

SOCIAL SUPPORT AND RELATIONSHIP EXPECTATIONS
IN MOTHERS OF SICK AND WELL NEWBORNS

by

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The dissertation entitled, "Social Support and Relationship Expectations in Mothers of Sick and Well Newborns," by Sherrilyn DeJean Coffman is accepted by the faculty of the School of Nursing, Indiana University, in partial fulfillment of the requirements for the Doctor of Nursing Science degree.

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ABSTRACT

SOCIAL SUPPORT AND RELATIONSHIP EXPECTATIONS
IN MOTHERS OF SICK AND WELL NEWBORNS
by Sherrilyn DeJean Coffman

The purpose of the study was to investigate if social support and fulfillment of relationship expectations were related to personal outcomes and quality of relationships for mothers of sick and well newborns. The study tested Levitt's model of close relationships and drew upon Kahn's and Antonucci's work in social support. Emphasis was placed on two support figures: the person identified by the mother as the closest or most important in her network, and one nurse, perceived by the mother as closest or most important in that role.

The sample was composed of 83 new mothers, including 47 mothers of NICU infants and 36 mothers of healthy newborns. Both interview and questionnaire techniques were utilized during home visits conducted at two to five weeks after birth.

Results indicated that women with greater fulfillment of expectations for the close person and the nurse had more positive personal outcomes in selected areas. Both close person support and support from the nurse were positively correlated with selected outcomes.

Receiving support from the close person was found to have a more positive effect upon personal outcomes than receiving support from the total network. Fulfillment of relationship expectations for the close person had an independent effect on personal outcomes, above and beyond the effect of social support. The buffering hypothesis regarding social support and stress was partially supported, with women under higher stress experiencing a greater effect of close support on two out of five outcomes.

These results suggest that maternal-child nurses need to consider the importance of social support from one close network member on the well-being of the new mother. The concept of expectations for interpersonal relationships was shown to be a relevant one both in regard to the close person and the nurse.

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CHAPTER I

NATURE OF THE STUDY

Introduction

Birth of a healthy newborn is a transition period for family members that may involve changes in interpersonal relationships due to the new stresses and demands. Social support has been shown to have a buffering effect on stress, and may be most important during the transitional time after birth, designated the postpartum period. But what effect does illness and hospitalization of a sick newborn have on the family? The additional stresses involved may increase the need for social support, particularly emotional support, and the buffering effect of social support on stress may be more pronounced.

Social support, close relationships, and relationship expectations are interrelated concepts. Social support is most often derived from close relationships. Mutual support is an expected aspect of committed relationships. Within a close relationship, expectations for support are developed by each partner. Past experiences within the relationship influence these expectations, as do other factors such as social norms and individual maturation.

Before the infant is born, the pregnant woman

develops expectations for the behavior of other individuals in her close network. After birth, the additional stresses associated with parenting predispose the new mother to changes in close relationships. Role changes for the new mother and her significant others also contribute to changes in behavior. The quality of future relationships for the woman with her husband, her own mother, and others, may depend on how well the new mother's expectations for others' behaviors are met.

The nurse contacts the new mother at a crucial time of adjustment to the infant and her mothering role. If the infant is healthy, the contact may be limited to a few hours or days. Yet the impression made on the mother by nurses in labor and delivery, postpartum, or the newborn nursery can be a significant one. If the infant is sick and hospitalized for a longer period of time in the neonatal intensive care unit, the mother may develop a long term relationship with members of the nursing staff. The effect of the nurse as a source of social support may be even more important for the mother coping with these additional stressors. Each woman enters the hospital with expectations about treatment by nursing staff. The woman's acceptance of support from the nurse may be partially determined by her perception of how well

these expectations have been met.

This study focused on new mothers during the postpartum period, who had either a healthy baby or one who had been ill and hospitalized. Measurements were made of each woman's perception of her stress, social network, expectations for close relationships, and the unique role of the nurse as a provider of social support. The effect of these variables on outcomes, including maternal well-being, attitudes toward the infant, and quality of relationships was considered.

The theoretical base selected for the study was Levitt's model of close relationships (in press). This cognitive psychological model emphasizes developmental change. The focus of the model is expectations for close relationships and relationship change, concepts that are pertinent to the maternal processes involved with the birth of a baby.

Levitt's Model of Close Relationships

Relationship Expectations in Close Relationships

Domain and Boundaries

Levitt's model (in press) focuses on the establishment and maintenance of relationship expectations within close relationships. The domain of the model is the social network, or the support convoy as described by Kahn and Antonucci (1980). Convoy is defined as the individual's network of friends, family

members, and others structured by roles and functioning to provide social support.

Boundaries of the model are defined in terms of interpersonal relationships. In order to be included in the model, other individuals must maintain a relationship with the focal person. Kahn and Antonucci (1980) operationalized these boundaries in terms of the social support convoy, with individuals placed in three concentric circles. In the first circle are persons who are perceived as the most important support givers. In circles two and three are persons perceived as less close, but still an important source of support.

Concepts

Levitt's model (in press) outlines the processes that govern passage into and out of the inner circle of the convoy structure; that is, the processes that promote the initiation and maintenance of social attachments at various phases of the life cycle. Levitt's model of close relationships is illustrated in Figure 1. The model focuses on the establishment and maintenance of relationship expectations in close relationships. The concept of close relationships is defined as those relationships between the individual and persons who are the most important support givers or receivers. These are relationships without which life would be hard to imagine. If these relationships

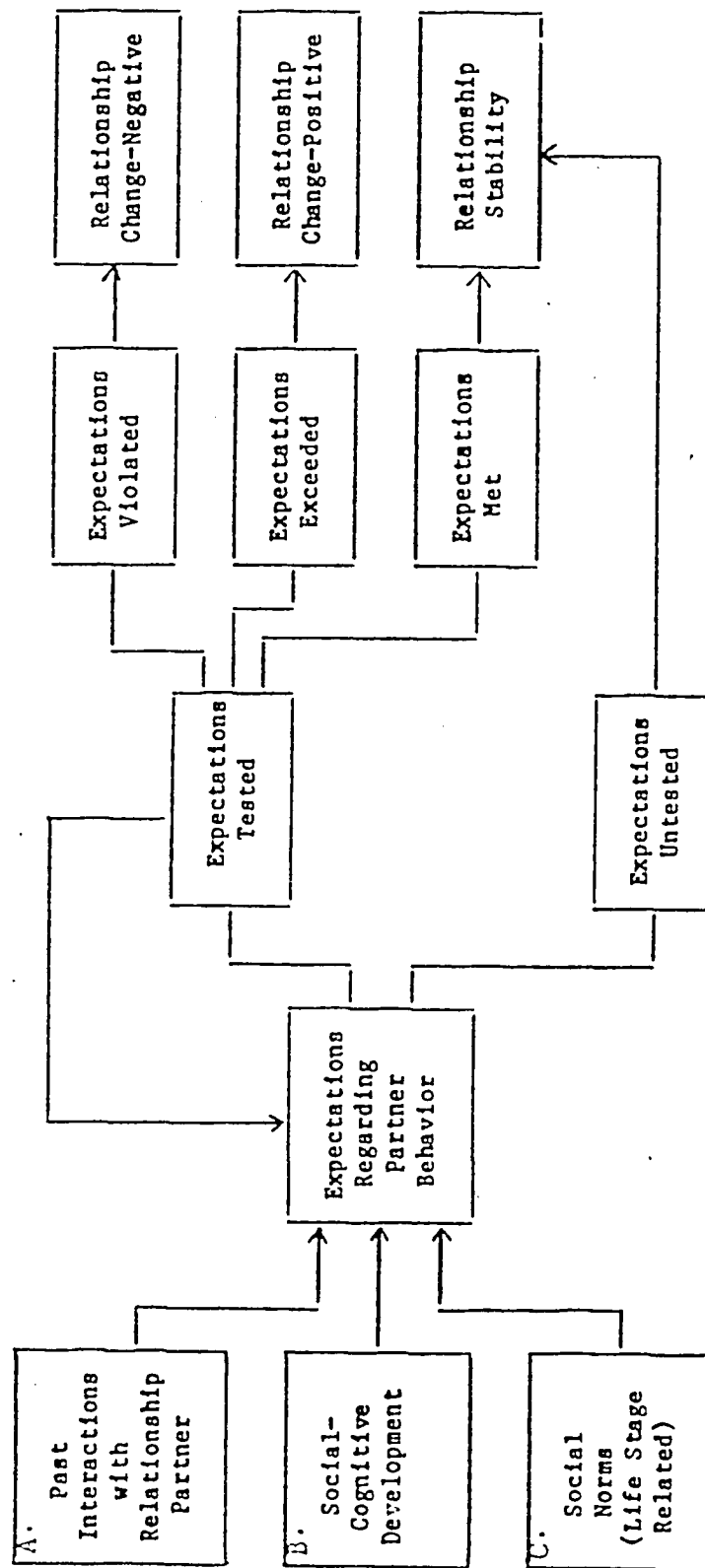


Figure 1. Levitt's hypothesized model of processes governing relationship change and continuity across the life span. (Levitt, M. J. (in press). Attachment and close relationships A life span perspective. Chapter to appear in J. L. Gewirtz and W. F. Kurtines (Eds.), Intersections with attachment, Hillsdale, NJ: Erlbaum.

were severed, a grief reaction would normally occur. Levitt draws upon Sternberg's and Grajek's (1984) description of close relationship characteristics, emphasizing that all close relationships share a common general factor defined by interpersonal communication, shared understanding and affectional exchange, mutual fostering of personal growth, and emotional and instrumental support.

Other concepts within the model are: (a) past interactions between relationship partners include past behavioral interactions or exchanges. The most important factors in past interactions include familiarity between partners and contingency; (b) personal influences focus on personal characteristics of the individual that change as he/she matures, especially social and cognitive development; and (c) environmental influences such as age-related social norms are emphasized, but other factors such as stressful life events or financial resources are not excluded. The core concept in the model is relationship expectations, described as expectations for future behavioral interactions or exchanges between the individual and partner. These expectancies may prevail over very long time periods. The outcome of the model is the quality of the relationship itself, which in turn relates to personal well-being. Other

outcomes, such as health, are not excluded.

Interactions among concepts

Because this model represents a process, relationships among units are specifically outlined. The primary process in stability or change of close relationships is the establishment and maintenance of relationship expectations. More specifically, relationship expectations are influenced by (a) personal factors, (b) environmental factors, and (c) past interactions between relationship partners. The importance of close relationships to personal well-being is related primarily to close attachment relationships, rather than to support networks as a whole.

Relationship expectations may be tested or remain untested. When expectations remain untested, there is relationship stability. Levitt (in press) states that when elements of one's current relationships are similar to those of past relationships, relationship expectations should generalize from past to present; that is, the relationship will remain unchanged. In situations where testing takes place, the outcome may vary. When positive relationship expectations are violated, relationship change may result in a negative direction. For example, the individual may request support that exceeds the limitations of the partner.

The result is likely to be violation of expectancy that may disrupt the relationship. When positive relationship expectations are exceeded, relationship change may result in a positive direction. For example, when a network member provides more attention or assistance than is expected, positive feelings about the relationship are generated within the individual. When relationship expectations are met, there is relationship stability. Mutual accommodation to partner expectations results in maintenance of relationships.

Additional Aspects of Close Relationships

Relating this process model to the structural model of the social network proposed by Kahn and Antonucci(1980), Levitt (in press) suggests additional relationships which encompass the life span.

1. The infant exists within a social convoy from the time of birth (Antonucci, 1976; Cochran & Brassard, 1979; Kahn & Antonucci, 1980; Lewis, 1982).

2. The infant develops a limited number of attachment relationships, initially governed by parents (Lewis, 1982). These relationships compose the initial inner circle of the social convoy. Contingency and familiarity are suggested as crucial processes in relationship formation. Provision of behavior by the caregiver which is contingent on the infant's own

behavior is fundamental to attachment formation (Ainsworth, Blehar, Waters, & Wall, 1978; Cairns, 1977; Gewirtz, 1972). Familiarity has also been found to influence infants' responses to strangers (Levitt, 1980).

3. The presence of at least one close relationship is important to the individual's well-being. Findings of previous studies suggest that well-being is related to support from close relationships, rather than to support networks as a whole (Levitt, Clark, Rotton, & Finley, in press; Lowenthal & Haven, 1968; Traupmann & Hatfield, 1981). Support of the husband has been found to be a major factor in maternal well-being after birth of an infant (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Price, 1977).

4. Changes in inner circle relationships are a function of normative or idiosyncratic changes within the individual or alterations in the external environment. For example, parent-child relations undergo transformations as the child matures and the parent ages. Normative crises or points of transition are likely to occur, such as the child's leaving home, marrying, and becoming a parent (Hagestad, 1984).

Changes in other family relationships may affect composition of the inner circle. Skolnik (1981) studied the marital relationship and found that

dissatisfaction was associated with nonnormative events such as job-related stress or alcoholism. Cicerelli (1982) described changes in sibling relations over time, with siblings often reporting greater closeness in later life.

5. There are factors that serve to maintain continuity in one's core of close relationships. The locus of these stabilizing factors may be within or outside of the relationship. Expectations about reciprocity make up one important type of internal control. The highly contingent response patterns of the infant are transformed to delayed exchange processes in adulthood. Likewise, initially high levels of self-disclosure decrease over time within a long-term relationship (Altman & Taylor, 1973) and communication is assigned less importance in the relationship (Reedy, Birren, & Schaie, 1981). Mutual adaptation, modulation of conflict, and maintenance of behavior within the limits of the partner's tolerance are also internal stabilizing factors. Mutual escalation of conflict is risky to a relationship because it provides an ideal climate for the violation of partner expectations.

External factors that are proposed to stabilize close relationships include economic security, community cohesion, and sociocultural norms and sanctions governing relationships. Legal or ethical

prohibitions against child, parent, or spouse abuse are examples of sanctions imposed on the partners by society.

Assumptions

The assumptions upon which the model are based are common to other developmental psychology theories. Social relationships within the network can have either positive or negative (or both) influences on the person's well-being. Personal factors and environmental influences are in constant interaction as the individual develops and matures. More pertinent to the theory are the cognitive aspects of this person-environment interaction. The individual builds up certain expectations as interaction with the environment occurs.

Application of Levitt's Model

In Figure 2, the concepts consistent with Levitt's model were depicted from the perspective of this study. Both environmental and personal factors were considered. These were believed to influence the woman's appraisal of stress and social support, variables which in turn influenced perceived fulfillment of relationship expectations. The outcomes, which were influenced by all preceding variables, included three types: personal, close person related, and nurse-related.

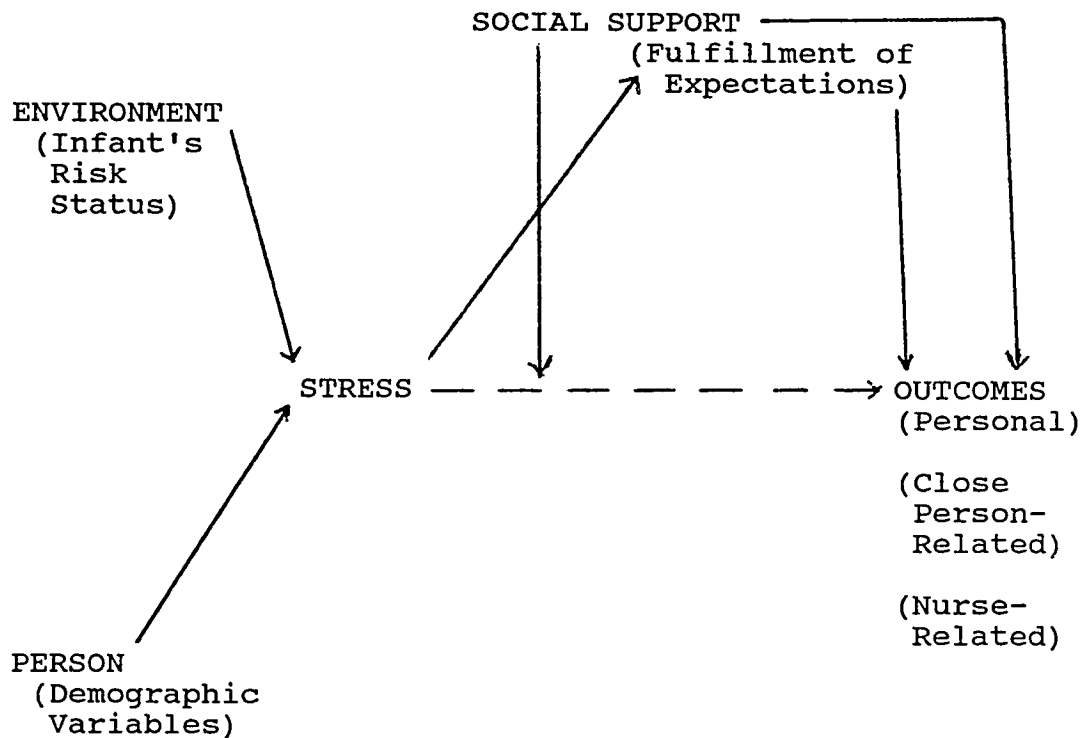


Figure 2. Relationships of concepts in the study, based on Levitt's Model of Close Relationships and Kahn's and Antonucci's Convoy Model of Social Support.

Two concepts were emphasized within the study: relationship expectations and social support. The application of each concept to the situation of the new mother, as addressed in the study, is discussed.

Relationship Expectations

In this study, the postpartum period was regarded as a test situation in which relationship expectations

were likely to be tested. Normally, stabilizing factors outside the relationship serve to maintain relationship continuity. Developmental changes in existing relationships, such as the role changes with birth of a baby, create relationship instability. Relationship changes depend upon whether expectations are exceeded, violated, or met during this transitional period.

The woman's appraisal about whether relationship expectations have been met is an independent factor, over and above the social support functions provided by the person. The concept of reciprocity is a key to understanding this independence. Levitt proposes that the individual's needs and beliefs about reciprocity in a relationship are more important than the actual equity of sharing. In other words, the actual exchange of social support functions is not the most important determinant of relationship outcomes. Rather, the certainty of one's expectation that support would be provided by the other person when needed, is the factor that binds the relationship. Therefore, the new mother's expectations about a relationship are as important as the actual support provided within the relationship, in determining relationship quality.

Social Support

Size and functioning of the social network are two attributes of primary importance in a social support

model. Size of the social network is determined by the number of people in the network. The importance of a few close relationships, rather than large numbers of network members, has been determined in studies by Levitt, Clark, Rotton, and Finley (in press), Lowenthal and Haven (1968), and Traupmann and Hatfield (1981). Levitt proposes that personal well-being is related primarily to close attachment relationships, rather than to support networks as a whole.

Social support functions provided by persons in the social network have been enumerated in various ways. Kahn and Antonucci (1980) proposed three types of support functions: (a) affective, (b) affirmative, and (c) direct aid. As related to this study, it was believed that different persons in the social network provide different types of support to the new mother. For example, a close relative might provide more emotional (affective) support. A hospital nurse might offer more informational (direct aid) support.

In this study, birth of a baby was regarded as one source of stress to parents. When the baby was ill even greater stress was predicted. The buffering hypothesis predicted the following relationships: (a) Under conditions of high stress, as when parents reacted to the ill newborn, social support was more likely to affect personal outcomes than in conditions

of low stress; (b) Under conditions of low stress, as with the healthy baby, social support may have had a weakened effect or none at all.

The conceptual definition of stress utilized in this study was taken from Lazarus's model of psychological stress (1984). Lazarus emphasized that stress is not solely an environmental variable, but rather is determined by the person's appraisal of the relationship between environmental demands and the person's capabilities to meet or alter these demands.

According to Lazarus (1984), a person's appraisal of stress is an important component of the stress rubric. In this study, the mother's appraisal of stress was studied as it related to her newborn's health status. Health professionals have often assumed that mothers of sick infants are under considerably more stress than mothers whose infants are well. This study attempted to determine the interrelationship between the mother's appraisal of stress and the actual health status of her infant.

Purpose

The purpose of the study was to investigate if social support and fulfillment of relationship expectations were related to personal outcomes and quality of relationships for mothers of sick and well newborns. Two areas were addressed: (a) the social

support network and its functions and (b) the degree to which relationship expectations were fulfilled.

Emphasis was placed on two support figures: the person identified by the mother as the closest or most important in her network, and one nurse, perceived by the mother as closest or most important in that role.

Hypotheses

The following hypotheses were based on Levitt's model:

Hypothesis 1. The greater the fulfillment of relationship expectations for the close network member, the more positive personal outcomes and close person-related outcomes.

Hypothesis 2. The greater the fulfillment of relationship expectations for the nurse, the more positive personal outcomes and nurse-related outcomes.

Hypothesis 3. The greater the social support from one close network member, the more positive personal outcomes and close person-related outcomes.

Hypothesis 4. The greater the social support from the nurse, the more positive personal outcomes and nurse-related outcomes.

Hypothesis 5. Fulfillment of relationship expectations for the close person will have an independent effect on close person-related outcomes, over and above the effect of social support from the close

person.

Hypothesis 6. Social support from one close network member will have a more powerful effect on personal outcomes and close person-related outcomes than will support from the overall network.

Hypothesis 7. Social support from one close network member will have a more powerful effect on personal outcomes and close person-related outcomes in women with higher stress than in women with lower stress.

Conceptual and Operational Definitions

For the purposes of the present study, the following definitions were proposed:

Perceived stress. The individual's perception of stress was conceptualized according to Lazarus's model. Lazarus emphasizes that stress always involves perception. The person's appraisal of the relationship between environmental demands and the person's capabilities to meet or alter these demands make up the essence of stress perception. The mother's perception of stress was operationalized as two scores:

1. frequency, or total number of hassles checked on the Hassles Scale.

2. intensity, determined by dividing the cumulated severity by the frequency on the Hassles Scale.

Social support. Social support was conceptualized as interpersonal transactions that provide the new mother with affective support (love, admiration), affirmative support (agreement, confirmation), or direct aid (information, tangible resources). To operationalize this variable, three social support function scores were calculated:

1. network support: total number of functions provided by all persons in the network, minus the number of functions provided by the close person, as measured on the Personal Network Support Functions Scale.

2. close support: total number of functions provided by the person who the mother designated as closest or most important to her, as measured on the Personal Network Support Functions Scale.

3. nurse support: support functions provided by the nurse who was designated by the mother as closest or most important to her during or since the birth of the baby, as measured on the Nurse Support Functions Scale.

Expectations Fulfillment. This variable was conceptualized as the degree to which the new mother's expectations for the behavior of another person in a relationship had been met. Two relationships were considered, one with a close network member and another with a nurse. Operationally, two measurements

were made: the mother's response on the (a) Expectations Fulfillment (Close Person) Scale and (b) Expectations Fulfillment (Nurse) Scale.

Outcome measures. Three types of outcome measures were utilized.

1. personal outcomes, conceptualized as affective components of the mother's behavior. These outcomes were operationalized as three scores:

a. affect balance, as measured on the Bradburn Affect Balance Scale.

b. attitudes toward the baby, as measured on the Semantic Differential Scale-My Baby.

c. life satisfaction as measured on the Life Satisfaction Scale.

2. close person-related outcomes were conceptualized as the mother's perception of the nature of her relationship with one close network member. These outcomes were operationalized as two scores:

a. close person relationship satisfaction, as measured on the Close Person Relationship Satisfaction Scale.

b. close person conflict, as measured on the Close Person Conflict Scale.

3. nurse-related outcomes were conceptualized as the mother's perception of the nature of her relationship with a nurse. These outcomes were

operationalized as two scores:

a. nurse relationship satisfaction, as measured on the Nurse Relationship Satisfaction Scale.

b. nurse conflict, as measured on the Nurse Conflict Scale.

Significance of the Study

Many of the issues addressed in the study have received little attention in the literature. Levitt's model of close relationships, focusing on relationship expectations, has not been empirically tested. Social support as a construct has been tested in multiple ways, but the literature relating social support to parenting stresses with a sick child is limited. The role of the nurse as a source of social support to the new mother is an assumed function, but few studies have measured it. This study, therefore, makes a significant contribution both to the development of Levitt's model and to understanding how the concepts addressed in the study relate to the situation of parenting a new baby.

CHAPTER II

REVIEW OF LITERATURE

In her model of close relationships, Levitt (in press) focuses on the establishment and maintenance of relationship expectations in close relationships. Relationship quality is hypothesized to be an outcome of the testing or lack of testing of expectations. In a testing situation, expectations for the partner's behavior may have several consequences; they may be met, exceeded, or violated. Changes in the relationship are determined by these consequences. The birth of an infant is one example of a testing situation. Outcomes of relationships between the mother and her significant others after the birth of the baby are suggested to be functions of the testing of relationship expectations formulated before the baby was born.

To develop her model of close relationships, Levitt integrated infant attachment theory with models of close relationships and social support in adulthood. The result is a life span attachment model in which the development of relationships is considered from infancy to old age. The structure of the model is the social convoy described by Kahn and Antonucci (1980). Defined as a network of family, friends, and others, the social

convoy provides a structure for continuity and change in social support over the life course. Close relationships within the convoy are viewed as continuations of earlier attachment relations from infancy.

Levitt's model (in press) is relatively new and has not been empirically tested. Very few studies are available that deal directly with this content area. Therefore, the literature upon which Levitt's model is based and research supporting these theoretical areas are reviewed. Theory relating to infant attachment, life-span attachment, and social support is included. Kahn and Antonucci's (1980) convoy model is emphasized. Following the presentation of theory, the author reviews pertinent literature relating to the new mother and the period of transition to motherhood. The effects of stress, social support, and other variables on maternal outcomes are described. Finally, literature relating to testing of expectations within close relationships is examined.

Infant Attachment

Two views prevail regarding the nature of early attachment relationships: (a) the epigenetic position and (b) opposing views. Because Levitt integrates ideas from both viewpoints, each position is described.

Following presentation of these ideas, an analysis

is conducted regarding four major issues or claims made by proponents of the epigenetic view. The literature supporting their claims is reviewed, as well as support for the counterarguments to these claims. Levitt's stand on each issue is also discussed.

The Epigenetic Position

The epigenetic position proposed by Bowlby (1969) and Ainsworth, Blehar, Waters, & Wall (1978) holds that the first attachment between caregiver and child serves as a prototype for all later relationships. Attachment is defined as any behavior by the infant that elicits, initiates, or maintains proximity to the caregiver. This proximity-seeking behavior protects the infant from harm and promotes survival. Bowlby and Ainsworth et al. propose that infancy is a critical period in which the child attaches to the caretaker, and the security of that attachment influences subsequent relationships. The mother is recognized as the predominant provider, and her responsiveness is viewed as a major determinant of the quality of the relationship. In a securely attached relationship, the mother functions as a secure base for the child, from which the child can venture out into the world. Separation of the infant and caretaker predisposes to depression and maladjustment.

