for help even when they have offered.	4	3	2	1	25.____
26.	My partner makes me feel good about how I handle the baby.	4	3	2	1	26.____
27.	My partner believes mothering is an important job.	4	3	2	1	27.____
28.	Other members of my family are too involved with the baby.	4	3	2	1	28.____

Subsscale Items and Scoring Direction for
Partner (Husband, Father of the Baby,
Boyfriend) Support of Maternal Role

(+) 2. My partner thinks I am a good mother.

(+) 26. My partner makes me feel good about how I handle the baby.

(-) 10. My partner blames me when anything goes wrong with the baby.

(-) 7. My partner criticizes the way I handle the baby.

(-) 24. My partner could support me more as a mother.

(+) 16. My partner is understanding about the amount of time the baby requires.

(+) 27. My partner believes mothering is an important job.

Subscale Items and Scoring Direction for
Support for Maternal Role From
Parents, Friends, and Relatives

(+) 18. My parent(s) seem to like the way I care for the baby.

(-) 21. My parent(s) make me feel there is little that I do right with the baby.

(-) 9. My parent(s) criticize me as a mother.

(+) 11. I can rely on friends or relatives to talk to or help me with the baby when necessary.

(+) 14. I have friends or relatives who reassure me as a mother.

(+) 4. I have friends or relatives who encourage me to care for the baby in my own way.

(+) 20. I have friends or relatives who think I'm a good mother.

Subscale Items and Scoring Direction for Density of Support

(-) 28. Other members of my family are too involved with the baby.

(-) 1. I feel that I get too much advice from members of my family about caring for the baby.

(-) 12. I have family members who think they can care for the baby better than I can.

(-) 19. Other members of my family want to take the baby over.

(-) 3. My family is my only source of help or advice with the baby.

(-) 23. I feel that I have too much help with the baby.

(-) 5. Decisions about the baby involve too many family members.

Subscale Items and Scoring Direction for Maternal Ability to Attain Support

(+) 13. I don't hesitate to call on friends or relatives if I need help.

(-) 6. I don't involve other people when I have a problem with the baby.

(+) 17. There are times when I must impose on other people to help me with the baby.

(-) 25. I don't ask other people for help even when they have offered.

(-) 8. I am able to handle all the baby's needs myself without assistance.

(-) 22. A mother should be able to take care of her baby without depending on other people.

(-) 15. I don't trust other people to take care of my baby.

APPENDIX C

NURSING CHILD ASSESSMENT SATELLITE TRAINING TEACHING SCALE

UNIVERSITY OF WASHINGTON
SCHOOL OF NURSING
NURSING CHILD ASSESSMENT SATELLITE TRAINING

TEACHING SCALES (BINARY FORM)
(BIRTH TO THREE YEARS)

PERSON OBSERVED IN INTERACTION (CIRCLE)
MOTHER FATHER OTHER

MAJOR CAREGIVER (CIRCLE)
YES NO

TEACHING TASK _____
LENGTH OF TEACHING (CIRCLE) MIN
1 or LESS 2 3 4 5 6 OR MORE

SETTING (CIRCLE)
HOME CLINIC OTHER

CITY _____
CHILD S FIRST NAME _____
CHILD S AGE (IN MONTHS) _____
CHILD S SEX (CIRCLE) MALE FEMALE
CHILD'S RACE _____
MOTHER'S EDUCATION (CIRCLE)
6 YRS OR LESS 7-8 9-10-11-12-13-14-15-16-17-18-19-20+
MARITAL STATUS (CIRCLE)
MARRIED NOT MARRIED

