

THE PREDICTIVE VALUE OF ROLE  
SUPPLEMENTATION ON MOTHER-INFANT INTERACTION

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I am submitting herewith a dissertation written by Anita Goldberg Hufft entitled "The Predictive Value of Role Supplementation on Mother-Infant Interaction."

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THE PREDICTIVE VALUE OF ROLE SUPPLEMENTATION  
ON MOTHER INFANT INTERACTION

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MAY, 1987

The purpose of this study was to investigate the effect of role supplementation on mother-infant interaction. Sixty caucasian primiparas between 20-30 years of age were randomly placed in experimental and control groups. The experimental group received role supplementation on the second postpartum day in the form of support of the mother in identifying and recording infant characteristics on the Nursing Child Assessment Satellite Training (NCAST) Sleep/Activity Record. The control group received no role supplementation. The control group infant Sleep/Activity Record was completed by a Registered Nurse through interview of the mother. Mother-infant interaction was measured by the NCAST Feeding Scale during observation of a feeding situation during a home visit two months postpartum.

The Mann-Whitney U test revealed no significant differences in mother-infant interaction between the mothers in the experimental group and the mothers in the control group. While sampling methods and criteria for selection controlled most important variables affecting mother-infant interaction, the control group mothers experienced significantly more contact time with their

infants as determined by the t-test for independent groups.  
Role supplementation and mother infant contact possibly  
affected mother-infant interaction equally.

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## CHAPTER 1

Nursing care of the postpartum patient has been increasingly directed toward support of the mother-infant relationship in recent years (Blackburn, 1983; Paukert, 1982; Reiser, 1981). This emphasis on social interaction has focused nursing observations on the unique nature of infants and the need for hospital staff to observe varying interactive patterns between mothers and infants (de Chateau, 1977).

New mothers are influenced by what they believe is culturally expected mother-infant behavior. Postpartum nurses are in a unique position to influence new mothers by reinforcing selected mother-infant interactions (Gay, 1981; Jenkins, 1981). There is a demand among new parents for this type of nursing care and support is seen as a significant nursing role during the postpartum period. In a study of parent preferences for hospital maternity care, keeping the family together and having the support of hospital staff were identified as most important (Scaer & Korte, 1978).

Nursing interventions used to support the new mother's role include a wide variety of nursing actions

such as postpartum teaching of baby care techniques, identification of community support systems, and resolution of maternal biophysical needs (Cronenwett, 1985; Curry, 1982; Hamblin, 1982). Anderson (1979) investigated the relationship between mother-infant interaction and informing mothers about their infants' behavior characteristics. She found increased knowledge regarding an infant's characteristics can affect the frequency and selection of specific mother-infant interactional responses. The process of identifying these interactions is an assessment nurses use to precede nursing care. The quality of the mother-infant relationship can be viewed as a diagnostic state.

Alterations in parenting is a recognized nursing diagnosis (Kim & Moritz, 1982). Appropriate nursing interventions require specific assessment of this state. In order to accurately diagnose alterations in parenting additional clinical data is essential.

Role theory has been used to conceptualize motherhood as a status in which transition occurs at childbirth and has served as a model for nursing intervention during pregnancy, childbirth and postpartum (Meleis, 1975; Rubin, 1967, 1984). Role theory has been utilized to support interventions assisting mothers in their response to transition to motherhood following

childbirth (Anderson, 1979; Cronenwett, 1985; Curry, 1982; Hamblin, 1982). Meleis (1975) has identified strategies for nursing interventions aimed at assisting new parents with the transition into parenthood. A diagnosis of role insufficiency indicates the mother is lacking in resources to achieve role mastery. The mothering role can be supported by the nurse in the form of role supplementation.

In order to justify the use of role theory as an underlying structure from which to determine nursing interventions, the relationships between mothering behaviors and the factors which affect these behaviors must be demonstrated to exist empirically. Events which are predicted to precede mothering behaviors must be documented and theoretically related to the performance of mothering behaviors as they are encountered in the clinical situation. In this way the use of role theory to guide nursing intervention can be justified.

Current practices in maternity care create the environment where role transition occurs for new mothers. Mothers are more likely to have extended contact with their infants, engage in breastfeeding, have husband involvement in the birth, and experience a shortened hospitalization of only 1-2 days. These changes have

resulted in the need for nurses to modify practices of patient teaching, support strategies, and the establishment of nursing goals. Increased contact with infants and breastfeeding indicate the opportunity to concentrate nursing observations and interventions on the mother-infant dyad rather than the mother or infant alone. Increased father involvement changes the context in which support is available to the mother and necessitates increased attention to father's role in supplying care that once was the sole domain of nursing. Earlier discharge from the hospital means less time in which to accomplish the goals of teaching the new mother. If indeed this is a period of "binding-in" as Rubin (1984) has identified, the ability of the mother to respond to needs outside herself in order to learn about general mothering concepts may be restricted. The purpose of this study was to relate mothering as a period of role transition to factors affecting the mothering role.

#### Problem of Study

How does role supplementation during the early postpartum period affect enactment of the mothering role two months postpartum?

### Justification of the Problem

Role-relationship patterns and parenting disorders (Gordon, 1982; Kim & Moritz, 1982) have been established as categories by which data concerning mothering behaviors may be assigned. These two diagnoses represent a positive and a negative form of labeling parent behavior. Meleis (1975) used the categorization of role insufficiency as a diagnosis establishing a state of mothering in need of nursing intervention. The need for specific and broadened cues by which these diagnoses may be assigned is crucial for their utilization and validation. Role relationship patterns may be expressed in terms of specific behavior clusters observed in the mother and newborn, but variations in the stability of mothering role attainment and role identity and the lack of correlating measures of risk factors (Walker, Crain & Thompson, 1986) leaves a void in the diagnostic capabilities for nursing.

Many studies have been conducted to account for the influence of early contact between mothers and infants after birth and subsequent attachment behaviors exhibited between the mother and child (Turley, 1985). Most evidence has suggested early mother-infant contact

(45 minutes after birth) does increase the incidence of selected attachment behaviors for up to three months postpartum. There is a lack of evidence of any direct long term effects of extended mother-infant contact on child development or mother-child relationships (Chess & Thomas, 1982; Sander, 1962, Siegal, 1982). Other studies have attempted to measure the influence of teaching the mother about her infant on later mother-infant interaction (Anderson, 1979; Hall, 1980; Meleis & Swendson, 1978; Riesch & Munns, 1984). A meta-analysis of the results of such studies has revealed a wide variety of approaches to teaching mothers (Turley, 1985). The effects of teaching mothers about their infants appears to be most significant when accomplished four to six weeks postpartum and most effectively conducted in the mother's home environment (Turley, 1985). The results of the above types of research seem to suggest that many of the present nursing interventions used to care for expectant and new mothers have little if any lasting benefit with regard to mother-infant relationships.

An association between mothering patterns and the potential for child abuse and the lack of reliable indices by which to provide early diagnosis of such relationships critically affect health care provided to

childbearing populations (Bolton, 1983; Disbrow, Doerr & Caulfield, 1977). Patterns associated with successful parent coping after the first two to three months after birth have been identified (Ventura & Boss, 1983), but these have not been linked to specific coping strategies effective in the early postpartum period before two months. There is a need to establish some early indicators of mothering behavior patterns and the degree of risk this establishes for the mother with regard to child abuse, neglect, failure-to-thrive syndrome and other parenting needs. The identification of factors influencing early mothering relate the behaviors between mother and infant to specific preceding conditions in the mother, the infant, and the environment (Anderson, 1985; Bassoff, 1984; Benedict, 1985; Justice & Calvert, 1985; Murphy, Orkow, & Nicola, 1985; Polansky et al., 1985). Primary prevention, in the form of prenatal parent education or early postpartum parent education, has not shown to be an effective means of enhancing competencies in managing parenting role responsibilities, reducing stress or providing long term retention of knowledge among parents (Curry, 1983; Peterson & Mehl, 1978; Turley, 1985).

The potential for the development of nursing

strategies which positively affect the mother-infant relationship can be approached through the isolation of early behaviors associated with later states of mother-infant interactions. Through the development of early diagnostic categories which differentiate mothering behaviors, the ability to intervene early in the mother-infant relationship is enhanced. This early intervention may increase the effectiveness of programs designed to decrease problems in parenting.

The prediction of mother-infant interaction based on early postpartum nursing care can be tested by comparing groups of mothers receiving role supplementation and those who have not received role supplementation. Teaching has traditionally taken place in prenatal education programs. Aimed at assisting the expectant or new parent in acquiring an understanding of what the expected duties and sensations of early parenting are, parenting education traditionally occurs at a time when new mothers are least able to accept formal instruction (Mercer, 1981 a & b; Rubin, 1984).

There is a need to develop strategies to support the maternal role which utilize the mother's developmental abilities during the first few days postpartum. Mothers may not be ready to accept information regarding role requirements during pregnancy. The immediate



postpartum period is characterized by physiological and emotional needs which interfere with acquisition of didactic knowledge (Mercer, 1985; Rubin, 1984). In order to test the effectiveness of role supplementation, the effects of support for the mother was studied. It was hypothesized role supplementation could be offered in such a way that the mother would control the learning achieved through identification of her infant's characteristics. In this way the benefits of increasing awareness of the infant would continue past the period of hospitalization. The use of support to facilitate mothers' exploration of their infants was related to later mother-infant interaction at two months postpartum. The interval between birth and the postpartum measurement of mother-infant interaction allows time for the infant to establish predictable behavior patterns (Barnard, 1978).

### Theoretical Framework

The life situation of becoming a mother represents a developmental role transition in which nurses may intervene (Dyer, 1963; LeMaster, 1957; Meleis, 1975; Rossi, 1968). Nurses are in a unique position to assist women in acquiring role mastery of mothering if

they can adequately assess role acquisition, diagnose role insufficiency and intervene therapeutically with appropriate role supplementation (Meleis, 1975). For the purpose of this study, the object of mothering is the infant.

Role theory is a product of symbolic interaction theory (Blumer, 1969) and is viewed as a form of psychosocial adaptation in nursing models developed by Roy and Roberts (1981) to explain behaviors in persons as adaptive systems. Meleis (1975) developed role function concepts to include specific application of this theory in nursing practice. Role mastery occurs when an individual demonstrates both expressive and instrumental behaviors that meet social expectations associated with a role. Role insufficiency or ineffective role transition occur when a person fails to assume effective behaviors dictated by societal or cultural norms for a particular function or place in society. Mothering is viewed as a classic example of an adaptive state in which new behaviors are required to meet the demands and expectations due to a change in status. Status is a label attached to a particular place or function in society. Role is the set of behaviors associated with the successful expression of that status. Transition from non-mother status to

mother status requires the assumption of new identity, new self-concept, new behaviors, and new expectations (Mercer, 1981b).

#### Assumptions of Role Theory

1. The analysis of relationships is the best way to understand human behavior.
2. Transactions occur as human beings act and react.
3. Meanings come about through trial and error or specific transactions with other persons. They are unique to each individual and are never unlearned or lost.
4. The anticipation of how a partner in a social transaction will respond to one's behavior is the basis for an individual's behavior. This is called a recipient role expectation.
5. The behaviors one assumes to be obliged to perform in order to adequately occupy a status are called role expectations and these affect a person's behavior.
6. Role expectations originate from the social environment and personal history of the individual. Social environments include role models (other persons occupying the same or similar status), cultural norms (history or behavior patterns associated with a particular status), and specific behaviors from

significant others (those closest to the person) who are held as social authorities in expected role behaviors. These can be real or imagined, known personally or known through media. Psychological orientations originate from personal needs.

7. Other influences on role behaviors include experiences of role modeling (practice of role behaviors), physical and mental capabilities, presence of competing role behaviors (role conflict), and the stability of the environment in which the role behaviors are expected to occur (presence of tension-producing or destructive stimuli) which compete for behaviors to adapt (Blumer, 1969; Rubin, 1984; Stryker, 1959).

Meleis (1975) described an adaptation of social role theory as the basis of research measuring the effect of nursing intervention on mothering behaviors. In this model, mothering was viewed as a set of behaviors which are based on society's expectations of one who mothers. The role theory model has been used to describe and explain mothering behaviors as they relate to a mother's perceptions of what is expected of her and her expectations of the responses of the infant (Anderson, 1979; Beckwith, 1971; Chao, 1979; Cronenwett, 1985; Hamblin, 1982; Rossi, 1968; Rubin, 1977; Siegal, 1982; Snyder, Eyres, & Barnard, 1979).

Role supplementation is defined as the conveying of information or experience necessary to bring full awareness of anticipated behavior patterns involved in a new role (Meleis, 1975). The process of recognizing characteristics in the newborn and focusing on documenting these characteristics should define the conditions and process occurring in the newborn. This increased knowledge of the newborn is a personal experience for each mother and infant. Participation in this role supplementation experience was designed to increase effective role transition to early motherhood.