Opposing Views to the Epigenetic Position

Counterpart to the epigenetic model is the viewpoint proposed by Cairns (1977), Gewirtz (1972), and Lewis (1982). These researchers emphasize the adaptability and plasticity of the child. Environmental variables are given greater consideration, as is the child's ability to adapt to changes in caretakers. The joint contribution of both infant and caretaker is more strongly considered.

Analysis of Major Issues

The epigenetic model has been the most widely accepted and utilized in the past. Four major claims are made within the epigenetic view. Critics of the model refute these claims. In this section, each claim is presented, followed by its counterargument.

Claim # 1

There are antecedents to attachment in early parent-child interactions. Ainsworth et al. (1978) and Ainsworth (1983) designed a controlled, laboratory situation labeled "the strange situation" in which infants were separated from their mothers and exposed to contact with a stranger. Based on their reactions to a series of separation and reunion experiences, infants were classified into three groups: (a) Group A, anxious and avoidant, (b) Group B, securely attached, and (c) Group C, anxious and ambivalent. Before the strange situation was administered, researchers had observed

these same infants at home interacting with their mothers. Comparisons across home and laboratory situations led to the conclusion that babies classified as securely attached at 12 months had mothers who had been significantly more sensitive to infant signals during the first three months of life. Support for this view was offered by Sroufe and Waters (1977) and Egeland and Farber (1984), who replicated Ainsworth's study. Crockenberg (1981) partially supported these findings. She found that infants growing up in contexts characterized by low social support for their mothers received less responsive mothering and subsequently developed insecure attachments.

The original findings of Ainsworth et al. (1978) are open to criticism due to methodological problems. Ainsworth developed her three attachment categories post hoc, after examining narratives. A large number of measures, all interrelated, were utilized. Only 26 subjects were included in the longitudinal study. Furthermore, maternal behaviors serving as antecedents to attachment were found to differentiate only group B (securely attached) and the other two groups. No differences in antecedents for groups A and C were found. Grossmann, Grossmann, Spangler, Seuss, and Unzner (1982) found only partial support for Ainsworth's views. Parents of group B infants were found to be more

sensitive only at six months.

In summary, although there is some support, the evidence linking maternal sensitivity with the strange situation classification is not clear cut. Levitt has utilized the strange situation in her research (Antonucci & Levitt, 1984; Weber, Levitt & Clark, 1986) but notes the limitations involved with this research technique.

Claim # 2

The attachment bond is a stable trait, versus a transient state. If this statement is true, then repeated testing of subjects in the strange situation should yield stable results. Waters (1978) found stability upon retesting of subjects in the strange situation. When 50 infants were classified at 12 months and then again at 18 months, 48 of the 50 (96%) received the same major classification.

Later researchers failed to substantiate this degree of stability. Vaughn, Egeland, Sroufe, and Waters (1979) studied lower socioeconomic status mothers under stress and found only 62% of their infants remained in the same classification from 12 to 18 months. Thompson, Lamb, and Estes (1982) tested infants of middle class mothers and found a retest stability of only 53%. Initiation of maternal employment and changes in regular maternal care were

associated with instability. Findings of these studies support the viewpoint that attachment behaviors, as measured by the strange situation, may reflect only the current status of interaction between mother and child. Attachment classifications appear to be consistent over time only if there is stability in the life situation.

These conclusions are based on the assumption that the strange situation is a valid measure of the attachment construct. However, the validity of this research approach is open to question. The strange situation was used by Ainsworth as the conclusive measure of the attachment construct. Only one subject's behaviors were measured in this situation, the infant's. No systematic recordings were taken of the mother's behavior or of dyadic interaction. Few researchers have used other caretakers such as fathers, grandmothers, or siblings. The generalizability to naturalistic settings has not been determined. Only a finite number of variables are considered. Ainsworth (1983) acknowledged the age limitations for use of the strange situation. After 18 months, she stated, it does not provide a valid measure of attachment.

This issue of trait versus state accounts for the major difference in the two models. The epigenetic view (trait), that attachment is an enduring aspect of the personality, has dominated much of contemporary

thinking. But more current research findings (Lewis, 1982) suggested that an individual child can have multiple attachments and that some of them can be secure while others are not. Levitt (in press) notes that the evidence for the epigenetic view is not compelling, based on the evidence supporting the individual's plasticity and adaptability.

Claim #3

The quality of attachment predicts later behavior in other constructs. Ainsworth (1983) suggested a tendency toward stability in the family environment as well as "homeorrhetic" processes in the child. These processes tend to keep development in the same pathway from infancy onward, and processes become more resistant to change with age. Main and Weston (1981) found continuity over time in 22-month-old toddlers. Those who had been judged securely attached to their mothers at 12 months of age, in comparison with those judged nonsecure, were superior in exploratory play and language acquisition.

Critics argue that prediction of behavior is only possible in a stable environment where there is continuity in care. The effect of changing environments on stability of behavior is unclear. Rather than stability, Cairns (1977) emphasized the continuing adaptive capabilities of children and their

caretakers. He argued that as children mature, they become more, not less, adaptable to the multiple demands of the environment. Subsequent social behaviors are not simply the residues of earlier interactions, but must be considered in the light of current circumstances. Levitt (in press) expresses agreement with Cairn's viewpoint.

Claim # 4

Secure attachment is more adaptive. From an evolutionary perspective, Bowlby (1969) viewed attachment as an instinctual process that enhances survival. By seeking contact and proximity with the mother, the infant secures protection. By utilizing the caretaker as a secure base from which to explore, the infant maintains a balance in development.

In his social networks model, Lewis (1982) questioned the primacy of the mother-child relationship and pointed out the importance of peer relationships in child development. He suggested there is no reason to suppose that maternal attachment per se will determine successful peer relations in the absence of peer experience. He described situations in which peer experiences have overcome poor parent-child relationships. Cross-cultural research on infancy (Super, 1982) also contradicted the exclusive role of the mother. Many agricultural societies utilize older

siblings as childcare providers for infants. Studies from the Israeli Kibbutz also refuted the role of monotropy, or bonding between infant and one primary caretaker. Levitt emphasizes the importance of at least one intimate relationship for well being, but does not specify who the partners must be. She adopts the view of the caretaker as a secure base and proposes that attachment is an adaptive process in social development.

Summary

Research in infancy provides some support for both models of attachment. In the epigenetic position, which emphasizes the early mother-child relationship, attachment patterns are more often supported in stable environments that are culturally compatible with monotropy. In this model, however, there is failure to consider the importance of the infant in stimulating maternal behaviors and the plasticity of the child in adapting to different environmental and cultural settings. The issue of trait versus state accounts for the major difference in the two models. More current research findings suggested that attachment refers to a quality of the relationship and not to the qualities of a particular infant or caretaker.

Levitt (in press) offers support for both views. The idea that attachment relationships provide a secure

base for exploration, is embraced and generalized to adult relationships. However, the exclusiveness of the mother-child bond is questioned, and the possibility of multiple attachment relationships is supported. The influence of both personal and environmental factors on close relationships is recognized, which counters the epigenetic view.

Attachment Across the Life Span

The study of adult development provides overwhelming evidence that many close relationships are continuations of attachment relationships from infancy and childhood. In some form, particular attachment relationships may persist throughout life. For example, parent-child ties are not terminated as the child reaches adolescence or adulthood. There is some consistency in interpersonal relationships and therefore social support over the life course (Antonucci, 1985; Troll & Smith, 1976). A broadening of the concept, attachment, is offered in this section followed by literature on close relationships in adulthood.

Life Span Attachment

Today, in many courses focusing on development, textbooks and curriculum tend to be designed to divide the life span into age-specific groups, dealing with infancy, childhood, adolescence, adulthood, and old

age. Antonucci (1976) urged that researchers give up the convenience of a purely age-specific approach and begin to examine the life-span development of the individual. She suggested that a focus on chronological age be replaced by a focus on the processes by which an individual develops and changes over time. Longitudinal research is emphasized as one method to get at this knowledge.

Despite their beliefs in continuity, life-span researchers agreed that circumstances of attachment realignment in adulthood are not the same as the circumstances of attachment formation in early childhood (Antonucci, 1976; Hartup & Lempers, 1973; Knudtson, 1976). Measures of attachment differ in the one-year-old, the adolescent, and the adult. The concept of what is considered attachment behavior in one age group does not directly transfer to other age groups. Life-span analyses of attachment in adulthood cannot be based on models of infant development, such as the epigenetic model or the social networks model. Hartup and Lempers questioned the validity of viewing attachment as a single, endlessly differentiating system. They suggested that there may be multiple classes of attachment activity that are differentiated from one another mainly by type of social object. They urged that attachment be viewed as a dimension of the

relationship, rather than an attribute of the individual. Attachment bonds, as manifested by parents for their offspring, by lovers for each other, and by numerous other dyads, should be regarded as independent response classes.

Close Relationships in Adulthood

In the study of close relationships among adults, the concept of attachment is often omitted altogether. Indeed, there is controversy about what constitutes a relationship or a close relationship. Berscheid and Peplau (1983) approached this ambiguity and offered definitions from a multidisciplinary point of view. They proposed that two people are in a relationship with one another if they have an impact on each other; in other words, they are interdependent in the sense that a change in one person causes a change in the other. They suggested that a relationship is close if the amount of mutual impact two people have on each other is great. A high degree of interdependence is revealed in four properties of their interaction: (a) the individuals have frequent impact on each other, (b) the degree of impact per each occurrence is strong, (c) the impact involves diverse kinds of activities for each person, and (d) all of these properties characterize the interaction for a relatively long duration of time. Kelley et al. (1983) reinforced this same definition;

that a close relationship is one of strong, frequent, and diverse interdependence over a considerable period of time. The four properties emphasized by these authors were strength, frequency, diversity, and duration of the interaction. Kelley elaborated on other characteristics that are not necessary in close relationships. First, relationships need not involve the exchange of intimate information to be close. For example, spouses may show great hostility for each other but continue to have strong effects on each other. Second, although close relationships have high potential for affect, at any point in time, strong affect may not be manifested.

Other researchers offered their definitions of closeness. Huston and Burgess (1979) went beyond Kelley's and Berscheid's four properties and listed a number of other factors. Shared norms, attitudes, beliefs about the relationship, and relations with the same other persons are also suggested as characteristics of close relationships. Sternberg and Grajek (1984) emphasized the positive aspects of relationships, suggesting that all close relationships share a common general factor defined by interpersonal communication, shared understanding and affectional exchange, mutual fostering of personal growth, and emotional and instrumental support. These

characteristics were determined by Sternberg and Grajek through factor analysis of various scales of love and liking. They found that these factors were identical across such diverse relationships as those between parents and children, lovers, and best friends.

Summary

Levitt's model (in press) encompasses the life span, focusing on attachment relationships in all age groups. Levitt views attachment relationships as those involving the inner circle of family and friends, who are significant sources of support. The processes underlying attachment in parent-child interactions and social support in adult relationships are seen as quite similar in many respects and different in others. For example, the importance of one close relationship as a secure base is cited for all ages. Yet other processes, such as reciprocity in relationships, vary across age groups. Levitt has taken many of the life span focused ideas of Antonucci and integrated them directly into her model. For example, both Levitt and Antonucci focus on the processes by which individuals develop and their relationships change over time.

Levitt (in press) drew upon Sternberg's and Grajek's (1984) work on the nature of close relationships. While acknowledging that close relationships may have either positive or negative

impact, she focuses on the supportive aspects of relationships. The goal of close relationships is described as mutual fostering of personal growth, involving both emotional and instrumental support. The importance of interpersonal communication and shared understanding is included in her model of relationship expectations.

Social Support

Rather than attempting to review the vast amount of literature on social support models, in this section the literature applicable to Levitt's model (in press) is the focus. As baseline information, general definitions and dimensions of social support are considered. This is followed by elaboration on the convoy model of social support proposed by Kahn and Antonucci (1980).

Definitions of Social Support

Much of the early research on social support has been atheoretical. Indeed, there is considerable diversity across different investigators on the conceptualization of social support (Barrera & Balls, 1983; Brown, 1986a). People usually have an intuitive sense of what comprises support for them; therefore, the term is more often used than defined. The nature and specificity of each definition of social support often depends on the study for which it was designed

(Brown, 1986a). Broad definitions for the term include: (a) psychological and material resources provided by the social network (Cohen & Wills, 1985), and (b) the provisions of social relationships (Weiss, 1974).

Dimensions of Social Support

Definitions of social support often incorporate its dimensional structure. Social support has been viewed as a unidimensional or multidimensional construct. Most investigators adopt the multidimensional view. Cobb (1976) focused on support as information, nurturance, empathy, encouragement, validating behavior, constructive genuineness, sharedness and reciprocity, instrumental help, or recognition of competence. Caplan (1974) outlined three broader themes involved in support: helping the individual mobilize psychological resources and master emotional burdens, sharing the individual's tasks, and providing extra supplies such as money to improve handling of a situation. House's (1981) conceptualization of support included emotional support (esteem, affection, trust, concern, listening), appraisal support (affirmation, feedback, social comparison), informational support (advice, suggestion directives, information), and instrumental support (aid such as money, labor, time, or environmental modification). Material or instrumental support is the

most controversial aspect of support. Rather than the giving of all things, the dimension refers to certain kinds of helping behaviors that occur in special relationships.

Levitt (in press) adopted the multidimensional view of social support proposed by Kahn and Antonucci (1980). Social support was defined as interpersonal transactions that provide affective elements (expressions of liking, respect, admiration, or love), affirmative elements (expressions of agreement with or appropriateness of the behavior of another person), and/or direct aid or assistance in the form of things, money, information, or time. Empirically, the separate dimensions of social support have not been confirmed by Kahn and Antonucci by factor analysis in their research. Thus, the possibility of either a multidimensional or unidimensional view of social support was acknowledged by these researchers.

The unidimensional nature of social support was suggested by Brown (1986a). In her research, expectant couples were asked to respond to a questionnaire on social support functions taken from House (1981). Factor analysis did not demonstrate independence of items representing the support dimensions of emotional, material, informational, and appraisal support. Rather, items blended together as one dominant

construct of social support.

In summary, these results suggest two possibilities. Social support may be either a multidimensional or unidimensional construct, which further research could help to determine. Or, it is possible that the measures used in past studies have not been refined well enough to pick up on the separate dimensions of social support.

The Convoy Model of Social Support.

Kahn and Antonucci (1980) linked the concepts of attachment and social support in their life span model. These authors reinforced the importance of the life-course perspective in studying attachment and social support for several reasons. First, people's needs and circumstances change with age. Shifts in roles and environmental circumstances are common. Second, the form and amount of social support appropriate at any given time change with age and life circumstances. Third, past experiences and relationships affect the future. To understand differences among adults, some systematic way to classify earlier experiences is needed. Fourth, the interpretation of individual differences such as age or cohort effects must be considered in light of past experiences during the life course.

In their convoy model, Kahn and Antonucci (1980)

and Antonucci (1985) integrated theories of infant attachment and role in dealing with social support in adulthood. The purpose of the model is to provide a theoretical understanding of the concept of social support and the mechanism through which it operates, within a life span framework. The central proposition of the model is that social support is important to individual well-being throughout the life course. Social support is defined as interpersonal transactions that provide affective elements (expressions of liking, respect, admiration, or love), affirmative elements (expressions of agreement with or appropriateness of the behavior of another person), and/or direct aid or assistance in the form of things, money, information, or time. The model is based upon the assumption that there is some consistency in interpersonal relationships and therefore social support over the life course.

Role Concepts

Kahn and Antonucci (1980) drew heavily upon the concept of role and the changes that occur in adult roles. Attachment, in the relatively unstructured life of the infant, was seen as analogous to more diverse forms of social support in various adult role settings. These constructive aspects of role have received little attention, however. Much of the research on adult

roles has focused on the demands and expectations of roles and the stresses generated by role change.

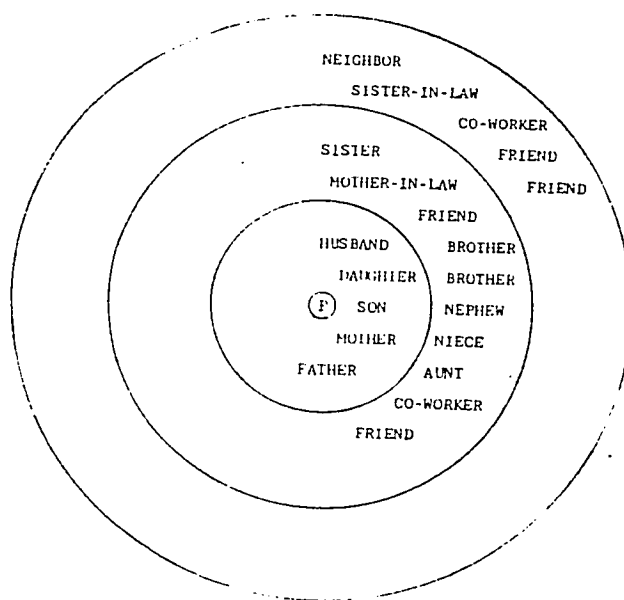
One issue regarding role change that has been studied (Cohen & Wills, 1985; Kahn & Antonucci, 1980) is the effect of social support as a buffer against stress during role transitions. The major proposition of these studies is that social support has a greater effect when any of a person's major life roles undergo change. In addition to social support, differences in personality have also been proposed as moderating factors in the relationship between role demands and individual responses (Blumberg, 1980; Majewski, 1986; Miller & Sollie, 1980; Walker, Crain & Thompson, 1986b). Little attention, however, has been paid to the concept of role from a life-span perspective. Differences in age and life stage as a determinant in role adjustment have seldom been studied. In their convoy model, Kahn and Antonucci (1980) addressed these variables from a theoretical point of view. In their research (Antonucci, 1985), they have begun to provide missing data on the relationships between roles and social support over the life course.

Convoy Structure

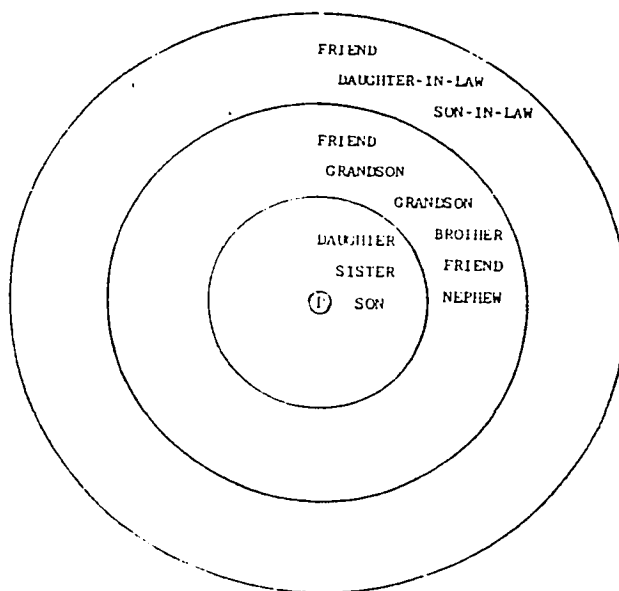
Kahn and Antonucci (1980) replaced the more static term, social network, with the concept of convoy. The individual's convoy is the personal network, structured

by roles within which social support is given and received. Figure 3 represents an example of one woman's convoy at two different points in her life cycle. The center circle (P) represents the woman in question, the focal person. The outermost (third) concentric circle represents convoy members who are least close to P, and very likely relate to P on the basis of role as they function to provide social support. The second concentric circle includes people who may be family, friends, or co-workers of the person. Support from these persons is likely to be less dependent on the roles they fill in her life. The first concentric circle consists of persons who are perceived as important support givers. Membership in this inner circle is likely to remain fairly stable over time. As illustrated in Figure 3, losses and gains occur in the convoy as time passes, due to death, changes in residence, retirement, and other life changes. Additionally, the boundaries between these circles are permeable and flow between them is possible, as is flow into and out of the convoy as a whole.

The term convoy structure refers to network composition and structural characteristics of the network over the life course. Common examples of structural features include size, stability,



A. Social convoy at age 34 years



B. Social convoy at age 61 years

Figure 3. Hypothetical example of one woman's convoy at two different points in her life cycle: (A) 34 years and (B) 61 years

homogeneity, symmetry, and connectedness. These are further described respectively as number of network members, average duration of membership, proportion of relationships that are both support-giving and support-receiving, and proportion of network members who are acquainted with each other. Properties of interpersonal relationships within networks are also described, including interaction frequency, type, magnitude, initiative, range, duration, and capacity.

Convoy Model

The convoy model is designed to provide a broad perspective on the determinants and outcomes of social support as well as an understanding of the structure and function of support over the life course.

Hypothetical determinants and affects of the convoy structure and function are proposed: (a) personal characteristics include age, needs, abilities, and other demographic variables; (b) situational characteristics are more external to the individual and include role expectations, resources, life events, demands, and other environmental factors; (c) the individual's perceptions are also emphasized, as he or she determines requirements for social support, and based on this need, judges the adequacy of social support received from convoy members. This "goodness-of-fit" concept includes the possibility of

too much support as well as too little. All of these factors influence individual requirements for social support and outcomes. Personal performance, well-being, life satisfaction, health negative affect, and happiness are proposed as examples of outcome measures.

Summary

Although no uniform definition of social support has been agreed upon by researchers, certain themes emerge in the literature. Social support is viewed as a positive resource for the individual. Dimensions of support include emotional, informational, and material aspects. Whether social support functions as a multidimensional or unidimensional concept needs clarification, however. There is agreement that the source of social support is the individual's social network.

Levitt's model of close relationships (in press) is grounded in the convoy model of Kahn and Antonucci (1980). The convoy model provides the structure for the interpersonal processes described by Levitt. While the convoy model outlines structural characteristics of the social network, Levitt's model describes processes involving interpersonal expectations that take place within the network. Changes in network composition are influenced by the outcomes derived from testing of

relationship expectations.

Stress in the Transition to Motherhood

The transition period after birth is regarded by many as a stressful time. Literature supporting this view is presented in terms of two groups of mothers: those whose infants are well and those whose infants are sick and hospitalized. Studies in this section tend to be of a descriptive or comparative nature. The initial section examines transition to motherhood as a crisis period. In the second section, studies that assess stress in the mother of the healthy infant are addressed. This is followed by a review of studies that determine the effect of a sick infant on maternal stress.

Transition to Motherhood as Crisis

Levitt (in press) speaks of normative transitional points in relationships, such as birth. During these transition periods, changes within the individuals involved or alterations in the external environment are likely to cause changes in inner circle relationships. Indeed, transition to motherhood is one of the most significant changes in the life of a woman. Although pregnancy provides some time for preparation, the roles and tasks of parenting are acquired abruptly. This transition period has frequently been described as stressful, due in part to changing roles, demands,

reward structure, and expectations (Wandersman, Wandersman, & Kahn, 1980).

Many researchers have concerned themselves with the degree to which stress is experienced by couples following birth. Because parenthood is generally considered to be a normal event, use of the term "crisis" has been criticized, and other terms such as "normal crisis" have been suggested (Rapoport, 1963). Infante (1982) spoke of "vulnerability to crisis" during the childbearing continuum. However, recent studies have reported much lower levels of crisis experienced by new parents than earlier believed, and it is suggested that future studies focus more on reactions to changes (feelings and attitudes) rather than on the changes (behavior patterns) themselves (Miller & Sollie, 1980).

Mothers are more likely to be affected by the changes brought on by parenthood because of the demands of their own physical recovery and their greater involvement in direct infant care. The involution process continues for approximately six weeks to three months after the birth. Furthermore, a woman's recovery may be prolonged by a cesarean delivery or postpartum complications. Care of the baby causes certain stresses arising from lack of sleep, tiredness, less time for self and spouse, feelings of overwhelming

responsibility, and being tied down. Stresses on the marital relationship are often associated with childbirth. Most studies revealed negative, although modest, changes in marital quality across the transition to parenthood (Belsky, Spanier & Rovine, 1983). During this same period, parents may experience a sense of fulfillment and personal well being as well as greater closeness in the marital relationship (Miller & Sollie, 1980; Turner, 1981).

Assessment of Stress in the New Mother

One method to measure stress related to this transition period is to administer both pre- and post-birth tests. Two studies are described that utilized this design (Miller & Sollie, 1980; Tietjen & Bradley, 1985).

Miller and Sollie (1980) surveyed 120 couples once before birth and two times after birth. Stress measurements included a semantic differential scale of personal stress and a marital stress scale developed by Pearlin (1975). Both new mothers and fathers reported higher personal stress after they had become parents. New mothers, however, had higher personal and marital stress scores than their husbands at 5 to 6 weeks postpartum, and mothers' scores increased even greater at 8 months after birth. New fathers' marital stress scores, by contrast, remained essentially the same

across the year of study. For both parents, feelings of personal well-being were higher at 5 to 6 weeks than at 8 months after birth. Questions used by the researchers directly assessed parents' personal and marital feelings, rather than the influence of the baby on their lives. In this way, researchers attempted to avoid socially desirable responses related to a romantic view of children in American society.

A second study utilized the pre- and post-birth assessment design. Tietjen and Bradley (1985) assessed stress in 23 primiparous women during pregnancy at 35 weeks gestation and again at 3 months postpartum. Respondents indicated whether they perceived themselves to be under stress in any of 34 given situations, such as health, work, finances, and social life. Results indicated a significant increase in the mean level of perceived stress during this transition period.

An alternative approach to measuring stress in new parents is to collect data only after birth, and attempt to identify factors that are associated with various stress levels. One such study by MacPhee, Benson, and Bullock (1986), utilized the Hassles Scale developed by Kanner, Coyne, Schaefer, and Lazarus (1981). Parity effects were considered, as both primiparous and multiparous women were surveyed when their infants were two months old. No significant group differences were

found in frequency or intensity of hassles. In fact, three of the five most frequently experienced hassles were the same: (a) troubling thoughts about the future, (b) planning meals, and (c) concerns about owing money. Other hassles checked most frequently by primiparous women included: (a) concerns about weight and (b) not getting enough sleep. Other high frequency items selected by multiparous women included: (a) misplacing or losing things and (b) home maintenance.

Types of Stresses

Included in the nursing literature are several studies that identify stresses experienced by new mothers. Moss (1981) developed a 61-item card-sort tool composed of three general categories: family, mother, and baby items. Each mother was asked to differentiate among items as to whether the item made her feel upset or worried and then whether she was interested in learning more about it. Moss interviewed 56 multiparas in the hospital on the third postpartum day. The main area of concern identified by mothers was family. These women were worried about how the children at home would act toward the newborn and how they as mothers would meet the needs of everyone at home. Being a good mother, the newborn's safety, their weight, and how the children at home would act toward them were other concerns.

Hiser (1987) utilized the tool developed by Moss (1981) to identify concerns of 20 multiparas during the second postpartum week. Many of the items selected most frequently by Moss's sample were again included by mothers. The majority of multiparas selected these four items as a worry: (a) meeting the needs of everyone at home, (b) finding time for self, (c) being a good mother, and (d) weight.

