

ADOLESCENT AND ADULT MOTHERS' PERCEPTIONS  
OF INFANT BEHAVIOR

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A THESIS  
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF MASTER OF SCIENCE  
IN THE GRADUATE SCHOOL OF THE  
TEXAS WOMAN'S UNIVERSITY

COLLEGE OF NURSING

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DENTON, TEXAS

AUGUST 1981

The Graduate School  
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Denton, Texas

\_\_\_\_\_ June 5, \_\_\_\_\_ 19 81

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To David

for patience

for help

for love

To Kristin, Andrew, and Matthew

for laughter

confidence

and a light touch

## ACKNOWLEDGEMENTS

The writer wishes to express appreciation to her committee chairperson, Dr. Beth Vaughan-Wrobel for direction and careful editing, and to her committee members, Mrs. Estelle Kurtz and Mrs. Gail Watson.

Acknowledgements are made to Dr. Roger Kirk of Baylor University for statistical guidance, and to Leo Bradman, John Jolly, and Joel Kramer for computer programming assistance.

Finally, thanks are expressed to the mothers who participated so willingly in this study and who made its completion possible.

## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS . . . . .	iv
TABLE OF CONTENTS . . . . .	v
LIST OF TABLES . . . . .	vii

### Chapter

1.	INTRODUCTION . . . . .	1
	Problem of Study . . . . .	3
	Justification of Problem . . . . .	3
	Conceptual Framework . . . . .	6
	Assumptions . . . . .	9
	Hypotheses . . . . .	10
	Definition of Terms . . . . .	11
	Limitations . . . . .	12
	Summary . . . . .	13
2.	REVIEW OF LITERATURE . . . . .	15
	Mother-Infant Relationship as an Interactive Process . . . . .	16
	Motherhood as a Developmental Process . . . . .	23
	Adolescent Motherhood . . . . .	34
	The Neonatal Perception Inventory as a Screening Instrument . . . . .	61
	Summary . . . . .	75
3.	PROCEDURE FOR COLLECTION AND TREATMENT OF DATA . . . . .	79
	Setting . . . . .	79
	Population and Sample . . . . .	80
	Protection of Human Subjects . . . . .	81
	Instrument . . . . .	83

	Page
Data Collection . . . . .	85
Treatment of Data . . . . .	85
4. ANALYSIS OF DATA . . . . .	88
Description of Samples . . . . .	88
Findings . . . . .	91
Summary of Findings . . . . .	105
5. SUMMARY OF THE STUDY . . . . .	109
Summary . . . . .	109
Discussion of Findings . . . . .	113
Conclusions and Implications . . . . .	124
Recommendations for Further Study . . . . .	125
APPENDIX A . . . . .	127
APPENDIX B . . . . .	130
APPENDIX C . . . . .	132
APPENDIX D . . . . .	134
APPENDIX E . . . . .	136
APPENDIX F . . . . .	139
APPENDIX G . . . . .	142
APPENDIX H . . . . .	145
APPENDIX I . . . . .	148
REFERENCES . . . . .	154

## LIST OF TABLES

Table	Page
1. Number of Adolescent Mothers by Age, Race, and Marital Status . . . . .	89
2. Number of Adult Mothers by Age, Race, and Marital Status . . . . .	90
3. Neonatal Perceptions and Age of Mother: NPI Difference Scores 24-48 Hours . . . . .	93
4. Number of Adolescent and Adult Mother Who Had Positive, No Difference, or Negative Scores of Neonatal Perception . .	95
5. Correlations of Mothers' Neonatal Per- ceptions 24-48 Hours and 30-36 Days after Delivery . . . . .	97
6. Neonatal Perceptions and Age of Mother Average Baby and My Baby . . . . .	100
7. Comparison of Time 1 and 2 Mean Neonatal Perception Scores for Adolescent and Adult Mothers . . . . .	102
8. Analysis of Variance of Difference Scores by Age, Race, and Marital Status at 30-36 Days . . . . .	104
9. Comparison of Mean Neonatal Perception Scores by Marital Status . . . . .	106

## CHAPTER 1

### INTRODUCTION

A myth in our culture implies that mothers love their infants from the moment of birth; a mother and her child are expected to live together "happily ever after." Reality is that mother-infant dyads are as diverse as they are numerous. Some mother-infant relationships are harmonious and loving, whereas other mother-infant relationships appear strained almost from the moment of birth. Physically healthy mothers who have given birth to healthy infants do not always rejoice with the birth of that infant. The ideal that every baby should be wanted is not fulfilled.

Probably numerous factors affect the attitudes mothers have at the birth of their new babies. Among these would be age, marital status, race, physical health, and psychological preparedness. In the United States, one-fifth of all babies are born to adolescent mothers (Green & Potteiger, 1977). No society leaves the scheduling of parenthood purely to biological readiness (Furstenberg, 1976). In Western societies early marriage and childbirth is considered a social

and economic liability and is assumed to affect the child detrimentally (Sullerot, 1971).

Age and its presumed correlate, readiness for parenthood, will alter the establishment of the mother-infant relationship which develops as an interactive system. During the neonatal period, mother and infant are not only involved in the process of getting to know each other but they are also influencing each other. The mother who successfully comforts her crying baby experiences positive feedback when the infant stops crying. In turn, the infant whose cries are quickly responded to also experiences the environment (mother) as comforting and predictable. Such interactions enhance and provide satisfaction to the mother-infant pair.

The infant's future development and well-being is entwined in the mother's perception of him/her. A mother who perceives her infant positively will be able to provide a better environment for her infant than the mother who perceives her infant as less desirable. Mothers' perceptions of infants and subsequent mother-infant relationships have long-term effects upon the quality of human development. This study investigated adolescent

and adult mothers' perceptions of expected infant behaviors during the neonatal period.

### Problem of Study

Do adolescent mothers' perceptions of the difficulty of care for expected infant behaviors differ during the neonatal period from perceptions of adult mothers? Secondly, do the perceptions individual mothers have of their babies shortly after birth remain stable after a month's experience with their babies?

### Justification of Problem

Adolescent motherhood represents a mental health problem of major proportions for both mother and child. The infants of adolescent mothers are at risk because of the factors frequently experienced by their mothers: inadequate familial support systems, economic insecurity, less education which may indicate limited psychological resources, and punitive child-rearing attitudes (DeLissovoy, 1973).

Adolescent mothers compared to adolescents who are not mothers have lower self-esteem, weaker support systems, fewer skills in using their support systems, more health problems, less educational training, inadequate



incomes, and restricted job opportunities (Green & Potteiger, 1977). Furthermore, adolescent mothers may enter motherhood with less positive expectations about their babies than adult mothers because of demographic characteristics. For example, adolescent mothers have less education, more dependence on public assistance, are less likely to be married, and have higher incidences of health problems (Furstenberg, 1976). It is likely they will experience distress in their relationships with their infants.

Broussard (1978) without reference to mothers' age has investigated four areas of maternal behavior which seem to predict distress in mother-infant relationships and future psychosocial problems for the child. These behaviors are already in evidence in the first month postpartum. Mothers whose infants were judged to be at high risk for future psychosocial disorders were noted to:

- 1) have poor self-esteem, lack confidence in themselves as mothers, and be dependent on the external world, yet often not able to use help when offered.

- 2) view their environmental support systems as less helpful than the mothers of low risk infants (they make many references to the health professionals as being of no help or not to be trusted. Husbands and mothers were often considered to be "not much help").

3) report having more trouble in caring for their infants in regard to sleeping, feeding, colic, crying, and elimination.

4) often seem depressed and anxious. (p. 55)

Some similarities seem to exist between adolescent mothers and the mothers in Broussard's (1978) study. Consequently it might be expected that adolescent mothers would be more likely to reveal distress patterns in the mother-infant relationship, especially in respect to caretaking aspects. If so, Broussard's work would suggest that these infants are more likely to be at greater risk for future psychosocial disorders in childhood than are infants born to adult mothers. Such evidence would contribute to the awareness that adolescent pregnancy represents a crisis to the individual and her family. To society at large, adolescent pregnancy also represents economic loss, social disruption, and often long-term public costs. The consequences of adolescent pregnancy have an impact upon each of us.

Among the groups of health professionals, nurses frequently are most available to the adolescent both during and after pregnancy. Nurses will be able to provide effective care for adolescent mothers if they understand the life change involved for this group. Potential interaction between nurse and adolescent occurs in

several settings: junior and senior high school programs for pregnant adolescents, prenatal clinics, hospital obstetric units, well baby clinics, follow-up public health care, as well as private physicians' offices. The role of the nurse is to assist the individual to attain, maintain, and/or reattain a maximum level of wellness. Nursing care focuses on intervention at the primary, secondary, and tertiary phases of the individual's health needs (Neuman, 1974). Therefore, a nurse has a significant role in caring for the pregnant adolescent prenatally and postnatally, providing instruction in self and infant care and assisting her effectively to utilize the health care system. For example, the nurse sensitized to the particular needs of adolescent mothers will ideally function as an enabler, allowing the adolescent mother to be dependent upon her when she needs that support but encouraging the adolescent mother toward the goal of independence so that she will become a more competent parent (Kozier & Erb, 1979).

#### Conceptual Framework

"The way the mother relates to her child is based upon her perception. How she handles the infant will affect its behavior" (Broussard, 1978, p. 44). According

to Broussard (1979) when a woman becomes a mother she already has certain expectations as to what kind of mother she will be and what kind of child she will have. These expectations effect how a woman relates with her child and, thus, will influence the infant's behavior. Reciprocally the baby will influence the mother's behavior; at birth the infant manifests the capacity to initiate and regulate in part his/her interaction with the environment. The mother represents the environment which is critical to the infant's survival. The way a mother relates to her infant will be modified by her perception of his/her appearance and behavior. Her sensitivity to her infant's needs will influence her ability to provide an optimal environment in which the infant develops (Brazelton, Kozlowski, & Main, 1974).

As a practicing pediatrician, Broussard (1979) observed that the range of responses which mothers manifested toward their newborns seemed to be related to the mothers' internal perception of her newborn rather than actual physical or behavioral characteristics of the infant. Some women made a smooth transition from pregnancy to motherhood, whereas others lacked the ability to make that transition; these mother-infant

pairs seemed to be in distress. The distress which Broussard observed was present even when the infant was professionally judged to be physically healthy and normal.

Broussard initiated longitudinal studies of mothers and infants in 1963. The focus of these studies was healthy, full-term infants, born without physical defect, who traditionally had not been considered at high risk for psychosocial disorder. Broussard (1978) observed that the mothering or caretaking skills of mothers varied with their perceptions of their infants. Mothers who felt their infants would be difficult to care for were not as responsive to their infants' needs. Differences in functioning by mothers with positive and negative expectations about their infant were noticed in the mother's ability to: (a) anticipate or fulfill the child's needs, (b) anticipate threat or danger to the child, (c) establish appropriate limits, (d) engage in mutually satisfying games, and (e) provide a positive verbal mirror.

Mothers who seemed to have negative self-concepts appeared to project that negativity onto their infants. "Their inability to believe that what they have created

is of value is impressive" (Broussard, 1979, p. 100). These women at 1 month postpartum were noted to have poor self-esteem, lack of confidence in themselves, dependence on the external world, distrust for environmental support systems and health professionals, and trouble caring for their infants. They also seemed depressed and anxious and had difficulty in tolerating closeness to their infants (Broussard, 1979).

Studies of adolescent mothers (DeLissovoy, 1973; Furstenberg, 1976; Green & Potteiger, 1977) suggested that because of their demographic characteristics, their samples appeared to be similar to the mothers Broussard identified as perceiving their infants negatively. Thus, adolescent mothers could be expected to have more negative perceptions of their infants. This study investigated the relationship between the variables of maternal age and mothers' perception of their infants. If such a relationship was established, the infants of adolescent mothers could be expected to have higher incidences of psychosocial disorders.

#### Assumptions

The assumptions of this study were:

1. Mothers and infants have the potential to influence each other.

2. A mother's own level of psychosocial development affects how she will perceive her infant.

3. Adolescent and adult mothers because of their age difference are themselves encountering different developmental tasks.

4. A mother's perception of her infant affects the baby's subsequent development.

5. The way a mother relates to her infant will be modified by her perception of her infant.

6. The mother's sensitivity to her infant's needs will influence her ability to provide an optimal environment for her infant.

7. The mother's perceptions of her infant at 1 month of age are predictive of subsequent psychosocial development (Broussard, 1979).

### Hypotheses

The hypotheses of this study were:

1. Adolescent primiparous mothers perceive their infants as more difficult to care for than adult primiparous mothers 24-48 hours after delivery.