Role transition to early motherhood is characterized by interactive behaviors between the mother and the infant. These interactive behaviors demonstrate components of the adapting process occurring between mother and infant. Categories of the adapting process between mother and infant include (a) sensitivity to the communication cues, (b) response to distress in the infant, (c) demonstration of social and emotional growth fostering actions, (d) cognitive growth fostering behaviors, (e) how clearly the mother and infant exchange communication cues, and (f) the nature of the responsiveness of the infant to the mother. These categories are measured by subscale scores in the Nursing Child Assessment Satellite Training (NCAST) Feeding Scale (see Appendix D). The total NCAST Feeding Scale score

represents the recorded observations of the adaptive process occurring between mother and infant during a infant feeding situation.

Interaction between a mother and infant represents enactment of the mothering role (Hardy & Conway, 1978). Labels of attachment and bonding are expressions of phenomena which have focused on observable behaviors in the mother-infant pair (Ainsworth, 1979; Anthony & Benedek, 1970; Barnard, 1976). Interaction between the mother and infant occurs as a process in which the mother consciously responds to behaviors in the infant. Mother and infant each serve to alter the behaviors of the other. (Hardy & Conway, 1978).

Barnard (1976) describes this interaction as an example of adaptation. Three aspects of mother-infant interaction are:

1. There is interplay of mother's and infant's active affinities and not merely the passive tolerance of the other.
2. There is a mutual exchange between mother, infant and the environment.
3. External aspects of adaptation are related to internal aspects of organization of the infant (Sander, 1964).

Adaptive behaviors in the mother include

sensitivity to infant cues, ability to alleviate infant distress, and the ability to mediate the environment for the infant in ways that foster cognitive and social/emotional development (Barnard, 1976). Infant cues include ability to produce clear cues for the caregiver and the ability to respond to the caregiver (Barnard, 1976). Variables which affect the adaptation in mother and infant are maternal characteristics, infant characteristics and the environment (Barnard, 1976). These adaptive behaviors constitute the role enactment and are based on the meaning of the cues obtained during mother-infant interaction (Anderson, 1979; Rubin, 1967, 1984; Sander, 1964).

For most infants, early interaction occurs most frequently with the mother. The unfolding of actions and reactions dependent on contact with one another is the basis for adaptation in the mother-infant dyad. A common feature of this process is the occurrence of estrangement. Estrangement is the ambivalence and lack of confidence regarding the enactment of a role, in this case, mothering (Robson & Moss, 1970). Estrangement appears to be related to acknowledgement of lack of control over a baby's sleep patterns and the inability to communicate in the early postpartum period. A mother's ability to feel at ease and develop a

communication style with her infant is dependent upon knowledge gained regarding how the interactions between the infant and herself are supposed to occur and what they are supposed to accomplish (Anderson, 1979; Chao, 1979; Curry, 1982). Snyder, Eyres, and Barnard (1979) have found that a mother's expectations of how her infant will respond to her is more often than not a predictor of how that infant will respond.

Scientific observation of the infant's social interaction is based on recognition of infant arousal states and an awareness of adult responsiveness complementary to infant capacities (Hales, Lozoff, Sosa & Kennell, 1977). The development of the NCAST Feeding Scale is based on these concepts and serves to measure the behaviors associated with mother-infant interaction (Barnard, 1978).

Sensory mediators are a mother's instruments for discovering her infant. The choice of mediators is related to the mother's sensitivity to infant cues, confidence with her expected role behaviors, and communication efforts engaged in role enactment (Gottlieb, 1978). Observation skills are the basis for the discovery process and any enhancement of the mother's observational skill should augment interaction leading to role mastery. This is the theoretical basis



for the experimental treatment of guiding the mother in observing and recording her observations of her new infant (Gottlieb, 1978; Robson & Moss, 1970).

Maternal-infant functioning may occur within interactions based on maternal discovery, maternal motivation and infant responses. Based on this orientation, mother and infant engage in interactions in which actions and responses are dependent upon expected reactions from one another. The ability of the participants of the interaction to receive cues from the other and assign meaning to the interaction determines the quality, duration and outcomes of the interaction (Hardy & Conway, 1978). Successful role acquisition of mother and infant is measured by behaviors based on synchronous and reciprocal responses to one another (Buckner, 1983; Censullo, 1985; Clarke-Stewart, 1973). Specific propositions (Roy & Roberts, 1981) from which to draw hypotheses for the study of mothering behaviors are concerned with the relationship between the concepts of social support and role performance.

### Propositions Related to the Role System

- 1.1 Accuracy of perception positively influences the clarity of input in the form of role cues and cultural norms.
- 1.2 The amount of clarity of input in the form of role cues and cultural norms positively influences the adequacy of role taking.

(Roy & Roberts, 1981, p. 267)

Therefore, accuracy of perception positively influences the adequacy of role taking.

The nursing actions involving the provision of support for mothers in the postpartum period should therefore consider the concept of mother's perceptions as targets for changes in maternal behavior. This would increase the potential for the mother to accomplish the maternal tasks of early postpartum (Mercer, 1985; Rubin, 1984).

### Assumptions of the Study

1. Maternal behaviors are partially determined by the ability of the mother to notice her infant (discovery).
2. Discovery is enhanced by responses of the infant and environmental support.

3. Environmental factors which increase the mother-infant interaction expose the mother-child pair to increased opportunities for discovery.

4. Maternal behaviors measured by the Nursing Child Assessment Satellite Training (NCAST) Feeding Scale represent the maternal role. These are considered synonymous with attachment behaviors.

5. Attachment behaviors, as measured by mother-infant interaction, is a means by which mothers and infants clarify and act out their respective roles appropriately.

6. Appropriate maternal role enactment is partially dependent on knowledge of the expected behaviors of the infant.

7. Successful enactment of one role (mothering role) increases opportunities to assume skills necessary to accomplish other role transitions and this is a significant goal of nursing intervention.

### Research Hypothesis

Mothers who receive role supplementation on the second and third postpartum day will demonstrate greater role enactment at two months postpartum than mothers who do not receive role supplementation.

### Definitions of Terms Used in This Study

1. Cue - a symbol or stimulus that has meaning for individuals engaged in an interaction with the infant that affects maternal responses. Cues are observed as components of the NCAST Feeding Scale.
2. Infant characteristics - those perceptual-motor aspects of the infant that affect maternal responses. They may be affective, behavioral sleep/activity patterns or abilities to adapt to the caregiver (as measured by the NCAST Feeding Scale).
3. Interaction - actions and reactions demonstrated between mother and infant. The interaction in this study is the feeding situation measured in the NCAST Feeding Scale.
4. Maternal Characteristics - those traits in the mother that affect her ability to respond to her infant. Examples are health status, type of delivery, and mothering history. Psychosocial assets of family support system and self-concept will be self-reported in terms of mother's perceptions of ease of

adaptation to motherhood. Adaptation skills and parenting style are measured in the NCAST Feeding Scale.

5. Postpartum contact - any time the mother and the infant occupy the same room and have the opportunity to interact with one another, as measured by the NCAST Sleep/Activity Record.
6. Role enactment - the use of a set of behaviors identified as expected of one in a particular interaction (in this case the set of mothering behaviors as measured by the NCAST Feeding Scale).
7. Role supplementation - nursing intervention consisting of support and guidance provided to the mother in identifying and documenting observed infant characteristics. This is the independent variable and is measured by inclusion or exclusion in the experimental group.

### Limitations of the Study

The scope of this study encompasses the application of role theory to the situation of new mothering. The clinical context of the postpartum experience of first time mothers two days after birth and at two months postpartum focused the study on the early mothering experience.

The interactional situation of infant feeding was observed for maternal and infant behaviors which suggest role enactment has occurred. Nursing intervention by role supplementation was studied for its effect on maternal role enactment and consisted of guiding mothers' observations of their infants. Maternal-infant contact was measured in order to determine the effect of opportunity for contact on maternal discovery of infant cues and subsequent role-enactment. The context of the home environment was the situation in which mother-infant interaction was measured.

The limitations of this study include the relatively small number of subjects in each group. The constraints of limited monetary resources and of availability of certified administrators of the NCAST Scales limited the feasible size of the study.

The identifying sample characteristics for subjects

available for the study limited the generalizability of the study to Caucasian, primiparas, married individuals between 20-30 years of age with no diagnosed complications of health. Each subject delivered, vaginally, a healthy infant at the same institutional setting.

### Summary

The role of mothering can be viewed within the context of role theory. The evaluation of mothering states, with regard to role performance, can be utilized as a means of assessing the need for and the effects of nursing intervention. Role performance can be observed through the identification of patterns of interaction between the mother and the infant and can be measured by the NCAST Feeding Scale. Limitations affecting the study of mothering include availability of certified NCAST administrators and accounting for other significant variables affecting mother-infant interaction.

## CHAPTER 2

### REVIEW OF THE LITERATURE

The life situation of becoming a mother presents a period of developmental role transition for first-time parents (Dyer, 1963; LeMaster, 1957; Meleis, 1975; Rossi, 1968). Nurses are in a unique position to assist women in acquiring role mastery of mothering if they can adequately assess role acquisition, diagnose role insufficiency and intervene therapeutically with appropriate role supplementation (Meleis, 1975). For the purposes of this study, the object of mothering will be defined as an infant.

Mothering has been described, investigated, analyzed and editorialized from different perspectives, depending on the theoretical orientation used by the author in question. Anthropologists have been primarily concerned with the cultural practices which mothers assume; who are the mothers and what they do in a specific society. Anthropological studies describe maternal practices by presenting systematic statements made from direct observation in field studies and from information informants (Brody, 1956). The phenomenon of



mothering is viewed as a means of socialization and as the means of transmission of cultural patterns.

Professionals in the biological and medical sciences have examined the relationships between mothers and infants in order to describe how they interact (Brazelton, 1983; Hales et al., 1977; Klaus & Kennell, 1982), what types of problems they incur (Josten, 1981; Robson & Moss, 1970), and the influence of timing on such a relationship (de Chateau, 1977; Chess & Thomas, 1982; Greenberg, Rosenberg & Lind, 1973; Peterson & Mehl, 1978).

In the psychoanalytic framework used by Brody (1956) to study maternal behavior patterns, mothers were viewed as the prime mediators between infants and the world. She asserted that a relationship existed between an infant's experience with its mother and later ego formation and intrapsychic conflict. The feeding situation was identified as the interaction most likely to elicit maternal behaviors representing a pattern of mothering (Barnard, 1978; Brody, 1956; Rubin, 1967; Zablielski, 1984).

Sociologists have compiled studies in which mothers have been described according to various social variables such as marital status, number of children, employment status, economic status, social support

systems and other factors defining a person's placement in one group or another (Gilbert & Hanson, 1983).

Meleis (1975) described an adaptation of social role theory as the basis of research measuring the effect of nursing intervention on mothering behaviors. In this model, mothering was viewed as a set of behaviors which are based on society's expectations of one who mothers. Role theory has been used to describe and explain mothering behaviors as they relate to a mother's perception of what is expected of her (Rossi, 1968; Rubin, 1977).

Differing theoretical orientations provide conflicting views of how mothering occurs, what influences mothering, and what influence mothering has on the child. The timing and character of the first interaction may or may not have significant influence on the behaviors of the mother or infant. The selection of a particular person to do the mothering of an infant may or may not influence infant development. The particular actions taken by the mother, in fulfillment of mothering, may or may not affect success of mothering or infant development. Because so many questions remain unanswered and because society has a great need to understand mothers and mothering (Belsky & Rovine, 1984; Feller, 1985; Josten, 1981; Klaus &

Trause, 1982), the concept of mothering as a research problem is valid.

A linking construct on which to base nursing research is the ANA (1980) definition of nursing as diagnosis and treatment of human responses to health problems. Related health problems of attachment and growth fostering environments are related to the concept of mothering.

Gorrie (1986) has identified nursing diagnoses of psychosocial problems in the postpartum patient. Specific among these is difficult adaptation to role changes related to (a) lack of preparation, (b) lack of information, (c) age, and (d) inadequate or unavailable support system. These diagnoses are based on the concepts of role theory.

Role theory, as developed from symbolic interaction (Blumer, 1969) is the general theoretical framework used for the study of mothering. Within the framework of symbolic interaction (Blumer, 1969; Burr, 1972; Kando, 1977) the mothering role is achieved through the ability to respond to expected reciprocal behaviors of significant others. The mother's success in taking the mothering role depends on the mother's ability to anticipate the response of significant others regarding mothering behaviors (Chao, 1979; Mercer, 1981b).

The infant and others, such as father, mother's mother, and close friends, are viewed in consideration of anticipated reactions by the mother. The new mother's experiences with her parents can determine the patterns of her own parenting practices (Justice & Calvert, 1985). In a study examining the factors relating to child abuse as a parental response to stress, Justice and Calvert (1985) found the need to use offspring to meet emotional needs is tied to expressions of hostility when such needs are not met. Persons close to the parents serve as mediators of acceptable behaviors and can have a profound influence on the interpretation of infant behaviors and their response to them.