Hiser acknowledged limitations of this study (1987), which are also related to the study by Moss. First, small, non-random samples do not allow generalization to the population of new mothers. Second, the importance of mothers' perceptions should be considered and measurements made of the importance of stress items. Third, uncontrolled variables may influence study findings. Hiser noted that the mothers' utilization of teaching may have influenced results.

A qualitative approach to measuring stress was utilized by Mercer (1985). This investigator overcame the limitations imposed by small sample size by recruiting 294 women to participate in a one year study. To elicit data on challenges or demands experienced with motherhood, interviews were conducted at 1, 4, 8, and 12 months after birth, and women were asked, "What is the most difficult thing about

mothering?" Four categories of demands emerged from the content analysis of the interview data: (a) personal time, (b) role skills and felt incompetency, (c) nighttime care and sleep deprivation, and (d) responsibility. The challenge mentioned most frequently by mothers was that of having enough personal time. Women noted that they often had little time to eat meals, to bathe or apply makeup, or to talk with their husbands. With increased experience in the maternal role, fewer women reported these concerns. The second most frequently identified challenge involved unmastered role skills and the resulting feeling of incompetency. Feelings of inadequacy and uncertainty in dealing with the infant were cited more at one month than at four months by women of all ages. Also of concern at one month was the third category of demands, sleep deprivation and nighttime care of the infant. This demand decreased over time, from the one to four months period. The fourth category, feeling of responsibility in the maternal role, was a pervasive demand over the entire first year of motherhood. Women felt a loss of freedom associated with meeting the frequent demands of the infant.

To summarize, various techniques have been used to assess stress in the mother of a healthy infant. Pre- and post-birth measurements indicated that the first few

weeks after birth are a period of greater stress than pregnancy. Assessment of hassles and concerns revealed several themes that emerged relating to self, family, and baby. Although research limitations often precluded generalization of findings, the utilization of repeated measures in several of these studies was a promising beginning in detecting individual patterns in reaction to stress.

Effect of the Sick Infant on Maternal Stress

Several factors influence the mother's reaction to having a sick infant. The time factor is one consideration. Mothers' initial reactions to the illness are considered in this section. The degree of illness in the infant and its relationship to maternal stress are additional considerations, and are also discussed. Studies that compare stress in mothers of sick and healthy infants are also presented.

Reaction to Birth of a Sick Infant

Mercer (1977) noted that the birth of a sick infant has an immediate and pervasive impact on parents. Enormous amounts of energy are required to deal with the event, which usually demands immediate restructuring of parents' plans and goals. The crisis extends from parents, to family, to friends, and to community. Several crises may be precipitated, involving self-identity, social stigma, finances, and

family strain.

Levitt (in press) predicts that changes in close relationships are likely to occur during this time of crisis. Factors that serve to maintain continuity in close relationships are disrupted as the individual and environment change rapidly. The expectation of a healthy infant is not met, and new emotional, cognitive, and social responses are initiated.

Lindemann (1944) was one of the first investigators to describe the grief reaction that occurs in response to loss. Caplan (1960) and Kaplan and Mason (1960) described patterns of parental response to the crisis of premature birth, based on analysis of interview data and case studies. Solnit and Stark (1961) outlined typical mourning reactions of parents. More recently, Blake, Stewart, and Turcan (1975) described three phases in maternal behavior associated with the weeks immediately following hospitalization of the premature infant: (a) the "honeymoon" phase, lasting 7 to 21 days, in which parents were anxious about their ability to manage at home, but excitement prevailed; (b) a phase of exhaustion, when the mother complained of many minor problems with the management of the baby; and (c) a recovery phase, when these problems disappeared, the mother experienced more pleasure and confidence in handling the baby, and

mothers often wished to talk about their experiences.

Unfortunately, these studies are limited by their reliance on clinical impressions rather than rigorous data collection techniques. The behavioral themes they describe are valuable in guiding practitioners as they assess parents. They may be misleading, however, because no single pattern of parental response to a sick infant has been identified that is applicable to all parents.

Degree of Illness and Maternal Stress

Since the advent of neonatal intensive care units, several studies have been undertaken to determine parents' reactions to having a sick infant. Three studies are reviewed that link the degree of illness in the infant with maternal behaviors. Blumberg (1980) assessed 100 mothers of at-risk infants in the first week postpartum. Higher levels of neonatal risk were found to be related to higher levels of depression and anxiety in mothers. Of interest is the fact that neonatal risk was not significantly correlated with the pre-pregnant (trait) measures of depression and anxiety. This indicates that the risk variable was related to current, but not to more chronic feelings of depression and anxiety. The validity of this conclusion is limited by the fact that these trait measures were taken retrospectively, during the

postpartum period. An additional finding was that mothers of infants at higher levels of risk demonstrated more negative perceptions of their newborns.

Gennaro (1986) utilized Blumberg's (1980) risk categories in a study of mothers of premature infants. Study results failed to demonstrate a relationship between infant risk category and mother's anxiety level. The relatively large number of infants in high risk categories (36 out of 40 infants) probably accounted for this failure.

Harper, Concepcion, Sokal, and Sokal (1976) also classified sick newborns according to morbidity scores. They found a significant correlation between parental anxiety and the seriousness of the infant's illness, with the correlation being higher for fathers than for mothers. Interestingly, no correlation was found between infant morbidity and parental contact. Parents continued to visit their infants in the neonatal intensive care unit regardless of the seriousness of the infant's illness. A significant correlation was found, however, between infant contact and parental anxiety. Parental anxiety increased as the quantity and quality of contact with the infant increased. This correlation was greater for mothers than for fathers.

To summarize, although some of these studies

demonstrate a link between degree of illness in the infant and maternal anxiety, a caution expressed by Gennaro (1986) is well taken. She stated that nurses need to be aware that mothers of only moderately ill infants may be just as anxious during the infant's hospitalization as mothers of more seriously ill infants. Levitt's (in press) emphasis on perception is supported by Gennaro's view.

Comparison of Mothers of Sick and Well Infants

Another approach to measuring stress in parents of sick infants is to compare these parents with parents of healthy full-term infants. Several studies have utilized this approach, but findings are contradictory. Some studies support the hypothesis that parents of sick infants have greater stress. Other studies find no differences.

Evidence for greater stress in mothers of sick infants. Studies are reviewed that provide evidence that parenting a sick child is more stressful. Choi (1973) conducted a two-group quasi-experimental design in the first postpartum week composed of 20 mothers of premature infants and 20 mothers of full-term infants. Higher degrees of anxiety and depression were found in mothers of premature infants. In addition, anxiety and depression increased in proportion to decreased birth weight of the premature infant. Anxiety and depression

showed no significant correlation with infant birth weight in mothers of full-sized infants.

Gath (1978) conducted a longitudinal study that examined the effect of individual differences among Down's syndrome infants on marital functioning. The 30 families bearing Down's syndrome infants were compared with a matched sample of families bearing normal children. Marital interviews conducted in the second and third years of the child's life revealed greater sexual dissatisfaction, tension, hostility, and criticism in couples rearing a disabled child. Overall, there were more disharmonious marriages in this group. However, because an equal number of marriages in the two groups were noted as good, Gath concluded that the presence of a disabled infant may not so much mar a good marriage as disrupt the balance of a moderate or more vulnerable one.

Additional support for this conclusion was found by Cain, Kelly, and Shannon (1980) in a recent study of the effect of apnea monitors on families of infants at risk for sudden infant death. These researchers reported that 27% of families felt the monitoring of their at-risk infant had actually improved the marriage, whereas in the case of 14% of couples, the stress of monitoring was judged to make marital relations worse. These findings are consistent with

Levitt's proposal (in press) that birth of a high-risk infant creates a testing situation in which relationship expectations within the marriage are likely to be tested.

Evidence for no differences in stress in mothers of sick infants. A second group of studies comparing parents of sick and healthy infants found no differences in stress levels. Smith et al. (1969) compared 35 mothers of premature infants with a matched control group of mothers of full-term infants. Mothers who delivered premature infants were not significantly different from the mothers of full-term infants with respect to ratings of mood at interview, acceptance of pregnancy and infant, and concern toward the infant.

Similar findings were made by Crnic, Greenberg, Ragozin, Robinson, and Basham (1983) in a study of 52 mothers of premature infants and 53 mothers of full term infants. Measurements of stress and social support at one and four months failed to reveal any significant group differences. When groups were pooled, stress was found to have an impact. Mothers with greater stress were less positive in their attitudes and behavior toward their infants.

A third study by Waisbren (1980) also reported similarities in parents of handicapped and normal infants. In the first year and a half of the child's

life, parents' reports on their physical health, social activities, activities with the baby, marital relationships, and plans for the future did not differ to a significant degree. Changes in their marriages included more intense feelings of intimacy as well as more tensions. Despite these group similarities, differences were found. Parents of disabled children expressed more feelings suggesting anger, rejection, and hopelessness toward the child. In addition, they described their self-evaluations as having changed in negative ways since the baby's birth.

The failure of studies to demonstrate significant differences in stress levels between parents of sick and well infants may be attributable to a variety of causes. Instruments for stress measurement may not have enough sensitivity and validity. The time period of the study seems to affect responses. When measurements are made in the early period after birth, parents may not realize the full impact of the infant's illness. Likewise, measurements made too late, after a stable premature infant has gone home and been integrated into the family, may fail to discern the stresses experienced by parents during hospitalization. Studies that establish a baseline during pregnancy would be helpful, but the difficulties in predicting neonatal complications make this almost impossible.

In summary, comparison studies of parents of sick and well newborns indicated that families of sick infants tend to be under greater stress and may have altered behavioral responses. Methodological issues need to be examined to allow better measurement of the differences in these two groups. If researchers are to determine more individual responses to parenting a sick infant, as encouraged by Levitt (in press) and Belsky (1981), then studies that examine individual parents' perceptions and patterns of behavior should be conducted.

Social Support in the Transition to Motherhood

The normal maturational and life event changes that characterize this transition period present opportunities for growth and reorganization. The fact that this period is stressful has previously been documented. The mother's own physical recovery needs as well as the demands of the infant are compounded by changing roles and expectations within her marriage and the overall social network (Belsky, Spanier, & Rovine, 1983). Social support is postulated to play an important role in moderating the stresses of this period. Developing, gaining access to, and using appropriate social supports are central processes in the new mother's coping strategies (Wandersman, Wandersman, & Kahn, 1980).

The first issue to be addressed in this section, relates to the source of social support. Levitt (in press) proposes that personal well-being is related primarily to close attachment relationships, rather than to support networks as a whole. Data are cited to suggest that one or very few such relationships may be sufficient. The importance of the husband as a source of support to the new mother is consistently stated (Blackburn & Lowen, 1986; Levitt, Weber & Clark, 1986; Price, 1977), and the importance of the maternal grandmother is also noted (Levitt, Weber, & Clark, 1986).

A second issue is that social support is hypothesized to work through two very different processes. One model proposes that support is related to well-being only for women under stress. This is termed the buffering model because it suggests that support serves to buffer or protect the new mother from the potentially pathological influence of stressful events. The alternative model proposes that social resources have a beneficial effect regardless of whether the woman is under stress. Research presented in this section will provide support for both models.

Third, the issue of negative relationships is considered. The social network can be a source of stress as well as support. Evidence for negative

effects from social networks is cited in studies from the parenting literature.

The Importance of Intimate Support.

Social support from one or a few close persons in the social network is the focus of this section. Five studies are reviewed that consistently reveal the importance of the husband as a primary support. Two studies of mothers with sick infants reveal this same finding. Three additional studies are described that explore the utilization of support from different sources.

Levitt (in press) suggests that close supportive relationships in adulthood provide a stable and predictable environment for the individual in much the same way that the parent provides a secure base for the infant (Ainsworth et al., 1978). Most support is provided by persons in the inner core of the individual's network, and only one or a few close relationships may be sufficient to foster well being (Levitt, Clark, Rotton, & Finley, in press). Furthermore, there is evidence that sex differences exist in the use of social support, with men and women utilizing support from different sources (Wandersman, Wandersman, & Kahn, 1980).

Husbands as Sources of Support

Five studies are cited in this section that emphasize the role of the husband as a major

support-giver to the new mother. In a study involving 43 mothers of 13-month-old infants, Levitt et al. (1986) examined social networks in relation to the amount and type of support provided through various network members. Mothers reported an average of 13 persons in their networks, but support was provided primarily by the husband, followed by the infant's maternal grandmother and one or two other family members or friends. Support from husbands was related generally to maternal well-being (emotional affect and life satisfaction). Support from maternal grandmothers was related to well-being in multiparous mothers, most likely because of their assistance in child care.

Tietjen and Bradley (1985) assessed 23 middle to upper class women during pregnancy and at three months postpartum. They found that support from husbands was associated with good adjustment in all areas during pregnancy and with good emotional and marital adjustment after birth. At three months postpartum, an increase in satisfaction with support from the total network was significantly related to higher levels of perceived stress. These findings indicate a positive relationship of intimate support with well-being, but a negative association of total network support with well-being.

A study by Price (1977) provided evidence of the

importance of intimate support. Price addressed influences on reciprocity in early postpartum mother-infant interaction. In the mother-infant pairs experiencing a decline in reciprocity, the most important variable was the availability of the father to the mother. The mother's perception of the supportiveness of the father was a clear factor in this determination of availability. While other groups of mothers and infants continued to decline in reciprocity over time, the mother-infant pairs with fathers who were available to the mother showed dramatic improvement in reciprocity.

The importance of the husband to the new mother is supported in other studies. Drick (1982) focused on mothers in the first hour after delivery. These women sought affirmation of their behavior from their husbands and maintained communication with other people through their husbands. Stemp, Turner, and Noh (1986) studied 312 women during the first year after birth. Social support, when operationalized as total network support, did not influence maternal distress. However, when social support was viewed as marital intimacy, there was a significant association with distress.

Intimate Support for Mothers of Sick Infants

The significance of intimate support has been validated in studies of mothers of sick infants. Crnic,

Greenberg, Ragozin, Robinson, and Basham (1983) studied mothers of premature and full-term infants. Intimate support proved to have the most general positive effects, significantly predicting mothers' life satisfaction and satisfaction with parenting, maternal sensitivity to infant's cues, and infant responsiveness. Intimate support was the only variable to act as a moderator against stress. For mothers with high stress, personal outcomes were better in mothers with high intimate support than those with low intimate support. Other types of support were evaluated. Community support was the next most significant predictor, but friendship support was not significant. Blackburn's and Lowen's (1986) study of parents and grandparents in the neonatal intensive care unit supported these findings by Crnic et al. Both parents and grandparents reported that their spouses were their main source of emotional support after the premature birth.

Sex Differences in Intimate Support

A growing body of evidence suggests that sex differences may be a factor in the types of support used. Wandersman et al. (1980) studied social support in new parents at three and nine months after birth. Their results suggest that the importance of a particular type of support may be different for fathers

and mothers. While emotional marital support played a major role for both parents, parenting groups support played a significant role for fathers and network support played a significant role for mothers in predicting postpartum adjustment. Possible explanations for these differences are offered by the researchers. As child care takes more of their time, mothers may feel cut off from the social network of friends, co-workers, or former co-workers. Support from these sources may be viewed as more important by the mother than by the father, who has experienced little change in community relationships. On the other hand, the father's participation in parent groups may provide new opportunities to observe other fathers and may ease adjustment to the fathering role. Brown's (1986b) research with expectant mothers and fathers supports these findings. Partner support appeared to be the most important variable in understanding fathers' health, but both social network and partner support contributed equally to mothers' health.

Cronenwett (1985) found results that contradict the above studies. Fifty primigravid couples were assessed before and after childbirth. In men, higher quality of the marital relationship was associated with larger, denser networks, including a higher percentage of relatives. In women, network density was inversely

correlated with outcomes, including marital quality.

Summary

In their review article, Cohen and Wills (1985) summarized issues relating to intimate support. First, the importance of intimate support, or confidant support, was supported in numerous studies. The authors suggested that in a close, confiding relationship, functions such as self-esteem enhancement and information support are most likely to occur. Furthermore, confiding relationships may counteract stressors by increasing feelings of self-esteem and personal efficacy. The authors cited evidence in the literature for a buffering effect in the interaction between intimate support and stress (Crnic et al., 1983). Although the evidence for sex differences in the use of intimate support is less clear, such differences do seem to be present. These summarized findings are consistent with the research on new parents cited in this section.

Main and Buffering Effects of Social Support

How does social support work to promote positive coping during the transition to motherhood? Two mechanisms are proposed: (a) a main effect and (b) a buffering effect. Evidence for both main and buffering effects of social support is found in the literature.

Supporters of the main effect hypothesis suggested

that social support functions directly to improve personal outcomes. Cohen and Wills (1985) proposed that social networks provide persons with regular positive experiences and a set of stable, socially rewarded roles. This kind of support could be related to overall well-being because it provides positive affect, a sense of predictability and stability in one's life situation, and a recognition of self-worth.

Proponents of the buffering hypothesis suggested that social support affects outcomes only under stressful conditions. Two mechanisms were proposed by Cohen and Wills (1985). First, support may intervene between the stressful event and stress reaction by attenuating or preventing a stress appraisal response. In other words, the situation is not perceived as highly stressful. Second, support may alleviate the impact of stress appraisal by providing a solution to the problem or reducing the perceived importance of the problem. Levitt (in press) describes the possibility of both direct and buffering effects of social support from close relationships. However, during transition periods such as childbirth, the possibility of buffering effects is increased.

Evidence for Main Effects

Studies that suggest that social support functions as a main effect are discussed first. Cutrona (1984)

investigated social support in 71 primiparous women. Social support measures were only administered during pregnancy. Prenatal social support predicted depression after eight weeks postpartum. Results were not consistent with the buffering hypothesis, in that social support showed a progressively weaker relationship to depression as the level of stress increased. A major weakness of this study was the failure to measure social support in the period after birth.

Other studies found evidence for a main effect. Cronenwett (1985) examined types of social support utilized by parents. Emotional and instrumental support were important variables in explaining six-week postpartum outcomes. Waisbren (1980) studied extended family support. For both marital partners, positive feelings about their developmentally disabled child were associated with a perception that the paternal grandparents were highly supportive. It is interesting to note that despite frequent contact with professionals who treated their child (less than 18 months old), professionals did not figure prominently as a source of support.

Evidence for Main and Buffering Effects

Studies by Turner (1981) and Crnic et al. (1983) provided evidence of both main effects and buffering

effects. Turner combined data from four studies to demonstrate a significant relationship between social support and psychological well-being. In support of the buffering effect, the relationship between social support and psychological well-being was significantly greater for the high stress group than for the medium and low stress groups. The interaction between stress and support, controlling for the main effect of social support, was significant. Turner concluded that social support has significant main effects and that it is most important in stressful circumstances. Crnic found a similar relationship between perceived social support and life stress. He noted both a direct effect and a stress-moderating effect of intimate support on stress.

Evidence for Buffering Effects

The buffering hypothesis receives most support among studies of this transitional period. Nuckolls, Cassel, and Kaplan (1972) studied maternal complications during pregnancy. In the presence of increasing life change scores, women with high psychosocial assets (including social support) had only one-third the complication rate of women whose psychosocial assets were low. In the absence of such life changes, there was essentially no difference in the complication rate between those having high and low

asset scores.

Turner and Noh (1983) demonstrated that the significance of social support varies by level of stress. A total of 312 women were interviewed four weeks after giving birth. The buffering effect was observed in lower class women. Although support and stress showed no significant relationship for these women in low or medium stress circumstances, the relationship was of dramatic significance in high stress circumstances.

Brandt (1984b) also demonstrated the buffering effect of social support on maternal discipline in mothers of developmentally delayed children. Social support was inversely related to restrictive discipline for high stress mothers but not for low stress mothers.

To summarize, the literature dealing with pregnancy and early motherhood provided support for both main effects and buffering effects of social support. Evidence for the buffering effect seemed to predominate in these studies. This was especially true in situations where stress was increased, as in lower socioeconomic class women and mothers of sick or disabled children. Studies that measured perceived support concurrently with stress were most likely to demonstrate buffering.

Evidence for Negative Effects of Social Networks

An assumption in Levitt's model (in press) is that

social network relationships can be either positive or negative. The positive effects of close relationships are emphasized, but the possibility of negative relationships is not precluded. Relationship quality is hypothesized to change in a negative direction when expectations are violated.

Evidence for negative relationships is presented in the parenting literature. Several of the studies already reviewed include such evidence, and new studies are presented that also support this finding.

Tietjen and Bradley (1985) noted that the mother's perception of a poor marital relationship was associated with seeing one's network members more frequently, at three months postpartum. Barerra and Balls (1983) studied adolescent mothers. They found that frequency of support was positively correlated with negative life events, while support satisfaction was negatively correlated with negative events. In other words, mothers with frequent network contact reported more negative life events, while mothers who perceived greater satisfaction from their networks reported fewer negative life events.

Additional evidence was provided by Weinraub and Wolf (1983) who studied single parents. They found that increased social contacts in these families correlated with reduced maternal nurturance and lower

maternal control.

In all of these studies, increased network contact was related to negative personal outcomes, whether in the marital relationship, stress perception, or parenting behaviors. Several explanations are offered. Weinraub and Wolf (1983) proposed that when parents and grandparents or other network members disagree on childrearing practices, frequent social contacts are often stressful. Close proximity with kin and sanctions against the mother's child-rearing practices can result in more parenting difficulties. A single parent often has to balance her own needs against those of her children. Choosing to spend too much of her limited time with children could leave the single parent feeling lonely and isolated. Choosing to spend too much time with friends could leave the single parent less sensitive to her children's needs. Brandt (1984a) suggested that an overdependence on others for support may actually induce stress by decreasing self-reliance, control, and problem-solving. Such overdependence may be an indicator of the lack of individual competencies.

Lee (1979) suggested that solidarity of the marriage may be influenced by social network participation leading to marital conflict. For example, when one spouse has a higher amount of

community involvement, this may lead to an increase in the spouse's status outside the family as well as a reduction in the dependence on the other spouse. This shifting in power may lead to conflict within the marital relationship. Overlapping in spouse's social networks may lead to group pressure for marital conformity. Likewise, spouses who have very different social networks may experience greater conflict.

Levitt, Weber, and Clark (1986) found similar results regarding relationships with spouse and others. Mothers who were less satisfied with their husbands received more support from friends and were more satisfied with their relationships with their fathers. The direction of this effect was uncertain, however. It may be that low marital satisfaction led to more contact with network members. Or effects in the opposite direction may have operated, as suggested by Lee above.

In summary, although evidence for negative effects from social networks is much less than evidence for positive support, the network's potential as a source of stress cannot be ignored (Croog, 1970). With increased vulnerability due to relationship changes, childcare demands, and physical recovery, the new mother is especially prone to experience negative outcomes.

Other Variables Affecting Maternal Outcomes

In addition to stress and social support, numerous other factors have been studied to determine their effect on maternal outcomes. Little is documented regarding the effect of nurses and nursing care. Much of the data relates to three maternal variables: (a) age, (b) parity, and (c) maternal attitudes. The effect of teaching the mother has also received attention. These and other variables are considered in this section.

Nursing

Unfortunately, there is a significant gap in the literature of studies that measure the influence of the nurse and other health care professionals on maternal outcomes. Waisbren (1980) noted that parents of developmentally delayed children did not perceive professionals to be a prominent source of support. Several articles included in nursing journals prescribe interventions for nurses to use with parents (Blackburn & Lowen, 1986; Censullo, 1986; Christensen, 1977; Eager & Exoo, 1980; Hawkins-Walsh, 1980; Miles & Carter, 1983; Schraeder, 1980; Sims-Jones, 1986; Young, 1986). Many of these are case studies and clinical impression articles. Several suggested methods for assessing parents.

Only two of the reviewed studies actually measured

the effectiveness of routine nursing care measures. Consolvo (1986) measured the effect of 14 mothers' participation in a care-by-parent unit when their infants were discharged from intensive care. The Spielberger State-Trait Anxiety Inventory was used to measure the women's anxiety on entry into the special unit and at discharge 36 to 48 hours later. On the unit nurses served as role models for the parents and taught parents infant care skills. Results indicated that in only one of the four hypothetical situations used to measure state anxiety was there a significant decrease in the mother's anxiety after the care-by-parent experience. The researchers suggested that a larger, randomized sample, utilization of a control group, and measurement of additional outcomes might have permitted more significant differences to emerge.

The second study to measure the effect of nursing interventions was conducted by Harrison and Twardosz (1986). The effects of a structured teaching program on 30 mothers' perceptions of and interaction with their premature infants was evaluated. Mothers were randomly assigned to one of three study groups: control, attention, and instruction (the experimental group). Measures of maternal perceptions and behaviors were obtained during home visits at two, four, and eight weeks after infants were discharged from the

hospital. No significant differences were found among the groups on maternal perceptions or interaction behaviors.

Another group of studies is exemplified by Anderson (1981), utilizing the Brazelton Neonatal Behavior Assessment Scale. Although administration of this scale is not a routine nursing function, it does include components of nursing teaching about infant characteristics. Anderson found that mothers who observed the administration of the Brazelton Scale, were given an explanation of items on the scale, and observed their infants' responses, later demonstrated significantly increased maternal responsiveness. Parallel effects on infant responsiveness were also observed.

Maternal Age

The effect of age on maternal outcomes was found to be significant in three studies. Walker, Crain, and Thompson (1986a) determined that maternal age was significantly correlated with mother-infant interactions. Older mothers exhibited more sensitive, responsive behaviors during feedings. Mercer (1985) related age to gratification in the maternal role. Results showed that age groups functioned at different levels of gratification, with older mothers experiencing lower levels. Mercer found no significant

differences by maternal age in role strain and self-image as a mother after the infant's first year. Blumberg (1980) detected a significant relationship between age and postpartum anxiety, with younger mothers reporting higher levels of anxiety than older mothers. However, this relationship may have been confounded with illness in the infant.

Parity

Parity is the number of viable births experienced by a woman. The primipara is a first time mother, while the multipara has previously given birth. Parity has been discussed previously in this review as it relates to stress and social support (Levitt et al., 1986; MacPhee et al., 1986; Mercer, 1985). The effect of parity on mothers' perceptions was studied by Blank (1985). She found that multiparous mothers differentiated more among infant tenderness needs than primiparous mothers. Walker et al. (1986a) focused on maternal role attainment. They found that multiparas demonstrated more positive attitudes than primiparas toward themselves and their babies, and were more confident in caring for an infant.

Maternal Attitudes

Another area receiving much attention in the literature is maternal attitudes. Blumberg (1980) discovered a correlation between negative maternal attitudes toward pregnancy and childbirth and increased

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postpartum anxiety. Walker et al. (1986b) linked negative attitude toward self with less sensitivity and responsiveness toward the infant. Ventura (1986) found that mothers who viewed their infants more positively exhibited better coping skills. Young (1986) noted a positive correlation between women's own attitudes toward mothering and their perception of their mothers' attitudes toward mothering.