2. Adolescent primiparous mothers perceive their infants as more difficult to care for than adult primiparous mothers 30-36 days after delivery.

3. The perceptions adolescent mothers have of the "average infant" at 24-48 hours and 30-36 days are positively related.

4. The perceptions adolescent mothers have of their infants at 24-48 hours and 30-36 days are positively related.

5. The perceptions adult mothers have of the "average infant" at 24-48 hours and 30-36 days are positively related.

6. The perceptions adult mothers have of their infants at 24-48 hours and 30-36 days are positively related.

#### Definition of Terms

The terms operationalized for this study were:

1. Adolescent mother--a mother of 13-18 years of age who has given birth vaginally to a healthy infant.

2. Adult mother--a mother of 21-30 years of age who has given birth vaginally to a healthy infant.

3. Difficulty of care--the degree to which a mother perceives her baby as easier (positive scores) or more difficult (negative scores) to care for than her perception of the average baby, as measured by Broussard's Neonatal Perception Inventory.



4. Infant--a newborn baby up to 36 days of age.
5. Neonatal--the first 36 days of an infant's life.
6. Perception--the act or process of knowing through the senses about infant's behavior as measured by Broussard's Neonatal Perception Inventory.
7. Primiparous--a woman giving birth to or having had her first infant.

#### Limitations

The following factors were inherent in this study and could have diminished and limited the generalizability of the conclusions:

1. Generalizations cannot be extended to women and infant pairs who were excluded by design from the study. Pairs were excluded if any of these factors were present: Cesarean delivery, multiparity, premature birth, physically defective features at birth, low birth weight ( < 2500 grams), low Apgar score (< 7 at 1 minute and < 8 at 5 minutes), mothers' ages 19, 20, or over 30 at time of delivery.
2. The following variables were not controlled and, thus, may affect results in undetermined ways: sociocultural background, psychological health and

maturity, personal life experiences, time of year of birth (sample includes only births from September 3, 1980 to November 19, 1980), and geographical location.

### Summary

The mother-infant relationship develops as an interactive system. Mother and infant each have the capacity to influence each other. The infant's future development and well-being is entwined in the mother's perception of the infant. A mother who perceives her infant positively will be able to provide a better environment for her infant than the mother who perceives her infant as less attractive.

Adolescent motherhood is often considered a high risk period for both infant and mother because of the following demographic characteristics: (a) less education, (b) more dependence on public assistance, (c) less likely to be married, and (d) inadequate incomes. Similarities seem to exist between adolescent mothers and the mothers studied by Broussard (1978). These mothers were noted to have poor self-esteem, to lack confidence in themselves as mothers, to be ineffective in utilizing outside resources for help (e.g., the health care system), and to have difficulty in caring for their infants.

This study investigated the following problem: Do adolescent mothers' perceptions of expected infant behaviors during the neonatal period differ from perceptions of adult mothers?

## CHAPTER 2

### REVIEW OF LITERATURE

Nurses improve the quality of care given to adolescent and adult mothers and their infants through an understanding of the (a) mother-infant relationship as an interactive process, (b) motherhood as a developmental process, and (c) adolescent motherhood. The first section of the review of literature addresses the areas of the mother-infant relationship as an interactive process; the behavior of the mother and the infant affects the responses of each participant. The second section considers motherhood as a developmental process by tracing the development of mothering attitudes and their evolution into maternal or caretaking skills. The third section reviews adolescent motherhood as it relates (a) to the risks involved for both mother and infant, (b) to the psychosocial impact of a premature pregnancy and childbirth, and (c) to the developmental consequences of adolescent pregnancy. A final section describes the use of the Neonatal Perception Inventory (NPI) as a screening instrument for future psychosocial disorder and its value for the pediatric nurse clinician.

Mother-Infant Relationship as an  
Interactive Process

The reciprocal nature of the mother-infant relationship has received considerable attention during the past decade. Bell and Ainsworth (1972) characterized the infant as competent and able through his own activity to exert control on his environment. A variety of infant behaviors, such as smiling, crying, clinging, sucking, and eye contact, have been suggested as particularly important "signals" in eliciting maternal attention and caregiving. Bell and Ainsworth (1972) and Lewis and Goldberg (1969) suggested that for the human infant, development is significantly related to maternal response contingent upon infant behavior.

In an infant social competence model, Lewis and Goldberg (1969) emphasized the mutual enhancement of "feelings of efficacy" within the reciprocal mother-infant pair. Generally the available empirical data indicated that the development of infant cognitive and social competence is associated with early maternal responsiveness to infant social behavior in general as well as to infant careseeking cues in particular. The more responsive the mother is, the less likely the infant is to cry and the more likely the infant is to

develop varied modes of communication (Bell & Ainsworth, 1972).

Recently, Thoman (1975) stated that the nature of parental behavior is related to the characteristics of the child. Mother and infant each possess characteristics that developed before the infant's birth. A very active infant prenatally establishes within the mother expectations of an active baby postnatally. Ideally, their interaction develops to their mutual satisfaction and well-being as a consequence of synchrony of their behaviors. For example, a highly probable sequence is if an infant is crying and the mother picks the baby up, the baby is likely not only to stop crying but also to become alert to the mother's behavior (Korner & Thoman, 1970). When alert, the infant is more capable of receiving environmental stimuli than when crying. It is then reasonable to state that in such an interactive sequence, the baby's more organized or receptive state is a function of the mother's intervention (Thoman, 1975).

Thoman (1975) asserted that researchers have been able empirically to distinguish patterns of interactive influence.

In any mother-infant relationship, characteristics of both the mother and infant contribute to an ongoing process of mutual modification of behavior. With intensive observation and objective recording of behaviors, it is possible to describe individual infants, depict patterns of interaction with their mothers, and identify some of the consequences of interaction for both the mother's and the infant's developing behaviors. (Thoman, 1975, p. 177)

Thoman's (1975) studies of very early mother-infant interactional patterns suggested that the patterns may be predictive of later interactional patterns as well. Marked differences were noted in the mother-infant interaction as a function of the parity of the mother (Thoman, Barnett, & Leiderman, 1971; Thoman, Barnett, Leiderman, & Turner, 1970).

Inexperienced, primiparous mothers take longer to feed their infants, they change their feeding activity more often, and they stimulate their infants more than multiparous mothers do. Yet the infants of primiparous mothers consume less if they are bottlefed and suck less if breast fed than infants of multiparous mothers. (Thoman, 1975, p. 178)

However, when infants were fed by an experienced nurse, these differences in sucking patterns were not apparent which suggests that primiparous mothers were less responsive or less sensitive than multiparous mothers to their infant's cues during the feeding interaction.

According to Lasko (1954), Hilton (1967), and Sutton-Smith and Rosenberg (1965), mothers of first-born

children are more persistent, more demanding, more inconsistent, and more attentive than mothers with second or subsequent children. First born children also differ from those of subsequent birth order in that they are more highly motivated for achievement (Altus, 1966), more anxious (Schachter, 1959), more susceptible to social pressure and less physically aggressive (Warren, 1966), and more dependent (Sears, 1950).

Bromwich (1976) also indicated that the infant's optimum development is dependent upon a mutually satisfying relationship with the mother. Bromwich developed a program at the University of California at Los Angeles (UCLA) to identify maternal behaviors which favor infant development. Underlying assumptions of this program are:

- 1) Differences in the behavior patterns of infants can be observed early in life. Infants with problems often exhibit a combination of temperamental traits that makes them more difficult babies to care for and enjoy. Many babies with developmental delays or other neurologically based handicaps respond in ways sufficiently deviant to make mutually pleasurable interaction between mother and infant difficult to achieve.

- 2) The prime requisite for the infant's optimum development is a mutually satisfying relationship between mother and infant.



3) The mother gains competence as she enjoys her baby's increasing responsiveness to her successful efforts in motivating the infant's growth-promoting activities. (Bromwich, 1976, p. 440)

The program focused on teaching the mother to identify and respond to signals given by the infant such as smiling, crying, clinging, sucking, and eye contact.

Studies by Bell and Ainsworth (1972), Lewis and Goldberg (1969), and Watson (1967) suggested that human infant development is significantly directed by maternal response. At the same time, maternal response is dependent upon the infant's behaviors, cuddliness, alertness, ability to be consoled, and to make eye contact with his/her mother. Brazelton and Als (1979) stated that the reciprocal nature of the mother-infant relationship provides fuel to the mother for the nurturance she provides her infant. In a reciprocal system the infant experiences the rewards of being responded to and having his/her needs met. At the same time the mother experiences satisfaction as she interprets correctly the infant's needs and develops skills in mothering the infant.

Infants at birth are already able to attend to their environment and have a large repertoire of behaviors available. Brazelton (1974) has reported that

babies have the ability to follow visually a red ball through a large arc in the first hour after birth. Fantz (1963) first demonstrated that the visual pathways and occipital cortex are well developed at birth so that infants are able to discriminate and select patterns. New mothers are frequently surprised by their infant's ability to focus on them, and Robson (1967) has noted that eye-to-eye contact is a releaser of maternal caretaking responses.

Condon and Sander (1970) have shown that newborn infants move in rhythm or dance with the language of the person talking to them. This responsiveness is true regardless of the language and whether the speaker is present or transmitting from a recording. Lang (1972) indicated that mothers talk to their newborn infants in a high pitched voice; Brazelton (1974) reported that infants are more responsive to high pitched feminine voices than to lower pitched male voices. The newborn's sense of smell is highly developed. MacFarlane (1975) has observed that breastfed babies, if given a choice between their mother's breast pad and the breast pad of another mother, will turn toward the breast pad of their own mother significantly more often.

Mother and infant each possess characteristics that developed before the infant's birth, and their interaction after birth develops as a result of ongoing changes in the behavior of each of them. Brazelton and Als (1979) demonstrated that maternal stimulation may either elicit or inhibit sucking. The effect of the mother's stimulation is primarily a function of her timing within the infant's suck-pause sequence. Stimulation too early in the pause period is more likely to prolong the pause rather than induce sucking. Thus, the mother may either facilitate or impede the infant's feeding pattern according to how appropriately she responds to her infant's cues of cessation of sucking. This may be a significant factor as to why primiparas are reported to stimulate their infants more during feedings, and yet their infants were recorded to suck less during feeding.

Thoman (1975) summarized the interactional relationship of mother and infant as a function of both

the infant's capabilities for indicating its status, signalling its needs and responding to maternal interventions, and the mother's ability to perceive cues provided by her infant and to respond appropriately to these cues. To the extent that they are mutually responsive, the relationship of the pair should develop in such a way as to facilitate the infant's development. (p. 179)

Thoman's (1975) approach to mother-infant interaction is based on the concept that the mother and infant comprise a system which is psychobiological in nature and characterized by mutual modification of behavior. This interactional framework makes it difficult to conceive of either mother or infant as the independent cause of the behavior of the other. Mother and infant are an interdependent system with the power to affect each other.

#### Motherhood as a Developmental Process

Motherhood as a developmental process begins for all women when they are little girls. The culture in which they are raised conveys attitudes and expectations of feminine behavior and ultimately motherhood which shape the goals toward which women strive. After conception is validated for a woman, maternal identity becomes an actively sought psychological role as she seeks to understand the implications of motherhood for herself.

Nurses have been giving increased attention to the psychosocial aspects of motherhood. Rubin (1967) described the process of attaining the maternal role,

and offered the nurse a theoretical model for assessing a mother's progression from a narrow focus initially limited to herself, to a larger focus encompassing her life with her newborn. Elaboration of her theory is germane to this review of literature to establish and clarify the normal development of the maternal role.

A woman who is pregnant is often observed to be different in ways only vaguely associated with the condition of being pregnant. She is different in what she perceives, in how she interprets situations that are present or pending, and in how she responds in established interpersonal relationships. In other words, there is a change in her cognitive style that makes her seem less predictable to those who know her well, and sometimes to herself now that she is pregnant. (Rubin, 1970, p. 502)

Rubin (1970) described a cognitive style which facilitates the development process of pregnancy. Cognitively the woman focuses on two sets of questions salient to feminine identity. One set of questions is concerned with time of pregnancy within the woman's life cycle. The feminine woman wants someday to have a child, but few women who become pregnant are instantly ready for the pregnancy. In addition to an element of surprise which is usually present when one discovers that she has conceived are the mixed reactions of both pleasure and displeasure. This second set of questions is concerned with the woman's personal sense of identity

and satisfaction. The pleasure is linked with the wish to someday conceive; the displeasure is linked to the sense of not feeling ready to have a baby. The surprise of conception and the ambivalence about the pregnancy are the two dominant questions during the first trimester. They recede in importance during the second trimester only to become dominant again in the third trimester of pregnancy, especially during labor itself. Thus, it is normal for a woman to experience pregnancy as a conditional state in which she is keenly aware of time, of ambivalent feelings, of who she is becoming, of the approval of significant others, and the realignment of life goals.