		YES	NO
I	SENSITIVITY TO CUES		
1	PARENT POSITIONS CHILD SO CHILD IS SAFELY SUPPORTED		
2	PARENT POSITIONS CHILD SO THAT CHILD CAN REACH AND MANIPULATE MATERIALS		
3	PARENT GETS THE CHILD S ATTENTION BEFORE BEGINNING THE TASK, AT THE OUTSET OF THE TEACHING INTERACTION		
4	IN NEARLY ALL CASES PARENT GIVES INSTRUCTIONS ONLY WHEN THE CHILD IS ATTENTIVE (90%)		
5	PARENT ALLOWS CHILD TO EXPLORE THE TASK MATERIALS FOR AT LEAST 5 SECONDS BEFORE GIVING THE FIRST TASK RELATED INSTRUCTION		
6	PARENT POSITIONS CHILD SO THAT IT IS POSSIBLE FOR THEM TO HAVE EYE-TO EYE CONTACT WITH ONE ANOTHER DURING THE TEACHING EPISODE		
7	PARENT PAUSES WHEN CHILD INITIATES BEHAVIORS DURING THE TEACHING EPISODE		
8	PARENT PRAISES CHILD'S SUCCESSES OR PARTIAL SUCCESSES		
9	PARENT ASKS FOR NO MORE THAN THREE PERFORMANCES WHEN CHILD IS SUCCESSFUL AT COMPLETING THE TASK		
10	PARENT CHANGES POSITION OF CHILD AND/OR MATERIALS AFTER UNSUCCESSFUL ATTEMPT BY THE CHILD TO DO THE TASK		
11	PARENT DOES NOT PHYSICALLY FORCE THE CHILD TO COMPLETE THE TASK		
	SUBSCALE TOTAL (NO OF YES ANSWERS)		
II	RESPONSE TO DISTRESS (INDICATE WHETHER DISTRESS OCCURRED OR NOT)		
12	STOPS THE TEACHING EPISODE		
13	MAKES POSITIVE SYMPATHETIC, OR SOOTHING VERBALIZATION		
14	CHANGES VOICE VOLUME TO SOFTER OR HIGHER PITCH (DOES NOT YELL)		
15	REARRANGES THE CHILD S POSITION AND/OR TASK MATERIALS		
16	MAKES SOOTHING NON-VERBAL RESPONSE E G PAT, TOUCH, ROCK, CARESS KISS		
17	DIVERTS CHILD S ATTENTION BY PLAYING GAMES, INTRODUCES NEW TOY		
18	DOES NOT MAKE NEGATIVE COMMENTS TO THE CHILD		
19	DOES NOT YELL AT THE CHILD		
20	DOES NOT USE ABRUPT MOVEMENTS OR ROUGH HANDLING		
21	DOES NOT SLAP HIT OR SPANK		
22	DOES NOT MAKE NEGATIVE COMMENTS TO HOME VISITOR ABOUT THE CHILD		
	SUBSCALE TOTAL (NO OF YES ANSWERS)		
III	SOCIAL EMOTIONAL GROWTH FOSTERING		
23	PARENT S BODY POSTURE IS RELAXED DURING THE TEACHING EPISODE (AT LEAST HALF THE TIME)		
24	PARENT IS IN THE FACE-TO FACE POSITION WITH THE CHILD DURING THE TEACHING INTERACTION (AT LEAST HALF THE TIME)		
25	PARENT LAUGHS OR SMILES AT CHILD DURING THE TEACHING		
26	PARENT GENTLY PATS CARESSES STROKES HUGS, OR KISSES CHILD DURING EPISODE		
27	PARENT SMILES, OR TOUCHES CHILD WITHIN 5 SECONDS WHEN CHILD SMILES OR VOCALIZES		
28	PARENT PRAISES CHILD S EFFORTS OR BEHAVIORS BROADLY (IN GENERAL) AT LEAST ONCE DURING THE EPISODE		
29	PARENT MAKES CONSTRUCTIVE OR ENCOURAGING STATEMENT TO THE CHILD DURING THE TEACHING INTERACTION		
30	PARENT DOES NOT VOCALIZE TO THE CHILD AT THE SAME TIME THE CHILD IS VOCALIZING		
31	PARENT DOES NOT MAKE GENERAL NEGATIVE OR UNCOMPLIMENTARY REMARKS ABOUT THE CHILD		
32	PARENT DOES NOT YELL AT THE CHILD DURING THE EPISODE		
33	PARENT DOES NOT MAKE CRITICAL, NEGATIVE COMMENTS ABOUT THE CHILD S TASK PERFORMANCE		
	SUBSCALE TOTAL (NO OF YES ANSWERS)		
IV	COGNITIVE GROWTH FOSTERING		
34	PARENT PROVIDES AN IMMEDIATE ENVIRONMENT WHICH IS FREE FROM DISTRACTIONS FROM ANIMATE SOURCES (SIBS PETS, ETC)		
35	PARENT FOCUSES ATTENTION ON CHILD'S ATTENTION ON THE TASK DURING MOST OF THE TEACHING (60% OF THE TIME)		
36	AFTER PARENT GIVES INSTRUCTIONS AT LEAST 5 SECONDS IS ALLOWED FOR THE CHILD TO ATTEMPT THE TASK BEFORE PARENT INTERVENES AGAIN		
37	PARENT ALLOWS NON-TASK MANIPULATION OF THE TASK MATERIALS AFTER THE ORIGINAL PRESENTATION		
38	PARENT DESCRIBES PERCEPTUAL QUALITIES OF THE TASK MATERIALS TO THE CHILD		
39	PARENT USES AT LEAST TWO DIFFERENT SENTENCES OR PHRASES TO DESCRIBE THE TASK TO THE CHILD		
40	PARENT USES EXPLANATORY VERBAL STYLE MORE THAN IMPERATIVE STYLE IN TEACHING THE CHILD		
41	PARENT S DIRECTIONS ARE STATED IN CLEAR UNAMBIGUOUS LANGUAGE (I E AMBIGUOUS = 'TURN, ' 'REACH,' UNAMBIGUOUS = "TURN THE KNOB TOWARD ME ')		
42	PARENT USES BOTH VERBAL DESCRIPTION AND MODELING SIMULTANEOUSLY IN TEACHING ANY PART OF THE TASK		
43	PARENT ENCOURAGES AND/OR ALLOWS THE CHILD TO PERFORM THE TASK BEFORE INTRUDING IN ON THE USE OF TASK MATERIALS		
44	PARENT VERBALLY PRAISES CHILD AFTER CHILD HAS PERFORMED BETTER OR MORE SUCCESSFULLY THAN THE LAST ATTEMPT		
45	PARENT SMILES AND/OR NODS AFTER CHILD PERFORMS BETTER OR MORE SUCCESSFULLY THAN THE LAST ATTEMPT		
46	PARENT RESPONDS TO THE CHILD S VOCALIZATIONS WITH VERBAL RESPONSE		
47	PARENT USES BOTH VERBAL AND NONVERBAL INSTRUCTIONS IN TEACHING THE CHILD		
48	PARENT USES TEACHING LOOPS IN INSTRUCTING CHILD (75% OF THE TIME)		
49	PARENT SIGNALS COMPLETION OF TASK TO CHILD VERBALLY OR NONVERBALLY		
50	PARENT SPENDS NOT MORE THAN 5 MINUTES AND NOT LESS THAN ONE MINUTE IN TEACHING THE CHILD THE TASK		
	SUBSCALE TOTAL (NO OF YES ANSWERS)		