Other Characteristics

A variety of other characteristics have been identified in other studies as affecting maternal outcomes. Belsky and Isabella (1985) noted that couples with poor marital history coupled with poor childrearing history were more susceptible to increasing differences in the way they viewed their marriage after childbirth. Majewski (1986) positively correlated marital satisfaction and ease in transition to the maternal role. Gennaro (1986) found that mothers with good problem-solving ability acknowledged experiencing higher levels of anxiety than did mothers with lower problem-solving abilities. Although Majewski (1986) observed no significant differences between employed and unemployed mothers in relation to role conflict, mothers with careers tended to experience more role conflict than mothers with jobs. Education and socioeconomic class were significantly

correlated with primiparas' responsiveness to their infants as measured by Walker et al. (1986b). The direction of these two correlations was not stated.

Two health-related correlations were noted. Women who had experienced cesarean birth had more positive perceptions of their newborns. The amount of in-hospital rest perceived by breastfeeding mothers was associated with mothers' perceptions of competence for infant care (Rutledge & Pridham, 1987).

The last group of studies focused on infant behavior. Roberts (1983) found that the amount of obligatory infant behavior (behavior that required action on the part of the parents) was negatively correlated with ease in transition to parenthood and perception of the infant. Conflicting results were obtained in two studies utilizing the Brazelton Neonatal Behavior Assessment Scale. Parents were taught to assess their own infant's behavior utilizing this scale. Perry (1983) found no relation between infant behavior and parental perception of the newborn. Anderson (1981) showed maternal responsiveness to be significantly enhanced by use of the assessment tool.

Summary

Multiple variables were found to be related to maternal outcomes in the studies cited. Maternal age, parity, and attitudes were cited most frequently. One

area which needs more study is the effect of nursing actions on outcomes in new mothers. The variety of factors included in this section is evidence of the multiple influences on maternal outcomes in the transition to motherhood.

Relationship Expectations of New Mothers

Although the literature on attachment and social support provides evidence that support processes affect personal well-being in new mothers, very little is known about how these processes work. Testing of components in Levitt's model (in press) concerning expectations in close relationships provides a unique opportunity to learn more about these mechanisms. To date, very few authors have addressed the issue of relationship expectations as a means of change in close relationships.

The two issues which have received attention separately in the literature are expectations for parenthood and change in interpersonal relationships during the transition to parenthood. Each issue is presented as it is operationalized by different researchers. The scant literature relating specifically to expectations in interpersonal relationships follows these initial sections.

Expectations for Parenthood

General expectations and perceptions regarding

parenthood are the focus of a study by Kach and McGhee (1982). Prebirth and postbirth questionnaires were administered to parents of healthy infants. On the prebirth questionnaire couples noted their expectations regarding their upcoming parental role. In the postbirth questionnaire each parent indicated the degree to which expectations had been met. Daily activities and events as well as feelings about the self were the focus of the questions. A t-test computed separately for mothers and fathers yielded no significant differences between prebirth and postbirth measurements, indicating that parents' expectations were generally accurate. Mothers with less accurate expectations about parenthood, however, were most likely to have problems adjusting to parenthood. Less accurate expectations about parenthood among mothers were also associated with lower levels of preparation for parenting, higher age levels, and a greater number of years married. These findings contradict studies previously cited. Small sample size (26) was a major weakness of this study. Unfortunately, expectations regarding interpersonal relationships were not addressed in the questionnaire, although the study design could easily have included this information.

Change in Relationships

Several authors have addressed the issue of change

in interpersonal relationships during the transition to parenthood. This body of literature omits the separate issue of expectations for relationship change. The marital relationship is most frequently the focus. Belsky, Spanier, and Rovine (1983) noted both stability and change in the marital relationship. Their data indicated a modest but highly reliable decline in overall marital quality and functioning after birth. Analysis of the stability of individual differences revealed, in contrast, that the rank ordering of individual spouses and couples showed little change. In other words, while marital quality changed significantly over time, individual differences remained significantly stable.

Belsky et al. (1983) noted that patterns of change in the marital relationship were similar for primiparous and multiparous couples. Overall marital quality, however, was lower for couples rearing more than one child. Sex differences revealed that wives perceived a greater decline in marital quality after birth of the infant than did husbands. For both parents, the greatest decline in marital satisfaction occurred in the first three months after birth. Data also indicated a decline in baby-related interaction between spouses, from one to three months after birth. Belsky proposed that these data provided evidence for a

honeymoon period in parenting that extended through the first month but was over by the third month postpartum.

Levitt et al. (1986) surveyed mothers of 13-month-olds regarding changes in relationships with husbands and parents. Mothers reported these changes since the birth of the infant: (a) 71% reported a change in relationship with their husband, (b) 49% with their mothers, and (c) 40% with their fathers. Although 22% of those reporting changes indicated that the infant had a negative impact on their relationship with husbands, all other changes were perceived to be positive. Mothers often reported greater closeness in spousal and parental relationships following birth of the baby. Social support of an emotional nature was significantly related to relationship satisfaction in regards to the husband and mother. In addition, the amount of child care assistance provided by the husband and the mother was related to satisfaction with the help received through these relationships.

Fischer (1981) examined the mother-daughter relationship exclusively. She found that when daughters became mothers, mothers and daughters tended to reevaluate each other and become more involved in each other's lives. Fischer examined the "symbolic" domain of a relationship, or the meaning attributed to the relationship by each member of the dyad. This

concept included what partners think about each other and about their relationship. These young mothers indicated that they had experienced a reorientation toward their mothers on a symbolic level in terms of their interpretations and evaluations of their mothers' behavior. In other words, because they saw themselves in the position of a mother confronting some of the same problems that their own mother faced, they came to value their mother as a role model more and developed new expectations for her behavior and for the relationship.

Expectations in Relationships

Although these studies provided evidence for relationship change during this transition period, little is known about how expectations within relationships influence change. One of the earliest theorists to focus specifically on expectations was Sears (1951). In his paper, Sears illustrated how social learning theory could be used to analyze parent-child interaction. An important supplemental hypothesis was offered that intended to account for continuity in social relationships. Sears proposed that the "glue" underlying stable, as opposed to unstable, relationships consists of each individual's expectancies about the behavior of the other. These expectancies make the behavior of two people truly

interdependent, providing the mechanism by which a relationship unit can be derived from the behaviors of two individuals.

The only study to date that has tested the influence of expectations on outcomes in relationships is Belsky's study (1985) of violated expectations during the transition to parenthood. Belsky compared husbands' and wives prenatal expectations and postnatal experiences. For both parents, reports of actual experiences at three and nine months postpartum were significantly different from prenatal expectations. Wives held significantly more positive views than husbands concerning how the baby would and did influence relations with friends and neighbors. Wives also anticipated and experienced fathers as being less involved in caregiving than did fathers themselves.

Belsky (1985) hypothesized that the stress of childrearing would be greatest for individuals whose prenatal expectations proved to be overly optimistic. The hypothesis was supported. For both sets of spouses, the more events turned out to be less positive (and more negative) than anticipated, the more marital satisfaction declined. In fact, the impact of violated expectations was more evident in the case of women. At three months after delivery, wives whose expectations

were violated showed a decrease in their satisfaction with problem-solving in the marriage, a decrease in their feelings of love, and an increase in marital conflict. At nine months postpartum, husbands whose actual experiences turned out to be less positive than their expectations reported a decline in positive marital interactions and an increase in spousal conflict. Wives whose expectations were similarly violated, engaged in fewer maintenance behaviors.

Belsky's (1985) study is an outstanding example of the type of study currently needed. Most of the research on the transition to parenthood has either described the changes that take place in individuals or the marital unit, or has documented the influence of stress, social support, and other variables on parental outcomes. Belsky's study moves beyond the description of change to an analysis of the determinants of variation in change. His findings support the hypotheses proposed in Levitt's (in press) model.

Summary

Concepts addressed in theories of infant attachment, close relationships in adulthood, and social support provided background information for Levitt's model of close relationships (in press). Levitt drew upon Ainsworth's view of infant attachment to propose that attachment relationships provide a

secure base for both children and adults. However, the plasticity of the individual and the importance of environmental events were emphasized, which counters Ainsworth's epigenetic view. Levitt drew upon the characteristics of close relationships offered by Sternberg and Grajek (1984), focusing on supportive aspects of close relationships. The processes underlying attachment in parent-child interactions and social support in adult relationships were viewed as quite similar. Attachment relationships in adulthood, involving the inner circle of family and friends, were seen as significant sources of social support.

Levitt's model of close relationships (in press) is grounded in the convoy model of social support developed by Kahn and Antonucci (1980). Defined as a network of family, friends, and others, the social support convoy provides a structure for continuity and change in social support over the life course. Levitt's model focuses on the processes that govern passage into and out of the inner circle of the convoy structure. The primary process is the establishment and maintenance of relationship expectations in close relationships. Changes in relationships are determined by the outcomes of testing expectations. Depending upon whether relationship expectations are met, exceeded, or violated, the relationship may remain

stable or undergo positive or negative change.

Levitt proposed that normative transition periods, such as childbirth, provide a situation in which relationship expectations are likely to be tested. The literature on transition to motherhood provided evidence that stress is increased during this period and relationships are vulnerable to change. Studies focusing on parental reactions to sick infants demonstrated the importance of parents' perceptions as determinants of stress levels. Severity of illness of the infant was not consistently correlated with parents' anxiety levels.

Social support and particularly support from one or a few close network members, has been demonstrated to have both direct and buffering effects on stress. The husband and maternal grandmother were most often cited as sources of support. Despite the strong evidence for supportive functions of social networks, the network's potential as a source of stress was also found in the literature.

Although change in the marital relationship during the transition to parenting was well documented, little attention has been paid to individual processes involved in change. Research in this area has generally described the changes taking place, or documented the influence of variables on maternal outcomes. Belsky's

(1985) study on violated expectations in new parents directly tested Levitt's model (in press) and supported her hypotheses. More studies are needed that analyze the actual interpersonal processes involved in change, as proposed in Levitt's model.

CHAPTER III

METHODS

The study design consisted of a one time data collection in which both interview and questionnaire techniques were used. Contact with subjects took place between two and five weeks after birth of the infant. The primary investigator and one assistant collected all of the data. Most questions in the data collection tools were focused on the present or the recent past, specified as "the last few weeks." More long term retrospective analysis was required, however, for the questions dealing with fulfillment of relationship expectations.

The present section describes the methods used in the study, including sample selection and characteristics, protection of human subjects, instruments, procedures for collection of data, analysis of data, and limitations.

Sample

The 83 women who participated in the study were 18 years of age or older and had given birth within two to five weeks of the interview date. Of the total, 36 were mothers of well newborns who had been discharged home from the normal nursery and 47 were mothers of newborns who had been hospitalized after birth in a

neonatal intensive care unit. Various procedures were used for recruitment of subjects and classification of infants into risk groups. A description of these procedures as well as the characteristics of the sample are included in this section.

Recruitment of Subjects

A convenience sample of new mothers was used in the study. Women were recruited from the private practices of two obstetricians and three pediatricians, as well as from neonatologists in charge of two large neonatal intensive care units. Two women were referred by friends. Table 1 lists the number of women recruited from each of these sources and the method of initial contact.

Table 1
Number of Women Recruited by Different Types of Referral Sources and Methods of Contact

Source \ Method of Contact	Flyers	Telephone
Neonatal Intensive Care Units	3	40
Private Obstetricians	12	0
Private Pediatricians	26	0
Friends (Other Study Participants)	<u>0</u>	<u>2</u>
Total	41	42

Various methods were used to secure names of new mothers. A flyer (included in Appendix A) was given to

potential subjects recruited through all of the private physicians and one neonatal unit. Women who were interested in learning more about the study completed the slip attached to the flyer. The researcher was given these names, telephone numbers, and actual or estimated date of delivery by regular telephone contacts. In addition, the researcher always obtained information from staff about the condition of the infant in terms of risk category. Criteria for classification of infants into risk categories is included in Appendix B.

Flyers were distributed to women either by office staff or by nurses in the hospital. Women recruited through private obstetricians were given flyers in the office prior to delivery. Women recruited through the three private pediatricians received flyers after birth of the infant, on the postpartum unit, where nursery nurses passed out flyers. On one of the neonatal units, nurses gave flyers to women eligible to participate. In all three situations, staff were available to answer questions about the study. Response slips could either be returned to staff or placed in a special box labeled "Motherhood Study" by the woman herself.

A second method of recruitment was used on one of the neonatal units. Information on potential

participants was obtained directly from hospital staff. The clinical nurse specialist on the unit determined which women were eligible for the study. Through weekly telephone contacts with the clinical specialist, the researcher obtained names and telephone numbers of mothers, birth dates of infants, and risk category numbers.

The first telephone contact with potential participants took place after complete information had been obtained and approximately two weeks had passed since the date of delivery. The telephone script included in Appendix C was modified according to the recruitment source and was followed in this initial contact. Several purposes were accomplished. First, women were screened for age eligibility by asking if they were 18 years of age or older. A determination was also made as to whether the woman spoke English well enough to participate. Second, the purpose of the study was described. Third, information was provided about what would be done in the personal interview and the time involved (one to one and one-half hours). Women were also reassured about confidentiality and questions were solicited. After receiving this information, women were asked if they would be willing to participate.

For women who indicated a willingness to

participate, arrangements were made for the interview or for further contact. A frequent occurrence was for the mother to request that the researcher call back in a few days, because she was unable to arrange the interview at that time.

Intrapartum and postpartum complications did not disqualify women from participation in the study if the complication had been resolved by the time of the interview. This determination was made by asking each woman to indicate whether she felt well enough to spend one to one and one-half hours being interviewed. No screening was done through the physician; rather, this was the woman's subjective decision.

Response to the flyers and telephone contact was positive overall. Out of 113 calls to potential subjects, 83 or 73% were actually interviewed and became participants in the study. It is interesting that 41 (75%) women who had initially responded to the flyer and were then telephoned, became subjects in the study, while 40 (71%) women whose first contact about the study was by telephone, rather than flyer, participated.

Reasons for refusal to participate varied. One mother of a hospitalized infant stated she felt "very drained" and believed that her baby would die very soon. A mother whose infant was healthy continually

expressed interest in participating but postponed arranging an interview date. She stated she was having difficulty caring for a toddler at home as well as the new baby. Out of the total number of women who were contacted by telephone, 30 (27%) refused to participate or could not be reached on follow-up calls.

Classification of Infants

All infants were classified according to the four risk categories outlined in Appendix B. Group 1 was the sickest infants, "High Risk." Group 2 was also NICU babies, "Medium Risk." Groups 3 and 4 were well infants, originally labeled "Low Risk" and "No Risk." These categories were adapted by the researcher, in consultation with a neonatologist, from criteria presented in Pernoll, Genda, and Babson (1986). The process used to classify infants took place during the recruitment phase but varied according to the health status of the infant. Different mechanisms were used according to whether the infant was hospitalized in the neonatal intensive care unit or sent home from the normal newborn nursery.

If the infant was discharged home from the normal newborn nursery, then this was all the information needed before calling the mother to arrange an interview. Further differentiation as to the lower two risk groups (group 3 or 4) was made in two ways.

First, infants of new mothers recruited from pediatricians were known to newborn nursery staff. One nursery nurse served as liason to the researcher and determined the risk classification of these infants. Because the researcher did not have access to hospital records of these infants, it was not possible to check the reliability of these classifications. A second method was used when women were recruited from obstetricians. The determination as to risk category was made by the researcher based on information from the mother. The mother was given a check list of risk behaviors and with the help of the researcher, determined which, if any, behaviors applied to her infant.

If the infant was hospitalized in the neonatal intensive care unit after birth, a special procedure was followed by the liason nurses on each of the neonatal units. First, medically unstable or dying infants were excluded. The definition of "medically unstable" or "dying" was left up to the physician and liason nurse on each individual unit. This screening was done to protect the mother of the unstable newborn because of the likelihood that she was already extremely stressed by the uncertainty of her baby's outcome.

Second, if the hospitalized infant was determined

to be stable, the liason nurse utilized the risk criteria in Appendix B. These infants were classified as High Risk (group 1) or Medium Risk (group 2). The infant who manifested conditions listed under both risk categories was classified in the higher category. The only information about the infant that was given to the researcher by the liason nurse was the number of the risk category. The researcher received no other information and was kept blind as to the specific problems of the infant for two reasons: (a) to prevent interviewer bias, and (b) to prevent the researcher from knowing specific information about the baby which could be passed along to the mother. If the mother asked about the condition of her baby during the interview, she was told that the researcher had not seen her baby and did not have any specific information about the baby's condition. When appropriate, the mother was referred to the physician or hospital staff for information.

Another reason for requesting information about infants' risk categories during the recruitment phase of mothers was to equalize numbers in each category. Equalization of numbers did not turn out to be possible, however, due to limitations of the recruitment process. The final distribution of infants by risk group was as follows: Group 1: 20

(24%); Group 2: 27 (33%); Group 3: 9 (11%); Group 4: 27 (33%).

During the data analysis phase of the study, groups 3 and 4 were combined. This was necessary for several reasons. First, the unreliability of mothers in classifying infants as small or large for gestational age (criteria for group 3), when mothers were the source of this information, meant that some infants in group 4 actually fit group 3 criteria. Second, the number of infants in group 3 was very small compared to the size of the other risk groups. Therefore, for purposes of data analysis, the original groups 3 and 4 were merged into a new group 3, labeled "Low Risk."

Characteristics of Subjects

Womens' Characteristics

The study sample consisted of 83 women ranging in age from 18 to 40 years, with a median age of 29 years. Most of the participants were Caucasian (84%) with minority representation of Black (11%), Hispanic (4%), and Oriental (1%). Marital status of the women was as follows: 71 (86%) married, 10 (12%) single, and 2 (2%) separated or divorced. The sample was almost equally divided by parity, including 42 primiparous women (having their first child) and 41 multiparas (having had one or more previous children). Educational level of the women in the study ranged widely, from 7 to 20 years. The

average educational level was 13 1/2 years of schooling.

Occupational and work data were gathered in the study. Occupations were categorized to include clerical workers (27%), professionals (23%), managers (15%), service workers (10%), operatives (2%), salespersons (1%), and miscellaneous (including housewives) (13%). Women were questioned about their plans to return to work. Responses indicated that 3 (4%) of the women had already returned to work by the time of the interview, 20 (24%) planned to return in the next eight weeks, and 26 (31%) planned to return after eight weeks. Another 25 (30%) of the women planned to remain home with no definite work plans.

Information about type of delivery and medical problems was collected. One half (42) of the women had experienced caesarean deliveries and the other half vaginal deliveries. Medical problems relating to pregnancy and delivery which were cited by 40 of the women included urinary tract infections, anemia, toxemia, diabetes, fever, early labor, prolonged labor, tubal ligation, and other problems. Several of the women cited more than one problem. Twenty women had previously experienced miscarriages. Data from mothers did not match information from medical records. For example, several of the women who had premature infants did not regard their early labor as a medical problem and did not

record it on the questionnaire.

Infants' Characteristics

Description of infants' characteristics is based on the reclassification of healthy infants into one risk group, Group 3 or Low Risk. Location of infants according to risk groups is presented in Table 2. Of the 20 Group 1 (High Risk) babies, 14 remained in the hospital at the time of the interview and 6 were home. Only 4 of the 27 Group 2 (Medium Risk) infants remained in the hospital and 23 were home. All 36 of the Group 3 (Low Risk) babies were home, since they had been discharged from the normal nursery.

Table 2
Location of Infants According to Risk Group

Location \ Risk Group	Group 1 High Risk	Group 2 Medium Risk	Group 3 Low Risk
Hospital	14	4	0
Home	<u>6</u>	<u>23</u>	<u>36</u>
Total (N=83)	20	27	36

Of the Low Risk babies, four were reported by mothers to have experienced minor illnesses at home, such as vomiting or upper respiratory infection. The time spent in NICU for High Risk infants ranged from 8 to 32 days, with a median of 22.5 days. The NICU stay for Medium Risk

infants was shorter, ranging from 1 to 29 days, with a median of 10 days. At the time of the interview, infants' ages ranged from 15 to 35 days old, with a median age of 23 days.

The neonatal intensive care groups (Groups 1 and 2) were composed primarily of prematures (25 or 53%). Other neonatal problems experienced by infants included respiratory distress, apnea, sepsis or suspected sepsis, hydrocephalus, imperforate anus, and necrotizing enterocolitis. Out of these 47 sick newborns, 4 sets of twins were represented. Only one infant from each set of twins was considered in the study. When completing the questionnaire, the mother was asked to report on the sicker infant of the pair, and the healthier infant was counted as an additional child in the family.

Perception of Illness in Infant

Mothers of sick infants were asked to rank their infants on two 7-point scales as to "seriousness" of the illness and how "worried" they were about the illness. The mother's perception of seriousness of illness was found to be significantly related to the risk group of the infant on t -test, $t(81) = 4.29$, $p < .001$. However, mothers tended to be very worried about their babies despite the level of risk. Perception of how worried they were about the infant's illness was not found to be significantly related to the level of risk. Medical

problems of previous children in the family and number of miscarriages were not found to influence these perceptions.

Household Characteristics

Household composition of women in the study varied. The majority of women lived with their husband and children (75%). An additional 11% had other relatives living in their homes, in addition to husband and children. The remaining households of single women varied as to composition and head of household. Women were asked to report total income of household members for the previous tax year. The median yearly income, before taxes, for the sample was \$35,000 to \$49,999, with a wide range in income from less than \$5,000 to over \$60,000 per year.

For the married women, information was collected regarding husband's education and occupation. The median number of years of schooling for husbands was 14, with a wide range from 7 to 20 years. Reported occupations for husbands included professionals (19%), operatives (such as truck drivers) (18%), managers (17%), salesmen (6%), service workers (6%), clerical workers (2%), and miscellaneous (such as full time students) (5%).

Multiparous women made up one-half of the sample. Most of these women ($n=33$) had only one other child, while 7 had two other children, 2 had three other children, and

1 had six other children living at home with them. The previous children of these women ranged in age from less than 1 year to 17 years. Women were asked if any of their other children had experienced medical problems at birth. Twelve women responded that they either presently (as with twins) or previously had other children hospitalized at birth for medical problems. One half of these other children fit into the Group 1, High Risk, classification used in the study; the other half fit Group 2, Medium Risk, criteria.

Social Network

Data on social networks included size, density, age and relationship composition, and supportive functions. The total number of persons placed in the three circle diagram by respondents ranged from 4 to 54, with a mean of 16 persons. The closest circle, number 1, had a mean of 6 persons, with a range of 2 to 20. Circle 2 was the most diverse, with a range of 0 to 41 people and a mean of 6 people. Circle 3 was left empty by 15 of the respondents, and composition ranged from 0 to 17 persons, with a mean of 4 persons.

The subject was asked to give age and relationship data on the first 10 people in the network. Ages of these network members ranged from 15 days to 98 years. The most common relationships listed for these closest persons included mother (79), husband (69), father (51),

boyfriend (7), son (72), daughter (59), sister (76), brother (53), and friend (83). Numbers in parentheses indicate the number of times the woman placed a person in that role within the first 10 network spaces.

Each participant was asked to list the person "closest or most important" to her. Husbands were listed by 57 women and 19 of the women selected their own mothers. Other relationships selected for closest person included boyfriend ($n=2$), father ($n=2$), brother ($n=2$), and aunt $n=(1)$. The position in the network for these close persons was usually high: number 1 for 63%, number 2 for 19%, and number 3 for 6%. All but two of these close persons were listed in the first circle.

Placement of the newborn infant in the circle diagram varied across participants. Of the 83 participants, 13 omitted the infant altogether. When the infant was included, placement ranged from first (20%), second (19%), third (31%), fourth (6%), fifth (1%), sixth (4%), and eighth (2%). All of these infants were placed in the first circle. Placement of the infant in the network was significantly correlated with the number of children living at home, $r=.53$, $p<.001$. Women with other children tended to list the other children first, and then the newborn.

The supportive relationship with the nurse often started during pregnancy. Each woman was asked to think

of one nurse who had been "closest and most important" to her around the time the baby was born or since that time. Of the total, 18 women first met this nurse during pregnancy, 15 met her at the time of labor and delivery, 13 met her during the first eight hours after delivery, and 36 met her after this time. Areas in which these nurses worked included neonatal intensive care ($n=24$), postpartum ($n=23$), labor and delivery ($n=15$), physician's office ($n=7$), prenatal class ($n=6$), and other areas ($n=5$).

Protection of Human Subjects

Risk factors differed for the two groups of women in the study, according to the health of the newborn. No risk was felt to be present for the mothers whose infants were healthy. Minimal psychological risk was felt to be present for the mothers of sick infants. It was assumed that mothers of sick babies were under greater stress in general, which made them more vulnerable to interpreting stimuli as stressful. The informed consent forms (Appendix D) differed for each group of mothers and clearly stated the risk involved.

The informed consent forms included other information. The voluntary nature of the study was stated. It was emphasized that the physician would not be aware of the subject's participation and medical care would not be affected in any way. Confidentiality was assured. The purpose of the study was described as

well as the benefit to society. Each participant was given a copy of the consent form to keep, with the telephone number of the researcher.

Participants were given a card to complete if they wished to be sent a written summary of the study. Almost all women completed this card and returned it to the researcher.

The study was reviewed by the Indiana University-Purdue University at Indianapolis Institutional Review Board. In addition, permission was obtained to approach women about taking part in the study from the hospitals and physicians involved in Broward County, Florida. These permission forms are included in Appendix E.

Setting

Data collection for the study took place in Broward County, Florida. A small number of subjects lived across county lines in neighboring Dade County. Of the 83 women, 75 were interviewed in their homes and 8 were interviewed in other settings, such as restaurants or hospital waiting areas. Data were collected during the fall and early winter of 1987.

Procedure

Training of Interviewers

Interviews were conducted by the primary investigator and one assistant. The second interviewer was added during the second month of data collection,

and visited mothers of infants in all risk groups, focusing on groups 3 and 4. The second investigator was a mature psychology student, selected because of her ability and her interest in the study. She was trained by observing two different interviews conducted by the primary investigator and consulting frequently on the techniques used and their rationale. She was then observed by the primary investigator during one interview, with evaluative feedback given. At this time it was determined that she was ready to conduct interviews independently, with maintenance of frequent contact with the primary researcher. A total of 64 women were interviewed by the primary researcher and the remaining 19 women in the study were interviewed by the assistant.

Data Collection

When the investigator arrived at the subject's home or the arranged meeting place, she introduced herself and attempted to place the woman at ease. The subject was assessed for a high level of anxiety or any other problem that might have required rescheduling the interview. For example, one woman complained of a severe headache, which resulted in the interview being rescheduled. If other individuals were present in the same room, it was explained that the interview needed to be private, and in almost all cases, it was possible to find

an area away from others.