Probably the most significant positive sign the woman receives to confirm she is pregnant is provided by the movement of her child. The flickering, gentle movement gradually increases in strength, duration, and regularity; any uncertainty she may have harbored as to the reality of the pregnancy is removed. Along with her increasing weight, the baby's positive presence is experienced and she shares this change with an increasingly wider sphere of friends. She particularly seeks out the company of other pregnant women or friends

who were recently pregnant. The introspective orientation of pregnancy frequently excludes others who are not involved or concerned with her pregnancy (Rubin, 1970).

Time acquires a new meaning as the delivery approaches; there are so many things to do and not nearly enough time in which to do them. Casual relationships are loosened or severed indefinitely and familial relationships are realigned to prepare for the new family member. As the pregnancy progresses, the woman becomes more aware of other children in her environment and she observes them intensely as she seeks to increase her information and knowledge about their behavior and characteristics. Increasingly she recalls her own childhood experiences and fantasies about what her infant will be like and how it will be for her to become a mother. Included in her fantasies is the identification of the child's sex. While the pregnant woman may refer to her baby as "it," in time it becomes increasingly difficult not to identify the baby's gender. Friends, relatives, and physician often participate in guessing the baby's sex based on the woman's physique during pregnancy, her food preferences,

and skin coloring. Most mothers try to remain neutral toward their infant's sex outwardly but increasingly focus privately on a particular sex to complete their fantasy (Rubin, 1970).

During the last trimester the woman prepares for her baby's arrival with an intensity that often leaves her exhausted at the end of each day. A part of this preparation includes worry and concern about the baby's well-being. The last month is a time of disturbed sleep or sleeplessness. Finding a comfortable position in which to sleep and the anticipation of her baby's arrival combine to make her ready and eager for her baby's birth (Rubin, 1970).

Rubin (1961) stated that the goal of obstetrical nursing is to assist the woman in the attainment of motherhood. Rubin (1961) asserted that maternal behavior is a

learned behavior, evolving and changing, largely dependent on the nature and kinds of intimate interpersonal experiences and on the individual mother's evolving self-concept. (p. 684)

Of particular interest to the nurse is the mother's perception of herself as a mothering person in relation to her particular child.



Rubin (1967) delineated five operations involved in attaining the maternal role. These five operations represent two forms of taking-on (mimicry and role playing), two forms of taking-in (fantasy and introjection-projection-rejection), and one form of letting-go of a former status or role (grief work). The goal of these operations is identity or achievement of the maternal role.

Mimicry. This is the adoption by the subject of simple behavioral manifestations such as dress, speech, and gestures that are symbols of the characteristics of pregnant women and mothers which the woman wishes to mimic. All pregnant women in memory as well as in current relationships serve as models for the subject.

Role play. Role play is similar to mimicry but includes the acting out of behavior. This might include bathing a friend's baby, baby-sitting for a new mother, and perhaps even disciplining an older child.

Fantasy. There is an element of fantasy in role play, but fantasy differs from mimicry and role play by asking oneself, "how will it be for me?" Fantasy encompasses wishes, fears, daydreams, and nocturnal dreams for it represents a deepening psychological

involvement of the pregnant woman toward that of her unborn child.

Introjection-projection-rejection (I-P-R). This operation is similar to mimicry but is highly discriminatory in both content and models. In I-P-R the memory and environment is searched for relevant models and events. Then these models or events are compared to or matched for "fit" with the behavior, feelings, or event that the mother is experiencing. If the fit is good, the behavior is taken in, incorporated, or is used to reinforce the mother's behavior or feelings. If the fit is poor, the model behavior or the event is discarded and the search continues. For example, I-P-R helps one mother with her decision to breast-feed, and another to choose whom to invite in to help her with the care of her new baby.

Grief work. This operation involves a letting-go of a former identity with old roles that are now incompatible with the assumption of the new role. "Grief work is a review, in memory, of the attachments and associated events of a former self (role)" (Rubin, 1967, p. 243). For the new mother, former roles of school girl, career woman, or bride must be relinquished

or at least significantly modified. Giving-up previous identities occurs reluctantly and is successfully achieved only after the mother has attained a maternal role identity with a healthy baby. Grief work is many faceted and also includes some disengagement from established ties with her other children. This is particularly difficult for the mother about to have her second child who seems to be as bewildered by role division as she was with role taking with the first infant (Rubin, 1967).

Rubin (1977) described the postpartum period as a time of maternal "binding-in," a term less familiar to nurses than attachment or bonding, and intended to convey the maternal-child relationship as a process, not a state. The process of maternal identity is active, intermittent, and accumulative which develops progressively over a period of 12-15 months.

Maternal identity and binding-in to the child are two major developmental changes which are interdependent and develop during the three trimesters of pregnancy and the postpartum period (Rubin, 1977). Maternal identity is facilitated or retarded by the behavior of the woman's significantly family members and by the value her society

places on pregnancy and motherhood. Characteristics of her infant, too, contribute to her maternal identity.

Maternal binding-in to the infant accelerates markedly after delivery. The symbiotic oneness of pregnancy is replaced by identification of the infant as a separate human being with a distinct form, appearance, and behavior. During pregnancy the infant is the exclusive possession of the woman. After birth the infant is viewed in a social context as a separate individual,

During pregnancy each mother fantasizes an imperfect as well as a perfect baby, and after the sex, size, and condition of the baby are known to be fine, she experiences the child as a gift (Rubin, 1977). With the infant's birth the process of maternal identification assumes new significance as the mother seeks to identify her infant in relation to herself. The infant's sex, size, and condition are of paramount importance to the mother and affect how she will relate to her infant. All mothers must know the sex of their child before they can begin to relate. If they are disappointed with the infant's sex, identification and binding-in will be delayed. A bigger child is easier to relate to and interact with than a very small child, and the mother's tone

of voice is determined by the infant's size. She uses almost no voice at all when interacting with a very tiny baby. The mother will evaluate the infant's physical intactness before she interacts with him/her.

Binding-in through identification after birth accelerates with the help of supportive adults, and frequently is operationally complete in about 4 weeks with a normal, healthy baby.

Complete identification of the infant by the mother can be said to occur when the mother "knows" by looking, touching, hearing, or smelling whether he/she is well or not, hungry or satisfied, comfortable or uncomfortable.  
(Rubin, 1977, p. 69)

The psychological and physical investment in giving birth contributes significantly to the mother's identification of the infant as her own. Commonly, she will assert many times after the birth that "it was worth it." Family members also will become involved in the identification and claiming process and will identify physical and psychological aspects of the infant which link him/her to significant people. All parents, paternal, adoptive, and grandparents will identify and claim the newborn to some extent. Biological mothers, however, are the only ones who will experience the phenomenon of polarization (Rubin, 1977).

"Polarization is the physical and conceptual separating-out process of the incorporated infant of pregnancy into a separate, external, and constant entity postpartally" (Rubin, 1977, p. 70). Labor and delivery are a necessary process of polarization, but polarization actually begins late in pregnancy and seems to be a necessary condition for spontaneous birthing of the infant.

Deutsch (1945) first identified the process of polarization. The term polarization describes a stage in cell reproduction before final separation of "mother" and "daughter" cells from each other. The human mother experiences an analogous process of polarization in the experience of delivery. This polarization occurs physically and conceptually as she prepared to give birth, delivers the infant, and experiences separation from the infant.

Polarization proceeds gradually during the first 3 to 4 weeks postnatally. It takes a while to adapt to the child "outside" of herself and for the mother to develop the concept of object constancy--that the baby does indeed exist as a separate independent individual. As the mother's physical and psychological strength

return she increases her interactions with the wider world away from home and with adult society. As she extends herself the polarization is effected; the infant is "you" and her sense of "I" has been restored (Rubin, 1977).

To summarize, maternal binding-in during the postpartal period comprises three mutually dependent aspects:

- 1) polarization, the psychological loosening, without severing, of the experience of the infant from the unity with herself to an entity in physical social and conceptual space,

- 2) identification of the infant in reality instead of in the varied hypothetical fantasies of pregnancy, and

- 3) the claiming of the infant by association with significant others in her immediate social environment who, in turn, claim her. Postpartal binding-in is sufficiently unique in the development of maternal identity to warrant a separate, discrete term of neomaternal for the period of 1-3 months. Factors that determine the duration of the neomaternal stage are (a) the mother's own recovery state of well-being, (b) the amount and kinds of socially significant support, and (c) the endearing inputs of the baby itself. (Rubin, 1977, pp. 74-75)

### Adolescent Motherhood

Adolescent motherhood in our culture may be viewed as a significant life event which has occurred out of sequence or off schedule according to prevailing general social norms. Furstenberg (1976) studied the social consequences of unplanned parenthood in depth and

suggested that the striking growth of adolescent parenthood in the 1960s was related to the increased population pool to adolescents making them a more highly visible group. There were more adolescent girls than ever before to give birth, and a striking proportion did so. In the United States today teenagers bear approximately 1 in 5 babies born, and by the age of 20 years, 3 in 10 American women have borne at least one child (Green & Potteiger, 1977).

All societies possess cultural norms that control the sequence and tempo of important life events. These unwritten rules provide guidelines for its members which convey when and under what circumstances status transitions should occur. Ryder (1965) stated:

Every society seizes upon the circumstances of birth as modes of allocating status, limiting the degrees of freedom of the person's path through life. Virtually every subsequent occurrence will depend on the societal plan for utilizing characteristics present at birth: sex, race, kinship, birthplace, and so forth. (p. 856)

These normative schedules provide an agenda for personal and social change, but they do not offer assurance that the life course will be smooth. Cultural timetables exist partly because changes throughout the life span are inherently stressful and full of conflict (Furstenberg, 1976).



The circumstances under which parenthood are permitted vary from culture to culture, but no society leaves the scheduling of parenthood purely to biological readiness or entirely in the control of the prospective parents (Furstenberg, 1976). Malinowski (1930) argued that marriage as an institution exists in all societies not to mandate sexual relations, but to regulate parenthood. Malinowski's central assertion is that unregulated parenthood is costly for both the child and society.

Children who lack a sociological father are more vulnerable economically as well as socially for they must rely on one parent and one family instead of two for support and social connections. (Furstenberg, 1976, p. 5)

Unregulated parenthood presents serious problems to society. For those societies in which children are an economic liability, there may be reluctance to assist the children of nonmarital unions. Where children are considered an economic asset or a source of special pride the issue of who has the right to the child's labor or social benefit is settled in advance by marital unions (Malinowski, 1930).

Rules which regulate the formation of new families protect individuals from incurring obligations they are not ready to assume, as well as safeguard the welfare of the child. In modernized Western societies, early

marriage and childbearing much before the age of 20 years are universally discouraged (Sullerot, 1971). In these societies the performance of adult responsibilities requires an extensive period of training and education, and the ability to support a family is considered a necessary prerequisite to starting one.

Unscheduled parenthood, particularly when it occurs out of wedlock, can be thought of as a social as well as a biological process. It follows a "natural history," a sequence of events beginning with the onset of sexual activity and concluding with the birth of a child. At various points in this sequence, a potential recruit may accidentally or intentionally "drop out." She may, for example, experience infecundity, spontaneously abort during the course of pregnancy, or lose her child in delivery. Or the sequence may be deliberately interrupted if she decides to use contraception, obtain an abortion, or marry before the child is born. (Furstenberg, 1976, p. 37)

Most women "drift" into adolescent parenthood rather than choose it consciously or unconsciously (Klein, 1978). Families do play a significant role in conveying expectations about contraceptive use. Mothers who discuss contraception with their daughters are acknowledging awareness that the daughter is or may be having sexual relations. In turn, the adolescent is given the opportunity to acknowledge her own sexuality and may regard sex less as a spontaneous and uncontrollable act and more

an activity subject to planning and regulation (Furstenberg, 1976).

Cognitive development for the adolescent includes acquiring the ability to "think about thinking." The adolescent progresses from a stage of thinking by concrete operations to a level of thinking by formal operations. Teenagers who are functioning at a formal operational level are able to handle potential events as well as actualities. The individual who has achieved formal operational thinking has the ability to reason abstractly and can plan effectively for contingencies. It might be concluded that an adolescent who "drifts" into pregnancy is at an earlier stage of psychosocial and cognitive development than the adolescent who chooses to postpone sexual intercourse or uses contraception regularly (Langer, 1969).