The mothering behaviors which are selected as appropriate or desired are those behaviors which correspond to anticipated responses from those significant others as stated above (Meleis, 1975). If the theoretical relationship between role expectations and role acquisition is valid, the ability of a mother to adequately perform mothering behaviors is affected by what she thinks others expect of her and what she expects the infant to do in response to her mothering attempts. Burr (1972) calls this anticipatory socialization and suggests that the greater the amount of identification with expected behaviors of a role, the

greater the ease of transition into that role.

Clinical data are cues upon which a person's health patterns are constructed (Gordon, 1982). A cue, then, is information which influences the decision to characterize or classify a particular behavior pattern or status of an individual with regard to health. States of mothering are assigned meaning through the classification of behavioral cues of clinical observations. Within the context of psychosocial adaptation, the role of mothering is affected by the mother's expectations of infant behavior or abilities. The accuracy of these expectations, along with the acceptance of the infant's behaviors will affect the ongoing patterns of interaction which will define the mother-infant relationship. In a review of the research on infant temperament, Carey (1983) noted that mutual modifications in maternal attitudes and infant temperament would appear to determine the behavioral style of the infant as it unfolds after birth.

As the mother learns about her infant during the first few days after birth, new information about the infant provides the mother with the basis for new expectations. In a study investigating the influences of the initial mother-infant interactions, Avant (1981) found that anxiety was a potential factor affecting

maternal attachment. The major causes of anxiety in new mothers was not specifically identified, but the anxiety scores were associated with affectionate behaviors. The conclusion was drawn that appropriate nursing interventions would include teaching the mother how to behave affectionately toward her infant. The high anxiety associated with most postpartum mothers was conceptually linked with expectations the mothers may have regarding their performance with the infant. Emphasizing the relationship with the infant directs nursing interventions and nursing research to focus on interactional aspects of the postpartum experience.

Other researchers (Mercer, 1985; Rubin, 1984) suggest that the quality of mothering behaviors are more related to life experience which in turn dictates expectations for the mothering role. It was found that the younger the mother, the more important the perception of the birth experience and the lower the spontaneous interactions between mother and infant (Mercer, 1985). This relationship, in turn, was conceptually linked to readiness for the mothering role, which was more defined with age.

The importance of fostering parent-infant interaction as a means to affect behavioral development of infants has been studied in reference to high-risk

infants. The nurse has been shown to be instrumental in establishing patterns for parents to imitate in order to develop sensitivity to infant cues (Als & Brazelton, 1975; Blackburn, 1983; Boudreaux, 1981; Brown, 1982; Goodman & Sauve, 1985; Nelson, 1985; Williams, Williams & Dial, 1986).

In order to know when nursing intervention is needed to promote healthy parenting, assessment of the parenting style must be accomplished. The use of specific guidelines for assessing early interactions between mother and infant has incorporated the identification of the sequence of events which occurs (Als & Brazelton, 1975; Barnard, 1978; Bee et al., 1982; Brodish, 1982; Cratty, 1970; Erickson, 1978; Goldberg, 1983). Although these behaviors have been established as a means of identifying what is called maternal attachment, the validity of these measures has been questioned.

In a study of the patterns of initial handling of newborns comparing mothers and a group of female nursing students (Tulman, 1985), it was found the mothers deviated from the expected patterns of behaviors identified in the literature, but the students did not. The use of a specific patterning for maternal handling of newborns may not be a reliable means of assessing maternal attachment. The difference may be

accounted for in the expectations each group had for their behaviors toward the newborns. Other behaviors such as eye contact and vocalization to the infant needs to be specified as unique in pattern regarding the mother. The conclusion of this study focuses on the need for continued assessment of the specific behaviors associated with states of early mothering.

Gilbert and Hanson (1983) have recognized the apparent lack of specificity in assigning behaviors to parenting patterns and have developed a tool to measure perceptions of role responsibilities. This acknowledgement of the influence of role expectations as a determinant of maternal behavior is supported in the work of Gottlieb (1978) who found the early postpartum period was a time of increased sensitivity of the mother to the stimulus of infant cues and seemed to be dependent on the "vulnerability of the mother to comments of others" (p. 43). This suggests the early postpartum period may be an ideal time to direct a mother's attention to her infant's behavior.

Patterns of maternal behavior have been established regarding mothers attempts to individualize their infants. Robson and Moss (1970) documented the ways in which mothers interpret the behaviors of their infants. They found the interpretations did not always reflect an



understanding of infant characteristics identified in medical literature but rather signified the assignment of personality and family traits on the newborn. However, specific patterns of these maternal behaviors were not associated with later maternal behavior characteristics. What mothers observe may not be as significant as the process of observing.

Carey (1983) identified the use of maternal perceptions of infant behavior as a means of assessing infant temperament in a review of the research in infant temperament. The vagueness in empirical referents used to establish measurements of infant temperament and the lack off cross-disciplinary cooperation in their development have caused doubt as to their validity. It has been suggested that mothers project themselves on to the behaviors of their infants. The establishment of infant temperament categories may be more of a reflection of mothers perceptions and expectations. "Perceptions may be...influenced by the observer and the observer's situation" (p. 247). Such influences on the characterization of infants may feedback into the maternal-infant interaction system and result in altered cues affecting such interaction. Actions by significant others during early postpartum may affect the nature of mothers' projections.

Concepts held critical to parent-infant bonding have been questioned with regard to the importance of maternal-infant contact. The importance of social support through relationships with significant role models was identified as possibly more influential to maternal behaviors than contact with the infant, especially in socially or economically deprived groups (Chess & Thomas, 1982). The notion that prenatal self-concept of the mother is related to the perceptions of the infant by the mother postpartum has not been supported (Bassoff, 1984; Curry, 1982). The efforts of health promotion through prenatal support and teaching has not demonstrated a positive relationship to postpartum mothering behaviors (Meleis & Swendson, 1978). Efforts to establish the relationship between prenatal support systems and the early mothering behaviors demonstrated postpartum may be more a function of established patterns of interacting with individuals and the ability of the mother to successfully meet expectations for mother-infant interaction postpartum. Regardless of the knowledge and support offered prenatally, the early mothering behaviors demonstrated in mother-infant contact during the postpartum period may be most influenced by direct acknowledgement of those behaviors (Belsky & Rovine, 1984; Blackburn, 1983; Conger, 1984; Erickson, 1978; Meleis & Swendson, 1978).

In an analysis of experimental studies investigating the relationship between informing mothers of infant characteristics and maternal-infant interaction, it was found providing information to mothers concerning their infants' social capabilities significantly increased the overall effect in terms of maternal-infant interaction (Turley, 1985). A meta-analysis was done on all available experimentally controlled studies in which the treatment consisted of providing information to mothers concerning the sensory and perceptual capabilities of their newborns. The findings of this study supported the mother's home as the most effective setting in which to provide such information, with after the fourth week post-discharge from the hospital as the most effective time to present the information. The second week following the presentation of the information was found to be the most effective time to measure the effects of this teaching (Turley, 1985). This analysis confirms the relative inadequacy of the prenatal and immediate postpartum time for teaching interventions regarding infant characteristics. The long term effects of such teaching have also not been supported.

Stryker (1959) states that stimuli affecting interactions take on meaning depending on the activity

in which the interaction occurs. The performance of the mothering role is based on the input of role cues and cultural norms. The significant sources of stimuli from the external environment include the relationship a new mother has with the nurse during the postpartum experience and the type of contact sustained with the infant. The ways in which the nurse influences the mother's interaction with the newborn may account for a significant amount of the nature of that interaction.

Methods for positively influencing the mother-infant relationship have not been firmly established. There is a need to explore the ways in which the expectations a mother has for her newborn change and establish themselves as patterns during the period immediately following birth. The sequence of behaviors demonstrated through maternal handling of the newborn may not be adequate to assess role performance. There is a need to further define the mother-infant relationship in terms of patterns of personalizing the infant through maternal identification of the infant characteristics and determine the influence nursing interventions have on the mother-infant relationship. Alternatives to formal teaching during the postpartum period have been suggested. In a study comparing the knowledge level regarding infant care and development

among adolescent girls, adolescent mothers and young adult mothers, Davis (1984) found that the knowledge level did not differ significantly among the groups but behaviors did. The younger the mother, the less synchrony, touching and closeness were demonstrated between mother and infant. It is possible that knowledge, by itself, is not the critical determinant of maternal actions toward the infant.

An extreme example of maladaptive or unhealthy parenting is child abuse or child neglect. These parenting styles have been characterized as responses to stress (Justice & Calvert, 1985), extremes of discipline style (Meddin, 1985), and products of an unhealthy ecology (Polansky et al, 1985). Perinatal factors have been evaluated in relation to the incidence of child abuse, child neglect and failure to thrive. Prenatal family stress has been cited as a factor which contributes to maternal behavior (Anderson, 1985; Benedict et al., 1985) in a study of mothers scoring "high" and "low" on the Family Stress Checklist. Child abuse studies starting with the birth of the infant have found that high risk status of the mother and infant can be identified prior to discharge from the hospital (Hans, 1986; Josten, 1981). Factors in the infant associated with child abuse include (a) need for

critical or intensive care due to physical impairment, (b) being a twin, and (c) prematurity (Nelson, 1986).

Justice and Calvert (1985) viewed child abuse as one expression of a diminished ability to cope with stress. Certain factors may be present in order for stress to result in violence. Social isolation of parents and the combination of low income, low education and low status occupation may be necessary conditions preceding the incidence of violent child abuse. It is uncertain as to the exact nature of these factors' influence on child abuse. Benedict et al. (1985) found a relationship between age of mother at time of birth, length of birth interval and prenatal care and subsequent child abuse. They found mothers in maltreating families were younger, had shorter birth intervals and less prenatal care. Conclusions of studies investigating the diagnosis of "mothers at risk" for child abuse and neglect have cited the need for study of the influence of social experience of the mother, the existence of parenting skills in managing infant needs, and evidence of questionable bonding (Benedict et al., 1985; Justice & Calvert (1985); Murphy, Orkow & Nicola, 1985). Mild neglect or questionable bonding have been identified through behavior clusters which include statements made by mothers regarding infant

characteristics (Murphy, Orkow, & Nicola, 1985).

Measurements of maternal statements were done at one year and two years after birth. The prenatal factors correlated with abuse or neglect in this study were the same as those identified with most studies looking at parenting behaviors:

1. parenting history
  2. parent self-esteem
  3. parent's social resources
  4. incidence of family financial stress
  5. unwanted status of child
  6. circumstances predisposing to poor bonding
- (Benedict et al., 1985)

The psychological component of assessment of the new mother is a critical factor affecting the nursing care of the postpartum patient. Nurses must analyze the mother's reaction to her birth experience, her adaptation to the infant, and the family's reaction to the infant as aspects of the new mother's psychological status (Hans, 1986). Potential psychosocial problems and consequences of parental knowledge deficit are part of nursing's domain of diagnosis and management (Gorrie, 1986). In order to successfully diagnosis these situations, a reliable cadre of knowledge regarding normative behaviors which are reliable in

predicting these states is being developed. Gorrie (1986) has identified common knowledge deficit problems in the postpartal patient and has included in this list:

1. infant need for comfort, touch and stimulation
2. infant growth and development
3. infant crying

Because of the trend of early discharge for maternity patients (24-48 hours postpartum), the structure of the health care provided during childbearing has caused a gap in services of support and teaching available to these patients. Nursing diagnoses made during the very early postpartum period may be used to plan for follow-up care. Nursing interventions which are aimed at using the new mother's own sense of caring and curiosity about her newborn to learn about her newborn have been cited as possible nursing strategies (Gorrie, 1986). There is a need to identify how best to recognize a mother's lack of knowledge regarding infant characteristics and how this knowledge really affects long term relationships between mother and infant.



### Summary

Viewed within the construct of psychosocial adaptation, the acquisition of the role of mothering is the means by which the mother copes with social demands of motherhood to care for her infant. The mother's understanding of the infant's needs, the cues the infant gives regarding those needs, and the unique characteristics of the infant are the basis for the mother's responses to the infant. There are other social and environmental factors which also contribute to these responses. The mother's responses to the infant determine the development of the mothering role for the mother. Identifying significant influences on the mother's expectations regarding this role and the ability to determine the nature of the mother-infant interaction have been the focus of studies regarding mother-infant interaction. The ability to effectively alter the input to the mother-infant system to result in mastery of the mothering role and long term effective role performance has yet to be related to specific nursing interventions.

### CHAPTER 3

#### PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

The essential questions to be answered in this study were those of a predictive nature. The experimental research design, when applicable, is preferable to the nonexperimental research design, primarily due to the power to demonstrate causality (Kerlinger, 1973).

The experimental design, posttest-only with control group was selected. This experimental design is one of the true experimental research designs (Campbell & Stanley, 1963) and avoids the effect of pretesting on sensitization of subjects to the posttest measurement of the dependent variable.