		YES	NO
V	CLARITY OF CUES		
51	CHILD IS AWAKE		
52	CHILD WIDENS EYES AND/OR SHOWS POSTURAL ATTENTION TO TASK SITUATION		
53	CHILD CHANGES INTENSITY OR AMOUNT OF MOTOR ACTIVITY WHEN TASK MATERIAL IS PRESENTED		
54	CHILD S MOVEMENTS ARE CLEARLY DIRECTED TOWARD THE TASK MATERIALS OR AWAY FROM THE TASK OR TASK MATERIALS (NOT DIFFUSE)		
55	CHILD MAKES CLEARLY RECOGNIZABLE ARM MOVEMENTS DURING THE TEACHING EPISODE (CLAPPING REACHING, WAVING, POUNDING, POINTING, PUSHING AWAY)		
56	CHILD VOCALIZES WHILE LOOKING AT TASK MATERIALS		
57	CHILD SMILES OR LAUGHS DURING THE EPISODE		
58	CHILD GRIMACES OR FROWNS DURING THE TEACHING EPISODE		
59	CHILD DISPLAYS POTENT NEGATIVE CUES DURING THE TEACHING INTERACTION		
60	CHILD DISPLAYS SUBTLE NEGATIVE CUES DURING THE TEACHING INTERACTION		
	SUBSCALE TOTAL (NO OF YES ANSWERS)		
VI	RESPONSIVENFSS TO PARENT		
61	CHILD GAZES AT PARENT S FACE OR TASK MATERIALS AFTER PARENT HAS SHOWN VERBAL OR NONVERBAL ALERTING BEHAVIOR		
62	CHILD ATTEMPTS TO ENGAGE PARENT IN EYE-TO-EYE CONTACT		
63	THE CHILD LOOKS AT THE PARENT'S FACE OR EYES WHEN PARENT ATTEMPTS TO ESTABLISH EYE-TO-EYE CONTACT		
64	CHILD VOCALIZES OR BABBLES WITHIN 5 SECONDS AFTER PARENT S VERBALIZATION		
65	CHILD VOCALIZES OR BABBLES WITHIN 5 SECONDS AFTER PARENT S GESTURES, TOUCHING OR CHANGING FACIAL EXPRESSION		
66	CHILD SMILES AT PARENT WITHIN 5 SECONDS AFTER PARENT'S VERBALIZATION		
67	CHILD SMILES AT PARENT WITHIN 5 SECONDS AFTER PARENT'S GESTURE, TOUCH OR FACIAL EXPRESSION CHANGES		
68	WHEN PARENT MOVES CLOSER THAN 8 INCHES FROM THE CHILD S FACE—THE CHILD SHOWS SUBTLE AND/OR POTENT NEGATIVE CUES		
69	CHILD SHOWS SUBTLE AND/OR POTENT NEGATIVE CUES WITHIN 5 SECONDS AFTER PARENT CHANGES FACIAL EXPRESSION OR BODY MOVEMENTS		
70	CHILD SHOWS SUBTLE AND/OR POTENT NEGATIVE CUES WITHIN 5 SECONDS AFTER PARENT S VERBALIZATION		
71	THE CHILD SHOWS SUBTLE AND/OR POTENT NEGATIVE CUES WHEN PARENT ATTEMPTS TO INTRUDE PHYSICALLY IN THE CHILD S USE OF THE TASK MATERIAL		
72	CHILD PHYSICALLY RESISTS OR RESPONDS AGGRESSIVFLY WHEN PARENT ATTEMPTS TO INTRUDE PHYSICALLY IN CHILD S USE OF THE TASK MATERIAL		
73	THE CHILD STOPS DISPLAYING DISTRESS CUES WITHIN 15 SECONDS AFTER PARENT S SOOTHING ATTEMPTS		
	SUBSCALE TOTAL (NO OF YES ANSWERS)		