The developmental tasks of adolescence have been delineated as the completion of biological maturation, the development of self-identity, the determination of one's sexual identification and role, the development of the capacity for lasting relationships, and for both tender and genital sexual love in a heterosexual relationship. Additional developmental tasks of adolescence

include the attainment of independence and separation from one's parents, the development of a personal value system, and the choice of a vocation and commitment to work (Calderone, 1966; Erikson, 1959; Group for the Advancement of Psychiatry, 1968). Pregnancy in adolescence significantly interrupts the young woman's school career; one-half to two-thirds of all female high school dropouts cite pregnancy and/or marriage as the principle reason for leaving school (Coombs & Cooley, 1968; Stine, 1964). Furstenberg's (1976) study of adolescent parents revealed that a sizable minority of adolescents were marginal students before they became pregnant. These women found it particularly difficult to cope with the conflicting demands of school and parenthood after their child was born.

One-half of the young mothers in Furstenberg's (1976) study managed to complete high school despite the minimal assistance provided by educational programs. Furstenberg suggested that the number of graduates would have been significantly higher if more support had been provided to the women. Furstenberg concluded that inflexibility in the school system is at least as important a cause of educational failure as is lack of ability or motivation on the part of the student.

Data obtained from a nationwide survey of 375,000 students were reported by Card and Wise (1978). Initially the students were interviewed while in the ninth grade, and then again 1, 5, and 11 years after the expected year of high school graduation. A direct correlation was found between the age at the birth of the student's first child and the amount of schooling completed. This was true for men as well as women. This same positive correlation was found when the students were matched with a control group for race, socioeconomic status, academic aptitude, and educational expectations before the birth of the child. Of particular significance, 50% of adolescent mothers and 70% of adolescent fathers received a high school diploma, compared to 97% of women and 96% of men who were not parents by age 24 years.

Participation in school and its activities represents the major role and occupation of adolescents. The sudden loss of the student role (even temporary loss) constitutes rejection and punishment of the pregnant girl (Osofsky, 1968). Some women experience a loss of self-esteem when they withdraw from school. Their hopes and plans for the future have been uncontrollably

altered. They may respond to this loss by withdrawal and depression. One of the tasks of adolescence, that of gaining independence, often is curtailed with the crisis of pregnancy as the adolescent must re-evaluate her life direction and goals and assume a dependent role toward parents, husband or boyfriend, health care workers and educators. Her strivings for independence have been set back (LaBarre, 1972).

LaBarre (1972) affirmed that the structure of the educational process which includes the daily tasks of school life, the continuity of ongoing activities, and the satisfaction derived from achievement as essential to the adolescent's ego development. LaBarre's studies comparing married and unmarried adolescent mothers revealed the married, pregnant girls who dropped out of school to be lonely and depressed. The dual roles of pregnancy and marriage have catapulted the young woman into a developmental stage for which she was not prepared. The peer group, so important to the adolescent, is no longer a source of support and/or reference to the married, pregnant adolescent.

Perhaps one of the most serious consequences of the lack of educational achievement is the long-term

loss of vocational achievement. Card and Wise (1978) noted that adolescent mothers as adults held less prestigious jobs, had lower incomes, and were less satisfied with their jobs than the control group who had postponed childbearing. Furstenberg (1976) found that fewer than 50% of high school dropouts in his study had been employed at the 5 year follow-up compared to 80% of the students who had completed high school. Furstenberg concluded that teenage parenthood often results in economic disadvantage because of the disruption of formal education.

The developmental task of biological maturation is also interrupted with pregnancy particularly if the young mother is in the 12-16 years age group. They bear significantly more low birth weight babies than older adolescents and adults of similar backgrounds (Elster & McAnarney, 1980). A study by Jeckel (1977) has shown that subsequent children born to adolescent mothers are at a higher risk for prematurity and perinatal death than the first born child. For the children of primigravida adolescents, the risk of perinatal death was 0.6% and the risk of low birth weight was 10.7%. Second births had a risk of perinatal death of 7.1% and a risk

of low birth weight of 21.2%. Third births had a risk of 14.3% for perinatal deaths and 42.8% for a low birth weight. While adolescents may be able to carry a first pregnancy to term, their biological maturity may not have developed sufficiently to maintain subsequent pregnancies.

The adolescent's biological development is closely related to her nutritional status. Adolescent girls are the most poorly nourished group in the United States regardless of socioeconomic status (Poole, 1979). If the adolescent's diet remains poor during pregnancy, the baby will meet some of his/her needs by drawing from the mother's already poor reserves. Following the pregnancy the young mother will continue to have increased nutritional demands to repair her body and to meet her normal growing needs. It may take well over a year for her body to meet all of these demands.

Adolescent pregnancy interrupts the process of identity formation so vital to successful passage into adulthood. The adolescent is often very insecure about the relations with other people and although society has become more tolerant of teenage pregnancies, the prevailing attitude is still considerably more negative than



positive. Teenage mothers often express feelings of isolation and anxiety over what others think of them. Once they have given birth they may feel they no longer have anything in common with their peers. In reality, child care, school, and/or work may leave very little time for old friends or for developing new ones (Poole, 1979).

The developmental task of independence and separation from one's parents is usually retarded with the advent of pregnancy. In almost any family setting, teenage pregnancy is considered a problem of sufficient importance to get parental attention. It may occur as the direct response of a conflictual mother-daughter relationship. Sexual acting out is a way to compete with mother, to have something in common with mother, or even to give mother a child (Klein, 1978). Hostile father-daughter relationships may also result in premature sexual activity. The daughter attempts to receive attention and approval of male peers when such approval has not been a part of the relationship with her own father (LaBarre, 1972).

Many explanations have been offered by various disciplines to explain why adolescents become prematurely

pregnant. Some experts believe that teenagers who become pregnant differ little emotionally and psychologically from their peers, some or many of whom are also sexually active. Pregnancy may be genuinely unintended and result from contraceptive failure. Sexually active teenage females who become pregnant are often regarded as deviant or delinquent and yet sexually active teenage males are considered normal. The teenager who is "caught" with an unwed pregnancy is frequently regarded with scorn, and educators and health care providers often convey punitive attitudes and actions toward her (Klein, 1978).

The emotional reasons a teenage girl becomes pregnant are numerous and difficult to evaluate. She may feel lonely and isolated or alienated from her family and peers. Sexual intercourse often occurs as a means to be close to someone, to be held and caressed, and emotionally cared for. The male is usually older, more persuasive, and dominant. In her attempt to please and satisfy him, sexual intercourse becomes a part of their relationship. At the same time it helps to affirm her identity and provides proof of her femininity (Klein, 1978).

Pregnancy may be desired; a child may be the goal. The adolescent strives to have someone to love or to

be dependent upon her. But pregnancy as a solution to personal or interpersonal problems is rarely effective; the desired closeness to a boyfriend does not occur or is short-lived; the infant is a demanding love object; and the adolescent is left with her original problem, plus a child. She may begin to view the child as a cause of part or all of her problems. "If it weren't for the baby, I could . . . " (Klein, 1978).

In Klein's (1978) study of teenage childbearing, 9% to 10% of the subjects stated they planned to get pregnant or did not mind becoming pregnant. "I wanted someone to love," or "I wanted something of my own" were statements made by some of these young mothers. The needs of the child are rarely considered by the teenage mother at this stage in her development.

Naively, some teenage mothers view pregnancy as a way to emancipate themselves, to make their own decisions, to be their own boss, and to have a family and household of their own. Fantasies of love, support, and marriage are rarely fulfilled and constitute another disappointment and/or failure in the adolescent's transition to adulthood. Some unmarried fathers do support their girlfriends through the pregnancy and following

delivery. However, few show consistent interest in the mother or the baby over an extended period of time (Poole, 1979).

Marriage is often dependent upon whether the male is employed. He tends to be 2 to 4 years older than the young mother and Klein's (1978) sample indicated that marriage is a frequent outcome if the baby's father can support a family. However, Furstenberg's (1976) study showed that teenage marriages preceded by pregnancy experienced a high rate of marital instability. Approximately three of five couples separated within 5 years of their wedding date. Furstenberg interpreted the foundering of these marriages to be caused primarily by economic stress. The father is not able to support his family and eventually leaves; then the adolescent mother becomes the sole support of herself and child.

Many social scientists have attempted to identify the critical factors underlying pregnancy in unmarried adolescents. Since most studies lack a nonpregnant control group their results are difficult to interpret. Gottschalk, Titchener, and Piker (1964) published the results of their study of adolescent pregnancy which utilized a control group and isolated several factors

of significance for their population. The pregnant adolescent girls experienced fewer social taboos with respect to youthful premarital sexual intercourse, such as poor reinforcement of Judeo-Christian ethical codes, and inadequate parental supervision. These girls also experienced fewer menstrual disturbances and onset of menarche prior to 12 years of age. A similar study by Brandt, Kane, and Moan (1978) supported the findings of Gottschalk et al. (1964). In Brandt et al.'s (1978) study the pregnant girls rarely lived in families where both parents were present when compared to nonpregnant girls. The father was usually the missing parent. Both groups reported significant numbers of working mothers. Church attendance was significantly higher in the non-pregnant group and more than two-thirds of the girls identified themselves as Protestant.

Gottschalk et al. (1964) reported that pregnant White adolescents differed in having more missing fathers while pregnant Black adolescents had more working mothers. The study inferred that less supervision, less strict limit setting, and decreased involvement in church activities resulted in permanent impairment of autonomous limit-setting functions; by extension, the superego and

ego ideal of the pregnant adolescent would be less strict and more permissive.

Brandt et al. (1978) emphasized that the adolescent peers of pregnant girls contributed significant support and encouragement for premarital sex. Their data suggested that the devaluation of parental authority significantly contributed to premarital pregnancy.

Data on the use of contraceptives were similar in the Gottschalk et al. (1964) and Brandt et al. (1978) studies. Approximately 90% of the young women had information about oral contraceptives and condoms, but they were highly ambivalent about contraceptive use. This is an expected finding for an adolescent population whose values and identity are still in the process of being formulated. Acknowledgement and mature management of one's sexuality are clearly adult behavior (Brandt et al., 1978).

On the positive side, many adolescent mothers view motherhood as a prized role and a source of self-esteem. LaBarre's (1972) study of teenage marriage and motherhood focused on the "blue collar" class. For these girls, marriage and motherhood was the career of choice and many dropped out of school as early as seventh grade to

marry and have children. Neither they nor their parents had expectations for higher education or preparation for a career. Since many of their mothers and sisters also had early marriages, they were supported for their choice and were not as troubled as middle-class girls who were facing marriage or college ambivalently. These daughters of "blue collar" workers expressed gratitude for the support and caring they received from their mothers while pregnant. A kind of peer relationship developed between mother and daughter during the pregnancy which facilitated the adolescent's transition to the maternal role.

One of the critical issues in reviewing the literature on adolescent motherhood is the difficulty in determining the extent to which biological or social inadequacies seem most determinative of the disadvantages of teenage pregnancy for the mother and infant. Both sets of factors seem to contribute in a possible interactive fashion.

A number of studies indicated a strong relationship between maternal age and birth weight. Hoffman, Lundin, Bakketieg, and Harley (1977) reported a curvilinear relationship for mothers' age and preterm babies. Mothers 18 years of age and younger tended to have infants of

of shorter gestational age than women 19-24 years of age; however, when women reached the age of 35 years or more, they tended to have more preterm babies with lower birth weights than women in the 24-34 age group. This evaluation by Hoffman et al. (1977) suggested that gestational period for adolescent primiparas 18 years of age or younger was shorter than in women over 18 but that birth weight of the infants born to them remained appropriate for gestational age. This would refute the assumption that there is frequent growth failure among infants born to adolescent mothers. However, a review of more refined data suggested a more complex picture for mothers' age and race and infant birth characteristics.

Merritt, Lawrence, and Naeye (1980) analyzed three large sets of data: (a) neonatal data on 55,711 pregnancies collected by the Collaborative Perinatal Project of the National Institute of Neurological and Communicative Disorders and Stroke; (b) neonatal data from the University of Kansas Medical Center covering 4,000 pregnancies, 770 of which were gestations in teenage mothers; and (c) obstetric, perinatal, and neonatal data concerning 6,087 pregnancies in 1976, 1977, and 1978 at the



Regional Perinatal Center at the University of Rochester Strong Memorial Hospital.

The University of Rochester data indicated an age of mother factor for birth weight but only for very young women. Mothers, 14 years or younger, had a disproportionately higher number of low birth-weight infants. These mothers were 6 times more likely to have an infant weighing  $< 2,500$  grams at birth than mothers 15 years and older. However, low birth-weight, preterm infants were primarily the infants of Black teenagers. Similar findings were reported by Hardy and Mellits (1977); a higher frequency of low birth-weight infants were born to young Black mothers. The infants of White and Hispanic adolescent mothers in the Rochester sample had gestational ages and weights similar to those of infants of older mothers (Merritt et al., 1980).