Characteristic of the essential quality of experimental design, the posttest-only with control group research design is based on manipulating the independent variable and measuring the effect on the dependent variable. Using the posttest-only with control group experimental design (Campbell & Stanley, 1963), a control group and one experimental group was used. In the control group, the dependent variable was measured with no alternation made on the independent variable. In this case the dependent

independent variable. In this case the dependent variable was mother-infant interaction and the independent variable was role supplementation. The dependent variable was measured by the administration of the NCAST Feeding Scale at two months postpartum. The use of randomization in sample selection and treatment controlled for extraneous variance. Manipulation of the independent variable gave power to the interpretation of the results, statistically and conceptually (Kerlinger, 1973).

Controlling unwanted influences was obtained by eliminating interference by extraneous variables, bias, the Hawthorne effect, and the passage of time (Brink & Wood, 1983). Extraneous variables which interfere with the actions of the variable under study included (a) mother-infant contact time, (b) mother and infant health state, (c) race, (d) cultural orientation, (e) existence of financial problems, (f) mother's age and educational level, (g) the physical environment at birth and (h) the mothering history of the mother (Bakeman & Brown, 1980; Barnard, 1976; Clark-Stewart, 1973; Hales, Lozoff, Sosa, & Kennel, 1977; Klaus & Kennell, 1982).

### Setting

This study took place in two settings. Subjects were approached for inclusion into the study and received the treatment of role supplementation or were placed into a control group on the postpartum unit of a major southwest medical center maternity hospital.

All subjects had access to identical facilities and nursing care. The measurement of the dependent variable took place in the home of each subject on a two month postpartum home visit. Each subject had access to the researcher by telephone and was notified prior to the visit. All subjects had equal notification to prepare for the home visit. Variances in the setting for the home visits were noted on the tool measuring the dependent variable.

### Population and Sample

A primary means of controlling extraneous variables is the utilization of randomization, theoretically, the only method of controlling all possible extraneous variables (Campbell & Stanley, 1963). Subjects were chosen from the same sample within the same time period and were randomly assigned to either

the control group or the treatment group.

The population from which the sample for this study was drawn were all primigravidas between the ages of 20 and 30, giving vaginal birth to a term infant at the selected institutional setting.

A homogeneous sample was produced through selection criteria which designated variable characteristics. Race, age, health care institution, marital status, birth and health history were controlled in this manner. Other variables such as occupation, level of education, and self-concept and contact with infant were built into the design through data collection (See Appendices D and E).

Factors considered important in determining the nature and amount of mother-infant interaction have been cited in the works of other investigators. Race and social class have been observed to be independently and interactively related to the attitudes individuals have regarding the problematic nature of parenting and the expectations of the role of mothering (Belsky & Rovine, 1984; Davis, 1984; Miller, 1986). Marital status has been related to the quality and quantity of environmental support available to the new mother and the nature of significant role defining in the early postpartum period (Justice & Calvert, 1985; Miller,

1986). Perinatal health of the mother and the infant are distinctly and interactively related to the ability of the mother and infant to interact and the accessibility of the mother and infant to each other (Benedict et al., 1985; Kemp, 1985; Murphy, Orkow & Nicola, 1985). The nature of the birth experience has been shown to affect the type of interaction experienced during the early postpartum period between mothers and infants (Curry, 1983; Klaus & Kennel, 1982; Mercer, 1985; Stern, 1982).

Researcher bias was controlled by (a) limiting data collection to those nurses who have no knowledge of the subject with regard to treatment or control group placement, and (b) random assignment of treatment. The Hawthorne effect was controlled by the use of a control group. Both groups were aware they were participating in the study and this might affect the ways in which their interactions occurred. The groups were not approached for inclusion into the study on the day of delivery so that initial maternal-infant contact would not be affected by knowledge that they were going to participate in a study (Kerlinger, 1973).

On each day of sample selection, all mothers meeting the selection criteria were placed in a pool from which to draw. They received numbers from 1 to 60

based on the order in which they delivered and sample selection placing each participant in a control or experimental group was based on order numbers generated from a table of random numbers. Each day subjects were selected until a total of 30 subjects were drawn for the experimental group and the control group ( $N=60$ ;  $N_1=30$ ;  $N_2=30$ ).

The restrictions made on characteristics of the sample subjects were:

1. Caucasian race
2. Married marital status
3. Primigravida
4. Statement of absence of financial distress
5. No diagnosed medical conditions or complications of pregnancy or delivery

Variables not held constant were measured on the space provided on the NCAST Feeding Scale (see Appendix E).

6. Participation in parenting education course
7. Support present at home after delivery
8. Years of education
9. Sex of child
10. Whether data collection occurs on a typical day
11. Sources of discomfort during data collection

The element of time as a variable affecting the mother-infant interaction being measured was accounted for in three ways. Theoretical consideration was given to the developmental nature of mother-infant interactions. While infant responses appear to be highly changeable with age variance, maternal interactional patterns are seen as fairly constant, with regard to time alone (Barnard, 1976; Brody, 1956). All subjects were tested during the same time period and were exposed to the same temporal dimensions. The use of the control group provided a basis for measuring effects of developmental effect on the independent variable (Campbell & Stanley, 1963).

#### Protection of Human Subjects

The rights of the individuals serving as subjects in this study have been protected through adherence to the standards and practices dictated by the Human Subjects Review of the institution being used and the Texas Woman's University Graduate School (see Appendix F). All subjects were read a full description of the study and were advised of their rights and responsibilities (see Appendices A, B, and C). The subjects were free to withdraw from the study at any



time, without loss of care from the institution. All records are protected for confidentiality. Results of the study were made available to the subjects after the completion of the study.

### Procedure

The posttest-only control group design (Campbell & Stanley, 1963) was used to study the effects of role supplementation (guiding mother's in exploring their infants) on role performance (maternal-infant characteristics) two months postpartum. Scores on the criterion measure, the NCAST Feeding Scale, were compared between a group of mothers who received role supplementation and those who did not receive role supplementation.

### Collection of Data

Data collection was performed by registered nurses certified in administering the NCAST Feeding Scale. Inter-rater reliability was established through certification by the NCAST Project, Seattle, WA., with a minimum of 85% agreement on each subscale and total scale scores. The treatment of role supplementation was

performed by the primary investigator. The nurse provided role supplementation in this study by increasing mothers' awareness of their infants' characteristics. Mothers documented the sleep and activities of their newborns through the completion of the NCAST Sleep/Activity Record (see Appendix D). Mothers in the experimental group were approached on the second postpartum day. They were asked to observe their infants closely for five days and to record new observations daily on the back of the Sleep/Activity Record. They were told to be as creative as possible and the nurse would help them as needed. This treatment was based on the conceptual assumption underlying the utilization of role supplementation...if conditions and processes surrounding role transitions were well defined, role transitions might be accomplished more effectively (Meleis, 1975). The degree of role transition to new motherhood was demonstrated by the NCAST Feeding Scale score.

The investigator's phone number was given to them so they could have access to that person night and day. If the subject was discharged prior to 24 hours postpartum, she was instructed to complete the Sleep/Activity Record at home. It was collected on the home visit at two months postpartum. They were verbally commended for attempts to be descriptive regarding their infants'

characteristics. The nurse demonstrated the different ways in which the Sleep/Activity Record could be used to record the unique characteristics of each infant. Mothers were also told the Sleep/Activity Record would be a memorable keepsake of their infants' first days.

Subjects in the control group were asked to describe their activities with their newborn infants on the second and third postpartum day. The nurse investigator recorded this information on the NCAST Sleep/Activity Record.

The criterion measure occurred two months postpartum during a scheduled home visit. Home visits were scheduled by phone and confirmed the day before the home visit. Mothers were informed the home visit would occur during a regular feeding time for the infant and at their convenience. One or two home visits were performed by each nurse daily.

#### Treatment of Data

The following statistics were performed on the data collected during the study. The Mann-Whitney U Test compared differences in the ranks of scores of the control group and the experimental group on the NCAST Feeding Scale (Roscoe, 1975). A t-test for independent samples was

performed on the control group data and the experimental group data to see if they differed in maternal-infant contact (interval data, in hours) (Roscoe, 1975).

Descriptive statistics included the mean number of hours of mother-infant contact, median number of years of education of mothers, mean age of mothers, and the range and median score of the NCAST Feeding Scale total score. A standard deviation was computed for the amount of maternal-infant contact.

### Instrumentation

Instruments used to conduct this study included the NCAST Feeding Scale and the NCAST Sleep/Activity Record. These scales were developed after lengthly assessments of parent-child interaction. The aspects measured have been linked with a child's later skills or qualities (Bakeman & Brown, 1980; Beckwith, 1971; Clark-Stewart, 1973). A rating scale was developed by Barnard and Eyres (1979) to describe a mother feeding her infant. The scale covers such features as sensitivity to cues, response to distress, social emotional growth fostering, cognitive growth fostering, clarity of cues and responsiveness to parent. The feeding situation was chosen for observation because it has been identified as a situation in which

maternal responses represent behaviors consistent with maternal behaviors in other interactions with the infant (Brody, 1956; Osofsky, 1976). The development of the NCAST Feeding Scale incorporates the research findings of studies of reciprocity (Brazelton, 1983; Sander, 1962), cognitive development in children (Clark-Stewart, 1973) and communication (Stern, 1974).

Normative data for the NCAST Feeding Scale was obtained from observations by participants in the Nursing Child Assessment Satellite Training Project (NCAST), a program that involved training of over 2000 nurses to use a series of standard assessment instruments (Barnard & Bee, in press). All nurse observers were required to achieve 85% reliability. This researcher achieved 95% reliability with another observer. The variables associated with this scale include:

1. Scales are highly consistent with education differences; the greater the number of years of education a mother had had, the higher her average score.
2. The younger the child, the somewhat lower the score.
3. There may be ethnic differences in the normative data, although the sample sizes of non-white

groups were small, and not matched with the white group for level of education or marital status.

Internal consistency of the scales represents another form of reliability. Cronbach's alpha was calculated for each sub-scale and were consistently higher for total scores than for individual sub-scales. For this reason, only the total scores will be used to assess interaction in the feeding situation.

The test-retest reliability of the Feeding Scale total scores was established by the computation of a generalizability coefficient. This statistic reflects the stability of the scores over all ages studied (1, 4, 8, & 12 months) and is 0.75 for the parent score and 0.51 for the infant score (Barnard & Bee, in press). Concurrent validity has been established by correlation of the Feeding Scale scores with the NCAST HOME Scale and the NCAST Teaching Scale.

Concurrent validity information was also established by the use of five of the six subscales to study mother-infant interaction in a clinical setting of a retardation center (Barnard, 1978).

Predictive validity has been attempted through two major longitudinal studies with healthy and preterm infants. Multiple regression equations predicted Bayley MDI, Binet IQ, and problem behavior. Because of

the small sample size, few of the correlations obtained reached accepted levels of significance. Multiple R's for the feeding scales are consistently in the range of 0.30 to 0.50. Twelve-month feeding scale scores are significantly predictive of the Bayley Mental development ( $R = 0.67$ ) (Barnard & Bee, in press.)

Construct validity, the power of the scales to discriminate between subgroups that would be expected to differ in interactive skill, was demonstrated by Bee, Disbrow, Johnson-Crowley and Barnard (1981). They demonstrated significantly different scores between abusing mothers and non-abusing mothers. Comparison of term and preterm infants also demonstrated sensitivity of the instrument to discriminate on both the feeding scale and teaching scale.

The statistic regarding the NCAST Feeding Scale came from observations of mostly Caucasian, married mothers with an average of 13 years education. The 76 binary items on the Feeding Scale are based on observations of the feeding interaction as identified through the review of research literature (Barnard, 1978). The total responses to these items (nominal data) produces a total score which represents an ordinal value of the measurement of interactive adaptation. This assumption is based on the operational definition

of adaptation proposed by Sander (1964).

The NCAST Sleep/Activity Record was recorded by the nurse in the control group and by the mother in the experimental group and documented interactions with the infant. It was used to record the amount and character of the time the mother spends with the infant.

### Results of Pilot Project

This research project was piloted at a university medical center hospital in a major southwest city. Six subjects were selected from the mothers delivering over a two week period. Charts were reviewed for data significant in sample selection and the available subjects were interviewed. After an explanation of the study was completed, informed consent was obtained and the pretest feeding evaluation was completed. Random assignment to treatment groups was done and treatments were effected prior to discharge. Two month follow up home visits were made to each subject. A feeding situation was observed and recorded as NCAST Feeding Scale scores.

There were no significant differences in the total scores obtained on the feeding scales. There may have been no differences among the subjects selected in this pilot with regard to interaction behaviors between



mother and infant. This may be due to the invariable nature of early infant responses after birth.