ENTER TOTALS FOR EACH CATEGORY	
SENSITIVITY TO CUES	
RESPONSE TO DISTRESS	
SOCIAL-EMOTIONAL GROWTH FOSTERING	
COGNITIVE GROWTH FOSTERING	
CLARITY OF CUES	
RESPONSIVENESS TO PARENT	
TOTAL (NO OF YES ANSWERS)	

1 WERE YOU UNCOMFORTABLE DURING ANY PART OF THE TEACHING DUE TO MY PRESENCE?

A YES B NO

IF YES, WHY?

2 OBSERVER S COMMENTS

APPENDIX D

FAMILY ADAPTABILITY AND COHESION EVALUATION SCALE (FACES) FACES II AND FACES I SUBSCALE

ID_____

FAMILY ADAPTABILITY AND COHESION EVALUATION SCALES (FACES)

Instructions to be read to participants:

I am going to read a list of statements, and I want you to tell me whether each one is true or not for your family. For example, "Family ties are more important to us than any friendship could possibly be." You can answer in several ways: Something might be "true none of the time," "true some of the time," "true most of the time," or "true all of the time." When I read you a statement, you tell me which one of those choices best describes your family. There are no wrong answers.

1. As we talk about these statements, think about your family situation since you have been pregnant. Before we begin, please tell me who is a part of that family you will be describing:

a.