The vast majority of adolescent mothers in the Rochester study were Black teenagers. White teenage mothers increased proportionately over the 15-19 year span and Hispanic mothers constituted a small percentage in both age groups (Merritt et al., 1980). Among Black mothers, two-thirds were 19 years of age or less, whereas among White women two-thirds were 20 years or older.

Merritt et al. (1980) noted in the Kansas City study that the weights of infants born to White teenagers were comparable to the weights of babies born to White mothers in all age groups. In this study the incidence of medical complications of pregnancy was 15% for all White mothers and 15.4% for teenage mothers. Medical complications were listed as hypertension, pre-eclampsia, vaginal bleeding, chronic diseases, infections, tumors, medication reactions, and poly or oligohydramnios. Maternal behavioral conditions associated with pregnancy were seen in 47.3% of the teenage mothers and 45% of all White mothers. Total growth retarding behavioral conditions were defined as prepregnancy underweight, low weight gain during pregnancy, lack of prenatal care, smoking, addicting drug use, and consumption of large amounts of alcohol during pregnancy. The Kansas City study revealed that medical or behavioral complications of pregnancy were not more frequently observed in most teenagers.

Except in women less than 15 years of age, the incidence of known growth-retarding factors in the adolescent mothers [which affect their infants] was no different from what it was in mothers in the 20-34 age bracket. (Merritt et al., 1980, p. 38)

Teenage mothers with associated fetal-growth retarding behavioral conditions gave birth to 9.8% of

the low birth-weight infants in the Kansas City study. This compares favorably with the 10.5% of low birth-weight infants born to women with similar behavioral conditions in the 20-34 age group. The incidence of low birth-weight infants born to adolescent mothers without known growth-retarding medical or behavioral conditions did not differ significantly from that of those born to older control mothers (3.6% versus 2.3%) (Merritt et al., 1980). When fetal growth-retarding factors are rigorously excluded from the statistics, there are no demonstrated differences in prematurity or in low birth-weight rates among infants born to adolescent mothers

Merritt et al. (1980) analyzed the cause of perinatal death in the Collaborative Perinatal Project with a total of 55,711 pregnancies, 12,908 of whom were adolescent mothers. The age range of the mothers in this population was 10-50 years. The lowest perinatal mortality of all the women studied was achieved by mothers in their late adolescence (16-19 years) in which there were approximately 38 deaths per 10,000 live births. Mothers in the 10-15 years age group had 36% more fetal and neonatal deaths than those in the 16-19 age group due to the

increased incidence of amniotic infections, abruptio placenta, and placental-growth retardation in the very young mothers.

Amniotic fluid infections were much more common in Blacks than Whites. However, if nonpoor families were not included in the analysis, excessive losses due to abruptio placenta and placental-growth retardation would disappear.

In the Rochester study the incidence of late fetal death was almost the same for infants of adolescent mothers and older mothers; however, age of infants at death varied by maternal age. More infants of adolescent mothers died in the delivery room or within the first 24 hours of life. From the 8th to the 28th day of life, in-hospital deaths were significantly greater in infants of mothers 20-29 years old. Most of these deaths were related to complications of prematurity or to lethal congenital anomalies. Although neonatal death rates were similar in the two groups overall, a dramatic increase in infant deaths among babies of young mothers occurred by their second birthday. Shapiro, McCormick, Starfield, Krischer, and Bross (1980) reported data with similar findings.

In addition to the previously mentioned risks, infants of adolescent mothers are at greatest risk of dying of sudden infant death syndrome (SIDS). This risk increased significantly when mothers less than 20 years old were having their second or third babies. No biologic cause has been implicated, and the reason for the greater prevalence of SIDS deaths in infants of adolescent mothers remains unexplained (Merritt et al., 1980).

These findings fail to support the commonly held view that the mother's biologic immaturity is the main factor responsible for excessive fetal and neonatal deaths in infants born to very young mothers unless the mother is 14 years of age or less (Merritt et al., 1980). Under optimal conditions of high quality antenatal care by both the woman herself as well as by medical personnel, the medical risk to adolescent mothers and their infants need not be appreciably greater than for the maternal population as a whole (Thompson, Cappleman, & Zeitschel, 1979).

The adolescent mother's infant caretaking skills often reflect her lack of knowledge and experience. During the first few months of the baby's life, the teenage mother tends to view her baby as a live doll.

After 3 months of age, she is more likely to regard the infant as a nuisance (Poole, 1979).

DeLissovoy's (1973) study of 48 adolescent couples found that teenage mothers lack knowledge of normal infant behavior and developmental milestones. These mothers expected their babies to sit alone by 12 weeks, be bladder trained by 24 weeks, and bowel trained by 25 weeks. The fathers thought the baby would sit alone by 6 weeks and be toilet trained by 24 weeks. DeLissovoy reported that this group of adolescent parents were intolerant, impatient, insensitive, and prone to use physical punishment toward their infants. They had a low tolerance of their baby's crying, and that combined with their unrealistic expectations of child development, led to their sometimes cruel treatment of the infant. A later study by Field, Widmayer, Stringer, and Ignatoff (1979) supported these findings.

Teenage mothers often manifest inconsistency in the care of their infants, fluctuating between love and intolerance; overprotection and laxity. They are often neglectful of their children rather than abusive, dressing them inappropriately, feeding them poorly or not at all, and neglecting their medical needs (Knox, 1971).

Poole (1979) studied young mothers and found that those receiving support from the father of the baby, family, and friends were more effective in coping with their infant's needs. The young mothers also manifested more positive attitudes toward other people and toward infant caretaking. These mothers gave more positive feedback to their infants, allowed more exploratory behavior, and were more sensitive to their infants' needs.

It is encouraging to note that with proper social support many teenage mothers can become effective and capable mothers. Teenagers are flexible, resilient, and adaptable, often showing warmth and playfulness toward their children. Their abundant energy and developing identity makes them capable of greater change than adults. Day care programs which encourage teenage mothers to participate in the care of their children have demonstrated positive results. For example, peer pressure and support lead these mothers to increase the amount of affectionate behavior shown toward their infants, to increase their own relaxation and confidence while handling their infants, and to decrease the amount of yelling at or hitting of their children (Poole, 1979).

Williams (1974) noted that the childrearing practices of young mothers are characterized by their youth. The stereotype of "mother" makes it difficult for many to envision a high school or elementary school student in that role. Understandably the schoolage mother is often ambivalent about her relationships with others, and inconsistent in her behavior and attitudes. The young mother is insecure in the parenting role and may be particularly insecure if she lives with her parents. Often the grandmother assumes the parenting responsibility toward both her daughter and her daughter's infant which then adds to the young mother's ambivalence toward motherhood.

Williams (1974) also reported that teenage mothers are more likely than adult mothers to view infant stimulation (visual and verbal) as likely to spoil the child. When asked to describe how they wanted their child to be, one group of young mothers responded that

they did not want it to be spoiled, but wanted it to look neat and act straight, to be a quiet, patient child, and not curious and into things all the time. (Williams, 1974, p. 72)

Thompson et al. (1979) analyzed the newborn behavior of 30 Black infants of adolescent mothers and 30 Black infants of adult mothers using the Brazelton Neonatal



Assessment Scale to assess these infants. There were no significant differences on any items between the infants of single and married older mothers.

However, the first infants of older mothers scored significantly higher ( $p < .05$ ) [ $t$ -test for independent samples] on response decrement to rattle, response decrement to bell, response to face, response to voice, and hand to mouth activity than did the later-born infants. Therefore, on these items the subsequent comparisons between infants of adolescent mothers and infants of older mothers were made with the subgroup of first-born infants of older mothers, as well as with the entire group. (Thompson et al., 1979, p. 476)

However, the Brazelton Neonatal Assessment Scale was sensitive enough to provide a description of the behavior of infants of adolescent mothers and to delineate their differences from infants of older mothers. Subtle behavioral differences were noted in the infants of adolescent mothers which were not reflected in Apgar scores or on the newborn physical examination. The infants of adolescent mothers were seen as less capable of responding to social stimuli, less alert, and less able to control motor behavior or to perform integrated motor actions. These behavioral differences cannot be attributed to group differences in birth weight, gestational age, socioeconomic level, medication, type of feeding, or type of delivery. The expectancy is that

the adolescent mother will have a less competent infant who subsequently is more likely to interact with a poorly equipped mother and a generally unsatisfactory socio-economic environment (Thompson et al., 1979).

The Neonatal Perception Inventory as  
a Screening Instrument

The current study focused on the interactive experience of new mothers and their first born infants. The problem statement of this current study was, "Do adolescent mothers' perceptions of expected infant behaviors during the neonatal period differ from perceptions of adult mothers?" Broussard's (1976) Neonatal Perception Inventory (NPI) is an effective instrument to identify these differences. Broussard, a pediatrician, developed the NPI in 1963 in an attempt to answer the following questions: (a) how do mothers perceive their infants; (b) what influences this perception; and (c) does their perception have an effect on the infant's subsequent development? (Broussard, 1976, 1978, 1979).

In her practice Broussard had observed mother-infant interactions which she termed "puzzling." Mothers of healthy, full-term infants did not always respond positively to their infants and dissonance was observed in mother-infant relationships.

My clinical work suggested that the mother's perception of her newborn often was determined by factors coming from within herself rather than the actual physical condition of the infant. Her perception did not seem related to race or economic status, although these variables may have impact on the child's later development.

Some mothers made a smooth transition from pregnancy to motherhood and had pride and pleasure in raising their infants, and the infants thrived. Others lacked pride in their infants and had little pleasure in motherhood--although we the physicians had judged the infants' biologic endowments to be normal and saw them as appealing. Physician and mother looked at the same infant and saw different things--as though the beauty lay in the eye of the beholder. (Broussard, 1979, p. 91)

The Pittsburgh firstborn studies evolved as Broussard attempted to answer questions about maternal perception. Broussard (1979) developed the Neonatal Perception Inventory as a screening instrument designed to measure a mother's perception of her infant compared to her concept of the average infant. In today's society, great emphasis is placed on "being better than average" according to Broussard. Therefore, the assumption was made that mothers, delivering healthy, full-term first born infants, would expect their babies to be better than average. The Neonatal Perception Inventory uses the mother's concept of the average baby as an anchor for comparison with her own infant's behavior (Broussard, 1971).

The NPI may be viewed as a projective measure; the mother is presented with a set of somewhat ambiguous stimuli for which she is asked to rate the average baby over six behavioral items--crying, spitting, feeding, elimination, sleeping, and predictability. These items were selected on the basis of Broussard's clinical experience with the concerns young mothers expressed about their babies. After rating the average baby the mother is asked to rate her baby over the same items. The NPI is administered to the mother 1 to 2 days postpartum, and again 30-36 days postpartum. Responses to the questionnaire 1 to 2 days postpartum reflect the projected expectations of an infant whereas responses at 30-36 days postpartum will reflect experience with her infant (Broussard, 1979).

The NPI score is obtained by determining the difference between the mother's ratings of her own infant and her ratings for the "average baby." If a mother rates her baby as better than the "average baby," her perception of her baby is considered positive. On the other hand if she rates the average baby as better than her baby, the perception of her baby is considered to be negative. Thus, at either Time 1 or Time 2 the

mother can be identified as having positive or negative perceptions of her infant (Broussard, 1979).

Longitudinal studies with the NPI revealed that the instrument reflects the mother's ability to idealize her infant, to view her infant as better than average. This ability to idealize her newborn--to regard him/her as a source of gratification and satisfaction--appears to be essential if the mother is to provide an optimal, loving environment for her child. If the mother does not perceive her baby as better than average then her infant is considered to be at high risk for subsequent development of psychosocial disorder in childhood (Broussard, 1978).

A longitudinal study designed to establish the predictive validity of the NPI was begun in 1963 using a population of 318 first born, healthy, full-term infants living in the Pittsburgh area. All socioeconomic and racial groups were included although specific demographic characteristics were not reported. The NPI was completed by the new mother on the first or second day postpartum (Time 1) while they were still in the hospital. Of these mothers, 46.5% rated their infants as better than average. Approximately 32 days later

(Time 2), the second NPI was completed. At this time 61.2% of the mothers rated their infants as better than average (Broussard, 1979).