The relative equality of the feeding scores may also represent the lack of the ability of the sample infant to respond actively during the feedings. For five of the six feedings, the infants were unresponsive and very sleepy. All of the mothers had received epidural anesthesia during delivery and each had been medicated for pain during the postpartum period. Five of the six mothers commented on the sleepiness or disinterest perceived regarding their infants.

This study was useful in identifying the best time to implement the experimental procedure. Timing of role supplementation was moved to hours when distractions were minimal, before 9:00 A.M. and between 4:00 to 7:00 P.M.. Methods for scheduling home visits were changed from a single phone call to the phone call and a written reminder of the home visit.

## CHAPTER 4

### ANALYSIS OF THE DATA

The characteristics of the experimental and the control group were stable and supported the premise the samples were drawn from a homogenous population (see Table 1)

The average age for the experimental group was 26.3 years and for the control group was 25.8 years. The average number of years of education were 15 years in the experimental group and 14 years in the control group. Only one participant did not have a high school education. 47% of the experimental group and 37% of the control group held four year college degrees. Of those, fourteen percent in each group held professional or graduate degrees.

63% of each group had completed a childbirth preparation course in which early parenting skills were included. Ten percent of the experimental group and six percent of the control group took additional courses in parenting skills. All participants included their own mothers as a primary source of information on mothering skills.

Both the experimental group and the control group had a greater number of male infants than female infants (see Table 1). Slightly more girl infants were represented in the experimental group than the control group, 47% and 40% respectively. Likewise, the larger male representation was in the control group (60%) compared to the experimental group (53%). Raw data describing the sample subjects can be found in Tables 4 and 5 in Appendix G.

TABLE 1

Descriptive Analysis of Subjects by Group

	<u>Experimental</u>	<u>Control</u>
no.	30	30
Mean Age (yrs.)	26.3	25.8
Median Yrs. Education	15	14
Sex of Infant:		
Females    %	47	40
Males       %	53	60
Prepared Childbirth Course   %	63	63
Parenting Course               %	10	6
Hours of Maternal-Infant Contact (24-72 hrs. after birth)		
Mean	11.0	12.4
Standard Deviation	2.4	2.0
NCAST Score:		
Range	33-73	30-74
Median	68	53

## Findings

The t-test for independent groups was computed using NWA STATPAK computer program (1984) and revealed the two groups differed significantly in the number of hours of contact mothers and infants had during the first twenty-four hours after birth (see Table 2). Mothers in the control group spent more time with their infants.

TABLE 2

Difference in the Means of Mother-Infant Contact Time

	<u>Experimental</u>	<u>Control</u>
n	30	30
Mean Score	11.0	12.4

$$t = 2.5$$

$$\alpha = 0.05$$

$$\text{degrees of freedom} = 56$$

Reject Null Hypothesis if  $t > 1.699$  or  $t < -1.699$

$$\underline{t = 2.5}$$

Therefore, reject the null hypothesis that there is no difference in the average number of contact hours of mothers and infants in the experimental and control groups.

The range of the NCAST Feeding Scale scores was 30 to 74, the highest score possible being 76. The

difference in scores was not significant as tested by the Mann-Whitney U test (see table 3). The research hypothesis was rejected.

TABLE 3

Comparison of the NCAST Feeding Scale Score Ranks

	<u>Experimental</u>	<u>Control</u>
n	30	30
U	178.5	721.5

$\alpha = 0.05$  with direction not predicted

Reject Null Hypothesis if U less than or equal to 138

$$\underline{U = 178.5}$$

Therefore, the null hypothesis is confirmed.

There is no difference in the NCAST Feeding Scale Scores between the experimental and control groups. Mothers receiving role supplementation did not score significantly higher on the NCAST Feeding Scale than mothers who did not receive role supplementation.

## CHAPTER 5

### SUMMARY OF THE DATA

#### Discussion of Methodological Considerations

Failure to support the research hypothesis suggests the need to examine the nature and timing of role supplementation offered to new mothers during the early postpartum period. It is possible the timing of the role supplementation used in this study is critical in affecting interaction between mothers and infants. Use of the Sleep/Activity Record may be useful in guiding mothers through learning experiences but may not be adequate, by itself, in sensitizing mothers to their infants needs and responses. The explanation of the use of the Sleep/Activity Record may have been inadequate to insure proper utilization of the instrument. The usefulness of the Sleep/Activity Record may be enhanced if it were used over a longer period of time.

Role supplementation may not be effective in the early postpartum period when implemented as a self-directed discovery learning technique. Mothers may need more structured support in the form of stress

reduction or anticipatory planning for needs upon discharge. Nursing interventions possibly should be directed to reinforcing the new mother's reflection of her own actions and responses to the infant and significant others. This may prepare her for a transfer of her sensitivities during the later post delivery period four to six weeks postpartum. The early postpartum period may not be the time for teaching new mothers about their infants.

Mothers utilized in this study were drawn from a population using epidural anesthesia for delivery. Mothers utilizing the medical facility in this study routinely request epidural anesthesia for delivery and are usually offered anesthesia early in labor (4 cm. cervical dilatation). It was customary that mothers and infants be separated the first 5-8 hours after birth. Extended (>15 minutes post delivery) bonding time with newborns is not encouraged and was not experienced by any of the participants in this study. The lack of initial contact time between mothers and infants and the extended use of regional anesthesia may affect the timing of learning experiences useful to the new mother. Altering the experience of labor through regional anesthesia and institutional practices which decrease emphasis on mother involvement during delivery

and the immediate postpartum period may desensitize new mothers. These practices may place mothers in an increased dependent and vulnerable state which precludes active assumption of independent mothering activities. A delay in this process may affect later interactional skills exhibited between mother and infant.

Contact between mother and infant may be a confounding variable which affects mother-infant interaction. This effect could be interactional and depend on the amount of contact time spent between mother and infant, when the contact takes place or the exact nature of the situation in which the contact takes place. The institution used for this study did not encourage 24 hour rooming-in and none of the participants in the study selected this option. Most infants were returned to the nursery at night and at least once during the day. Both breastfeeding and bottle feeding mothers tended to schedule feedings every four hours.

The control group experienced significantly more contact with their infants than the mothers in the experimental group. This may have affected the interactional skills of the mothers in the control group. Role supplementation and mother-infant contact may be similar in their affect on mother-infant interaction.



This may account for the lack of differences in the NCAST Feeding Scale scores. If the groups had been controlled for mother-infant contact time, role supplementation might have had a significant effect on mother-infant interaction.

This study supports the concept of early mother-infant contact as a determinant of early mother-infant interaction. Mothers who choose to have increased contact with their infants may inherently interact differently with their infants than mothers who choose not to have extended contact with their infants. Extended contact between mother and infant needs to be questioned as a nursing priority for every mother and infant. Increased contact may have no effect on the mother and infant when it is not originated by the mother. Mothers who choose not to have extended contact with their infants may be candidates for role supplementation. This process of identifying specific patients needing role supplementation increases cost effective nursing care in the maternity setting.

The overall educational level and age in the population used in this study is higher than the general population for whom role supplementation may be most effective. Many measures of socialization in the mothering role are insensitive in the higher educated

population. It may be the usefulness of role supplementation, as employed in this study, is minimal in a population with diverse and adequate social support and educational resources. A less privileged, less educated, younger, and less stable population may respond more dramatically to role supplementation.

Infant response capabilities are highly variable at two months. A more useful interpretation of stable mother-infant interactional responses might be obtained if criterion measures were accomplished over a longer period of time. Comparing scores at two, four, six and eight months might provide data supporting a relationship between role supplementation and increased NCAST Feeding Scale scores.

A major factor influencing the study of mothering today is the fact most first time mothers are returning to work outside the home. All of the subjects included in this study were their infants' major caregiver. However, any study conducted over a longer period of time would be complicated by the need to control for the variable of whether or not the mother left the infant with another caregiver. Long range studies of maternal-infant interaction would need to consider when and how the factor of regular separation between mother and infant becomes significant in affecting the

mother-infant relationship.

#### Recommendations for Future Study

Continued study of specific nursing interventions during early postpartum and their influence on maternal-infant relationships are needed. Specific studies utilizing the role theory framework need to test this framework as a viable context within which to base nursing interventions and explain patient needs and responses. Different types of role supplementation need to be tested to clarify the usefulness of these categories of nursing actions. Diagnoses regarding role transition need to be carefully scrutinized for reliable cues and effective treatment. Studies must be conducted to validate knowledge deficits in new mothers before role supplementation is routinely prescribed. Nursing tools need to be further developed to assess the need for role supplementation. In order to continue the study of mother-infant relationships and build on the body of knowledge existing on mother-infant interaction the following is recommended:

1. Further qualitative studies to identify diagnostic cues for early mothering states.
2. Development of a taxonomy of verbal cues

indicating diagnostic mothering states requiring role supplementation.

3. Replication of this study with the following changes:

- lower socioeconomic population
- NCAST Feeding Scale measured at 2, 4 and 8 months
- Concurrent measurement of home environment by NCAST HOME Scale (NCAST, 1978).
- learning module package to introduce use of Sleep/Activity Record.
- control of mother-infant contact during first 48 hours postpartum.

4. Studies utilizing different types of role supplementation such as self-instruction pamphlets, telephone follow-up after discharge and group support.

The early postpartum period between discharge from the hospital and six weeks after birth may be the appropriate period for teaching mothers about their babies. Nursing studies need to focus on role supplementation in the home setting. The usefulness of nursing teaching intervention during the immediate postpartum period is limited. Cost effective delivery of maternal-child nursing services should be supported in the community setting, away from the immediate

postpartum period. Following this model of care, nursing care in the hospital would concentrate on supporting the recovery needs of the mother and infant. This study supports the need for re-eximining nursing priorities in the maternity setting.

## References

- Ainsworth, M.D.S. (1979). Attachment as related to mother-infant interaction. In J.S. Rosenblatt, R.A. Hinde, C. Beer and M.C. Busnel (Eds.). New York: Academic Press.
- Als, H. & Brazelton, T.B. (1975). Comprehensive neonatal assessment. Birth and the Family Journal, 2, 3-9.
- American Nurses' Association (1980). Nursing: A Social Policy Statement. Kansas City, MO: Author.
- Anderson, C.J. (1979). Informing mothers about the behavioral characteristics of their infants: the effects on mother-infant interaction. Unpublished dissertation, University of Texas, Austin.
- Anderson, C. (1985). A preliminary profile of abusive and non-abusive mothers. Unpublished doctoral dissertation, Texas Woman's University, Denton.
- Anthony, E.J. & Benedek, T. (Eds.). (1970). Parenthood, its psychology and psychopathology. Boston: Little, Brown, & Co.
- Avant, K.C. (1981). Anxiety as a potential factor affecting maternal attachment. JOGN Nursing, 6, 416-419.
- Bakeman, R. & Brown, J.V. (1980). Early interaction: consequences for social and mental development at three years. Child Development, 51, 437-447.
- Barnard, K.E. (1976). The nursing child assessment satellite training series learning resource manual. Seattle: University of Washington Press.
- Barnard, K.E. (1978). The nursing child assessment feeding scales. Seattle: University of Washington Press.

- Barnard, K.E. & Eyres, S.J. (Eds.). (1979). Child health assessment, part 2: the first year of life. Washington, D.C., U.S. Government Printing Office. Publication number DHEW No. HRA 79-25.
- Barnard, K. & Bee, H. (in press). The assessment of parent-infant interaction by observation of feeding and teaching. In T.B. Brazelton & H. Als (Eds.), New Approaches to Developmental Screening. New York: Elsevier North Holland, Inc.
- Bassoff, E.S. (1984). Relationships of sex-role characteristics and psychological adjustment in new mothers. Journal of Marriage and the Family, 46, 449-454.
- Beckwith, L. (1971). Relationships between infants' social behavior and their mothers' behavior. Child Development, 43, 397-411.
- Bee, H.L., Disbrow, M.A., Johnson-Crowley, N., & Barnard, K.E. (1981). Paper presented at the biennial meeting of the Society for Research in Child Development, Boston, Massachusetts, April.
- Bee, H.L., Barnard, K.E., Eyres, S.J., Gray, C.A., Hammond, M.A., Spietz, A.L., Snyder, C., & Clark, B. (1982). Prediction of IQ and language skill from perinatal status, child performance, family characteristics, and mother-infant interaction. Child Development, 53, 1134-1156.
- Belsky, J. & Rovine, M. (1984). Social-network contact, family support, and the transition to parenthood. Journal of Marriage and the Family, 46, 455-462.
- Benedict, M.I., White R. B.. & Cornely, D. A. (1985). Maternal perinatal risk factors and child abuse. Child Abuse and Neglect, 9, 217-224.
- Blackburn, S. (1983). Fostering behavioral development of high-risk infants. JOGN Nursing, 12, 76s-86s.
- Blumer, H. (1969). Symbolic interaction: perspective and method. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

- Bolton, F.G., Jr. (1983). When Bonding fails: clinical assessment of high risk families. Beverly Hills: Sage Publications.
- Boudreaux, M. (1981). Maternal attachment of high-risk mothers with well newborns. JOGN Nursing, 10, 366-369.
- Brazelton, T.B. (1983). Infants and mothers: differences in development (rev. ed.). New York: Dell Publishing Co.
- Brink, P.J. & Wood, M.J. (1983). Basic steps in planning nursing research. Belmont, California: Wadsworth, Inc.
- Brodish, M.S. (1982). Relationship of early bonding to initial infant feeding patterns in bottle-fed newborns. JOGN Nursing, 11, 248-252.
- Brody, S. (1956). Patterns of mothering: maternal influence during infancy. New York: International Universities Press.
- Brown, B. (1982). Maternity-patient teaching - a nursing priority. JOGN Nursing, 11, 11-14.
- Buckner, E.B. (1983). Use of brazelton neonatal behavioral assessment of planning care for parents and newborns. JOGN Nursing, 12, 26-30.
- Burr, W.R. (1972). Role transitions: a reformulation of theory. Journal of Marriage and the Family, 37, 407-416.
- Campbell, D. & Stanley, J. (1963). Experimental and quasi-experimental designs for research. Skokie, Illinois: Rand McNally.
- Carey, W.B. (1983). Some pitfalls in infant temperament research. Infant Behavior and Development, 6, 247-254.
- Censullo, M., et al. (1985) Rhythmic patterning in mother newborn interaction. Nursing Research, 34, 342-346.