____	No one	____	Your brother;	____	How many?
____	Your child ____	How many? ____	Your sister;	____	How many?
____	Your husband	____	Your grandmother;	____	How many?
____	Your mother	____	Your grandfather;	____	How many?
____	Your father	____	Your aunt;	____	How many?
____	Your mother-in-law (or boyfriend's mother)	____	Your uncle;	____	How many?
		____	Your roommate;	____	How many?
____	Your father-in-law (or boyfriend's father	____	Other(specify)_____		
			How many? _____		
____	Your boyfriend				

1.a. _____ (no. of people)

b.

____	Single parent living alone or with children	[01]
____	Nuclear family (husband (boyfriend) and wife or husband, wife and children)	[02]
____	Extended family with husband, (husband (boyfriend), wife, other kin besides children)	[03]
____	Extended family without husband (wife and other kin besides children)	[04]
____	Other	[05]

1.b. _____ (family type)

c. Number of people (including respondent) _____ 1.c. _____

d. Number of generations represented _____ 1.d. _____

2. Where do all of these family members live? 2. _____

____	Same house	[1]
____	Different houses; same neighborhood	[2]
____	Different neighborhoods; same city/town	[3]
____	Different cities/towns; same state	[4]
____	Different states	[5]

Reminder: Remember to respond to the following questions with the family members in mind that you mentioned above: (list family members).

ID_____

FACES II

Household - (list members)

Extended Family - Family members who are important to you in addition to and including the ones that live in the same house with you.

SPECIFY:

_____No one
_____Your child _____How many?
_____Your husband
_____Your mother
_____Your father
_____Your mother-in-law
_____(or boyfriend's mother)
_____Your father-in-law
_____(or boyfriend's father)
_____Your boyfriend

_____Your brother; _____How many?
_____Your sister; _____How many?
_____Your grandmother; _____How many?
_____Your grandfather; _____How many?
_____Your aunt; _____How many?
_____Your uncle; _____How many?
_____Your roommate; _____How many?
_____Other(specify)_____
_____How many? _____

	1 Almost Never	2 Once in a While	3 Sometimes	4 Frequently	5 Almost Always	HOUSEHOLD	EXTENDED FAMILY
1.	Family members are supportive of each other during difficult times.					1. _____	31._____
2.	In our family, it is easy for everyone to express his/her opinion.					2. _____	32._____
3.	It is easier to discuss problems with people outside the family than with other family members.					3. _____	33._____
4.	Each family member has input in major family decisions.					4. _____	34._____
5.	Our family gathers together in the same room.					5. _____	35._____
6.	Children have a say in their discipline.					6. _____	36._____
7.	Our family does things together.					7. _____	37._____
8.	Family members discuss problems and feel good about the solutions.					8. _____	38._____
9.	In our family, everyone goes his/her own way.					9. _____	39._____
10.	We shift household responsibilities from person to person.					10. _____	40._____

ID_____

(Cont'd) FACES II

	1 Almost Never	2 Once in a While	3 Sometimes	4 Frequently	5 Almost Always	HOUSEHOLD	EXTENDED FAMILY
11.	Family members know each other's close friends.					11. ____	41. ____
12.	It is hard to know what the rules are in our family.					12. ____	42. ____
13.	Family members consult other family members on their decisions.					13. ____	43. ____
14.	Family members say what they want.					14. ____	44. ____
15.	We have difficulty thinking of things to do as a family.					15. ____	45. ____
16.	In solving problems, the children's suggestions are followed.					16. ____	46. ____
17.	Family members feel very close to each other.					17. ____	47. ____
18.	Discipline is fair in our family.					18. ____	48. ____
19.	Family members feel closer to people outside the family than to other family members.					19. ____	49. ____
20.	Our family tries new ways of dealing with problems.					20. ____	50. ____
21.	Family members go along with what the family decides to do.					21. ____	51. ____
22.	In our family, everyone shares responsibilities.					22. ____	52. ____
23.	Family members like to spend their free time with each other.					23. ____	53. ____
24.	It is difficult to get a rule changed in our family.					24. ____	54. ____
25.	Family members avoid each other at home.					25. ____	55. ____
26.	When problems arise, we compromise.					26. ____	56. ____
27.	We approve of each other's friends.					27. ____	57. ____
28.	Family members are afraid to say what is on their minds.					28. ____	58. ____
29.	Family members pair up rather than do things as a total family.					29. ____	59. ____
30.	Family members share interests and hobbies with each other.					30. ____	60. ____