Broussard and Hartner (1970, 1971) found that Form I of the NPI used 2 days postpartum was not predictive of later child adjustment, but Form II completed at 4 weeks after birth was. Broussard (1979) has noted that a mother's initial perceptions of her infant are fluid, but by the 4th week postpartum her perceptions as measured by the NPI appear stabilized. Broussard has suggested that two different factors may account for the predictive power of Form II of the NPI. First, mothers may detect certain innate characteristics in their babies and, thus, reflect accurately infant behavior on the NPI Form II. Second, the mothers' positive or negative perceptions may become a "self-fulfilling" prophecy with perceptions influencing the handling of infants, thereby fostering differing levels of later child development (Broussard, 1979).

Follow-up studies tested the hypothesis that the mother's perception of her infant would be related to the child's subsequent psychosocial development. At age 4 1/2 years, 120 of the original population of first

borns were evaluated by two child psychiatrists who had no knowledge of the predictive risk ratings.

More infants predicted to be at high risk at one month of age had emotional disorders at 4 1/2 years than those who were at low risk (statistically significant at  $p < .001$ ). (Broussard, 1978, p. 48)

When these children were between the ages of 10 and 11 years, 104 were evaluated by one of three psychiatrists who also had no knowledge of the predictive risk ratings at 1 month or of the previous evaluation conducted at age 4 1/2 years.

Again, there was a statistically significant association ( $p < .05$ ) between the predictive risk taking at one month of age and the child's emotional development at age 10-11 years. The findings indicate that the mother's perception of her one month old first-born continued to be predictive of psychopathology. (Broussard, 1978, pp. 48-49)

Of significance was the fact that not one of the children who had been judged as manifesting psychopathology at age 4 1/2 years was considered to be free of disorder when evaluated by different psychiatrists at age 10-11 years. Children do not seem to outgrow their problems when there has been no treatment (Broussard, 1978).

However, among those children who had been considered to be developing well at 4 1/2 years, some were

considered to be having difficulty at 10-11 years of age. This is not a surprising finding when the stresses of growing up are taken into consideration (Broussard, 1978).

Positive maternal perception during the neonatal period does not guarantee there will be no difficulties in the child's subsequent development. However, the absence of a positive maternal perception of the neonate is associated with a very high rate of subsequent psychopathology.

Only 7.7% of those infants viewed negatively at both the first or second postpartum day and at one month were found to have no psychopathology at age 10-11 years. (Broussard, 1978, p. 55)

No attempt at intervention was made with the group of children and mothers who participated in the 1963 study (cited in Broussard, 1979). It was a study of the natural history of the developmental outcomes of first born children through the age of 10-11 years. In a 1973 study (cited in Broussard, 1979), a second population of 281 healthy, first born, full-term infants was selected for NPI testing and follow-up intervention. After the NPI risk rating was established, intervention was provided for one group of high risk infants. Evaluation of the intervention was completed when the children



were 2 1/2 years of age by comparing their development with (a) another group of high risk infants who did not have intervention, and (b) a group of low risk infants without intervention. The behavior of the children was assessed with regard to frustration-tolerance, coping ability, confidence, attachment to mother, and affective response.

There was not a statistically significant difference between the functioning of the high risk infants who, together with their mothers, had participated in the available intervention and the low risk children at age 2 1/2. However, both the high risk children who were in the intervention group and the low risk group were functioning more optimally than the high risk no-intervention group. (Broussard, 1978, p. 55)

Broussard (1978, 1979) suggested that mother-infant pairs identified as high risk according to the NPI, manifest distinctive behaviors during the neonatal period which sets them apart from low risk mother-infant pairs. During interviews at 1 month postpartum, mothers of infants at high risk were noted to (a) have poor self-esteem; (b) lack confidence in themselves as mothers; (c) be dependent on the external world yet often unable to accept help when offered; (d) view support systems (health professionals or family) as less helpful than the mothers of low risk infants; (e) have

more difficulty in caring for their infants in regard to sleeping, feeding, colic, crying, and elimination; and (f) seem depressed and anxious.

Broussard (1979) observed that mothers of infants at high risk often had difficulty in tolerating the closeness required during mothering--they demonstrated a fear of proximity, a reluctance to hold, cuddle, and interact physically with their infants. These mothers also seemed inattentive to their infants and failed to recognize cues of need from the infant. For example, a child may be hungry and/or tired, but feedings may be withheld, and little or no attempt is made to soothe or comfort a crying baby. In contrast, mothers of low risk infants are often observed modifying their actions according to changes in their infant's behavior, e.g., a pause in sucking, or the infant's exploration of the surroundings. Mothers of high risk infants do not seem to base their actions upon their babies' cues. A mother may be observed spoon-feeding an infant even after the infant has drifted off to sleep.

Mothers of high risk infants often "lose" their babies from their perceptual field, unaware of impending danger. This is evidenced by their failure to prevent

accidents to the infant by taking sufficient precautions. When questioned about a large bruise on her son's forehead, one mother of a high risk infant reported that she had heard the baby fall down the stairs but had not gone to him because she had not heard him cry. Mothers of low risk infants are generally available to their babies, allowing them to explore the environment while alert to potential hazards (Broussard, 1978, 1979).

Some mothers of high risk infants do not recognize their child's potential for inflicting injury to others and do not attempt to modulate their child's aggressive behavior. Broussard (1978, 1979) described one mother of a high risk infant who sat idly by as her 8 month old child repeatedly hit and pinched another infant. That mother, whose infant was also at high risk, did not intercede or comfort her crying child.

Mothers of high risk infants do not seem to know how to play mutually satisfying games with their infants. They may be observed interrupting a child who is contentedly involved in a task; pushing a child to perform when he/she is not interested; or failing to respond when the child initiates contact.

Mothers of high risk infants may also be heard making statements such as "You're so bad," "You're a

stinker," or "I feel like giving him away," in contrast with the statements of mothers of low risk infants:

"Who's that pretty girl in the mirror?," "You're a smart little thing," and "I'll sit here where you can see me" (Broussard, 1978, 1979).

Broussard has identified behavioral characteristics of high risk infants and compared them with infants rated as low risk. These infants manifest dissimilar functioning in the following areas: (a) affective expression, (b) ability to engage in explorative play, (c) ability to cope with stress, and (d) body management.

Some high risk infants have frozen, fixed smiles, and a "flat" facial expression. They may display few signs of pleasure or enjoyment in their activities. Low risk infants usually manifest a range of affective responses.

Some high risk infants appear immobilized and unable to explore their environment; they often have difficulty attending to one form of play and go from one subject to another. By contrast, infants at low risk are usually interested in the environment and are able to engage in sustained play with objects.

Infants at high risk have a low tolerance for frustration, and fewer coping mechanisms; they are often

unable to accept comfort when it is offered. Low risk infants may be observed coping in a variety of ways, e.g., going to their mothers for comfort, using self-comforting activities such as thumbsucking, or temporarily withdrawing from a stressful situation.

High risk infants frequently manifest stiff and awkward body movements. They sometimes seem unable to manage their bodies and get into awkward and precarious positions. They often seem unaware of the boundaries of their body and walk into objects. These infants may show aggressive behavior toward themselves; one 1 year old boy repeatedly pinched his abdomen in frustration after a toy had been taken from him.

The body movements of low risk infants appear more fluid and graceful. They are interested in physical activity and yet tend to keep themselves safe from harm; their ease and comfort with the environment is striking (Broussard, 1978, 1979).

The New York Longitudinal study of Thomas, Chess, and Birch (1978) analyzed the emotional and behavioral characteristics of children from infancy through the first decade of life. These authors introduced the concept of the "difficult child" as one with a particular

pattern of temperament traits. The difficult child typically manifests irregularity in biological functions (eating, sleeping, eliminating), withdraws negatively from new stimuli, adapts slowly to change, and frequently expressed negative mood swings. Thomas et al.'s (1978) study supported the work of Broussard (1976, 1978).

Carey (1970) developed a questionnaire for mothers of infants 4 to 8 months old and determined from it that there was a relationship between difficult temperament characteristics and colic, injuries, and night waking. Carey also found that mothers of difficult infants tended to underestimate their difficulty, so that the more difficult the infant, the greater was the likelihood of a discrepancy between temperament score of the infant and the mother's global rating.

Most studies of infant temperament characteristics have been based on maternal perception of the infant. Sameroff (1975) is one of the few researchers who has explored the relationship between early infant behavior, parental attitudes, and other environmental factors. Sameroff proposed that child development should be studied as a complex interaction between child, parent, and environment. Broussard (1979) supported this concept

and stressed that the NPI be used as a general screening instrument for disorders in the psychosocial adaptation of the mother-infant system. Thus, a high risk score is to be used as a clue of possible disorder. Further clinical evaluation is needed to determine the exact nature of the disorder. Only after a thorough assessment has been completed may the appropriate intervention be selected.

Observing the mother's behavior toward the baby is important in cross-validating the NPI results. A mother who is a sensitive caregiver and spends significant time in pleasurable interaction with her baby would suggest a positively adapted mother-infant system. In contrast, a mother who states that her healthy, alert baby is a lot of trouble and who handles the baby mechanically without eye contact or smiling suggests that mother and infant are not adapting positively. Both low risk and high risk NPI scores should be evaluated within the context of actual mother-infant interaction.

To summarize, the mother's perception of her infant is influenced by the infant's behavior, the mother's own temperament, confidence, previous experiences, and the availability of support from family and friends. The

fact that an infant is medically normal does not guarantee that the infant will manifest normal development in the psychosocial or behavioral areas. High risk scores on the NPI (Time 2) warrant screening the infant for behavioral qualities that may not be adaptive, such as extreme irritability, distress at being cuddled, or avoidance of eye contact with the mother. The NPI is an easily administered, easily scored screening instrument which can be used to identify a population of infants at risk for the development of psychosocial disorder. Identification of high risk infants should be followed by a careful clinical assessment that will provide an indepth appraisal of the adaptive potential of a particular mother-infant pair. The medical team will then decide the appropriate level of intervention based on knowledge of the family and their resources (Broussard, 1978, 1979).

### Summary

Chapter 2 has presented a review of literature on (a) the mother-infant relationship as an interactive process, (b) motherhood as a developmental process, (c) adolescent motherhood, and (d) the Neonatal



Perception Inventory as a screening instrument for the nurse clinician.

The reciprocal nature of the mother-infant relationship is characterized as an ongoing process in which mother and infant modify the behavior of the other. The mother will respond positively or negatively to the infant depending upon the infant's characteristics and ability to be consoled and nurtured. As the mother experiences satisfaction interpreting correctly the infant's needs, she and her infant will become an independent system with the power to effect each other.

Motherhood as a developmental process begins for all women when they are little girls. The culture in which they are raised conveys attitudes and expectations of feminine behavior and ultimately motherhood which shape the goals to which women strive. Maternal behavior is learned behavior which evolves and changes as the individual's self-concept evolves. Maternal identity becomes a focus for the pregnant woman and maternal "binding-in" to the child develops markedly after the birth of the infant. Binding-in is accomplished through identification of a healthy, normal baby, and with the help of supportive adults, is

operationally complete in approximately 4 weeks after the infant's birth (Rubin, 1977).

Adolescent motherhood may be viewed as a significant life event which has occurred out of sequence or off schedule according to prevailing social norms. However, norms may well vary according to race and socioeconomic status. A much higher incidence of adolescent pregnancy occurs among Black teenagers. Most women drift into adolescent parenthood rather than choose it consciously or unconsciously. Whether pregnancy was a conscious choice or not, the developmental tasks or adolescence are interrupted, resulting in delay of the young woman's education, delay in achieving independence from her family, physical stress to achieving independence from her family, physical stress to her body, altered personal identity, loss of peer relationships, and assumption of an adult role "mother" for which she may not be prepared. The outcome for infants of adolescent mothers varies considerably, with familial and socioeconomic characteristics of the caretaking environment being the most significant variable (Sameroff & Chandler, 1974). With proper support and medical care many teenage mothers can become effective and capable

mothers. Teenagers are flexible, resilient, and adaptable often showing warmth and playfulness toward their children. Their abundant energy and developing identity make them capable of greater change than adults.

The Neonatal Perception Inventory is an easily administered easily scored screening instrument focusing on the mother's perception of anticipated infant behaviors which can be used to identify a population of infants at risk for the development of psychosocial disorder. Identification of high risk infants should be followed by a careful clinical assessment that will provide an indepth appraisal of the adaptive potential of a particular mother-infant pair. The medical team will then decide the appropriate level of intervention based on knowledge of the family and their resources (Broussard, 1978, 1979).

## CHAPTER 3

### PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This study used an ex post facto research design so classified because the independent variable is not manipulated by the researcher (Polit & Hungler, 1978). The independent variable is the age of the mother. The dependent variable is a mother's perception of her baby compared to the average baby as measured by Broussard's Neonatal Perception Inventory.