- Chao, Y.M.Y. (1979). Cognitive operations during maternal role enactment. Unpublished doctoral dissertation, University of Pittsburgh, Pittsburgh.
- de Chateau, P. (1977). The importance of the neonatal period for the development of synchrony in the mother-infant dyad - a review. Birth and Family Journal, 4, 10-22.
- Chess, S. & Thomas, A. (1982). Infant bonding: mystique and reality. American Journal of Orthopsychiatry, 52, 213-222.
- Clarke-Stewart, K.A. (1973). Interactions between mothers and their young children: characteristics and consequences. Monographs of the Society for Research in Child Development, 38, 6-7.
- Conger, R.D., (1984). Mother's age as a predictor of observed maternal behavior in three independent samples of families. Journal of Marriage and the Family, 46, 411-423.
- Cratty, B.J. (1970). Perceptual and motor development in infants and children. New York: Macmillan Co.
- Cronenwett, L.R. (1985). Network, structure, social support, and psychological outcomes of pregnancy. Nursing Research, 34, 93-99.
- Curry, M.A. (1982). Maternal attachment behavior and the mother's self-concept: the effect of early skin-to-skin contact. Nursing Research, 31, 73-78.
- Curry, M.A. (1983). Variables related to adaptation to motherhood in "normal" primiparous women. JOGN Nursing, 12, 115-121.
- Davis, D.D. (1984). A comparison of the level of knowledge regarding infant care and development among adolescent girls, adolescent mothers, and young adult mothers. Unpublished doctoral dissertation, Texas Woman's University, Denton.
- Disbrow, M.A., Doerr, H., & Caulfield, C. (1977). Measuring the components of potential for child abuse and neglect. Journal of Child Abuse and Neglect, 1, 279-296.

- Dyer, E.D. (1963). Parentgood as crisis: a re-study. Marriage and Family Living, 25, 196-201.
- Erickson, M.P. (1978). Trends in assessing the newborn and his parents. Maternal Child Nursing, 3, 99-103.
- Feller, C.M. (1985). Sex role identity of first-time mothers and fathers and competency as a parent. Unpublished doctoral dissertation, Texas Woman's University, Denton.
- Gay, J. (1981). A conceptual framework of bonding. JOGN Nursing, 10, 440-444.
- Gilbert, L. & Hanson, G. (1983). Perceptions of parental role responsibilities among working people. Journal of Marriage and Family Living, 6, 203-219.
- Goldberg, S. (1983). Parent-infant bonding, another look. Child Development, 54, 1355-1382.
- Goodman, J.R. & Sauve, R. (1985). High risk infant: concerns of the mother after discharge. Birth, 12, 235-242.
- Gordon, M. (1982). Nursing diagnosis: process and application. New York: McGraw-Hill Book Company.
- Gorrie, T.M. (1986). Postpartal nursing diagnosis. JOGN Nursing, 15, 52-56.
- Gottlieb, L. (1978). Maternal attachment in primiparas. JOGN Nursing, 8, 39-44.
- Greenberg, M., Rosenberg, I., & Lind, J. (1973). First mothers rooming-in with their newborns: its impact upon the mother. American Journal of Orthopsychiatry, 43, 783-788.
- Hales, D., Lozoff, B., Sosa, R. & Kennell, J. (1977). Defining the limits of the maternal sensitive period. Developmental Medicine and Child Neurology, 19, 454-461.
- Hall, L. A. (1980). Effects of teaching on primiparas' perceptions of their newborns. Nursing Research, 29, 317-322.

- Hamblin, R.R. (1982). The relationship among first-time mothers' anticipatory socialization for motherhood, accuracy of preconceptions of the postpartum period, and the ease of transition into the parent role. Unpublished thesis, Michigan State University, Lansing.
- Hans, A. (1986). Postpartum assessment: the psychological component. JOGN Nursing, 15, 49-51.
- Hardy, M.E. & Conway, M.E. (1978). Role theory: perspectives for health professions. Norwalk, Conn.: Appleton-Century-Crofts.
- Jenkins, R.L. & Westhus, N.K. (1981). The nurse role in parent-infant bonding, JOGN Nursing, 10, 114-118.
- Josten, L. (1981). Prenatal assessment guide for illuminating possible problems with parenting, MCN, 6, 113-117.
- Justice, B. & Calvert, A. (1985). Factors mediating child abuse as a response to stress. Child Abuse and Neglect, 9, 359-363.
- Kando, T.M. (1977). Social Interaction. Saint Louis: C.V. Mosby.
- Kemp, V.H. (1986). Health assessment in high risk pregnancies. Family and Community Health, 8(4), 10-17.
- Kerlinger, F.N. (1973). Foundations of behavioral research (2nd. ed.). New York: Holt, Rinehart & Winston, Inc.
- Kim, M. & Moritz, D. (Eds.). (1982). Classification of nursing diagnoses: proceedings of the third and fourth national conferences. New York: McGraw-Hill.
- Klaus, M.H. & Kennell, J.H. (1982). Parent-infant bonding. St. Louis: C.V. Mosby Company.
- Klaus, M.H. & Trause, M.A. (1982). Maternal attachment and mothering disorders (2nd ed.). Sausalito, CA: Johnson & Johnson Baby Products.
- LeMasters, E. (1957). Parentgood as crisis. Marriage and Family Living, 19, 352-355.

- Meddin, B.J. (1985). The assessment of risk in child abuse and neglect case investigations. Child Abuse and Neglect, 9, 57-62.
- Meleis, A.F. (1975). Role insufficiency and role supplementation: a conceptual framework. Nursing Research, 24, 264-271.
- Meleis, A.F. & Swendson, L.A. (1978). Role supplementation: an empirical test of nursing intervention. Nursing Research, 27, 11-18.
- Mercer, R.T. (1981a). The nurse and maternal tasks of early postpartum. MCN, 6, 341-345.
- Mercer, R.T. (1981b). A theoretical framework for studying factors that impact on the maternal role. Nursing Research, 30, 73-77.
- Mercer, R.T. (1985). Relationship of the birth experience to later mothering behaviors. Journal of Nurse Midwifery, 30, 204-211.
- Miller, S.J. (1986). Prenatal nursing assessment of the expectant family. The Nurse Practitioner, 11(5), 40-52.
- Murphy, S., Orkow, B., & Nicola, R. (1985). Prenatal prediction of child abuse and neglect: a prospective study. Child Abuse and Neglect, 9, 225-235.
- Nelson, H.B. (1985). Increased child abuse in twins. Child Abuse and Neglect, 9, 501-505.
- Northwest Analytical, Inc. (1984). NWA STATPAK: Multifunction Statistics Version 3.1 [Computer Program]. Portland, OR: Author.
- Osofsky, J.D. (1976). Neonatal characteristics and mother-infant interaction in to observational situations. Child Development, 47, 1138-1147.
- Paukert, S. (1982). Maternal-infant attachment in a traditional hospital setting. JOGN Nursing, 11, 23-26.

- Peterson, G.H. & Mehl, L.E. (1978). Some determinants of maternal attachment. American Journal of Psychiatry, 135, 1168-1173.
- Polansky, N., Gaudin, J., Ammons, Pl, & Davis, K. (1985). The psychological ecology of the neglectful mother. Child Abuse and Neglect, 9, 265-275.
- Reiser, S.L. (1981). A tool to facilitate mother-infant attachment. JOGN Nursing, 10, 294-297.
- Riesch, S. & Munns, S. (1984). Promoting awareness: the mother and her baby. Nursing Research, 33, 271-276.
- Robson, K. & Moss, H. (1970). Patterns and determinants of maternal attachment. Journal of Pediatrics, 77, 976-985.
- Roscoe, J.T. (1975). Fundamental statistics for the behavioral sciences (2nd ed.). New York: Holt, Rinehart and Winston, Inc.
- Rossi, A.S. (1968). Transition to parenthood. Journal of Marriage and Family, 30, 26-39.
- Roy, Sr. C. & Roberts, S. L. (1981). Theory construction in nursing: An adaptation model. Englewood Cliffs, N. J.: Prentis-Hall, Inc.
- Rubin, R. (1967). Attainment of the maternal role. Nursing Research, 16, 237-346.
- Rubin, R. (1977). Binding-in in the postpartum period. MCN, 6, 67-75.
- Rubin, R. (1984). Maternal identity and the maternal experience. New York: Springer Publishing Company.
- Sander, L.W. (1962). Issues in early mother-child interaction. Journal of the American Academy of Child Psychiatry, 1, 141-166.
- Sander, L.W. (1964). Adaptive relationships in early mother-child development interaction. Journal of the American Academy of Child Psychiatry, 3, 231-264.
- Scaer, R. & Korte, D. (1978). MOM Survey: maternity options - what do women want in maternity care? Birth and Family Journal, 5, 20-25.

- Siegal, E. (1982). A critical examination of studies of parent-infant bonding. In M.H. Klaus & M.O. Robertson (Eds.), Birth, Interaction, and Attachment, 51-60. Skillman, NJ: Johnson & Johnson Baby Products.
- Snyder, C., Eyres, S.J., Barnard, K. (1979). New findings about mother's antenatal expectations and their relationship to infant development. MCN, 4, 354-357.
- Stern, D. (1974). Mother and infant at play. In M. Lewis and L. Rosenblum (Ed.), The effect of the infant on its caregiver. New York: John Wiley and Sons.
- Stern, D. (1982). Mothers and infants: the early transmission of affect. In M.H. Klaus & M.D. Robertson (Eds.), Birth, interaction and attachment, 43-50. Skillman, New Jersey: Johnson & Johnson Baby Products.
- Stryker, S. (1959). Symbolic interaction as an approach to family research. Marriage and Family Living, 21, 111-119.
- Tulman, L.J. (1985). Mothers' and unrelated persons' initial handling of newborn infants. Nursing Research, 34, 205-210.
- Turley, M.A. (1985). A meta-analysis of informing mothers concerning the sensory and perceptual capabilities of their infants: the effects on maternal-infant interaction. Maternal Child Nursing Journal, 14, 183-197.
- Ventura, J.N. & Boss, P.G. (1983). The family coping inventory applied to parents with new babies. Journal of Marriage and the Family, 45, 867-875.
- Walker, L., Crain, H., and Thompson, E. (1986). Maternal role attainment and identity in the postpartum period: stability and change. Nursing Research, 33, 68-71.
- Williams, P., Williams, A. & Dial, M. (1986). Children at risk: perinatal events, developmental delays and the effects of a developmental stimulation program. International Journal of Nursing Studies, 23, 21-38.

Zabielski, M.T. (1984). Giving and receiving in the  
neomaternal period: a case of distributive inequity.  
Maternal Child Nursing Journal, 13, 19-47.

## APPENDIX A

### Participation Explanation and Consent

**Project Title:** The Effect of Role Supplementation on Mother-Infant Interaction

**Investigator:** Anita G. Hufft R.N.,M.N.

**The Study:** To be read to participants

Within the first two days after delivery a nurse will visit you in your room in order to help you complete a form which describes your infant's activities. This form will be left at the nurse's station upon your discharge from the hospital. The nurse will make an appointment to visit you in your home two months after discharge from the hospital. At that time a feeding of the baby will be observed. At the end of the home visit the nurse will share the information on the forms with you.

1. You will be expected to proceed with your normal routine during the home visit. You will tell the nurse when the feeding begins and feed the infant in your usual fashion. After you inform the nurse that the feeding has ended you may engage in any discussion desired regarding the forms being used.
2. You will be asked to describe the ease with which you have adapted to mothering.