The subject was given the consent letter to read. Following her review of the consent, she was asked if she had any questions. If not, she was asked to sign the consent letter and was given a second copy of the letter to keep.

Actual data collection proceeded in two phases. First, a structured interview approach was used for the social network and support functions data. Second, the woman was given the questionnaire to complete on her own. The investigator assisted by explaining instructions to different sections of the questionnaire, when needed. In some cases, for example if the mother needed to feed or hold her infant, parts of the questionnaire were read to the mother and her verbal responses were marked by the researcher. After the questionnaire was completed, information was gathered about risk characteristics of the infant, as necessary. The subject was given the card requesting a written summary of the study, which she could either complete and return at that time, or send later in the mail. Most women completed the card at that time. Additional questions about the study were also answered. The interview was terminated and the woman was thanked for her participation.

Instruments

Three kinds of predictive measurements were made: (a) social support, (b) expectations fulfillment, and (c) stress. These measurements were the independent variables in the study. Three categories of outcome measurements were made: (1) personal outcomes, (2) close person-related outcomes, and (3) nurse-related outcomes. These outcomes were the dependent variables. Demographic variables were also measured. A description of each instrument is listed in this section and the specific tools are included in Appendix F, as they were presented in the questionnaire.

Social Support

Social support was measured using a revised version of the Social Networks in Adult Life Interview Form (Appendix F). First, network structure was measured by plotting all individuals in the social network on the three-circle convoy diagram. Second, social support functions were assessed utilizing two tools: (a) Personal Network Support Functions and (b) Nurse Support Functions.

Network Structure

The three circle convoy diagram was completed by the investigator with the help of the subject. In the first circle, the subject was asked to list names or initials of the person or persons whom she felt so

close to that it would be hard to imagine life without them. In the second circle, she was asked to list people to whom she might not feel quite so close, but who were still important to her. The third circle was for people not already mentioned who were close enough and important enough in the subject's life that they should also be placed in her network. After the circles were filled in, data concerning ages and relationship to the subject of the first 10 network members were collected. The subject was also asked to select, from all the adults in the circle, the person who was closest or most important to her.

Social Support Functions

Following the network structure data, social support functions were assessed utilizing two tools: (a) Personal Network Support Functions and (b) Nurse Support Functions.

Personal network support functions. The first tool listed ten support behaviors related to the personal network. Behaviors represented each of the three types of support functions: (a) affective, (b) affirmative, and (c) direct aid. Two scores were generated from this tool: (a) network support, which included the total number of support functions provided by the total network minus the number of functions provided by the close person and (b) close

support, including the total number of functions provided by the closest person in the network.

Nurse support functions. A third score, nurse support, was generated from a different tool, composed of nine support behaviors that typically would be provided by a nurse. Three behaviors represented each type of support function (affective, affirmative, and direct aid). On this tool, subjects indicated on a 5-point scale how strongly they agreed with each item. The tool was scored by adding the score of each item (5 = strongly agree). The nurse support items were developed by the researcher and were based on the overall and close network items described above.

Instrument Development

The three-circle method of measuring the social support network and the use of support functions from three categories was developed by Kahn and Antonucci (1980). These methods have been utilized with good results both by them and by other researchers (Levitt, Clark, Rotton, & Finley, in press; Levitt, Weber, & Clark, 1986). Subjects in these studies were found to have no difficulty conceptualizing their social networks in terms of the three concentric circles and the network functions.

Reliability. The list of network functions for the overall and close network was taken directly from

two sources, Levitt, Weber, and Clark (1986) and Norbeck, Lindsey, and Carrieri (1981). Reliability data were available from Norbeck et al. At a one week interval, test-retest reliability ranged from .85 to .89 on all her items. Internal consistency for affective and affirmative items ranged from .95 to .98 (Pearson Correlation Coefficients), suggesting that these two categories might not be distinct. Direct aid items had lower correlations with affective and affirmative categories (range of .72 to .78), suggesting more distinction between categories. From the Levitt et al. (1986) study, internal consistency reliabilities (Cronbach's Alpha) were .90 for the total emotional support index (affective and affirmative items) and .67 for the child care items (direct aid).

Validity. Norbeck et al. (1981) presented evidence for the validity of their support items in relation to response bias and concurrent validity. They tested the possibility that subjects' answers reflected a reporting of socially desirable answers rather than honest self-reports. The short form of the Marlowe-Crowne Test of Social Desirability was administered concurrently with their support functions test. None of the Norbeck items were significantly related to the social desirability measure, suggesting that their items were relatively free from this bias.

Concurrent validity testing revealed correlations ranging from .31 to .51 between the Norbeck items and items from the Cohen and Lazarus Social Support Questionnaire.

Fulfillment of Relationship Expectations

Two tools were used to measure the degree to which expectations in close relationships had been fulfilled since the baby was born. The Expectations Fulfillment (Close Person) Scale measured the fulfillment of expectations perceived by the mother for the close person. The Expectations Fulfillment (Nurse) Scale measured the fulfillment of expectations perceived by the mother for a nurse.

Expectations Fulfillment (Close Person) Scale

This instrument measured how well the mother's closest support person had met her expectations since the baby was born. In response to 13 support items, each subject answered on a 5-point scale from "much more than expected" to "much less than expected," with a sixth option category, "not needed." Retrospective analysis was required as the subject compared expectations developed before the baby was born with fulfillment of these expectations. A score for each subject was calculated by adding points for all items (5 = much more than expected, etc.) and dividing by the total number of items needed. Items marked "not

needed" were omitted from this count.

Expectations Fulfillment (Nurse) Scale

This scale was developed to relate to typical nursing functions. It measured how well the nurse designated as closest had met the mother's general expectations. When appropriate, items were similar to those in the "Close Person" scale, although most of the 17 items were unique to the nursing role. Response options and scoring were identical to the "Close Person" scale described above.

Instrument Development

Both tools measuring expectations fulfillment were developed from Levitt's Perceived Fulfillment Index. This scale was originally developed for use with mothers of infants regarding support from maternal grandmothers. Levitt's tool consisted of 12 items describing areas in which mothers might provide support to their daughters after giving birth. The 12 items were selected after pretesting the tool on a sample of 25 mothers of infants. Clarity and internal consistency were criteria for inclusion in the scale (Cronbach's Alpha = .81).

Stress

Stress was measured primarily to establish that the period after birth created a test situation in which social support needs and relationship

expectations were likely to be tested. Stress measurements were also made to test the effect of mothering a sick infant versus a healthy one. The primary instrument used to measure stress was a modified version of the Hassles Scale. Respondents were also questioned about major life changes that might have influenced their responses. Major life events were solicited with the question, "In addition to having a baby, has there been a change in your life during the last few weeks that affected how you answered this survey?"

In regard to sick infants, the woman's perception about the seriousness of her infant's illness was also measured. Women were asked to respond on a seven point scale to two questions: (a) "If your baby has been sick since birth, how serious was (is) it?" and (b) "If your baby has been sick, how worried have you been about the illness?"

Hassles Scale

As a measure of stress, 50 items from the original 117-item Hassles Scale developed by Kanner, Coyne, Schaefer, and Lazarus (1981) were used. These 50 items were described to the subject as "things that can make a person feel irritated or hassled." Respondents were asked to select items that had happened to them in the last few weeks and then rank each item according to

severity (mild, moderate, or extreme). Two scores were generated: (a) frequency, counting total number of hassles selected and (b) intensity, calculated by summing the 3-point severity ratings and dividing by the frequency score. A higher score on each of the two scales indicated greater number or severity of hassles.

Tool development. Selection of the 50 items from the original scale was based on a review of the literature. MacPhee, Benson, and Bullock (1986) had used the Hassles Scale with new mothers. They generated 23 items that had been selected by mothers with the greatest frequency, and all of those items were included in this study. Validity for the Hassles Scale was demonstrated by MacPhee et al. by comparing with scores on their parental self-perception scales. For the scales measuring competence and integration in parenting, significant negative relationships were found with frequency of hassles ($p < .001$).

The review of literature also considered findings from studies by Moss (1981) and Hiser (1987). These researchers generated lists of problems or concerns of new mothers. Items from the original Hassles Scale which matched these concerns were also selected for this study. No new items were generated.

Validity and reliability data were available from the developers of the Hassles Scale (Kanner et al.,

1981). These data were based on their sample of 100 middle-aged adults. Test-retest correlations among monthly frequency scores on the Hassles Scale were higher than among intensity scores. Average r 's were .79 for frequency and .48 for intensity. Validity data comparing the Hassles Scale with the Bradburn Affect Scale revealed that hassles were related to negative but not positive affect, $r = .34$, $p < .001$. Construct validation was further provided by comparisons with the Hopkins Symptom Checklist. Substantial correlations appeared between hassles frequency and psychological symptoms, $r = .66$ for women. Some evidence collected by Kanner et al. (1981) and Lazarus, DeLongis, Folkman, and Gruen (1985) indicated that hassles were a better predictor of psychological symptoms and negative affect than the standard life events scales.

Outcome Measures

Three types of outcome measurements were used:

(a) personal outcomes, (b) close person-related outcomes, and (c) nurse-related outcomes.

Personal Outcomes

The first type of outcome measure was personal outcomes. Three tools were utilized: (a) Bradburn Affect Balance Scale, (b) Semantic Differential Scale-My Baby, and (c) Life Satisfaction Scale.

Bradburn Affect Balance Scale. This scale

contained five positive affect items and five negative affect items. In addition to positive and negative scale scores (simple frequencies), the affect balance score was generated. Computation of the affect balance score was done as follows. First, each subject's negative scale score was subtracted from the positive scale score, yielding a distribution of scores from -5 to +5. Then, for computation purposes, a constant of +5 was added to each sum, giving a scale with values of 0 to 10.

Reliability and validity data were generated by Bradburn (1969) upon initial tool development. Reliability data were summarized upon retesting after three days. Coefficients of association (gammas) for the three scales were found to be: (a) positive scale, .83, (b) negative scale, .81, and (c) affect balance scale, .76. Validity data were generated by correlating change in affect level and avowed happiness yielding a correlation range of .45 to .51 (gamma coefficients) at two different points in time.

Semantic Differential Scale-My Baby. This semantic differential scale consisted of a series of 11 bipolar adjectives that could be used to describe a baby. The scale tapped the affective dimension of the mother-infant relationship. In completing this scale, each respondent first decided on

the adjective that best reflected her feelings about the newborn. Then she determined how strongly she felt by placing a check at the "very," "some," "slight," or "neutral" point beside the adjective. Scoring for each item ranged from 7 points for the "very strong" column of the positive adjective to 1 point for the "very strong" column of the negative adjective, with 4 points at neutral. The total scale score was computed by summing scores for the 11 items. Higher scores indicated a more positive evaluation of the infant.

Most of the adjective pairs in the tool were taken from Walker's Semantic Differential Scale-My Baby, a 6-item, 7-point semantic differential scale. Walker, Crain, and Thompson (1986) demonstrated internal consistency coefficients from .64 to .77 for these six items. The scale correlated negatively (r 's = $-.49$ to $-.60$) with mothers' perceptions of infant difficultness as measured on the Neonatal Perception Inventories Scale.

The work of other researchers also contributed to the semantic differential scale used in the study. In addition to items from Walker's scale, some of the items used in the study were taken from a semantic differential tool developed by Bidder, Crowe, and Gray (1974) for use with mothers of premature infants. Snider and Osgood (1969) completed much of the early

work on the semantic differential technique. They found a test-retest reliability of .85 in their study.

Life Satisfaction Scale. This single item scale dealt with life satisfaction. The respondent was asked to indicate on a 7-point scale, "How satisfied are you with your life as a whole these days?" from "very satisfied" (7 points) to "very dissatisfied" (1 point).

The scale was developed by Campbell, Converse, and Rodgers (1976) for use with a large national sample. Validity tests revealed a correlation of .50 between happiness and life satisfaction.

Close Person-Related Outcomes

These outcome measures considered the new mother's relationship with her significant other (her personal network member designated as closest and most important). Two tools were used: (a) the Close Person Conflict Scale, consisting of 14 items describing negative relationship behaviors and (b) the Close Person Relationship Satisfaction Scale, composed of 16 behaviors measuring closeness and satisfaction in a relationship. In response to items on both scales, subjects indicated whether they agreed or disagreed on a 5-point scale. Scoring for each item ranged from 5 points (strongly agree) to 1 point (strongly disagree). A mean score was calculated for each scale, with higher scores indicating greater conflict (Conflict Scale) or greater relationship

satisfaction (Close Person Relationship Satisfaction Scale).

The rationale for using both conflict and satisfaction scales was to increase sensitivity of measurement. With positive scales, a ceiling effect may exist, due to a general tendency for persons to report their relationships as positive. A conflict scale may have greater variability and would therefore be more likely to demonstrate the negative aspects of relationships.

Instrument development. Both tools were adapted from scales developed by Levitt in a pilot study with young mothers and maternal grandmothers. Levitt adapted items from Belsky's 1985 study of relationship change across the transition to parenthood, drawing upon his marital relationship scales. Items also had their origin in the 1976 study of American life by Campbell, Converse, and Rodgers. Levitt's pretesting on a sample of 40 women revealed internal consistency scores (Cronbach's alpha) of .93 on the Conflict Scale and .91 on the Relationship Satisfaction Scale.

Nurse-Related Outcomes

A third type of outcome measure was related to nurse relationship quality. Both positive and negative scales were used. The Nurse Relationship Satisfaction Scale was composed of 10 positive items and the Nurse Conflict

Scale consisted of 3 negative items. Both scales measured the mother's perception of her relationship with the nurse. Several of the items were identical to items used in the Close Person Conflict Scale and Close Person Relationship Satisfaction Scale. Other items had been developed by the researcher. Response patterns and scoring were identical to the two scales used for the close person. Subjects responded on a 5-point scale. Separate composite scores were computed for the negative and positive scales, with higher scores indicating either greater conflict or greater closeness in the relationship.

Demographic Data

Information was collected concerning the mother, her infant, and members of her household. Both medical and general data were collected. Women's responses to demographic questions have been described previously in this chapter in the section relating to sample.

Data Analysis

The purpose of data analysis was to describe demographic and social network characteristics of the sample, to examine scale items and calculate scale scores, to test hypotheses, and to search for intervening variables. The initial phase of data analysis was descriptive in nature. Frequency distributions on all of the data were obtained to check for coding errors and

distributional characteristics of the responses. These frequencies also allowed description of each demographic item. Reliabilities were calculated for the multiple-item scales to determine the appropriateness of each item and alpha reliability coefficients for each scale. Factor analysis of the Semantic Differential Scale-My Baby was also conducted. Based on these data, scores for all of the scales used in the study were calculated. These results are included in Chapter 4. The search for intervening variables involved comparison of demographic variables against the dependent and independent variables in the study.

Hypothesis Testing

The statistical methods used to test hypotheses in the study ranged from simple correlations to more complex multiple regression designs. Independent and dependent variables are enumerated in this section, as well as the specific statistical methods used to test each hypothesis. The search for intervening variables is described.

Hypothesis 1

The greater the fulfillment of relationship expectations for the close network member, the more positive personal outcomes and close person-related outcomes.

The independent variable for this hypothesis was the Expectations Fulfillment (Close Person) Scale. This scale described the degree to which expectations for the

close person had been fulfilled. The dependent variables included close person-related outcomes (Close Person Relationship Satisfaction and Close Person Conflict) as well as personal outcomes (Semantic Differential-My Baby, Life Satisfaction, and Bradburn Affect Scale). Pearson correlations between the variables were employed to test the hypothesis.

Hypothesis 2

The greater the fulfillment of relationship expectations for the nurse, the more positive personal outcomes and nurse-related outcomes.

This hypothesis utilized Expectations Fulfillment (Nurse) as the independent variable and focused on fulfillment of expectations for the nurse. The dependent variables included nurse-related outcomes (Nurse Relationship Satisfaction and Nurse Conflict) and personal outcomes (Semantic Differential-My Baby, Life Satisfaction, and Bradburn Affect Scale). As in the first hypothesis, Pearson correlations were the statistics used to test the hypothesis.

Hypothesis 3

The greater the social support from one close network member, the more positive personal outcomes and close person-related outcomes.

Close Person Support was the independent variable for this hypothesis. Dependent variables included close person related outcomes (Close Person Relationship Satisfaction and Close Person Conflict) and personal outcomes (Semantic

Differential-My Baby, Life Satisfaction, and Bradburn Affect Scale). The statistical technique used to test the hypothesis was Pearson correlations.

Hypothesis 4

The greater the social support from the nurse, the more positive personal outcomes and nurse-related outcomes.

Support from the nurse was the focus of this hypothesis. The independent variable was Nurse Support. Dependent variables included personal outcomes (Semantic Differential-My Baby, Life Satisfaction, and Bradburn Affect Scale) and nurse-related outcomes (Nurse Relationship Satisfaction and Nurse Conflict). Pearson correlations were used to test the hypothesis.

Hypothesis 5

Fulfillment of relationship expectations for the close person will have an independent effect on close person-related outcomes, over and above the effect of social support from the close person.

The effect of expectations fulfillment over and above the effects of social support was the focus of this hypothesis. The two independent variables were Close Support and Expectations Fulfillment (Close Person). Dependent variables included close person related outcomes (Close Person Relationship Satisfaction and Close Person Conflict).

Multiple regression was the statistical procedure used, with Close Support entered first in the equation

and Expectations Fulfillment (Close Person) entered second. The two outcomes were tested separately.

Hypothesis 6

Social support from one close network member will have a more powerful effect on personal outcomes and close person-related outcomes than will support from the overall network.

This hypothesis contrasted social support from the close person with support from other network members. The two independent variables were Network Support and Close Support. The dependent variables included close person-related outcomes (Close Person Relationship Satisfaction and Close Person Conflict) and personal outcomes (Semantic Differential-My Baby, Life Satisfaction, and Bradburn Affect Scale).

Multiple regression was the procedure used to test the hypothesis. Network Support was entered into the equation first, followed by Close Support.

Hypothesis 7

Social support from one close network member will have a more powerful effect on personal outcomes and close person-related outcomes in women with higher stress than in women with lower stress.

The buffering effect of close support on stress was examined in this hypothesis. Two different stress measures were utilized: (a) infant risk and (b) hassles intensity. Independent variables included the stress variable, Close Support, and the interaction between stress and support. Dependent variables were

close person-related outcomes (Close Person Relationship Satisfaction and Close Person Conflict) and personal outcomes (Semantic Differential-My Baby, Life Satisfaction, and Bradburn Affect Scale).

The statistical procedure used to test the hypothesis was multiple regression. The stress variable was entered into the equation first, followed by Close Support, and then the interaction variable.

Limitations

The major limitations of the study related to the one-time data collection and the use of a convenience sample. Other issues included the reliability of ranking infants according to risk criteria.

Testing of relationship expectations is most objectively done when data are collected at two points in time: (a) toward the end of pregnancy when expectations are developed, and (b) after the baby is born and there has been opportunity for expectations to be tested. This is very difficult with mothers of sick infants, however, because of the difficulty predicting neonatal outcomes. In this study, only the post-birth measurement was made. Therefore, only the subjective judgment of the mother was measured, rather than an objective comparison of pre- and post-birth data by the researcher. The importance of the woman's perception has been noted, however, (Lazarus & Folkman, 1984), and it is

possible that the post-birth measurement alone is adequate because of its emphasis on perception.

Various methods were used to recruit the convenience sample for the study. All women were volunteers, although the nature of their initial contact varied. The only women recruited directly by telephone (without written flyers) were mothers of infants in the largest neonatal intensive care unit. All other women were recruited by flyers, including all mothers of healthy infants and some NICU mothers. This limitation due to different recruitment methods was double-checked by comparing characteristics of women recruited by the two methods. The limitations imposed by a convenience sample limit generalization beyond the women in the sample.

The recruitment methods eliminated the most highly stressed new mothers and those with extremely sick infants. The voluntary nature of the study meant that women who were highly stressed often refused to participate. Even those who had signed the slip attached to the flyer and given permission to be telephoned gave stress at home as the primary reason for refusal to participate. Mothers of both healthy and sick infants dropped out for this reason. Elimination of mothers of unstable or dying infants was done to protect against added stress and to facilitate

cooperation with the clinical agencies. It is possible that staff in any of the clinical settings failed to recruit other women who were eligible for the study due to biases about who would make a "good subject."

The issue of reliability in ranking infants by risk groups is another limitation. The investigator did not have access to infants' medical records. Different liason nurses in the three major referral centers made most of these rankings, and other rankings were made by the researcher based on information from the mother. Although all liason nurses used the same criteria, it is possible that criteria were interpreted differently or that complications occurred after the infant had been ranked which could change the risk classification. To some extent, accuracy of ranking was double-checked by the interviewers during data collection, based on information from the mother.

CHAPTER IV

RESULTS

The results of the data analyses are presented in this section. First, reliability coefficients for each scale are presented as well as the results of factor analysis of the semantic differential scale. Second, the check for intervening variables is described. Third, a preliminary analysis of relationships between the major variables is made. Fourth, the results of hypothesis testing are presented.

Sample size varied according to social network or nurse support data. For the sections of the study dealing with the total network or the close person, all 83 subjects were included. For the sections dealing with the nurse, only 82 subjects were included. One woman was excluded because she selected a personal friend as her "closest" nurse, rather than a nurse who worked with her professionally.

Scale Evaluation

In the study, there were four categories of scales: (a) social support, (b) expectations fulfillment, (c) stress, and (d) outcomes. Discussion of the scales is organized by these categories.

Social Support

Three measurements were made of social support:

(a) network support, (b) close support, and (c) nurse support. The two measures for support from the network and close person utilized the same scale, Personal Network Support Functions. Support from the nurse was measured using the Nurse Support Functions Scale.

Personal Network Support Functions

This scale consisted of 10 support behaviors written to correspond to Kahn and Antonucci's (1980) three types of support: affective, affirmative, and direct aid. The alpha coefficient for the total network scale was .87, with item-total correlations ranging from .42 to .83. Additional data are presented in Table 3.

Changes were made in the close person measure. One item, "Are there people you would turn to for advice about your baby," was extremely weak in relation to other items (item-total correlation = $-.04$). Because this item seemed to be strongly related to role of the close person, further examination was done. On chi-square analysis, the subject's response to this item was found to be significantly related to role of the close person ($p < .001$). Women tended to list their mother as a source of advice about baby care, but did not select the item as a function of the husband or boyfriend. Because the item was so strongly related to role, rather than "closeness" of the significant other, this item was deleted from the close support measure for the purpose of hypothesis

Table 3
Description of Scales Used in the Study

Scale	# items	Range	<u>M</u>	<u>SD</u>	Alpha
<u>Social Support</u>					
Network	10	5-187	57.9	37.95	.87
Close	9	3-9	7.9	1.45	.64
Nurse	9	34-45	41.0	2.99	.65
<u>Expectations Fulfillment</u>					
Close Person	13	1.9-5.0	3.7	0.78	.86
Nurse	17	1.4-5.0	3.4	0.71	.82
<u>Stress</u>					
Hassles Frequency	50	8-46	27.5	9.20	--
Hassles Intensity	50	1-2.4	1.5	0.33	.93
<u>Personal Outcomes</u>					
Life Satisfaction	1	2-7	5.5	1.26	--
Bradburn Affect	10	2-10	6.9	2.10	.63
Baby Activity	6	2.8-7.0	5.5	1.01	.81
<u>Close Person-Related Outcomes</u>					
Rel. Satisfaction	16	2.6-5.0	4.4	0.47	.87
Conflict	14	1.1-4.7	2.6	0.71	.90
<u>Nurse-Related Outcomes</u>					
Rel. Satisfaction	10	3-5	4.0	0.42	.74
Conflict	2	1-4.5	2.2	0.77	.51

testing. When close support was recalculated with the remaining nine items, the internal consistency increased to .64 (alpha), with item-total correlations ranging from .17 to .44. Additional data are presented in Table 3.

Distribution of scores on the close support measure revealed a ceiling effect, with 48% of women selecting the top score. This effect attenuates the correlations between close support and other variables in the data analyses.

Nurse Support Functions

Many of the items included in the measure of nurse support were identical to items on the Personal Network Social Support Scale. Several items were rewritten or newly developed to reflect the support functions common to a nurse. Internal consistency for this scale was .65 (alpha) with item-total correlations ranging from .17 to .44.

Respondents scored the nine nurse support items on a scale of 1 (strongly disagree) to 5 (strongly agree). The item scores were summed to achieve scale scores. In Table 3, the range of scores is listed with other statistics relating to the scale.

Expectations Fulfillment

In addition to social support, the fulfillment of relationship expectations was a major predictor variable in the study. Expectations fulfillment was measured for

two persons in the study, the close person and the nurse.

Expectations Fulfillment (Close Person)

Internal consistency (alpha) for this scale was .86 (see Table 3). Item-total correlations ranged from .29 to .67. Individual items were scored on a scale of 1 (much less than expected) to 5 (much more than expected). Respondents also had the option of scoring items as 0, (not needed). Therefore, the scale score was calculated as a mean of all items needed. The minimum possible score was 1 and the maximum, 5. Higher scores on this scale indicated greater fulfillment of expectations by the close person. Because 3 was the neutral point, the mean score of 3.71 indicated that many expectations for the close person tended to be fulfilled in the study.

Expectations Fulfillment (Nurse)

Internal consistency (alpha) was .82 for this previously untested scale (see Table 3). Item-total correlations for the 17 items ranged from .34 to .57. Response options and scoring were identical to the close person fulfillment scale. Higher scores indicated greater fulfillment of expectations by the nurse. On the scale, a score of 3 stood for "about what was expected," and a score of 4 meant "somewhat more than expected." The mean scale score of 3.40 indicated that expectations for the nurse tended to be met, but not exceeded, as

perceived by the women in the study.

Stress

The 50-item Hassles Scale was examined for internal consistency. Based on severity ratings, the alpha coefficient was .93, with an item-total correlation range of .10 to .71. Two scores were calculated for the Hassles Scale. The frequency score was a sum of all the items selected by the subject. The intensity score was the sum of all the severity ratings for each item (1 = mild, 2 = moderate, 3 = extreme) divided by the frequency. Specific data for each score are presented in Table 3.

The hassles selected most commonly by study participants are listed in Table 4. Both the frequency of selection and the intensity ratings for the 25 most frequently selected hassles are included.

Outcomes

Personal outcomes included the Baby Scale, Life Satisfaction Scale, and Bradburn Affect Scale. Close person-related outcomes included the Close Person Relationship Satisfaction Scale and Close Person Conflict Scale. Nurse-related outcomes included the Nurse Relationship Satisfaction Scale and the Nurse Conflict Scale.