#### Setting

The data were collected in a 381 bed private hospital in a Southwestern city in the United States with a population of approximately 100,000. It is the only hospital in the area which has a labor and delivery suite, nursery, and postpartum unit. Thus, the hospital's birth population of approximately 225 deliveries each month represents the area's birth population.

Mothers selected as potential subjects for the study were patients on the postpartum unit which has 21 private rooms and 8 semi-private rooms. Rooming-in was not available. Infants were brought to their mothers

every 3 to 4 hours for feedings. Fathers may visit at any time and may be present for feedings. Other visitors are limited to regular visiting hours. The average postpartum hospitalization was 3 days.

### Population and Sample

The population was primiparous women who delivered vaginally full-term healthy infants. To be included in the study, infants had to weigh at least 2,500 grams and be considered in good health by their physician (Broussard, 1979). Furthermore, for inclusion infant Apgar scores had to be at least 7 at 1 minute and 8 at 5 minutes after delivery (Brazelton, 1973). Women in two age groups comprised the sample: adolescents and adults. Adolescent mothers were 13-18 years of age. Adult mothers were 21-30 years of age. Mothers 19 and 20 years old were not included to assure a clearer distinction between adolescent and adult groups. Women 19 or 20 years, depending on their marital and/or employment status, might be accurately categorized as adolescent or adult. Women over 30 who are giving birth for the first time could reasonably be a very distinct group.

Mothers who met the study criteria were identified and selected as potential subjects for the study. Each

potential subject was approached in the patient's room by the investigator to request her voluntary participation in the study. After the study was explained to the potential subject, the consent form was signed by the subjects and witnessed.

The first 45 adolescents and the first 45 adults comprised the original sample. Only one adult and one adolescent mother chose not to participate in the study; thus, the sample consisted of 44 adolescent mothers and 44 adult mothers.

Time 1 data were collected within the first 24-48 hours postpartum. Time 2 data were collected 30-36 days postpartum through home visits if possible, and if home visits were not possible or were unsuccessful, data were collected by mail. Eighty of the 88 subjects returned Form II for Time 2 data. Attrition rate at Time 2 is 9%. Data for adult mothers were collected between September 5, 1980 and November 19, 1980; data for adolescent mothers were collected between September 5, 1980 and December 30, 1980.

#### Protection of Human Subjects

The proposed study was submitted to the Human Research Review Committee at Texas Woman's University

and approved (Appendix A). Permission was also obtained from the graduate school (Appendix B). The hospital administration was contacted and written consent (Appendix C) was given to conduct the study. Physicians who cared for obstetrical patients were also contacted and their participation was obtained. The entire staff of obstetrical physicians gave permission for their patients to be approached (Appendix D).

Each subject included in the study received a verbal description of the procedures (Appendix E) which are also printed on the informed consent form which each subject signed (Appendix F). Subjects in the study were assured that their participation was voluntary and that their consent or refusal to participate in the study would not affect the care which they or their infant received while in the hospital. The subjects were informed that they could withdraw from the study at any time without consequences.

There were no known risks to participants with the use of this inventory. Although risk cannot be absolutely discounted, Broussard's Neonatal Perception Inventory asks questions about topics frequently

discussed by new mothers, e.g., feeding, eliminating, sleeping, and crying. The questions were unlikely to cause emotional concern or discomfort. No untoward effects were observed during data collection. Care was taken to assure the anonymity to each participant. All data were coded only by number to assure that each subject completed the Inventory at 1-2 days and 30-36 days.

#### Instrument

Broussard's Neonatal Perception Inventory (NPI) was used to measure the mother's perception of her baby (Broussard, 1976, 1978, 1979; Broussard & Hartner, 1970). The NPI (Appendix G) asks the mother to describe her perceptions about the "average" infant and her infant by rating six infant behaviors on a 5-point scale (a great deal = 5, a good bit = 4, moderate amount = 3, very little = 2, and none = 1). The six infant behaviors are: crying, trouble with feeding, spitting and vomiting, difficulty with sleeping, difficulty with bowel movements, and the establishment of predictable patterns of eating and sleeping.

Mothers are given the "average baby" form to answer first followed by the "your baby" form. The number of



points for each "baby" is totaled with a potential scoring range of 6-30. The score obtained for "your baby" is subtracted from the score obtained for the "average baby"; the resulting number represents the NPI score and may be positive or negative. The difference in scores between the mother's perception of the average baby and her baby reflect the degree of her favorable or unfavorable perception of her infant. The inventory has two forms. Form I is used on the first or second day postpartum and Form II is used at 1 month postpartum. These are termed Time 1 and Time 2 scores. Permission to use these scales was obtained from Broussard (Appendix H).

Reliability has not been determined by Broussard for these instruments, in part because they are administered at specific times in the first month following the birth of the infant. However, Broussard (1978) established predictive validity for the instrument in respect to subsequent emotional adjustment of the child as measured by independent psychiatric evaluations at age 4 1/2 and age 11 years. If a mother viewed her baby unfavorably compared to her perception of an average baby at 1 month postpartum, the child at age 4 1/2 and

11 years of age was significantly more likely to be judged to have an emotional disorder.

#### Data Collection

Each day during the months of September, October, and November of 1980, the investigator examined the charts of all newly delivered mothers during the previous 24 hour period. Mothers who met the study criteria were identified and selected as potential subjects for the study.

Time 1 data were collected within the first 24-48 hours postpartum for 88 subjects. Time 2 data were collected 30-36 days postpartum through home visits if possible, and if home visits were not possible or were unsuccessful, data were collected by mail. Eighty of the 88 subjects returned Form II for Time 2 data. Attrition rate at Time 2 is 9%. Appendix I presents further details on the collection of Time 2 data.

#### Treatment of Data

The NPI produced two scores upon each administration. One score described the "average baby" and one score described "my baby." The scores were derived from the six items each of which is scored on a 5-point

scale. Differences between the two scores (average baby and my baby) determine the degree of favorable or unfavorable perception of the infant by the mother. This score is called the "difference score." Two groups, adolescent mothers and adult mothers, were compared by use of the  $t$  statistic. This statistic is designed to test differences between the mean scores of two independent samples (Bruning & Kintz, 1968). The data for Time 1 and Time 2 were treated separately. This procedure tested Hypotheses 1 and 2. A significant level of .05 was chosen.

Hypotheses 3, 4, 5, and 6 are designed to measure the relationship between a mother's response 24 hours (Time 1) after birth and her responses 30-36 days (Time 2) after birth. The items for the two forms of Broussard's instrument are identical for the "average baby." For "your baby," the form for the second administration reflects the fact that now the mother has had a month of experience with her baby.

Four Pearson product-moment correlation coefficients were computed for 24-48 hours and 30-36 days: (a) for "average baby" with adolescent mothers, (b) for "your baby" with adolescent mothers, (c) for "average baby with

adult mothers, and (d) for "your baby" with adult mothers. This statistic estimated the relationship or equivalence of the two Broussard inventory forms. A significance level of .05 was chosen. In statistical terms, to what extent does the score at Time 1 predict a mother's score at Time 2?

## CHAPTER 4

### ANALYSIS OF DATA

This chapter will present the findings of the study. This study explored whether adolescent mothers' perceptions of expected infant behaviors during the neonatal period differ from perceptions of adult mothers. First, the samples will be described in respect to demographic characteristics. Second, the results of the study utilizing the Neonatal Perception Inventory will be reported.

#### Description of Samples

The demographic characteristics of the 41 adolescent and 30 adult respondents are presented in Table 1 and Table 2. Age, race, and marital status are listed. Of the 41 adolescent mothers, 16 were Black (39%), 11 were Spanish-American (27%), and 14 were White (34%). Twenty-four of the 41 adolescent mothers were not married (59%), including 2 separated from their husbands. The two women who are listed as separated from their husbands reported that they had "parted" from their common-law husbands sometime before delivery. The term "parted"

Table 1  
Number of Adolescent Mothers by Age, Race,  
and Marital Status

Marital status by race	Age in years					Totals
	14	15	16	17	18	
<u>Black (n = 16)</u>						
married				1		1
not married		1	2	5	7	15
<u>Spanish American (n = 11)</u>						
married		1		2	5	8
not married*		1		2		3
<u>White (n = 14)</u>						
married		1	1		4	6
not married*	1	—	1	2	4	8
Totals	1	4	4	11	21	41

\*Includes one mother separated from her husband.

Table 2

Number of Adult Mothers by Age, Race,  
and Marital Status

Marital status by race	Age in years										Totals
	21	22	23	24	25	26	27	28	29		
<u>Black (n = 3)</u>											
married				1						1	
not married	1			1						2	
<u>Spanish American (n = 7)</u>											
married				3	1	1	1			6	
<u>White (n = 29)</u>											
married	4	6		5	1	6	3		1	26	
not married	<u>2</u>	<u>      </u>		<u>      </u>	<u>1</u>	<u>      </u>	<u>      </u>		<u>      </u>	<u>3</u>	
Totals	8	6		10	3	7	4		1	39	

most frequently means a permanent separation. Fifteen of the 16 Black adolescents were not married (94%); 3 of the 11 Spanish American adolescents were not married (27%), including 1 separated from her husband; and 8 of the 14 White adolescents were not married (57%), including 1 separated from her husband. The modal adolescent mother was Black and single, 15 of 41 (37%).

Of the 39 adult mothers, 3 were Black (8%), 7 were Spanish American (18%), and 29 were White (74%). Six of the 39 adult mothers were not married (15%). Two of the 3 Black adults were not married (67%); 1 of the 7 Spanish American adults was not married (14%); and 3 of the 29 White adults were not married (10%). The modal adult mother was White and married, 26 of 39 (67%).

### Findings

Hypotheses 1 and 2 that adolescent mothers perceive their infants as more difficult to care for compared to average babies than adult mothers at 24-48 hours and 30-36 days respectively were not supported by the data. Hypotheses 1 and 2 were tested by use of the NPI "difference score" which was defined as the difference between a mother's score for average baby and my baby.



A positive score indicated a mother perceived her baby as easier to care for than the "average baby"; whereas, a negative score indicated she perceived her baby as more difficult to care for than the "average baby."

Hypothesis 1 predicted that adolescent primiparous mothers perceive their infants as more difficult to care for than average babies when compared to adult primiparous mothers 24-48 hours after delivery. A  $t$ -test for independent samples (Table 3) on these "difference scores" for 24-48 hours (Time 1) was not significant ( $t = -.56$ ,  $df = 78$ ,  $p = .58$ ). The research hypothesis was not accepted; this infers that adolescent primiparous mothers did not perceive their infants as more difficult to care for than average babies when compared to adult primiparous mothers 24-48 hours after delivery.

Hypothesis 2 predicted that adolescent primiparous mothers perceive their infants as more difficult to care for than average babies when compared to adult primiparous mothers 30-36 days after delivery. A  $t$ -test on these "difference scores" for 30-36 days (Time 2) was not significant ( $t = -1.02$ ,  $df = 78$ ,  $p = .31$ ). The research hypothesis was not accepted; this infers that adolescent primiparous mothers did not perceive their

Table 3

Neonatal Perceptions and Age of Mother:  
NPI Difference Scores 24-48 Hours

Time	Mean	<u>SD</u>	<u>t</u>	<u>df</u>	<u>p</u>
<u>At 24-48 hours</u>					
Adolescent ( <u>n</u> = 41)	1.83	2.33	.56	78	.58
Adult ( <u>n</u> = 39)	1.54	2.29			
<u>At 30-36 days</u>					
Adolescent ( <u>n</u> = 41)	2.66	3.05	-1.02	78	.31
Adult ( <u>n</u> = 39)	1.95	2.92			

infants as more difficult to care for than average babies when compared to adult primiparous mothers 30-36 days after delivery.

Not only were the results not significant, but inspection of the mean "difference scores" in Table 3 revealed that they were in the opposite direction of the prediction. It was expected that adolescent mothers would have a lower mean "difference score" than adult mothers, i.e., smaller positive scores if both groups had positive scores; a larger negative score if both groups had negative scores; or if one group was positive and one negative, the adolescents would have the negative score. However, both groups had positive mean scores with the larger positive score belonging to the adolescents and not to the adults as predicted.

An alternative analysis was also done. The "difference scores" were coded trichotomously following the methodology of Broussard's (1979) study and the frequencies for three groups are presented in Table 4. The three classifications are whether a mother perceived her baby as (a) more difficult, or (b) less difficult to care for, or (c) no different than the average baby.