**Potential benefits to you include:**

1. Increased awareness of your baby's abilities and a greater knowledge of how to care for your baby.
2. You may feel better about yourself as a mother because you have experienced a special time with your baby during this study.
3. You may become aware of resources in the community for new mothers.
4. You will have access to a nurse who is specialized in parent education.
5. You will have the opportunity to have access to a copy of the results of this study.

**Potential risks to you include:**

1. You may be uncomfortable while you are being observed feeding your baby.
2. Although all forms will be anonymous, your participation in this project may become known to others outside the study.

There are no other incentives provided for your participation in this study.

Your participation in this research study is strictly voluntary. You are free to withdraw at any time without loss of benefits. If you have any questions regarding your participation in this study you may contact:

Anita G. Hufft R.N.,M.N. (214) 553-0431



## APPENDIX B

### PARTICIPATION EXPLANATION AND CONSENT (2)

This addendum will be read to the participants in the experimental group only.

Procedures for this study shall include participation in an interaction with a nurse in which you will be guided in recording observations of your baby. This will be done during your stay in the hospital after the birth of your baby. This activity will be arranged so that it will not interfere with your daily routines.

## APPENDIX C

### LIMITED LIABILITY OF THE INVESTIGATORS BAYLOR UNIVERSITY MEDICAL CENTER AND TEXAS WOMAN'S UNIVERSITY:

Neither the investigator nor Baylor University Medical Center nor Texas Woman's University can accept any liability, financial or otherwise, for any unforeseen consequences of your participation in this study. In the event that a condition requiring medical treatment or hospitalization arises, the investigator will help you obtain such assistance but will neither necessarily provide such care nor be financially responsible for it.

#### CERTIFICATION:

I have read and understand the foregoing summary and voluntarily consent to participate in this study. I have received an oral explanation of the study, including a fair explanation of the procedures and any associated discomforts or risks, and a description of the possible benefits. An offer has been made to me to answer all my questions about this study.

I give my permission as legal guardian of my minor child for a nurse to observe me feeding my infant in my home.

---

Minor child's name

---

Date

---

Mother's signature

---

Witness signature

The above signed witness acknowledges signature of mother and certifies that fully informed consent has been obtained through a full description of the listed elements of informed consent.

APPENDIX D

**NURSING CHILD ASSESSMENT SLEEP/ACTIVITY RECORD**

CAREGIVERS USUAL BEDTIME \_\_\_\_\_  
 CAREGIVERS USUAL AWAKENING \_\_\_\_\_

CHILD'S NAME \_\_\_\_\_ LAST NAME FIRST NAME  
 BIRTH DATE \_\_\_\_\_  
 DATE OF RECORDING \_\_\_\_\_

																						24 HR SUMM.					
Date	12 Noon	1	2	3	4	5	6	7	8	9	10	11	12 Mid.	1	2	3	4	5	6	7	8	9	10	11			
																						Totals					

SYMBOLS

SUMMARY

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# APPENDIX E

## UNIVERSITY OF WASHINGTON SCHOOL OF NURSING NURSING CHILD ASSESSMENT TRAINING

### FEEDING SCALE (BIRTH TO ONE YEAR)

USUAL FEEDING TIME (CIRCLE)  
YES NO

PERSON OBSERVED IN INTERACTION (CIRCLE)  
MOTHER FATHER OTHER

MAJOR CAREGIVER (CIRCLE)  
YES NO

TYPE OF FEEDING (CIRCLE)  
BREAST BOTTLE SOLID

LENGTH OF FEEDING (CIRCLE)  
10 OR LESS 10-20 20-30 30 OR MORE

SETTING (CIRCLE)  
HOME CLINIC OTHER

CHILD'S FIRST NAME \_\_\_\_\_

CHILD'S AGE (IN MONTHS) \_\_\_\_\_

CHILD'S SEX \_\_\_\_\_

CHILD'S RACE \_\_\_\_\_

PARTY \_\_\_\_\_

MOTHER'S EDUCATION (CIRCLE)  
6 YRS OR LESS 7-8-9-10-11-12-13-14-15-16-17-18-19-20+

MARITAL STATUS (CIRCLE)  
MARRIED NOT MARRIED

MOTHER'S AGE (AT BIRTH OF CHILD) \_\_\_\_\_

	YES	NO
I. SENSITIVITY TO CUES		
1. PARENT POSITIONS CHILD SO THAT CHILD IS SAFE BUT CAN MOVE HIS ARMS.		
2. PARENT POSITIONS CHILD SO THAT THE CHILD'S HEAD IS HIGHER THAN HIPS.		
3. PARENT POSITIONS CHILD SO THAT TRUNK-TO-TRUNK CONTACT IS MAINTAINED DURING MORE THAN HALF OF THE BREAST OR BOTTLE FEEDING (50%).		
4. PARENT POSITIONS CHILD SO THAT EYE-TO-EYE CONTACT IS POSSIBLE.		
5. PARENT'S FACE IS AT LEAST 7-8 INCHES OR MORE FROM THE CHILD'S FACE DURING FEEDING EXCEPT WHEN KISSING, CARESSING, HUGGING OR BURPING THE CHILD.		
6. PARENT SMILES, VERBALIZES, OR MAKES EYE CONTACT WITH CHILD WHEN CHILD IS IN OPEN-FACE-GAZE POSITION.		
7. PARENT COMMENTS VERBALLY ON CHILD'S HUNGER CUES PRIOR TO FEEDING.		
8. PARENT COMMENTS VERBALLY ON CHILD'S SATIATION CUES BEFORE TERMINATING FEEDING.		
9. PARENT VARIES THE INTENSITY OF VERBAL STIMULATION DURING FEEDING.		
10. PARENT VARIES INTENSITY OF ROCKING OR MOVING THE CHILD DURING THE FEEDING.		
11. PARENT VARIES THE INTENSITY OF TOUCH DURING THE FEEDING.		
12. PARENT ALLOWS PAUSES IN FEEDING WHEN THE CHILD INDICATES BY CRY FACE, HALT HAND, BACK ARCHING, PULLING AWAY, PUSHING FOOD AWAY, TRAY POUNDING, TURNING HEAD, SHAKING HEAD NO OR SAYING "NO" OR FALLING ASLEEP OR WHEN CHILD IS IN PAUSE PHASE OF THE BURST-PAUSE SEQUENCE OF SUCKING (75% OF THE TIME).		
13. PARENT SLOWS PACE OF FEEDING OR PAUSES WHEN CHILD AVERTS GAZE, PLACES HAND-TO-EAR, HAND-TO-MOUTH, HAND-BEHIND-HEAD, HAND-BACK-OF-NECK, HANDS OVER STOMACH, YAWNS, RUBS EYE OR DISPLAYS FEET MOVEMENT (75% OF THE TIME).		
14. PARENT TERMINATES THE FEEDING WHEN THE CHILD TURNS HEAD, FALLS ASLEEP, COMPRESSES LIPS, PUSHES FOOD AWAY, SHAKES HEAD "NO" OR SAYS "NO," ONCE OR MORE OR AFTER OTHER METHODS (REPOSITIONING, BURPING, OR WAITING) HAVE PROVED UNSUCCESSFUL.		
*15. PARENT DOES NOT INTERRUPT CHILD'S SUCKING OR CHEWING BY REMOVING THE NIPPLE, JIGGLING THE NIPPLE, OR OFFERING THE CHILD MORE OR OTHER KINDS OF FOOD WHILE CHILD IS EATING.		
*16. PARENT DOES NOT OFFER FOOD WHEN THE CHILD LOOKS AWAY, LOOKS DOWN, TURNS AWAY OR TURNS AROUND.		
SUBSCALE TOTAL (NO. OF YES ANSWERS)		
II. RESPONSE TO DISTRESS (INDICATE IN BOX WHETHER OCCURRED OR NOT. IF NO DISTRESS, MARK EACH BOX "YES") IF CHILD SHOWS DISTRESS DURING THE FEEDING DOES THE PARENT:		
17. STOP OR START FEEDING IN RESPONSE TO THE CHILD'S DISTRESS.		
18. CHANGE THE CHILD'S POSITION IN RESPONSE TO CHILD'S DISTRESS.		
19. MAKE POSITIVE OR SYMPATHETIC VERBALIZATION IN RESPONSE TO CHILD'S DISTRESS.		
20. CHANGES VOICE VOLUME TO SOFTER OR HIGHER PITCH IN RESPONSE TO CHILD'S DISTRESS.		
21. MAKES SOOTHING NON-VERBAL EFFORTS IN RESPONSE TO CHILD'S DISTRESS.		
22. DIVERTS CHILD'S ATTENTION BY PLAYING GAMES, INTRODUCING A TOY, OR MAKING FACES IN RESPONSE TO CHILD'S DISTRESS.		
23. PARENT DOES NOT MAKE NEGATIVE VERBAL RESPONSE IN RESPONSE TO CHILD'S DISTRESS.		
24. PARENT DOES NOT MAKE NEGATIVE COMMENTS TO HOME VISITOR ABOUT CHILD IN RESPONSE TO CHILD'S DISTRESS.		

\*NEED ONLY OCCUR ONCE TO SCORE "NO."

	YES	NO
25. PARENT DOES NOT YELL AT THE CHILD IN RESPONSE TO HIS DISTRESS.		
26. PARENT DOES NOT USE ABRUPT MOVEMENTS OR ROUGH HANDLING IN RESPONSE TO CHILD'S DISTRESS.		
27. PARENT DOES NOT SLAP, HIT, OR SPANK CHILD IN RESPONSE TO DISTRESS.		
SUBSCALE TOTAL (NO. OF YES ANSWERS)		
III. SOCIAL-EMOTIONAL GROWTH FOSTERING		
28. PARENT PAYS MORE ATTENTION TO CHILD DURING FEEDING THAN TO OTHER PEOPLE OR THINGS IN ENVIRONMENT.		
29. PARENT IS IN EN FACE POSITION FOR MORE THAN HALF OF THE FEEDING (50%).		
30. PARENT SUCCEEDS IN MAKING EYE CONTACT WITH CHILD ONCE DURING FEEDING.		
31. PARENT'S FACIAL EXPRESSION CHANGES AT LEAST TWICE DURING FEEDING.		
32. PARENT ENGAGES IN SOCIAL FORMS OF INTERACTION (PLAYS GAMES WITH CHILD) AT LEAST ONCE DURING THE FEEDING.		
33. PARENT USES POSITIVE STATEMENTS IN TALKING TO CHILD DURING THE FEEDING.		
34. PARENT PRAISES CHILD OR SOME QUALITY OF THE CHILD'S BEHAVIOR DURING THE FEEDING.		
35. PARENT HUMS, CROONS, SINGS OR CHANGES THE PITCH OF HIS/HER VOICE DURING THE FEEDING.		
36. PARENT LAUGHS OR SMILES DURING THE FEEDING.		
37. PARENT USES GENTLE FORMS OF TOUCHING DURING THE FEEDING.		
38. PARENT SMILES, VERBALIZES OR TOUCHES CHILD WITHIN 5 SECONDS OF CHILD SMILING OR VOCALIZING AT PARENT.		
39. PARENT DOES NOT COMPRESS LIPS, GRIMACE, OR FROWN WHEN MAKING EYE CONTACT WITH CHILD.		
40. PARENT DOES NOT SLAP, HIT, SHAKE, OR GRAB CHILD OR CHILD'S EXTREMITIES DURING THE FEEDING.		
41. PARENT DOES NOT MAKE NEGATIVE OR UNCOMPLIMENTARY REMARKS TO THE CHILD OR HOME VISITOR ABOUT THE CHILD OR CHILD'S BEHAVIOR.		
SUBSCALE TOTAL (NO. OF YES ANSWERS)		
IV. COGNITIVE GROWTH FOSTERING		
42. PARENT PROVIDES CHILD WITH OBJECTS, FINGER FOODS, TOYS, AND/OR UTENSILS.		
43. PARENT ENCOURAGES AND/OR ALLOWS THE CHILD TO EXPLORE THE BREAST, BOTTLE, FOOD, CUP, BOWL OR THE PARENT DURING FEEDING.		
44. PARENT TALKS TO THE CHILD USING TWO WORDS AT LEAST THREE TIMES DURING THE FEEDING.		
45. PARENT VERBALLY DESCRIBES SOME ASPECT OF THE FOOD OR FEEDING SITUATION TO CHILD DURING FEEDING.		
46. PARENT TALKS TO CHILD ABOUT THINGS OTHER THAN FOOD, EATING, OR THINGS RELATED TO THE FEEDING.		
47. PARENT USES STATEMENTS THAT DESCRIBE, ASK QUESTIONS OR EXPLAINS CONSEQUENCES OF BEHAVIOR MORE THAN COMMANDS IN TALKING TO THE CHILD.		
48. PARENT VERBALIZES TO CHILD WITHIN FIVE SECONDS AFTER CHILD HAS VOCALIZED.		
49. PARENT VERBALIZES TO CHILD WITHIN FIVE SECONDS AFTER CHILD'S MOVEMENT OF ARMS, LEGS, HANDS, HEAD, TRUNK.		
50. PARENT DOES NOT TALK BABY TALK.		
SUBSCALE TOTAL (NO. OF YES ANSWERS)		