Table 4
Frequency of Selection and Average Intensity Ratings for the
25 Most Commonly Selected Hassles

Variable	Hassles	
	Frequency ^a	Intensity ^b
1. Not getting enough rest	77	1.63
2. Not getting enough sleep	75	1.71
3. Physical appearance	74	1.45
4. Not enough time to do the things you need to do	68	1.45
5. Troubling thoughts about your future	68	1.34
6. Concerns about owing money	67	1.48
7. Trouble relaxing	67	1.37
8. Home maintenance (inside)	66	1.40
9. Too many things to do	66	1.40
10. Concerns about weight	65	1.43
11. Not enough personal energy	64	1.33
12. Too many interruptions	63	1.22
13. Too many responsibilities	63	1.12
14. Financial security	60	1.17
15. Concerns about money for emergencies	59	1.33
16. Planning meals	58	0.98
17. Concerns about health in general	56	0.87
18. Not enough time for entertainment and recreation	55	1.07
19. Friends or relatives too far away	54	1.01
20. Overloaded with family responsibilities	53	0.95
21. Silly practical mistakes	53	0.83
22. Not seeing enough people	52	0.83
23. Trouble making decisions	50	0.92
24. Preparing meals	49	0.79
25. Misplacing or losing things	47	0.78

^a Frequency = number of women selecting item

^b Intensity = average intensity score for item

Personal Outcomes

My-Baby Scale. This semantic differential scale utilized 11 adjective pairs to describe the mother's attitudes and feelings about her baby. Since there were potentially different dimensions, a factor analysis was performed (Kerlinger, 1979). Alpha factoring with a varimax orthogonal rotation was the method used. Three dimensions or factors emerged from the analysis (see Table 5). Factor 1 was composed of six adjective pairs which were all related to activity of the infant. This activity factor accounted for 27.5% of the scale variance. Factor 2 included three items relating to the evaluative domain. An additional 13.3% of the variance came from this factor. Factor 3 represented the potency domain and included two pairs of adjectives. An additional 7.9% of the variance was accounted for by this factor.

Based on the factor analysis, the items dealing with activity level were reorganized into a new scale. The six factor 1 items became the Baby Activity Scale. This new scale achieved an alpha coefficient of .81. To determine scale scores, negative items were reversed, and a mean was calculated to compensate for occasional missing data. Scale data are included in Table 3.

Life Satisfaction. This scale consisted of one item, similar to the semantic differential technique, in which the woman was asked to respond along a 7-point scale from

"completely satisfied" (value = 7) to "completely dissatisfied" (value = 1) regarding life satisfaction. The average score of 5.47 indicated that most women in the study felt satisfied with their life situation.

Table 5
Factor Analysis of Semantic Differential Scale-My Baby

Scale Adjective Pairs	Factor 1 Activity	Factor 2 Eval.	Factor 3 Potency
Noisy --- Quiet	<u>.74246</u>	-.02856	-.25569
Tense --- Relaxed	<u>.72561</u>	.12137	-.02054
Dissatisfied --- Satisfied	<u>.61312</u>	-.26061	.11648
Belligerent --- Peaceful	<u>.60685</u>	-.02060	.12291
Calm --- Excitable	<u>.56426</u>	.26264	.13839
Difficult --- Easy	<u>.53925</u>	.34982	-.01410
Good --- Bad	.15983	<u>.72312</u>	.10252
Sweet --- Sour	.03403	<u>.64629</u>	.07440
Pleasant --- Unpleasant	.18690	<u>.57442</u>	.15928
Healthy --- Sick	.07802	.10067	<u>.91770</u>
Strong --- Weak	-.01054	.13879	<u>.52963</u>

Bradburn Affect Balance. The Affect Balance Scale was calculated by adding +5 to the affect positive score (based on 5 positive items) and subtracting the affect negative score (based on 5 negative items). This could result in a

scale with values ranging from 0 to +10. Range and mean scores are presented in Table 3. Internal consistency (alpha) for affect balance was .63, based on a reversal in coding of negative items.

Close Person-Related Outcomes

Both positive and negative scales were used to measure the subject's relationship with her closest support person: (a) Close Person Relationship Satisfaction and (b) Close Person Conflict. The scales were found to have high internal consistency, similar to the values achieved by Levitt in pilot testing. The positive scale, Close Person Relationship Satisfaction, received an alpha coefficient of .87. Item-total correlations ranged from .22 to .76. The negative scale, Close Person Conflict, had an alpha coefficient of .90. Item-total correlations ranged from .40 to .78.

Scores for each scale were calculated as mean scores to compensate for occasional missing values (see Table 3). The widest possible range of scores was from 1 (strongly disagree) to 5 (strongly agree). The Close Person Conflict Scale tended to have a wider distribution of scores than on the positive scale, in which ranking of items tended to be high.

Nurse-Related Outcomes

Both positive and negative scales were used to measure the new mother's relationship with one nurse: (a) Nurse

Relationship Satisfaction and (b) Nurse Conflict. The 10-item Nurse Relationship Satisfaction Scale had an internal consistency of .74 (alpha coefficient). Item-total correlations ranged from .22 to .56 (see Table 3).

The negative scale, Nurse Conflict, was originally composed of three items. One item, "My nurse and I were no closer than most in a nurse client relationship," had an item-total correlation of .17. This item was deleted because of the low reliability and because of comments made by subjects during data collection. One woman's comment summarized the reactions of several participants to the item: "I'm checking 'agree' on the question, not because the nurse and I had a poor relationship, but because the nurses seemed to have a close relationship with all the mothers on the unit." When the scale was reorganized with two items, reliability (alpha) improved to .51 (see Table 3). Item-total correlations for each of the two remaining items were .34. Unfortunately, the small size of this scale limited its effectiveness.

Scores for each scale were calculated as mean scores to compensate for occasional missing values. As in the close person relationship scales, scores could range from 1 (strongly disagree) to 5 (strongly agree).

Summary

Evaluation of scales, as listed in Table 3, revealed that seven scales achieved an internal consistency alpha of

.81 or greater, which is advantageous for hypothesis testing. Other scales had lower reliabilities, including the Bradburn Affect Scale, social support scales for the close person and the nurse, Nurse Relationship Satisfaction, and Nurse Conflict. The latter scale, Nurse Conflict, was composed of only two items, which probably accounts for its limitations. These scales were less consistent in the measurement of intended variables.

The only scale with a ceiling effect was the Close Person Support Scale. Such an effect attenuates the correlations with other variables in the hypothesis testing; that is, correlations may be an underestimation of the effect of close support.

Intervening Variables

Since intervening variables might be present and confound the relationships between independent and dependent variables in hypothesis testing, demographic variables were inspected for their effect on social support, expectations fulfillment, stress, and outcomes. Statistical tests included analysis of variance, t-tests, and chi-square, according to the nature of the data to be analyzed.

Social Support

Close support was correlated significantly with number of children living at home (see Table 6). Mothers with more children at home perceived that less support

was provided by the close person. The education of the mother was also related to close support. Mothers with more education perceived significantly greater close support. The relationship between close support and income was also found to be significant, although data on income were only available for 65 subjects. Women who reported higher household incomes perceived close support to be greater. Number of children at home was found to be significantly related to network support (Table 6), with more children associated with greater network support.

Only one demographic variable was related to support from the nurse. Women who had returned to work or planned to do so in the future, perceived less support from the nurse, $F(2, 70) = 3.72, p = .029$.

Expectations Fulfillment

For the 65 women from whom income data were collected, there was a negative correlation between expectations fulfillment and level of income. Women with higher household incomes perceived lower fulfillment of expectations. Education of the husband was also negatively related; women whose husbands had more education perceived less expectations fulfillment. These correlations are listed in Table 6.

The older mother perceived less fulfillment of nurse expectations, as did the more educated mother. Income was

also negatively correlated, with higher income mothers perceiving lower expectations fulfillment. The mother's type of delivery, cesarean or vaginal, also influenced nurse expectations. Women with cesarean deliveries experienced less fulfillment of their expectations for the nurse, $t(80) = -3.39$, $p = .001$, than women with vaginal deliveries.

Table 6
Pearson Correlations between Demographic Variables and Primary Variables

Demographic Variable /	Scale: Net	Soc.Support Close Nurse		Exp.Ful. Close Nurse		Hassles Freq Int	
Age	.02	.12	.10	-.11	-.26*	.10	.13
Education	.08	.22*	-.12	-.12	-.30*	.12	.05
No. Children	.22*	.24*	.09	-.13	.08	-.01	.00
Income	-.10	.22*	-.07	-.24*	-.26*	-.24*	-.09
Husb. Educ.	-.08	.17	.10	-.20*	-.24*	-.07	-.11
Network size	.85**	.05	.15	-.07	.11	.22*	.12

* $p < .05$

** $p < .01$

Stress

Infant Risk

Mothers of sick infants were compared with mothers of well infants. Out of the numerous demographic variables, only one, mother's education, was found to be significantly different in the risk groups, $t(81) = -2.84$, $p = .006$. Mothers of well infants had a mean education level of 14.5 years, while mothers of sick infants had a slightly lower

level of education (mean = 13.1 years).

Mothers of medium risk infants reported less network support than mothers of high risk or low risk infants, $F(2, 80) = 3.116$, $p = .050$. Mean number of support functions provided for each risk group was as follows: High, 67.0; Medium, 43.4; and Low, 63.7 functions.

Infant risk was significantly related to nurse relationship satisfaction. When analyzed for infant risk, mothers of well infants (Low Risk) were found to have higher satisfaction in their relationship with the nurse than mothers of sick infants, $t(80) = -2.41$, $p = .018$.

Hassles

Hassles were related to the number of persons in the total network. The relationship was a positive one; the larger the network, the greater hassles frequency scores (see Table 6). Women who had undergone cesarean delivery had greater hassles intensity scores, $t(81) = -2.38$, $p = .019$. Mothers of hospitalized infants had higher intensity scores, $t(81) = 2.26$, $p .027$, with a mean of 1.66 for mothers of hospitalized infants and 1.47 for mothers of infants at home.

Life Events

One question in the study related to changes in life events. Women were asked, "In addition to having a baby, has there been a change in your life during the past few weeks that affected how you answered this survey?" Data

were available from 73 women. No life events changes were noted for 56 of the women. One life events change was noted by 15 women and two changes by 2 women. Examples of responses included, "My mother has come to stay with me," "My husband just lost his job," and "I've had to return to work because we need the money." The weakness of this measure was the difference in interpretation by different subjects. What was considered a life events change by one woman was not interpreted that way by another. Utilizing one way analysis of variance, no significant differences were found between women with 0, 1, or 2 life events, on hassles frequency scores. However, differences in hassles intensity were significant, $F(2, 70) = 3.919$, $p = .024$. Women who noted one or two life events changes had higher hassles intensity scores than women with no life changes.

Outcomes

Infant age was the only variable significantly related to any of the personal outcomes scales. Women with older infants ranked their babies more negatively on the Baby Activity Scale (see Table 7).

Women with higher household incomes had lower close person conflict scores (Table 7). Number of children living at home was positively correlated with higher close person conflict, whereas, multiparas had higher close person conflict than primiparas, $t(81) = -2.61$, $p = .011$. Also, women with fewer children noted more nurse-related conflict.

Table 7
Pearson Correlations between Demographic Variables and Outcome Variables

Demographic Variable	/Scale:Life	Personal Affect	Baby	Close Person RelSat	Person Confl	Nurse RelSat	Confl
Age	-.15	.09	-.02	-.15	.11	.10	-.10
Education	-.11	-.08	.02	.11	-.10	-.03	-.03
No. Children	-.11	.04	.08	-.11	.32**	.02	-.22*
Income	.03	-.04	-.12	.15	-.24*	.03	-.07
Husb. Educ.	-.04	.10	.07	.15	-.09	.25*	-.19
Infant Age	-.12	.00	-.24*	.00	.10	-.02	-.17

*p <.05

**p <.01

Summary

Evaluation of the relationships between demographic variables and other variables in the study revealed scattered intercorrelations, as presented in Tables 6 and 7. The income variable was related to several scales, but this variable had several limitations. Income data were not available on all subjects, and it was usually a subjective guess rather than an objective measurement. Close support was related to several demographic variables, but no trend was found in these correlations. Number of children was significantly related to close person support and close person conflict, but not to expectations fulfillment for the close person. Women's education was also related to close support and to nurse expectations fulfillment, but these are

two unrelated scales.

The only demographic variable demonstrating any kind of trend was number of children, which was related to two close person variables. Therefore, this variable was controlled in the multiple regression analysis relating to the close person.

Preliminary Analyses of Primary Variables

Preliminary analyses of the interrelationships between the variables of social support, expectations fulfillment, and stress were conducted to check for multicollinearity. Additionally, the relationships between the stress measures and study outcomes were examined.

Relationships between Independent Variables

The purpose of this analysis was to check for multicollinearity among variables. An assumption of multiple regression analysis is the relative independence of variables (Cohen & Cohen, 1983). Variables which are highly correlated are not appropriate for use in the same regression equation, due to the high overlap of variance. High correlations between variables would be an indication of multicollinearity.

Correlations between the primary variables are presented in Table 8. The only correlations which are high enough to be of any concern are those between nurse social support and nurse expectations fulfillment and

between the two hassles measures.

Table 8
Correlation Matrix of Primary Variables in the Study:
Social Support, Expectations Fulfillment, and Hassles

Variable	network so.sup.	close so.sup.	nurse so.sup.	close exp.	nurse exp.	hassle freq.	hassle inten.
network so.sup.	--	.20*	.22*	.00	.05	.16	.15
close so.sup.		--	.04	.26*	-.14	-.21*	-.26**
nurse so.sup.			--	.01	.43**	-.06	-.03
close exp.				--	.23*	-.18*	-.18*
nurse exp.					--	.09	.10
hassle freq.						--	-.49**
hassle inten.							--

** $p < .01$

* $p < .05$

The first relationship between the two nurse measures indicates greater than desirable overlap, but it does not confound the hypothesis testing because the two measures are included in two separate hypotheses. The high overlap between the hassles measures is to be expected, since these are two scores from the same Hassles Scale. Low intercorrelations for the remaining variables indicate that there was no problem with multicollinearity in the study.

Relationship between Stress and Outcomes

The hassles measures were significantly related to two types of outcome criteria, personal outcomes and close person-related outcomes (see Table 9). Specifically, these relationships were between hassles and the three personal outcomes (Life Satisfaction, Affect Balance, and Baby Activity) and hassles and the two close person-related outcomes (Relationship Satisfaction and Conflict).

Levitt proposed that relationship expectations were more likely to be tested during periods of stress or transition, such as childbirth. An assessment was made of the level of stress in study participants. Out of the total 50 items, the average number of hassles identified by participants was 27.5, and the average intensity rating was 1.52. Comparative data on women in this age group were not available. However, normative data were available on a middle-aged sample studied by Kanner, Coyne, Schaefer, and Lazarus (1981). They found that the average frequency of hassles for women in their sample was 18.9, based upon administration of the complete 117-item Hassles Scale. This value was considerably less than the frequency reported by new mothers in the study (27.5 items). A comparison of intensity scores revealed little difference-- 1.49 for middle-aged women and 1.52 for new mothers. These comparative data support the presence of a test situation in the study; that is, childbirth is a stress period during

which expectations in close relationships are likely to be tested.

Table 9
Pearson Correlations between Outcomes Scales and Primary Variables

Variable/Scale	Social Support Net Close Nurse			Exp Fulfill Close Nurse		Hassles Freq Inten	
<hr/>							
<u>Personal Outcomes</u>							
Life Satisfaction	.06	.31**	.04	.21*	.03	-.37**	-.36**
Affect Balance	-.06	.27**	.06	.40**	-.01	-.47**	-.52**
Baby Activity	.02	.13	.12	.04	.11	-.30**	-.24*
<u>Close Person-Related</u>							
Rel Satisfaction	.18	.54**	.11	.33**	-.01	-.38**	-.27**
Conflict	-.10	-.39**	-.14	-.16	.22*	.33**	.28**
<u>Nurse-Related</u>							
Rel Satisfaction	-.11	-.12	.40**	.21*	.40**	-.13	-.07
Conflict	-.33**	-.04	-.42**	.16	-.11	-.06	-.01
<hr/>							

** $p < .01$

* $p < .05$

Hypothesis Testing

The statistical methods used to test hypotheses in the study ranged from Pearson correlations to hierarchical multiple regression. All of the seven hypotheses were supported to some degree, as a result of the data analyses.

For the purpose of testing hypotheses 5, 6, and 7, values for close person support were recoded to decrease the skew. Values of 3, 4, 5, and 6 were recoded into one category with a frequency of 13. Values of 7, 8, and 9 were left unchanged.

Hypothesis 1

The greater the fulfillment of relationship expectations for the close network member, the more positive personal outcomes and close person-related outcomes.

Pearson correlations were calculated. The effect of expectations fulfillment on personal outcomes was supported, with two out of three outcomes significant. The hypothesis was only partially supported for close person-related outcomes, although the conflict score approached significance. Findings were in the direction suggested by the hypothesis: as fulfillment of close person expectations increased, outcome scores increased. These correlations are presented in Table 9. The data analyses provided partial support for hypothesis 1, as evidenced by significant correlations for two of the personal outcomes (Life Satisfaction and Affect) and one of the close person-related outcomes (Close Relationship Satisfaction).

Hypothesis 2

The greater the fulfillment of relationship expectations for the nurse, the more positive personal outcomes and nurse-related outcomes.

Using Pearson Correlations the hypothesis was tested. There were no significant relationships with the personal outcomes. One of the two nurse-related outcomes was significantly related (see Table 9). The hypothesis was not supported for personal outcomes, but was partially supported for nurse-related outcomes.

Hypothesis 3

The greater the social support from one close network member, the more positive personal outcomes and close person-related outcomes.

Four out of the five outcome measures were significantly related to the independent variable by Pearson correlation (see Table 9). The greater the social support from the close person, the greater the Close Person Relationship Satisfaction score, the smaller the Close Person Conflict score, the greater the Life Satisfaction, and the more positive Affect Balance. The hypothesis was supported for both personal and close person-related outcomes.

Hypothesis 4

The greater the social support from the nurse, the more positive personal outcomes and nurse-related outcomes.

Pearson Correlations were calculated and two of the five outcome measures were significantly related to nurse support (Table 9). The hypothesis was supported for nurse-related outcomes but not for personal outcomes.

Hypothesis 5

Fulfillment of relationship expectations for the close person will have an independent effect on close person-related outcomes, over and above the effect of social support from the close person.

The statistical method used to analyze the hypothesis was hierarchical multiple regression. A separate regression equation was calculated for each dependent variable (Close Person Relationship

Satisfaction and Close Person Conflict).

Results of the evaluation of assumptions led to transformation of the Close Support variable to reduce skewness in its distribution. Close Support was recoded, with values of 3, 4, 5, and 6 becoming one category and other values remaining the same.

The recoded Close Support variable entered the equation first in the hierarchical model. The second independent variable, Expectations Fulfillment (Close Person) entered the equation second. This order allowed the researcher to determine the effect of expectations fulfillment on each outcome variable over and above the effect of close social support.

The hypothesis was partially supported, with one out of the two dependent variables being significantly influenced by the independent variables. A significant F change score was achieved for Close Person Relationship Satisfaction. For this criterion, fulfillment of relationship expectations had an effect on the outcome score over and above the effect of Close Support. Results of the regression analyses are presented in Table 10.

To control for two possible intervening variables, mother's education and number of children, a second form of the hierarchical regression was calculated. Mother's education and number of children were entered into the

regression equation first, followed by Close Support and Close Expectations Fulfillment, respectively. Each of these possible intervening variables was nonsignificant as a predictor of Close Person Relationship Satisfaction. The effect of Close Expectations Fulfillment on Close Person Relationship Satisfaction remained significant despite the entrance of the two additional variables.

Table 10
Hierarchical Regression Analyses of Close Support and Expectations Fulfillment (Close Person) on Outcome Measures

Variable	beta	Mult.R	R ² change	F change
<u>Close Person Relationship Satisfaction</u>				
Close Support	.45	.45	.20	20.87**
Relationship Fulfillment (Close Person)	.40	.51	.06	6.54*
Overall Regression: $F(2, 80) = 14.42^{**}$				

Note: Only significant regressions are included.

** $p < .01$

* $p < .05$

Hypothesis 6

Social support from one close network member will have a more powerful effect on personal outcomes and close person-related outcomes than will support from the overall network.

This hypothesis tested the importance of close support to the new mother, and attempted to answer the question, "Is close support more important than overall network support?" As in hypothesis 5, a hierarchical multiple regression

analysis was used to test the hypothesis.

Network Support was entered into the equation first, followed by Close Support. The hypothesis was supported, as regression variables for four of the five outcome measures were found to be significant (see Table 11). These outcomes included both personal and close person-related categories. The F change values for Close Support were significant for these four variables, indicating that Close Support contributed to the prediction of these outcome criteria above and beyond total network support.

To test for the possible intervening variable, number of children living at home, this variable was entered into the regression equation. Number of children was entered first, followed by Network Support, and then Close Support. No important differences were found in the significance levels for Close Support and its contribution to prediction of outcomes. Therefore, number of children was ruled out as an intervening variable.

Hypothesis 7

Social support from one close network member will have a more powerful effect on personal outcomes and close person-related outcomes in women with higher stress than in women with lower stress.

The buffering effect of close support on stress was tested in this hypothesis. The hierarchical regression analysis involved an interaction variable composed of stress and support in addition to the two independent variables, close support and stress.

Table 11
Hierarchical Regression Analyses of Network Support and
 Close Support on Outcome Measures

Variable	beta	Mult.R	R ² change	F change
<u>Close Person Relationship Satisfaction</u>				
Network Support	.18	.18	.03	2.58
Close Support	.44	.46	.18	18.05**
Overall Regression: $F(2, 80) = 10.59^{**}$				
<u>Close Person Conflict</u>				
Network Support	-.10	.10	.01	.84
Close Support	-.02	.34	.10	9.46**
Overall Regression: $F(2, 80) = 5.20^{**}$				
<u>Life Satisfaction</u>				
Network Support	.06	.06	.00	.33
Close Support	.31	.31	.09	7.98**
Overall Regression: $F(2, 80) = 4.16^{*}$				
<u>Affect Balance</u>				
Network Support	-.06	.06	.00	.28
Close Support	.24	.24	.06	4.75*
Overall Regression: $F(2, 80) = 2.52$				

Note: Only significant regressions are included.

** $p < .01$

* $p < .05$

The stress variable was entered into the equation first, followed by Close Support, and then the interaction variable. Two stress variables were used and the analysis was repeated for each: Hassles Intensity and Infant Risk. With Hassles Intensity as the stress measure, the hypothesis was supported for close person-related outcomes but not personal outcomes (Table 12).

Table 12

Hierarchical Regression Analyses of Hassles Intensity, Close Support, and the Interaction between Hassles and Support, on Outcome Measures

Variable	beta	Mult.R	R ² change	F change
<u>Close Person Relationship Satisfaction</u>				
Hassles Intensity	-.27	.27	.07	6.14*
Close Support	.41	.48	.16	17.14**
Interaction	.20	.52	.04	4.04*
Overall Regression: $F(2, 80) = 9.82^{**}$				
<u>Close Person Conflict</u>				
Hassles Intensity	.28	.28	.08	6.88**
Close Support	-.29	.40	.08	7.72**
Interaction	-.31	.50	.09	9.42**
Overall Regression: $F(2, 80) = 8.73^{**}$				

Note: Only significant regressions are included.

** $p < .01$

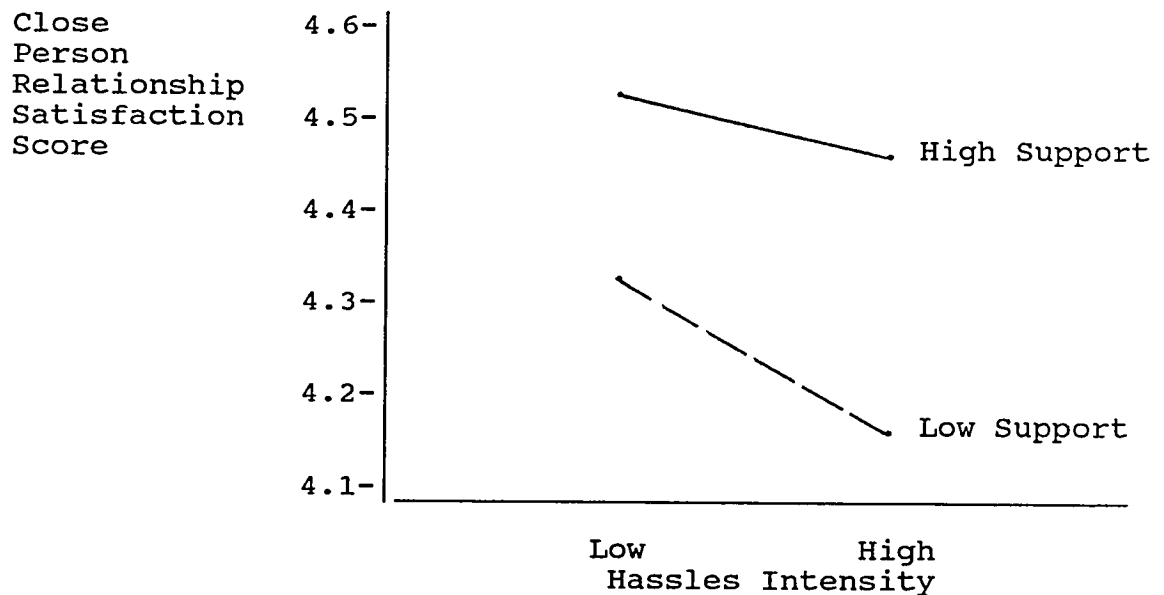
* $p < .05$

The interaction was in the predicted direction, as indicated in Figures 4 and 5. For the first outcome, Close

Person Relationship Satisfaction, the outcome score was more strongly influenced by Close Support in the women with higher Hassles Intensity. Under conditions of low stress (lower Hassles Intensity), Close Support had a positive effect on outcome scores, but the effect was not as great.