ID_____

FACES I SUBSCALE

1	2	3	4
True none of the Time	True some of the Time	True most of the Time	True all of the Time

1.	Family ties are more important to us than any friendship could possibly be.	1. _____
2.	Family members are totally involved in each other's lives.	2. _____
3.	In our family we know where all family members are at all times.	3. _____
4.	It seems as if we agree on everything.	4. _____
5.	We don't have spur of the moment guests at mealtime.	5. _____
6.	Family members often answer questions that were addressed to another person.	6. _____
7.	Family members know who will agree and who will disagree with them on most family matters.	7. _____
8.	It's difficult for family members to take time away from the family.	8. _____
9.	Family members feel pressured to spend most free time together.	9. _____
10.	It seems like there is never any place to be alone in our house.	10. _____
11.	Family members find it hard to get away from each other.	11. _____
12.	Family members have little need for friends because the family is so close.	12. _____
13.	Family members share the same friends.	13. _____
14.	Family members are expected to have the approval of others before making decisions.	14. _____
15.	Family members feel they have to go along with what the family decides to do.	15. _____
16.	Family members feel guilty if they want to spend some time alone.	16. _____
17.	Family members share almost all interests and hobbies with each other.	17. _____

Subscale Items and Scoring Direction for
FACES II Cohesion Items

Family Cohesion

Emotional Bonding

(+) 1. Family members are supportive of each other during difficult times.

(+) 17. Family members feel very close to each other.

Family Boundaries

(-) 3. It is easier to discuss problems with people outside the family than with other family members.

(-) 19. Family members feel closer to people outside the family than to other family members.

Coalitions

(-) 9. In our family, everyone goes his/her own way.

(-) 29. Family members pair up rather than do things as a total family.

Time

(+) 7. Our family does things together.

(+) 23. Family members like to spend their free time with each other.

Space

(+) 5. Our family gathers together in the same room.

(+) 25. Family members avoid each other at home.

Friends

(+) 11. Family members know each other's close friends.

(+) 27. We approve of each other's friends.

Decision-Making

(+) 13. Family members consult other family members on their decisions.

(+) 21. Family members go along with what the family decides to do.

Interests and Recreation

(-) 15. We have difficulty thinking of things to do as a family.

(+) 30. Family members share interests and hobbies with each other.

Subscale Items and Scoring Direction for
FACES II Adaptability Items

Family Adaptability

Assertiveness

(+) 2. In our family, it is easy for everyone to express his/her opinion.

(+) 28. Family members are afraid to say what is on their minds.

Leadership (Control)

(+) 4. Each family member has input in major family decisions.
(+) 16. In solving problems, the children's suggestions are followed.

Discipline

(+) 6. Children have a say in their discipline.
(+) 18. Discipline is fair in our family.

Negotiation

(+) 8. Family members discuss problems and feel good about the solutions.

(+) 20. Our family tries new ways of dealing with problems.

(+) 26. When problems arise, we compromise.

Roles

(+) 10. We shift household responsibilities from person to person.
(+) 22. In our family, everyone shares responsibilities.

Rules

(-) 12. It is hard to know what the rules are in our family.

(-) 24. It is difficult to get a rule changed in our family.

VITA 2

Susan Chesnut Sturm

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE RELATIONSHIP BETWEEN FAMILY COHESION, MOTHER'S PERCEPTION OF SOCIAL SUPPORT, AND MOTHER-INFANT INTERACTION

Major Field: Home Economics--Family Relations and Child Development

Biographical:

Personal Data: Born in Oklahoma City, Oklahoma, July 17, 1945, the daughter of Ed and Bernice Chesnut. Married on May 23, 1973, to Chris Sturm. One son, John, was born June 14, 1975.

Education: Graduated from Las Cruces High School, Las Cruces, New Mexico, in May, 1963; received Bachelor of Arts degree in History from the University of Oklahoma in 1971; received Master of Science degree at Oklahoma State University in July, 1979; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in July, 1985.

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