	YES	NO
<b>V. CLARITY OF CUES</b>		
51. CHILD SIGNALS READINESS TO EAT.		
52. CHILD DISPLAYS A BUILD-UP OF TENSION AT THE BEGINNING OF FEEDING.		
53. CHILD DEMONSTRATES A DECREASE IN TENSION WITHIN A FEW MINUTES AFTER FEEDING HAS BEGUN.		
54. CHILD HAS PERIODS OF ALERTNESS DURING THE FEEDING.		
55. CHILD DISPLAYS AT LEAST TWO DIFFERENT EMOTIONS DURING THE FEEDING.		
56. CHILD HAS PERIODS OF ACTIVITY AND INACTIVITY DURING THE FEEDING.		
57. CHILD'S MOVEMENTS ARE SMOOTH AND COORDINATED DURING THE FEEDING.		
58. CHILD'S ARM AND LEG MOVEMENTS ARE GENERALLY DIRECTED TOWARD PARENT DURING FEEDING (NOT DIFFUSE).		
59. CHILD MAKES CONTACT WITH PARENT'S FACE OR EYES AT LEAST ONCE DURING FEEDING.		
60. CHILD VOCALIZES DURING FEEDING.		
61. CHILD SMILES OR LAUGHS DURING FEEDING.		
62. CHILD AVERTS GAZE, LOOKS DOWN OR TURNS AWAY DURING FEEDING.		
63. CHILD ACTIVELY RESISTS FOOD OFFERED.		
64. CHILD DEMONSTRATES SATISFACTION AT END OF FEEDING THROUGH SLEEP, FACIAL EXPRESSIONS, DECREASED MUSCLE TONE, ARMS EXTENDED ALONG SIDE, VOCALIZATIONS OR CHANGE IN ACTIVITY LEVEL OR MOOD.		
65. CHILD DOES NOT HAVE MORE THAN TWO RAPID STATE CHANGES DURING FEEDING.		
SUBSCALE TOTAL (NO. OF YES ANSWERS)		

<b>VI. RESPONSIVENESS TO PARENT</b>		
66. CHILD RESPONDS TO FEEDING ATTEMPTS BY PARENT DURING FEEDING.		
67. CHILD RESPONDS TO GAMES, SOCIAL PLAY OR SOCIAL CUES OF PARENT DURING FEEDING.		
68. CHILD LOOKS IN THE DIRECTION OF THE PARENT'S FACE AFTER PARENT HAS ATTEMPTED TO ALERT THE CHILD VERBALLY OR NON-VERBALLY DURING FEEDING.		
69. CHILD VOCALIZES TO PARENT DURING FEEDING.		
70. CHILD VOCALIZES OR SMILES WITHIN 5 SECONDS OF PARENT'S VOCALIZATION.		
71. CHILD SMILES AT PARENT DURING FEEDING.		
72. CHILD EXPLORES PARENT OR REACHES OUT TO TOUCH PARENT DURING FEEDING.		
73. CHILD SHOWS A CHANGE IN LEVEL OF MOTOR ACTIVITY WITHIN 5 SECONDS OF BEING HANDLED OR REPOSITIONED BY PARENT.		
74. CHILD SHOWS POTENT NEGATIVE CUES DURING LAST HALF OF FEEDING.		
75. CHILD SHOWS POTENT NEGATIVE CUES WITHIN 5 SECONDS AFTER PARENT MOVES CLOSER THAN 7 TO 8 INCHES FROM CHILD'S FACE.		
76. CHILD DOES NOT TURN AWAY OR AVERT GAZE FROM PARENT DURING FIRST HALF OF FEEDING.		
SUBSCALE TOTAL (NO. OF YES ANSWERS)		

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

HOME VISIT QUESTIONS:  
1. WOULD YOU SAY THIS WAS A TYPICAL FEEDING?  
A. YES B. NO  
IF NO, WHY NOT?

2. WERE YOU UNCOMFORTABLE DURING ANY PART OF THE FEEDING DUE TO MY PRESENCE?  
A. YES B. NO  
IF YES, WHY?

3. DO YOU HAVE ANY CONCERNS ABOUT THE FEEDING OR YOUR CHILD'S EATING?  
A. YES B. NO  
IF YES, SPECIFY.

4. OBSERVER'S COMMENTS:

APPENDIX F

TEXAS WOMAN'S UNIVERSITY  
Box 22939, TWU Station  
RESEARCH AND GRANTS ADMINISTRATION  
DENTON, TEXAS 76204

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Anita G. Hufft Center: Denton  
Address: 9618 Mill Hollow Date: 8-18-86  
Dallas, TX 75243

Dear Anita G. Hufft:

Your study entitled The Predictive Value of Role Supplementation  
on Mother-Infant Interaction

has been reviewed by a committee of the Human Subjects Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health, Education, and Welfare regulations typically require that signatures indicating informed consent be obtained from all human subjects in your studies. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. Furthermore, according to DHEW regulations, another review by the Committee is required if your project changes.

Any special provisions pertaining to your study are noted below:

       Add to informed consent form: No medical service or compensation is provided to subjects by the University as a result of injury from participation in research.

       Add to informed consent form: I UNDERSTAND THAT THE RETURN OF MY QUESTIONNAIRE CONSTITUTES MY INFORMED CONSENT TO ACT AS A SUBJECT IN THIS RESEARCH.

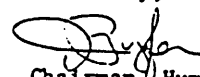
       The filing of signatures of subjects with the Human Subjects Review Committee is not required.

  X   Other: Please correct spelling of explanation under CERTIFICATION and observations on 3. Attachment #1.

       No special provisions apply.

cc: Graduate School  
Project Director  
Director of School or  
Chairman of Department

Sincerely,



Chairman, Human Subjects  
Review Committee

at Denton

8/10/82



BAYLOR UNIVERSITY MEDICAL CENTER

3522 Gaston Avenue  
Dallas, Texas 75246  
(214) 820-0111  
Cable Address: BAYLAIRDAL

November 20, 1986

Anita G. Hufft, R.N., M.N.  
9618 Mill Hollow  
Dallas, TX 75243

Dear Ms. Hufft:

This is to advise you that the Institutional Review Board for Human Protection, at its November 20, 1986 meeting, granted approval for the continuation of your project, "The Predictive Value of Role Supplementation on Mother-Infant Interaction."

The next review of your project will be conducted at the November, 1987 IRB meeting.

Sincerely,

George J. Race, M.D., Ph.D.  
Chairman, Institutional Review  
Board for Human Protection

GJR:kf



BAYLOR UNIVERSITY MEDICAL CENTER

3500 Gaston Avenue  
Dallas, Texas 75246  
(214) 820-0111  
Cable Address: BAYLORDAL

September 8, 1986

Anita G. Hufft, R.N., M.N.  
9618 Mill Hollow  
Dallas, Texas 75243

Dear Ms. Hufft:

The Institutional Review Board for Human Protection approved the modification of your study, "The Effect of Nursing Interventions of Teaching and Guiding on Mother-Infant Interaction."

The Committee asked me to remind you that both Baylor University Medical Center and the Department of Health and Human Services regulations require that written consents must be obtained from all human subjects in your studies. Informed consent can only be obtained by the principal investigator or co-investigators listed in your protocol. These consent forms must be kept on file for a period of three years past completion or discontinuation of the study and will no doubt be subject to inspection in the future.

HHS regulations require you to submit annual and terminal progress reports to Baylor's Institutional Review Board and to receive at least annual approval of your activity by this Committee. You are also required to report to this Committee any death or serious reactions resulting from your study. Failure to submit the above reports may result in severe sanctions being placed on the Medical Center.

Furthermore, we have been directed to review any change in your research activity. In other words, should your project change, another review by the Committee is required.

The IRB is in compliance with the requirements in the Federal Register, Volume 46, No. 17, Part 56, published January 27, 1981.

Sincerely,

George J. Raab, M.D., Ph.D.  
Chairman, Institutional Review  
Board for Human Protection





BAYLOR HEALTH CARE SYSTEM

3201 Worth Street  
P.O. Box 26265  
Dallas, Texas 75226  
(214) 820-2801

Boone Powell, Jr., F.A.C.H.A.  
President

October 25, 1985

Anita G. Hufft, R.N., M.N.  
9618 Mill Hollow  
Dallas, TX 75243

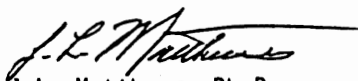
Dear Ms. Hufft:

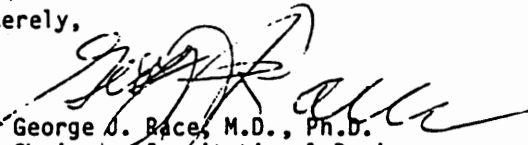
I have reviewed the application to the Institutional Review Board for Human Protection for the project "The Effect of Nursing Interventions of Teaching and Guiding on Mother-Infant Interaction".

Interim approval is hereby granted. This will be confirmed at the next meeting of the Institutional Review Board when the full board will review your application.

You are reminded that the requirements for informed patient consent must be followed in all procedures.

Sincerely,

  
J.L. Matthews, Ph.D.  
Vice-Chairman, Institutional  
Review Board for Human Protection

  
George J. Bace, M.D., Ph.D.  
Chairman, Institutional Review  
Board for Human Protection

GJR:kf

# APPENDIX G

TABLE 4

## Experimental Group Data

Contact Hours	NCAST Score	Infant's Sex	Mother's Age Yrs	Mother's Ed. Yrs	Feed Bttl-0 Brsfd-1	Prep'd. Chld Birth	Parent Ed.
10.5	56	M	28	15	0	Y	N
11.5	64	F	29	13	0	N	Y
12.0	60	F	30	16	0	Y	N
12.0	33	F	26	12	0	N	N
8.5	73	M	30	20	1	Y	N
8.0	73	F	30	16	1	Y	N
9.5	69	M	29	20	1	N	N
10.5	71	M	26	16	1	Y	N
11.0	59	F	30	15	0	N	Y
11.0	69	M	22	13	1	N	N
14.0	56	M	28	14	0	N	N
15.0	60	M	24	12	1	N	Y
16.0	68	F	22	13	0	N	N
14.5	72	M	27	17	0	Y	N
12.5	71	F	30	16	0	Y	N
12.0	52	M	26	12	0	Y	N
11.0	61	M	25	13	0	N	N
11.5	58	F	27	16	0	N	N
9.5	65	F	23	16	1	Y	N
8.0	69	F	20	12	1	Y	N
6.0	71	M	28	11	0	N	N
6.0	70	F	21	14	0	Y	N
12.5	72	M	24	14	0	Y	N
12.0	68	M	20	16	0	N	N
11.5	61	M	20	12	0	Y	Y
10.0	70	F	28	12	1	N	N
8.5	67	M	29	16	1	Y	N
12.5	61	F	30	16	0	Y	N
11.0	69	F	26	16	0	Y	N
10.5	71	F	30	16	0	Y	N

### Note.

M - Male, F - Female

0 - Bottlefed, 1 - Breastfed

Y - Yes, N - No

TABLE 5

Control Group Data

Contact	NCAST	Infant's	Mother's		Feed	Prep'd.	Parent
Hours	Score	Sex	Age	Ed.	Bttl-0	Chld	Ed.
			Yrs	Yrs	Brsfd-1	Birth	

10.0	56	F	25	16	1	Y	N
12.5	51	M	22	13	0	Y	N
15.0	74	M	28	14	0	Y	N
12.0	53	F	24	16	0	Y	N
14.0	30	F	28	12	0	Y	N
12.5	57	F	27	12	1	Y	N
10.5	73	M	30	14	0	Y	Y
14.0	69	M	30	20	0	N	N
14.0	55	F	29	16	1	N	N
12.0	48	M	28	12	0	Y	N
14.0	73	F	30	20	1	N	N
12.5	41	F	29	16	1	Y	N
10.5	63	F	25	12	0	Y	N
6.0	57	M	21	13	0	N	N
10.0	59	M	26	16	0	Y	N
12.0	61	M	27	16	0	Y	N
12.5	52	F	24	14	0	Y	N
11.5	51	F	28	12	0	Y	N
14.5	55	F	20	12	1	Y	N
14.0	58	M	20	12	1	N	N
12.0	61	M	27	16	1	N	N
14.0	53	F	30	16	0	N	N
12.0	52	F	26	16	0	Y	Y
13.0	44	M	28	14	0	N	N
10.0	46	M	22	12	1	Y	N
11.5	48	F	25	12	0	Y	N
14.0	43	M	25	12	0	N	N
16.0	49	M	24	10	0	N	N
12.5	46	M	27	14	0	Y	N
12.0	41	M	20	12	0	N	N

Note.

M - Male, F - Female

0 - Bottlefed, 1 - Breastfed

Y - Yes, N - No