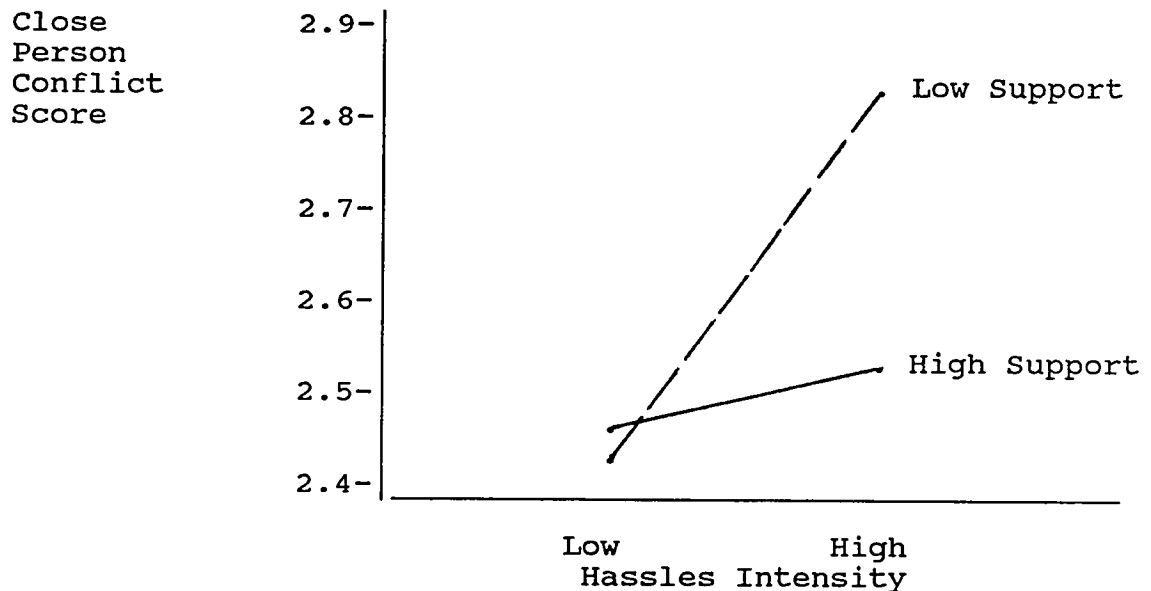
Figure 4

Close Person Relationship Satisfaction Scores For High and Low Close Support and High and Low Hassles Intensity



For the second outcome, Close Person Conflict, the interaction effect was stronger. Women with low Hassles Intensity changed little in regard to conflict scores under varying conditions of support. But the women with high Hassles Intensity had higher conflict scores under low support and greatly reduced conflict scores under conditions of high support.

Figure 5
Close Person Conflict Scores For High and Low Close Support
and High and Low Hassles Intensity



A second stress measure that was utilized to test the hypothesis was Infant Risk Group. Women whose infants had been sick after birth were assumed to be under greater stress than women with healthy infants.

A significant F change was found for the interaction variable in regard to one outcome, Baby Activity. The statistics for the regression equation are presented in Table 13. Under conditions of low infant risk (Group 3 infants) Close Support seemed to make a substantial difference in Baby Activity Scores. Under conditions of high infant risk (Group 1 infants), support did not seem to have an effect. Mothers with low support tended to rank

their infants lower, or more negatively, on the scale.

Table 13

Hierarchical Regression Analyses of Infant Risk, Close Support, and the Interaction between Risk and Support, on Baby Activity

Variable	beta	Mult.R	R ² change	F change
<u>Baby Activity</u>				
Infant Risk	.14	.14	.02	1.71
Close Support	.10	.18	.01	.85
Interaction	.28	.33	.08	6.90**
Overall Regression: $F(2, 80) = 3.22^*$				

Note: Only significant regressions are included.

** $p < .01$

* $p < .05$

Additional Findings

One of the most interesting findings in the study was the lack of significance in the relationship between infant risk group and the hassles measures. Neither Hassles Frequency or Hassles Intensity was found to be significantly related to Infant Risk. Although differences in cell means were not significant, trends in the data were in the expected direction, with mothers of sicker infants demonstrating higher hassles scores. As previously mentioned, the variable that related significantly to hassles intensity was location of the infant, hospital or home, with the 18 mothers whose infants were hospitalized experiencing greater hassles intensity than the mothers of

the 65 infants who were home.

Summary of Results

Possible intervening variables were ruled out prior to hypothesis testing. Support or partial support for each of the seven hypotheses was confirmed by the data analyses. Two of the personal outcomes (Life Satisfaction and Affect Balance) were significantly related to Close Support and Close Expectations Fulfillment in three of the four possible hypotheses (hypotheses 1, 3, and 5). Close person-related outcomes were also influenced by Close Support and Close Expectations Fulfillment. Close Person Relationship Satisfaction was significantly related to the independent variables in all of the hypotheses (1, 3, 5, 6, and 7). Close Person Conflict was significantly related to the independent variables in three of the five hypotheses (3, 6, and 7). These significant relationships provide support for Levitt's model.

The Baby Activity Scale behaved differently from the other two personal outcome measures, and was not significantly related to any of the support or expectations fulfillment variables. The Baby Scale did not measure the construct of "mother's attitudes toward the baby" as was originally intended.

Analyses of the data regarding the nurse were consistent with Levitt's model but did not provide the level of support that close person variables did. Nurse

Relationship Satisfaction was significantly related to both of the independent variables, Nurse Support and Nurse Expectations Fulfillment, (hypotheses 2 and 4) while Nurse Conflict was significantly related only to Nurse Support (hypothesis 4).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The chapter begins with a summary of the study's purpose, theoretical orientation, literature reviewed, methodology employed and major findings. Major themes which emerge from the study findings are discussed. Following this, conclusions of the study are specified. The significance of the study to nursing and health care for new mothers is analyzed, and recommendations for future research are proposed.

Summary

The purpose of the study was to investigate if social support and fulfillment of relationship expectations were related to personal outcomes and quality of relationships for mothers of sick and well newborns. Emphasis was placed on two support figures: the person identified by the mother as the closest or most important in her network, and one nurse, perceived by the mother as closest or most important in that role.

The theoretical orientation for the study was Levitt's Model of Close Relationships (in press) which focuses on the establishment and maintenance of relationship expectations within close relationships. The domain of the model is the social network, or the support convoy described by Kahn and Antonucci (1980).

Close relationships were defined as those relationships between the individual and persons who are the most important support givers or receivers. Expectations within close relationships are influenced by (a) personal factors, (b) environmental factors, and (c) past interactions between relationship partners.

Relationship expectations may be tested or remain untested. When expectations remain untested, there is relationship stability. In situations where testing takes place, such as the transition period of childbirth, outcomes may vary. When positive relationship expectations are violated, relationship change may result in a negative direction. When positive relationship expectations are exceeded, relationship change may result in a positive direction.

The review of literature included studies that related to Levitt's model and the transition to motherhood. To develop her model, Levitt drew upon theories of attachment and social support models. Stress and social support in the transition to motherhood, other variables influencing maternal outcomes, and relationship expectations in new mothers were also reviewed.

Two models of infant attachment were addressed: the epigenetic position (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969) and opposing models (Cairns, 1977; Gewirtz, 1972; Lewis, 1982). Research in infancy

provided some support for both viewpoints. The epigenetic position, which emphasized the importance of the early mother-child relationship for later development, was more often supported in stable environments that were culturally compatible with monotropy. Opposing models emphasized the importance of the infant in stimulating maternal behaviors and the plasticity of the child in adapting to different environmental and cultural settings. The issue of attachment as a trait versus a state accounted for the major difference in the two models. The epigenetic model viewed attachment primarily as a trait of the mother and baby. More current research supported the concept of state; that is, attachment as a quality of the relationship, rather than the qualities of a particular infant or caretaker.

Major proponents of the life span approach to attachment were Antonucci (1985) and Levitt (in press). These authors proposed that the study of adult development provides overwhelming evidence that many close relationships are continuations of attachment relationships from infancy and childhood. Drawing upon the work of researchers on close relationships in adulthood (Berscheid & Peplau, 1983; Kelley et al., 1983; Sternberg & Grajek, 1984), Levitt suggested that the goal of close relationships is the mutual fostering of

personal growth. These close relationships are the attachment relationships of the adult. In some form, particular attachment relationships, as between parents and children, may persist throughout life.

Definitions and dimensions of social support were approached primarily from the point of view of Kahn's and Antonucci's (1980) Convoy Model of Social Support. These authors defined social support as the interpersonal transactions that provide affective elements, affirmative elements, and/or direct aid. Kahn and Antonucci linked the concepts of attachment and social support in their life span model. The central proposition of the model is that social support is important to individual well-being throughout the life course.

The convoy model proposed by Kahn and Antonucci (1980) provides the structure for the interpersonal processes described by Levitt. While the convoy model outlined the structural characteristics of the social network, Levitt's model (in press) described processes involving interpersonal expectations that take place within the network. Levitt proposed that changes in network composition are influenced by the outcomes derived from testing of relationship expectations.

Levitt (in press) spoke of normative transitional points in relationships, such as birth of a child. Such points serve as test situations when relationship

expectations are likely to be tested. The literature supported the transition to motherhood as a time of stress or crisis (Miller & Sollie, 1980; Wandersman, Wandersman, & Kahn, 1980). Assessment of hassles and concerns revealed several themes relating to self, family, and the baby (Hiser, 1987; Mercer, 1985; Moss, 1981).

Comparison studies of parents of sick and well newborns indicated that families of sick infants tend to be under greater stress and may have altered behavioral responses (Blumberg, 1980; Cain, Kelly, & Shannon, 1980; Choi, 1983; Harper, Concepcion, Sokal, & Sokal, 1976). Some studies, however, failed to uncover greater stress in parents of sick infants (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Smith et al., 1969; Waisbren, 1980)

Social support was postulated to play an important role in moderating the stresses of this period. The importance of intimate support, or close support, was supported in numerous studies (Crnic et al., 1983; Levitt, Weber, & Clark, 1986; Price, 1977; Tietjen & Bradley, 1985). In addition, evidence was found for intimate support as a buffer against stress in new mothers (Crnic et al., 1983).

In addition to the buffering hypothesis, cited above, social support was postulated to have a direct

effect on outcomes. Cutrona (1984), Cronenwett (1985), and Waisbren (1980) provided evidence for main effects.

Negative effects of social support were primarily related to support from the overall network. Tietjen and Bradley (1985) noted that the mother's perception of a poor marital relationship was associated with seeing one's network members more frequently. Other types of negative effects were cited by Barrera and Balls (1983) and Weinraub and Wolf (1983).

Additional variables that were tested in relation to maternal outcomes included maternal attitudes, age, parity, and nursing actions. A significant gap was found in the literature regarding the effect of routine nursing care on maternal outcomes. Only two of the reviewed studies (Consolvo, 1986; Harrison & Twardosz, 1986) measured the effect of routine nursing care, including supervision of parent care and teaching of parents. Few significant differences were found in parent outcomes and parent-infant interaction as a result of nursing interventions.

Maternal variables, such as age, parity, and attitudes, were found to have some effects. Walker, Crain, and Thompson (1986a) found that older mothers exhibited more sensitive behaviors during feedings. Mercer (1985) determined that older mothers experienced lower levels of gratification. Regarding parity, results

were mixed, with one study demonstrating greater sensitivity to infant tenderness needs by primiparas (Blank, 1985) and a second study finding more positive attitudes and confidence in multiparas (Walker, 1986a). Positive maternal attitudes were repeatedly associated with more positive outcomes (Blumberg, 1980; Ventura, 1986; Walker et al., 1986b; Young, 1986).

Several studies provided evidence for relationship change during this transition period (Belsky, Spanier, & Rovine, 1983; Fischer, 1981; Kach & McGhee, 1982; Levitt et al., 1986). Belsky (1985) studied parents' expectations about the impact of the new baby on their relationship. For both parents, reports of actual experiences postpartum were significantly different from prenatal expectations. The more that positive prenatal expectations were violated, the more marital satisfaction declined and conflict increased. Wives whose expectations were violated engaged in fewer maintenance behaviors.

The study design consisted of a one time data collection in which both interview and questionnaire techniques were used. The primary investigator and one assistant collected the data. The study had been reviewed by the Indiana University-Purdue University at Indianapolis Institutional Review Board.

Home interviews took place between two and five

weeks after birth of the infant. The 83 women who participated in the study were 18 years of age or older. Of the total, 36 were mothers of well newborns and 47 were mothers of infants who had been hospitalized after birth in a neonatal intensive care unit. Women were recruited from the private practices of two obstetricians and three pediatricians, as well as from neonatologists in charge of two large neonatal intensive care units. Both flyers and telephone contact were the techniques used in recruitment.

Infants were classified into three risk groups: (a) high risk, (b) medium risk, and (c) low risk. Hospital nursing staff classified infants according to the risk criteria included in Appendix B. Mothers of infants in the three risk groups were compared as to differences in personal characteristics, and only one variable, level of education, was found to be significantly different.

During the home interview, each participant was asked to list the person "closest or most important" to her. The husband was listed by 57 women and the woman's mother by 19. The participant was also asked to list one nurse who had been close and important to her around the time the baby was born. Relationships with these two individuals (the close person and the nurse) became the focus of the questions on social support and expectations fulfillment.

Three types of predictive measurements were made in the study: (a) social support, (b) expectations fulfillment, and (c) stress. These measurements were the independent variables in the study. Three types of outcome measurements were made: (a) personal outcomes (life satisfaction, affect balance, and perceptions about the baby), (b) close person-related outcomes (relationship satisfaction and conflict), and (c) nurse-related outcomes (relationship satisfaction and conflict). These outcomes were the dependent variables. Demographic variables were also measured. The specific tools are included in Appendix F, as they were presented in the interview guide/questionnaire.

Based upon hypothesis testing in the study, the following summary of findings was suggested:

1. Women with greater fulfillment of relationship expectations for the close person had more positive relationship satisfaction with the close person, as well as greater life satisfaction and positive affect (hypothesis 1).
2. Women with greater fulfillment of relationship expectations for the nurse had more positive relationship satisfaction with the nurse (hypothesis 2).
3. Greater social support from the close person was correlated with more positive relationship satisfaction, life satisfaction, and affect, and with less close person

conflict (hypothesis 3).

4. Greater support from the nurse was correlated with greater relationship satisfaction and less conflict with the nurse (hypothesis 4).

5. Fulfillment of relationship expectations for the close person had an independent effect, over and above the effect of close support, on close person relationship satisfaction (hypothesis 5).

6. Social support from the close person had an independent effect, over and above the effect of network support, on four outcomes in the new mother: close person relationship satisfaction, close person conflict, life satisfaction, and affect balance (hypothesis 6).

7. Support from the close person had a greater effect on two outcomes (relationship satisfaction and conflict) in the new mother with greater hassles intensity, than in the new mother with lower hassles intensity (hypothesis 7).

Discussion

Two topics are examined in the discussion section. First, study methods are evaluated as to strengths and weaknesses. Three scales which need additional development are discussed. Second, major findings in the study are highlighted and evaluated as they relate to Levitt's model and findings of previous research.

Evaluation of Methods

Recruitment of subjects, the interview method, time and place of data collection, and interrater reliability are issues examined in this section. Additionally, three scales are examined. Recruitment of participants for the study was successfully accomplished by both flyers and telephone contact. This success was due in part to the supportiveness of the agencies involved, and the interest of nursing staff in these settings.

The personal interview approach was an appropriate method of data collection. The early postpartum period is a time when the new mother has difficulty leaving home, especially when the infant is at home also. It was probably easier to have the researcher travel to the woman's home than to have a secondary meeting place. For the woman whose infant was hospitalized, the hospital was often the most convenient location. Researchers need to be flexible and adaptive in meeting the needs of new mothers early in the postpartum period.

The one-time data collection may have limited the measurement of expectations fulfillment. Some of the studies cited in the literature measured expectations for parenthood during pregnancy and then followed up postpartum as to whether expectations had been met (Belsky, 1985; Cronenwett, 1985; Cutrona, 1984). This method probably allows for more objective measurement of

expectations fulfillment, but is difficult to use with mothers of sick infants. These mothers may be less available, either because they deliver early or because of limitations imposed if they are high risk. Primarily, it is difficult to get a prospective sample because of the inability to predict beforehand which babies will be sick.

Another methodological issue is interrater reliability between the two researchers. After the initial orientation period, the two interviewers remained in close communication. Both researchers carefully followed the interview guide, so that information was given and questions were answered in a consistent manner. Although not measured, it is doubtful that researchers influenced participants in significantly different ways. The structured approach on the interview guide and questionnaire supported consistency between the two researchers.

Most of the scales utilized in the study were found to have internal consistencies greater than .80. Three scales that had methodological weaknesses were the Baby Activity Scale, Close Social Support Scale, and Nurse Conflict Scale.

The initial intent of the Semantic Differential Scale-My Baby was to reflect attitudes of mothers toward their newborns. Based on factor analysis findings, the

scale was divided into three subscales dealing with different dimensions: potency, evaluation, and activity. The only subscale with sufficient variance and internal consistency was the Baby Activity Scale, and it was retained for use in hypothesis testing.

Although the Baby Activity Scale was grouped under "personal outcomes" of the new mother, it behaved very differently from the other two personal outcome variables, life satisfaction and affect balance. This scale represented an objective, behavioral (activity dimension) description of the infant rather than an attitude (evaluative dimension) as intended. For example, many of the sick infants in the study were prematures. A premature baby tends to be more lethargic, a behavior which would easily influence the mother's perception of her baby's activity. The fact that the Baby Activity Scale operated so differently from the other personal outcome scales (Life Satisfaction and Affect Balance) lends validity to the notion that these other scales tapped a different dimension, probably an attitudinal (evaluative) one.

The Close Person Support Scale was found to have both strengths and weaknesses in the study. Data relating to support from the "closest and most important" person in the network were collected in conjunction with total network data. For each of the 11 support functions

on the Personal Network Support Functions Scale, the subject could choose to circle or not circle the number of the close person. As a result, the items composing the close support measure were dichotomous variables. Even when one low reliability item was eliminated, the scale still had considerable skewness and had to be recoded for hypothesis testing.

The strength of the measure, as used in the study, was the indirect nomination of the close person. The woman's selection of the close person was no more emphasized than the selection of other network members. Therefore, less demand was involved in choosing or not choosing the close person on a given function.

The weakness of the measure was the dichotomous nature of the items. An alternative approach to measuring close support would be to develop a scale for the close person similar to the scale for support from the nurse, in which five options were available for each item (from strongly agree to strongly disagree). Although this scale might prove to be more subject to social desirability bias, it should be a stronger measure because of increased variability. The scale could be used alone or in conjunction with a second indirect measure, such as the one used in the study.

The major weakness of the Nurse Conflict Scale was its size (only two items), which also contributed to the

low internal consistency. As an outcome measure, the scale was significantly related to social support from the nurse, but not to relationship fulfillment. The scale should be expanded to include more items, and pilot tested for internal consistency, before it is used again. A stronger conflict scale might pick up more of the variability in the nurse-client relationship than the positive scale would. On the other hand, it is likely that conflict would not play as large a part in a professional relationship as it does in a close attachment relationship.

Major Findings

The discussion of major findings from hypothesis testing is divided into two sections: (a) social support and (b) expectations fulfillment. The relationship of stress to these major variables is included. Support or lack of support for Levitt's model (in press) is presented, as well as conformity to previous research.

Social Support

Four issues were addressed in the study: (a) the importance of close support, (b) the direct effect of close support, (c) the buffering effect of close support on stress, and (d) the nurse as a source of support. Each issue is discussed as it relates to study findings, support for Levitt's model (in press), and similarity to other studies in the literature.

The ease with which women utilized the circle diagram is consistent with Levitt's previous research (Levitt, Weber, & Clark, 1986). Also consistent is the choice of husband or mother as primary support givers (Blumberg, 1980; Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Levitt et al., 1986; Tietjen & Bradley, 1985). Most women in the study selected their husband ($n=57$), and the second largest group of women selected their mother ($n=19$). Several subjects expressed difficulty in deciding between husband and mother.

Levitt (in press) proposed that close attachment relationships are more important to personal well-being than support networks as a whole. This proposal received strong support in the study. Hypothesis 6 tested whether close support had a greater effect on outcomes than support from other network members. Significant relationships were established between close support and four of the outcome measures, over and above the effect of network support. In all of these regression equations, network support was not found to correlate significantly with outcome variables.

Some evidence was provided in the study for negative effects of support from other network members. Hassles measures were directly correlated with network support, and these correlations approached significance. This means that increased hassles were associated with more

perceived support from other network members. Earlier studies in the literature made similar findings (Barrera & Balls, 1983; Tietjen & Bradley, 1985; Weinraub & Wolf, 1983).

Hypothesis 3 addressed the direct effects of close support on outcomes in the new mother. Three outcomes were found to be significantly related to close support, including relationship satisfaction, life satisfaction, and affect balance. In her Model of Close Relationships, Levitt (in press) designated "personal well-being" as the outcome of positive close relationships. Personal well-being is a concept relating primarily to measures such as life satisfaction and affect balance. These two outcomes were significantly related to close support in the study, supporting Levitt's ideas. Study findings were consistent with the evidence for direct effects of social support from the literature (Crnic et al., 1983; Cronenwett, 1985; Cutrona, 1984).

Supporters of the buffering hypothesis proposed that social support has more of an effect on individuals under high stress than on those under low stress. The literature relating to the transition period after birth included strong support for the buffering phenomenon (Crnic et al., 1983; Nuckolls, Cassel, & Kaplan, 1972; Turner & Noh, 1983). Levitt (in press) also refers to the transition period of childbirth as a stressful period

and suggests that the buffering effect of social support may be increased at this time.

An assessment was made of the level of stress in study participants and compared with normative data from a middle-aged sample (Kanner, Coyne, Schaefer, & Lazarus, 1981). New mothers in the study selected considerably more hassles than the middle-aged women. This comparison supported the establishment of a test situation in the study; that is, childbirth is a stressful period when relationship expectations are likely to be tested.

Also addressed in the study was a second issue relating to stress, whether mothers of sick infants were under greater stress than mothers of well infants. Utilizing both hassles frequency and intensity as the stress variables, no significant differences were found in stress levels for mothers of infants in the three risk groups. The relationship which was significant, however, pertained to whether the infant was home or remained in the hospital. Mothers whose infants were hospitalized had a significantly higher intensity of hassles. No differences were found in hassles frequency.

The work of Crnic et al. (1983) produced similar findings. With life events utilized as the stress measure, no differences were found in stress level for mothers of full term or premature infants. However, all

of these infants were home at the time of the interview. Blumberg (1980) measured stress in mothers of sick and well infants a few days after birth, and found higher anxiety levels in mothers of sick infants. In the present study, women were interviewed at a time postpartum that was later than in the Blumberg study, but earlier than in the study by Crnic and his colleagues. The findings of the present study were consistent with both of these authors, in that mothers whose infants were home experienced less stress than mothers of hospitalized infants.

The specific hassles experienced by mothers in the study were very similar to stressors described by Hiser (1987), MacPhee, Benson, and Bullock (1986), Mercer (1985), and Moss (1981). Not getting enough sleep or rest, concerns about physical appearance, financial difficulties, and lack of time were recurrent themes throughout the studies in the literature and the present study.

Additional evidence was demonstrated that illustrated the effect of stress on study participants. These data were the significant correlations between hassles scores and women's outcomes. All three of the personal outcomes and both of the close person-related outcomes were significantly correlated with hassles. Women with more hassles had decreased life satisfaction,

lower emotional affect, and more negative perceptions of baby activity. Their relationship with the close support person included higher conflict and lower satisfaction.

The above evidence described the stressors experienced by new mothers and established that the transitional period after birth is a period when changes in interpersonal relationships are likely to occur. The research question relating to stress in the study was whether close support had a buffering effect on stress. Hypothesis 7 addressed the effects of stress, close support, and the interaction between stress and support, on women's outcomes. Results of hypothesis testing provided some evidence for the buffering hypothesis.

When hassles intensity was used as a measure of stress, close person-related outcomes were significant for buffering. Close support made a greater impact on relationship satisfaction and conflict for women under high stress than for women with low stress. Most studies in the literature utilized life events scales as stress measures (Crnic et al., 1983; Nuckolls et al., 1972) and had comparable findings related to buffering.

When infant risk was used as the stress measure, perception of baby activity was the significant outcome but no clear pattern was obtained. Medium risk and low risk mothers who perceived their infants as quieter, more peaceful, and better behaved, were mothers with higher

close support. A reversal occurred for mothers of high risk infants, although the differences in scores for the high and low support groups was small. Mothers of the sicker infants rated their infants lower on activity regardless of the level of support. The finding that the high risk group had lower scores on Baby Activity would be expected as a direct effect of stress on outcomes. But the question arises, why did support have such little effect on Baby Activity scores for high risk mothers?

Several answers are suggested. Perhaps mothers with high support felt more comfortable expressing their negative perceptions of the infant. Alternatively, it is possible that limitations of the Baby Activity measure may have affected the analysis, in that the "activity" factor of the semantic differential method may have tapped a dimension that is not appropriate to use as an outcome for buffering.

Although Levitt (in press) did not address the role of the nurse or of health professionals in her model, she suggested the possibility that support givers may be persons in various roles. Few studies were found in the literature that measured the nurse's importance as a source of support. Indeed, there was debate as to whether the support provided by the nurse could be titled "social support" (Norbeck, 1981). Studies that measured the outcomes of routine nursing care often failed to find

significant effects (Consolvo, 1986; Harrison & Twardosz, 1986).

In the present study, the woman's perception of support from the nurse was found to be related to the relationship with the nurse but not to personal well-being of the mother. The two nurse-related outcome measures (relationship satisfaction and conflict) were significantly correlated with support from the nurse.

To summarize, significant relationships were found in the present study between social support variables and maternal outcomes. Support from the close person (usually the woman's husband or mother) was found to be more important to personal well-being and relationship outcomes than network support. Close support was found to have both a direct effect and a stress-buffering effect on the two outcomes relating to the close person relationship. Only the direct effect of close support was found for the two personal outcomes, life satisfaction and affect balance. Additionally, support from the nurse was found to significantly influence both positive and negative aspects of the nurse-client relationship.

Expectations Fulfillment

Fulfillment of relationship expectations was tested in the study as it related to one close network member and one nurse. Fulfillment of expectations by the close

person and by the nurse were addressed separately.

Hypothesis 1 was concerned with the effect of close expectations fulfillment on outcome criteria. Women whose positive expectations for their closest network member were met experienced more positive affect, greater life satisfaction, and more relationship satisfaction.

These findings provided support for Levitt's model (in press). Levitt proposed that closeness and satisfaction in the relationship would be higher when the close attachment figure met or exceeded expectations, rather than violated them. The significant correlation between expectations fulfillment and close person relationship satisfaction was evidence in support of Levitt's proposal.

In Levitt's model, personal well-being was also hypothesized to be greater when expectations were met. Study findings supported this proposal as well. Increased life satisfaction and positive affect were the two personal outcomes found to be significantly related to fulfillment of expectations.

Belsky's 1985 study on violated expectations in the marital relationship was the only study in the literature which directly addressed relationship expectations. His findings were consistent with the present study findings. For both husbands and wives, he found that marital satisfaction declined when prenatal expectations

regarding the impact of the baby on the marriage were violated. The present findings regarding expectations fulfillment and marital relationship satisfaction were consistent with the Belsky study.

Belsky noted (1985) that marital satisfaction was significantly lower for couples with more than one child. This finding was supported in the present study when close person conflict was the outcome criterion. Both parity and number of children at home were highly correlated with conflict. Multiparas, and consequently women with more children, had higher conflict with their close person. These relationships were significant for the conflict scale, but were not found for the positive relationship satisfaction scale. Perhaps this indicates greater sensitivity for conflict as a measure. It is also possible that level of conflict may fluctuate significantly within an otherwise close and stable relationship.

Hypothesis 2 focused on the nurse-client relationship in regard to expectations fulfillment. Partial support for Levitt's model (in press) was offered by the study. For the new mother, satisfaction in the relationship with the nurse was positively correlated with fulfillment of expectations for the nurse.

The nurse conflict measure and personal outcomes were not correlated significantly with fulfillment of

expectations for the nurse. This lack of association between nurse-related variables and personal outcomes for the mother was also found in hypothesis 2, relating to the effect of nurse support on outcomes. One possible explanation relates to the short term relationship with the nurse. In many cases, the nurse selected had been in contact with the mother only a few hours, as in labor and delivery. It was not surprising that such a brief, even though highly emotional, relationship was not significantly correlated with more long-term outcomes such as affect and life satisfaction.

In summary, this discussion has included an evaluation of study methods and highlighted the major findings in the study. The home visit approach, utilizing both interviews and questionnaires, proved to be an appropriate method for collecting data from new mothers. Although a majority of the tools used in data analysis had satisfactory internal consistency, three measures, close person support, baby activity, and nurse conflict, need further refinement before they are used in future research.

Support for Levitt's model was achieved through hypothesis testing. Close support was determined to be more important to the new mother than network support. Close support had both direct and stress-buffering effects on the relationship with the close person. The

direct effect of close support was also found in relation to the two personal outcomes, life satisfaction and affect balance. In addition, nurse support and nurse expectations fulfillment were significantly correlated with satisfaction in the nurse-client relationship.

Conclusions

The discussion of study methods and major findings led to these conclusions:

1. The transitional period of childbirth was established as a stressful situation for new mothers. Hassles significantly influenced maternal outcomes, and hassles frequency was found to be at a higher level than in other populations. Mothers of hospitalized infants were found to be more stressed than mothers whose infants were home. In general, a test situation was established for changes in close relationships.

2. The study findings provided clear support for Levitt's Model of Close Relationships. Both social support and expectations fulfillment significantly influenced personal outcomes and close person-related outcomes. Close support was found to be more important than network support. Expectations in close relationships were found to have an effect over and above social support.

3. The ideas inherent in Levitt's model appeared to function in relation to the nurse. However, nurse

variables and close person variables acted as two different systems that did not parallel. Personal outcomes (life satisfaction and affect balance) were significantly related only to close person variables (close support and expectations fulfillment) and not to nurse variables (nurse support and expectations fulfillment). Nurse-related outcomes tended to be influenced by nurse support and nurse expectations fulfillment, just as close person-related outcomes were influenced by close support and close expectations fulfillment.

4. The stress-buffering effect of close support was determined by the type of outcome measured. Close support served as a buffer against stress in regard to the relationship with the close person (both relationship satisfaction and conflict), but not in regard to any of the personal outcomes.

5. Several of the instruments used in the study proved to have high internal consistency. Some tools needed further refinement, particularly measures related to close support, perception of the baby, and nurse conflict. Instruments used in the study hold promise for future research and would contribute to the body of assessment tools useful to nursing. Better measurement of the concepts addressed in the study would improve our understanding of how these concepts influence maternal

outcomes.

Significance to Nursing

The study raises many issues which are significant to nursing and to health care for the new mother. Nurses need to expand their knowledge base regarding the concepts addressed in the study in order to meet the needs of new mothers with greater sensitivity.

Regarding Social Support

As a discipline, maternal child nursing has traditionally focused on the family and fostered an awareness of its importance. The concept of "social network" is relatively new to nursing, as is the concept of "social support." Nevertheless, for years nurses have emphasized the needs of the client and family for emotional support, and written guidelines on how to provide such support.

Nurses have written prescriptions without examining the theoretical nature of the support prescribed. The time has come to gain more understanding of the theoretical framework involved in support. The work of House (1981), Kahn and Antonucci (1980), and others provides this framework, and is a developing body of knowledge that will continue to expand in the future. Nurses need to explore this theoretical work and develop innovative ways to test it through research and to apply their new understanding in nurse-client relationships.

Results of the present study reinforce the significance of social support to the new mother. The woman views herself as a member of a social network, as evidenced by the ease with which she completed this task in the study. Nurses need to expand their perception of the family to the broader conception of the social network. More awareness is needed of the differences between close support and support from the total network.

The controversial nature of support from the general network should be realized. The client's individual perception of the meaning of network support should be assessed. As validated in the present study, the possible outcome of increased stress for the new mother in dealing with large social networks should be considered.

Even more important to the woman after childbirth, is the close support giver, the source of intimate support. In the study, most women selected their husbands or their own mothers as their closest persons. The nurse in an obstetric, neonatal, or pediatric setting needs to assess the source of close support for each client, and help foster this relationship. Fathers, grandparents, or other significant others should be welcome visitors in the neonatal intensive care unit or on the obstetric floor. The new mother needs to exercise her own choice as to who her significant other is to be,

as exemplified in the study when fathers, brothers, and even aunts were selected as closest persons.

Common knowledge about attachment has been limited in nursing to the work of Klaus and Kennell (1982) on early mother-infant bonding. Nurses need to expand greatly upon this limited conception of attachment. The life span approach is lacking in the nursing literature, especially in textbooks for nursing students. As the findings from this study illustrated, adult attachment relationships are important to the new mother, and deserve greater emphasis.

Based on a broad understanding of social support, nurses can further develop the uniquely supportive role of the nurse. First, nurses need to examine the types of support functions that are helpful to the new mother and appropriate for the nurse to provide. By drawing upon the frameworks of previous research on social support, different types of support behaviors can be identified, such as the affective, affirmative, and direct aid categories identified by Kahn and Antonucci (1980). Further exploratory research is needed regarding types of support functions and the nursing behaviors which exemplify such functions.

Women in the study were often in contact with the nurse for only a few hours, as in the labor and delivery period, or when the infant was first seen by the mother

in the NICU. Nevertheless, the impact made by a supportive nurse was remembered and vividly described by many of the study subjects during the interview. These nurses had the privilege of working with clients during times of great emotion and times when support was needed most. As a professional group, nurses need to explore how times of crisis can be utilized by the nurse, keeping in mind that times of greatest crisis often afford the greatest opportunity to be supportive.

Regarding Relationship Expectations

Study findings provided support for Levitt's model regarding relationship expectations. Fulfillment of expectations was shown to be significantly related to relationship satisfaction and personal outcomes. This area provides a new focus for nursing. Nurses need to assess the client's expectations for close persons as well as professionals. Much more needs to be learned about typical expectations of women during pregnancy, childbirth, and the postpartum period. Working in conjunction with psychologists and other theorists, nurses can utilize opportunities to explore this area through research.

Several issues relate to Levitt's model of relationship expectations and nursing practice. First, by becoming acquainted with the model, nurses would increase their sensitivity in interpersonal

relationships. An understanding of the part played by relationship expectations in interpersonal processes would encourage assessment of these factors. The nurse also needs to be aware of the client's expectations for nurses and other health care staff, to clarify whether these are appropriate, and provide assistance in meeting expectations when possible.

Regarding Stress

The study provided evidence that the early postpartum period was a stressful time for new mothers. When the mother had a hospitalized infant, her hassles were more intense, although not more frequent. Nurses dealing with mothers of NICU infants need to realize the unique needs of these women. The woman's own perception of stress, her special needs, and her concerns should be assessed and addressed on an individual basis. The buffering role of husbands, mothers, and other significant persons in helping these women cope with stress should be assessed and supported by the nurse.

Recommendations for Future Research

Several recommendations for future research are proposed:

1. The two tools with methodological limitations, Close Support and Nurse Conflict, should be expanded and pilot tested before being utilized in further research.
2. Selection of a scale to measure the new mother's

perception of her infant should be made with the specific purpose of the measurement clearly in mind. For example, when the intent is to measure the new mother's attitudes toward the baby, a semantic differential scale could be developed with items from the evaluative domain. Or perhaps a different approach could be taken such as evaluating the mother's feelings about her ability to mother a new baby. The latter approach would represent more of the new mother's self-perception, rather than perception of the baby.

3. Data collection needs to be conducted in the prenatal period regarding the pregnant women's expectations for close support givers. By following up postpartum on the degree to which expectations were met, a more complete view of these processes would be gained.

4. Levitt's model should be tested in different populations, at different transition periods of the life cycle, and with persons who have different relationships. For example, to learn more about adult mother-daughter relationships, the research study could focus on these two individuals. Childbirth is a natural transition point in the mother-daughter relationship, but other transition periods could be used, such as marriage.

5. Further analysis of the data collected in this study can be conducted. One interesting approach would be causal model analysis, in which the "fit" of the data

to different proposed causal models would be determined.

6. Research should be conducted in the area of social support. Testing could be done regarding the nature of support, its components and its dimensions. Expansion of the Close Support Scale or the Nurse Support Scale used in this study would allow assessment of more behaviors of the support giver. By factor analysis, the different dimensions of support could be determined.

Nurses are involved in the testing and application of models and theories from other disciplines, such as Levitt's model in developmental psychology. With appropriate validation of the propositions of the model, application can be made to nursing practice. This study provides a beginning validation of Levitt's Model of Close Relationships.

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APPENDIX A
Flyer for Potential Subjects

ATTENTION: NEW MOTHERS

DO YOU HAVE A NEW
BABY TO CARE FOR?



Motherhood is a unique experience. The rewards and the hassles are best understood by women who have experienced them first hand. You can share your experiences by taking part in this nursing study. The outcome could be better health care for other new mothers.

Your participation in the study would involve meeting for a single interview in your home or another convenient location. The interview would take place between two and four weeks after your baby is born. The topics covered would include your day-to-day experiences as a new mother and your feelings about other people in your life. Women 18 years of age or older are eligible to participate.

The study is being conducted by Sherri Coffman, a nurse and a doctoral student from Indiana University School of Nursing. Also helping with interviewing is Kathy Quigley, a student from Florida International University. Your pediatrician is aware of the study and is supportive of it. Whether you take part will not be known by your doctor, however, and your baby's care will not be affected by whether you take part.

By completing the attached slip, you give permission to Mrs. Coffman or Mrs. Quigley to contact you by telephone. One of them will tell you more about the study and find out if you wish to be interviewed.

Please return the slip to the nursing staff. Thank you. Your help is appreciated.

RESPONSE TO MOTHERHOOD STUDY (Return to Nursing Staff)

☐ YES

I would like to learn
more about the study.

Name _____

Telephone number _____

Infant's birth date _____

APPENDIX B
Infant Risk Group Criteria

NEONATAL RISK CATEGORIES:

Group 1: HIGH RISK

- a. Severe immaturity, weighing less than 1,500 grams.
- b. Gestational age less than 33 weeks.
- c. Respiratory distress requiring intubation and ventilation for more than one hour, or oxygen therapy alone for more than 72 hours.
- d. Serious problems such as seizures, sepsis, shock, and intracranial hemorrhage, confirmed by tests or clinical observation.
- e. Congenital heart disease requiring cardiac catheterization.
- f. Major congenital malformations requiring surgery or invasive procedures.

Group 2: MEDIUM RISK

- a. Birth weight 1,500 to 2,500 gm.
- b. Gestational age, 33-36 weeks.
- c. Abnormal behavior (e.g. lethargy, irritability, poor feeding) requiring medical assessment and treatment in NICU.
- d. Early appearance of jaundice (within 24 hours) requiring treatment in NICU.
- e. Anemia (Hct. less than 35% and/or requiring transfusion) or polycythemia (venous Hct. greater than 65%).
- f. Metabolic imbalance (e.g. hypocalcemia, hypoglycemia, hypomagnesemia) requiring medical assessment and treatment in NICU.
- g. Respiratory distress requiring treatment in NICU, with oxygen therapy less than 72 hours and/or intubation or ventilation for less than one hour.
- h. Suspected sepsis with negative blood cultures, treated with intravenous therapy.
- i. Major congenital anomalies not requiring immediate surgery or invasive procedures (ex. CDH clubfoot, cleft lip or palate).
- j. Birth trauma (e.g. paralysis or fractures) requiring medical evaluation and treatment in NICU.
- k. Small-for-gestational age (SGA), large-for-gestational age (LGA) and/or infant of a diabetic mother (IDM), requiring observation and treatment in NICU.
- l. Central nervous system depression without seizures or intracranial hemorrhage, requiring observation in NICU.

Group 3: LOW RISK

- a. Gestational age 36 weeks or less, remaining in normal nursery.
- b. Abnormal behavior (e.g. lethargy, irritability, poor feeding) requiring assessment or treatment in normal nursery.
- c. Treated for physiologic jaundice with phototherapy in normal nursery.
- d. Respiratory depression at birth, requiring observation only (no treatment) in normal nursery.
- e. Minor congenital anomalies (e.g. simple extra digit) which do not require special investigation and remain in normal nursery.
- f. Birth trauma (e.g. fracture), remaining in normal nursery.
- g. SGA, LGA, or IDM infants without complications and remaining in normal nursery.

Group 4: NO RISK

- a. Normal birth weight, in normal nursery throughout hospitalization.

NOTE: Rank infant according to the highest risk category which describes any part of his condition.

APPENDIX C

Telephone Script for Recruitment of Subjects

SCRIPT

Hello,

I am S.
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SCRIPT OF INITIAL TELEPHONE CONTACT WITH MOTHER

Hello, Mrs. _____,

I am Sherri Coffman, a nurse and a graduate student from Indiana University.

Although I am in no way associated with Memorial Hospital, your baby's doctor has approved my calling you to request your participation.

I am carrying out a research study to learn about your experiences as a new mother.

If you were to take part in the study, I would need to spend about 1 to 1 1/2 hours with you either in your home or another place convenient for you.

During this time we would talk about other people in your life who are important to you and I would ask you to answer a short survey.

To take part in the study, women need to be 18 years or older and feel well enough to spend the 1 to 1 1/2 hours talking with me.

It is completely up to you whether or not you take part in the study, and your doctor will not be told.

Your baby's care and your own care will not be affected by whether you take part.

Your answers will be kept secret. Right after the interview your answers will be placed on coding forms and assigned a number. Results of the study will be reported in group form so no one will know your answers.

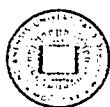
Do you have any questions about the study?

Are you interested in taking part?

If no: thank you for listening about the study.

If yes: thank you for agreeing to take part. When is a convenient time and place for you to meet?

APPENDIX D
Informed Consent Forms



INDIANA UNIVERSITY

610 Barnhill Drive
Indianapolis, Indiana 46223

SCHOOL OF NURSING

Dear _____:

I am a graduate student, studying mothers' experiences with a new baby. This study is part of the requirements for the Doctor of Nursing Science Degree at Indiana University School of Nursing.

Your baby's doctor is aware that I am calling you to see if you would be willing to take part in my study. If you were to take part, I would interview you to identify persons who are important to you. I also have a survey for you to complete which has a wide range of questions concerning things and people in your life. The total time involved would be one to one and one-half hours.

Taking part in the study is completely voluntary. If you do not want to answer a question, all you need to do is tell me or leave out the question. The study may have some risk for you, because talking about your experiences relating to your baby may be unsettling. If you should feel uncomfortable, tell me and we will stop the interview. The study should have moderate benefit to nursing and society. What we learn in the study should help nurses give better care to new mothers.

Your identity will be known only to me. Your doctor will not know if you take part in the study. Neither your name or any information identifying you will be included in any reports of this study. Thus, neither your care or the care of your baby will be affected by your taking part or refusing to do so.

Thank you for sharing your ideas and feelings. If you have any questions about the study, I can be reached by telephone at [REDACTED] in Coral Springs, Florida.

Sincerely,

[REDACTED]
Sherrilyn Coffman, R.N.

I have read the above
and am willing to take
part in the study.

Subject _____

Witness _____

Date _____

Investigator _____



INDIANA UNIVERSITY

610 Barnhill Drive
Indianapolis, Indiana 46223

SCHOOL OF NURSING

Dear _____:

I am a graduate student, studying mothers' experiences with a new baby. This study is part of the requirements for the Doctor of Nursing Science Degree at Indiana University School of Nursing.

Your baby's doctor is aware that I am calling you to see if you would be willing to take part in my study. If you were to take part, I would interview you to identify persons who are important to you. I also have a survey for you to complete which has a wide range of questions concerning things and people in your life. The total time involved would be one to one and one-half hours.

Taking part in the study is completely voluntary. If you do not want to answer a question, all you need to do is tell me or leave out the question. The study has no risk for you. The study should have moderate benefit to nursing and society. What we learn in the study should help nurses give better care to new mothers.

Your identity will be known only to me. Your doctor will not know if you take part in the study. Neither your name or any information identifying you will be included in any reports of this study. Thus, neither your care or the care of your baby will be affected by your taking part or refusing to do so.

Thank you for sharing your ideas and feelings. If you have any questions about the study, I can be reached by telephone at [REDACTED] in Coral Springs, Florida.

Sincerely,

[REDACTED]

Sherrilyn Coffman, R.N.

I have read the above
and am willing to take
part in the study.

Subject _____

Witness _____

Date _____

Investigator _____

APPENDIX E

Permission Letters from Hospitals and Physicians

IUPUI INSTITUTIONAL REVIEW BOARD

222

DOCUMENTATION OF REVIEW AND APPROVAL

DEETS

Reviewers:

Statement of Principles Concerning Clinical
Research and Investigation Involving Human Beings

Study No.:

#8708-16

Project Title: Social Support and Relationship Expectations in Mothers of
Sick and Well Neonates

Sponsoring Agency: I.U. School of Nursing

RECORDED IN
THE MINUTES OF
AUG 11 1987

As the signature below testifies, the principal investigator is
pledged to conform to the following precepts:

As one engaged in clinical investigation utilizing human subjects, I
acknowledge the rights and welfare of the patient or normal human
subject involved. I acknowledge my responsibility as an investigator
to secure the informed consent of the subject by explaining the
procedures, insofar as possible, and by describing the risks as
weighed against the potential medical benefits of the investigation.

I am in agreement with the ethical principles regarding all research
involving humans as subjects as set forth in the report of the
National Commission for the Protection of Human Subjects of Biomedical
and Behavioral Research entitled, "Ethical Principles and Guidelines
for the Protection of Human Subjects of Research," also known as the
"Belmont Report," and I understand that in the field of clinical
research a fundamental distinction must be recognized between clinical
research in which the aim is essentially therapeutic for a patient,
and clinical research the essential object of which is purely
scientific and without therapeutic value to the person subjected to
the research.

If there is a reason for me to deviate from these precepts, I will
seek prior approval in writing from the Indiana University-Purdue
University at Indianapolis Institutional Review Board.

Principal Investigator or Proxy

DEETS / Coffman

Print or Type Name

Signature

Date

Campus

Address: NSC

Department

Building/Rm. No.

Telephone

Routing:

Signature

Date

Department Chairman

Dean

This protocol for use of human subjects has been reviewed and approved
by the Indiana University-Purdue University at Indianapolis

Committee Chairman

Date

IRB 01/87

9/24/87

IUPUI Institutional Review Board

DOCUMENTATION OF REVIEW AND APPROVAL

Statement of Principles Concerning
Clinical Research and Investigation Involving Humans Beings

Project Title: Social Support and Relationship
Exposure to Noise in Workers of Steel mill
under Investigation

STUDY NO: 8708-16
AMENDMENT NO: 1

Sponsoring Agency: NA

As the signature below testifies, the principal investigator is pledged to conform to the following precepts:

As one engaged in clinical investigation utilizing human subjects, I acknowledge the rights and welfare of the patient, or normal human subject, involved. I acknowledge my responsibility as an investigator to secure the informed consent of the subject by explaining the procedures, insofar as possible, and by describing the risks as weighed against the potential medical benefits of the investigation.

I am in agreement with the ethical principles regarding all research involving humans as subjects as set forth in the report of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research entitled "Ethical Principles and Guidelines for the Protection of Human Subjects of Research," also known as the Belmont Report, and I understand that in the field of clinical research a fundamental distinction must be recognized between clinical research in which the aim is essentially therapeutic for a patient, and the clinical research the essential object of which is purely scientific and without therapeutic value to the person subjected to the research.

If there is a reason for me to deviate from these precepts, I will seek prior approval in writing from the Indiana University-Purdue University at Indianapolis Institutional Review Board.

I.C.S.
replaces
current
Cur
9/23/87
T.R.

RECORDED IN
THE MINUTES OF
OCT 13 1987

Principal Investigator or Program Director: Deets Carol Signature: [Signature] Date: 9/16/87
Type or Print Name
Campus Address: Nursing Department: N4 486 Building/Room No. Telephone: [Redacted]

The amendment of this protocol for use of human subjects has been approved by the Institutional Review Board of Indiana University-Purdue University at Indianapolis

[Redacted Signature]

Committee Chairman

OCT 13 1987

Date

(12/86)

[Redacted Signature]

REV. EWERS:

STUDY NO:
87-16
AMENDMENT NO:
1

I.C.S.
reduced
current
care
9/23/87
T.R.

RECORDED IN
THE MINUTES OF
OCT 13 1987



Memorial
Hospital

September 22, 1987

I.U.P.U.I. Review Board
Research and Sponsored
Indiana University - Pu
Indianapolis

Gentlemen:

Appropriate members of
administration have rev
and Relationship Expect
Well Neonates". (Study

Changes were suggested
into her materials. Pe
Coffman to obtain names
Memorial Hospital. She
indicate their willingne

Sincerely,

Angela Chapman, MSN RN
Assistant Director of N
Maternal Child Services

AC/jam

3501 Johnson S

Plantation General Hospital

401 N.W. 42nd Avenue
Plantation, Florida 33317-2882
Tel. (305) 587-5010

October 6, 1987

I.U.P.U.I. Review Board
Research & Sponsored Programs
Indiana University-Purdue University at Indianapolis

Gentlemen:

Members of our institution have reviewed the study,
"Social Support & Relationship Expectations in
Mothers of Sick & Well Neonates" (Study #8708-16).

Permission is granted to Sherrilyn Coffman to obtain
names of potential subjects from the Neonatal Unit at
Plantation General Hospital and to interview subjects
who indicate their willingness to participate.

Very truly yours,



S. HENDRIX, R.N.
DIRECTOR OF NURSING SERVICES

SH/ma

AN AFFILIATE OF **HCA** Hospital Corporation
of America

Telephone: [REDACTED]

ROBERT B. SCHULTZ, M.D.P.A.
•PEDIATRICS •ADOLESCENT MEDICINE
•PEDIATRIC ENDOCRINOLOGY

Oct. 1, 1987

I.H.P.U.I. Review Board
Research and Sponsored Programs
Indiana University - Purdue University
at Indianapolis

Gentlemen:

I have reviewed the study, "Social Support and Relationship Expectations in Mothers of Sick and Well Infants" (Study Number 8706-16). Permission is granted to Marilyn Coffman to obtain names of potential subjects from hospital nursing staff to interview subjects who indicate their willingness to participate.

Sincerely,

[REDACTED]
Robert B. Schultz, M.D.

RBC/mjs

[REDACTED] Hollywood, Florida [REDACTED]


ESTHER B. EISENSTEIN, M.D., P.A.


September 17, 1987

I.U.P.U.I. Review Board
Research and Sponsorship Programs
Indiana University-Bloomington at
Indianapolis

Gentlemen:

I have reviewed the study, "Social Support and Relationship Expectations in Mothers of Sick and Well Neonates" (Study Number 3708-16). Permission is granted to Sherrilyn Coffman to obtain names of potential subjects from the nursing staff at Memorial Hospital and to interview subjects who indicate their willingness to participate.

Yours truly,

ESTHER B. EISENSTEIN, M.D., P.A.

CIGNA Healthplan of South Florida, Inc.

3101 N. Pine Way, Suite 400
Fort Lauderdale, FL 33309
(305) 461-1000



October 30, 1987

I.U.P.U.I. Review Board
Research and Sponsored Programs
Indiana University - Purdue University
Indianapolis, In.

Gentlemen:

I have reviewed the study, "Social Support and Relationship Expectations in Mothers of Sick and Well Neonates" (Study Number 9708-16).

Permission is granted to Sherrilyn Coffman to obtain names of potential subjects from nursery staff at Memorial Hospital and to interview subjects who indicate their willingness to participate.

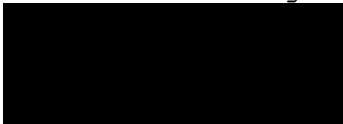
Yours truly,

A black rectangular box redacting the signature of George Termotto.

George Termotto, M.D.
CIGNA Healthplan of South Florida, Inc.

/bhc

Henry U. Parl, M.D., D.A.
DR MED. SC. JACOB



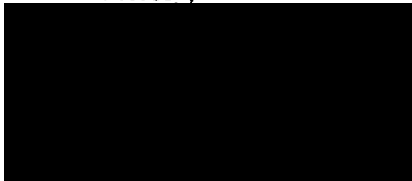
Sept. 16, 1987

I.U.P.U.I. Review Board
Research and Sponsored Programs
Indiana University-Perdue University at
Indianapolis

Gentlemen:

I have reviewed the study, "Social Support and Relationship Expectations in Mothers of Sick and Well Neonates" (Study Number 8708-16). Permission is granted to Sherrilyn Coffman to obtain names of potential subjects from my office staff and to interview subjects who indicate their willingness to participate.

Sincerely,



Henry U. Parl, M.D.

EIKE L. PARL, M.D., P.A.
DR. MED. SC., FACOG
Diplomate of the American Board of Obstetrics and Gynecology
GYNECOLOGY, INFERTILITY, AND OBSTETRICS

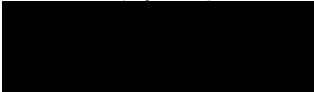
October 28, 1987

I.U.P.U.I. Review Board
Research and Sponsored Programs
Indiana University-Purdue University
at Indianapolis

Gentlemen:

I have reviewed the study, "Social Support and Relationship Expectations in Mothers of Sick and Well Neonates" (Study Number 8708-16). Permission is granted to Sherrilyn Coffman to obtain names of potential subjects from my office staff and to interview subjects who indicate their willingness to participate.

Very truly yours,


Eike L. Parl, M.D.

ELP/pg

MEDICAL SERVICES BUILDING


APPENDIX F
Interview Guide and Questionnaire

PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

232-240

U·M·I

VITA

Sherrilyn DeJean Coffman was born in Phoenixville, Pennsylvania, on April 26, [REDACTED]. Her childhood was spent in Salem, Indiana. She received her B.S. in nursing from Indiana University in 1968 and her M.S. in pediatric nursing from Indiana University in 1971. She began her clinical experience in pediatrics at Riley Hospital for Children in Indianapolis, Indiana, where she worked as a staff nurse, head nurse, and clinical nurse specialist. From 1975-76 she taught at Texas Women's University in Houston, Texas. In 1976 she joined the faculty at Indiana University School of Nursing, where she worked until 1982. At the present time she is an Associate Professor at Miami-Dade Community College in Miami, Florida.