Table 4  
Number of Adolescent and Adult Mothers Who Had Positive,  
No Difference, or Negative Scores of Neonatal  
Perception

	Positive perception of my baby*	No difference	Negative perception of my baby
<u>24-48 hours</u>			
Adolescent mothers	28	6	7
Adult mothers	26	6	7
<u>30-36 days</u>			
Adolescent mothers	29	7	5
Adult mothers	30	2	7

\*Data presented in this table are frequencies. Note that a positive perception indicates that a mother perceived her baby as easier to care for than the average baby, whereas a negative perception indicates that a mother perceived her baby as more difficult to care for than the average baby. No difference indicates that a mother perceived her baby and the average baby as equally easy or difficult to care for.

A negative "difference score" indicated the mother perceived her baby as more difficult to care for than the average baby. A positive "difference score" indicated she perceived her baby as easier to care for than the average baby. No difference indicated that the scores for average baby and my baby were the same. Table 4 shows that the adolescent and adult mothers' perception also did not differ when the data were coded according to Broussard's procedure.

Hypotheses 3, 4, 5, and 6 predicted that adolescent mothers and adult mothers respectively would manifest a positive relationship between their NPI perceptions at 24-48 hours and 30-36 days after delivery for their baby and the average baby. Table 5 shows the Pearson product-moment correlations for average baby scores, my baby scores, and "difference scores" for both age groups.

Hypothesis 3 predicted that the perceptions adolescent mothers have of the average baby at 24-48 hours and 30-36 days are positively related. The Pearson product-moment correlation coefficient was .51 and was significant at  $p = .001$ . Thus, the research hypothesis was accepted; there was a positive relationship between the perceptions adolescent mothers had of the average baby at 24-48 hours and 30-36 days.

Table 5

Correlations of Mothers' Neonatal Perceptions  
24-48 Hours and 30-36 Days after Delivery

	$\bar{r}$	$\bar{n}$	$\bar{p}$
<u>Adolescent mothers</u>			
Average baby	.51	41	.001
My baby	.54	41	.001
Difference score	.16	41	.16
<u>Adult mothers</u>			
Average baby	.63	39	.001
My baby	.16	39	.16
Difference score	-.17	39	.15

Hypothesis 4 predicted that the perceptions adolescent mothers have of their infants at 24-48 hours and 30-36 days are positively related. The Pearson product-moment correlation coefficient was .54 and was significant at  $p = .001$ . The research hypothesis was accepted; there was a positive relationship between the perception adolescent mothers had of their infants at 24-48 hours and 30-36 days.

Hypothesis 5 predicted that the perceptions adult mothers have of the average baby at 24-48 hours and 30-36 days are positively related. The Pearson product-moment correlation coefficient was .63 and was significant at  $p = .001$ . The research hypothesis was accepted; there was a positive relationship between the perceptions adult mothers had of the average baby at 24-48 hours and 30-36 days.

Hypothesis 6 predicted that the perceptions adult mothers have of their infants at 24-48 hours and 30-36 days are positively related. The Pearson product-moment correlation coefficient was .16 and was not significant at  $p = .16$ . The research hypothesis was not accepted; therefore it cannot be inferred that there was a positive relationship between perceptions adult mothers had of their infants at 24-48 hours and 30-36 days.

Although no predictions were made for the NPI "difference scores," Pearson product-moment correlation coefficients were also computed for these scores for the adolescent and adult samples. Neither coefficient was significant; for adolescents,  $r = .16$ ,  $p = .16$ ; for adults,  $r = -.17$ ,  $p = .15$ .

Because age is the critical variable in the study, further analyses were made using the actual scores for average baby and my baby rather than the "difference score." The mean scores for perceptions about the average baby and my baby for adolescent and adult mothers showed an interesting pattern. Table 6 shows that adolescent mothers at 24-48 hours compared to adult mothers at 24-48 hours perceived the average baby as being more difficult to care for ( $t = -2.01$ ,  $df = 78$ ,  $p = .05$ , two-tailed test). The difference between these mean scores for adolescents and adults on my baby at 24-48 hours was in the same direction, but is not significant ( $t = -1.75$ ,  $df = 78$ ,  $p = .08$ , two-tailed test). However, by 30 days postpartum this pattern disappeared. At 30-36 days no longer did adolescent mothers see average babies as more difficult to care for when compared to adult mothers ( $t = .65$ ,  $df = 78$ ,  $p = .55$ ). At 30-36 days, adolescent



Table 6

Neonatal Perceptions and Age of Mother  
Average Baby and My Baby

NPI Scale	Adolescent $\bar{n} = 41$		Adult $\bar{n} = 39$		$t$	$df$	$p$
	$\bar{X}$	$SD$	$\bar{X}$	$SD$			
<u>24-48 hours</u>							
Average baby	18.17	4.49	16.54	2.42	-2.01	78	.05
My baby	16.34	4.03	15.00	2.65	-1.75	78	.08
<u>30-36 days</u>							
Average baby	16.54	3.29	16.97	2.67	.65	78	.55
My baby	13.88	3.81	15.03	2.90	1.36	78	.18

mothers saw their babies as easier to care for when compared to adult mothers although not significantly ( $t = 1.36$ ,  $df = 78$ ,  $p = .18$ , two-tailed test).

Analysis showed that the adult mothers did not change their perceptions significantly, but the adolescent mothers did (Table 7). The mean scores for adult mothers for average baby at 24-48 hours was 16.54 and at 30-36 days it was 16.97; their scores for my baby at 24-48 hours was 15.00 and at 30-36 days was 15.03. On the other hand, the adolescent mothers' mean scores changed. For average baby the mean score for adolescent mothers was 18.17 at 24-48 hours and 16.54 at 30-36 days. A  $t$ -test for paired observations indicated a significant difference ( $t = 2.63$ ,  $df = 40$ ,  $p = .01$ , two-tailed test). For my baby the mean score for adolescent mothers was 16.34 at 24-48 hours and 13.88 at 30-36 days. This difference was also significant ( $t = 3.27$ ,  $df = 40$ ,  $p = .001$ , two-tailed test). Therefore, adolescent mothers had perceptions at 30-36 days indicating that average babies and their babies respectively were easier to care for than they perceived them to be at 24-48 hours. The adult mothers did not alter

Table 7

Comparison of Time 1 and 2 Mean Neonatal  
Perception Scores for Adolescent and  
Adult Mothers

	24-48 hours		30-36 hours		t	df	p
	<u>X</u>	<u>SD</u>	<u>X</u>	<u>SD</u>			
<u>Adolescent</u>							
Average baby	18.17	4.49	16.54	3.29	2.63	40	.01
My baby	16.34	4.03	13.88	3.81	3.27	40	.001
<u>Adult</u>							
Average baby	16.54	2.42	16.97	2.67	-1.23	38	.25
My baby	15.00	2.65	15.03	2.90	-.04	38	.90

their perceptions during the first month after they left the hospital.

Since race and marital status were not controlled variables when adolescent and adult mothers were compared, separate analyses were made for these variables on "difference scores" only. An analysis of variance by race of mother showed no statistical significance for the "difference score" between average baby and my baby at 24-48 hours (Table 8). However, at 30-36 days postpartum the "difference score" by race was statistically significant ( $F = 4.27$ ,  $df = 2$  and  $68$ ,  $p = .02$ ). Spanish American mothers, followed by Black mothers, and then White mothers showed the largest positive difference scores. A positive score indicates a mother considered her baby easier to care for than the average baby, and the larger the score, the more the mother considered her baby easier to care for than the average baby. The greatest difference was between the Spanish American group who had the largest positive scores ( $\bar{X} = 3.78$ ) and the other two groups ( $\bar{X} = 2.00$  for Blacks and  $1.84$  for Whites).

Analysis of marital status did not reveal significant results, although single mothers, including two

Table 8

Analysis of Variance of Difference Scores by Age,  
Race, and Marital Status at 30-36 Days

Source of Variance	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
<u>Main Effects</u>					
Age	0.04	1	0.04	0.0	.94
Race	67.08	2	33.54	4.27	.02*
Marital Status	26.90	1	26.90	3.42	.07
<u>2-Way-Interactions</u>					
Age-Race	11.67	2	5.83	0.74	.48
Age-Marital status	0.06	1	0.06	0.00	.93
Race-Marital status	63.74	2	31.87	4.05	.03*
<u>3-Way-Interactions</u>					
Age-Race-Marital status	21.73	2	10.86	1.38	.26
Residual	533.96	68	7.85		
Total	707.18	79			

\*Significant  $p = .05$ .

separated mothers, had somewhat larger positive difference scores than did married mothers (Table 9). At 24-48 hours single mothers had a positive mean difference score of 2.13 whereas married mothers had a positive mean difference score of 1.40. At 30-36 days, single mothers had a positive mean difference score of 2.81 and married mothers had a positive mean difference score of 1.98.

Finally, a 2-way interaction effect on "difference scores" between marital status and race was significant at 30-36 days (Table 8,  $F = 4.05$ ,  $df = 2$  and  $68$ ,  $p = .03$ ) but not at 24-48 hours. An interaction effect indicates that these two variables do not act independently of each other. Rather, race and marital status interact with each other to effect difference scores. As indicated previously, Spanish American and single mothers show the most favorable attitudes toward their babies when compared to the average baby 30-36 days postpartum.

#### Summary of Findings

Statistical findings for the six hypotheses were:

1. Adolescent mothers do not perceive their babies as more difficult to care for than average babies when compared to adult mothers at 24-48 hours postpartum.

Table 9

Comparison of Mean Neonatal Perception  
Scores by Marital Status

Difference Score	Single or Separated (n = 32)		Married (n = 48)		<u>t</u>	<u>df</u>	<u>p</u>
	<u><math>\bar{X}</math></u>	<u>SD</u>	<u><math>\bar{X}</math></u>	<u>SD</u>			
24-48 hours	2.13	2.45	1.40	2.17	-1.40	78	.17
30-36 days	2.18	2.80	1.98	3.10	-1.22	78	.23

2. Adolescent mothers do not perceive their babies as more difficult to care for than average babies when compared to adult mothers at 30-36 days postpartum.

3. The perceptions of the average baby given by adolescent mothers at 24-48 hours and 30-36 days were positively related.

4. The perceptions of my baby given by adolescent mothers at 24-48 hours and 30-36 days were positively related.

5. The perceptions of the average baby given by adult mothers at 24-48 hours and 30-36 days were positively related.

6. The perceptions of my baby given by adult mothers at 24-48 hours and 30-36 days were not significantly related.

Additional significant findings were:

7. Adolescent mothers perceived the average baby as more difficult to care for than did adult mothers at 24-48 hours. This difference was not found to be significant at 3-36 days.

8. Adolescent mothers perceived the average baby as more difficult to care for at 24-48 hours than they did at 30-36 days. Adult mothers did not show a change from 24-48 hours to 30-36 days.



9. Adolescent mothers perceived their babies as more difficult to care for at 24-48 hours than they did at 30-36 days. Adult mothers did not show a change from 24-48 hours to 30-36 days.

10. Race significantly effects how difficult a mother perceives her baby to care for compared to her perception of the average baby at 30-36 days. Spanish American mothers perceived their babies more positively than did the Black and White mothers. No differences were found at 24-48 hours.

11. Marital status does not significantly effect a mother's perception of the difficulty of caring for her baby compared to the average baby at either 24-48 hours or 30-36 days.

12. The interaction effect of race and marital status does effect a mother's perception of difficulty of caring for her baby compared to the average baby at 30-36 days. Single and Spanish American women perceived their babies most positively.

## CHAPTER 5

### SUMMARY OF THE STUDY

This study has investigated adolescent and adult mothers' perceptions of the expected behaviors of their infants during the neonatal period. Based on a review of the literature this investigator concluded that adolescent mothers would perceive their infants to be as more difficult to care for than would adult mothers when compared to their individual perceptions of the average baby. Adolescent motherhood is often described as high risk motherhood because of the following socioeconomic factors: inadequate familial support systems, job insecurity and limited income as a result of insufficient educational preparation, inadequate medical care, nutritionally inadequate diets, and lack of support from society. It would appear that adolescent women are frequently less prepared for motherhood than adults, and could be expected to experience greater stress in caring for their infants.

#### Summary

The conceptual framework was derived from the work of Broussard (1978) who concluded that a mother relates

to her child on the basis of her perception, and how she handles her child will affect its behavior. When a woman becomes a mother she has certain expectations about what kind of a mother she will be and what kind of a child she will have. Reciprocally, the mother and baby influence each other's behavior.

Because adolescent motherhood is not positively supported in American culture, it was reasoned that these mothers would be more likely to reveal distress patterns in the mother-infant relationship than would adult mothers, especially in respect to caretaking aspects, e.g., feeding, diapering, soothing, etc. Consequently, they might well perceive their infants as more difficult to care for than adult mothers.

The data for this study were collected in a private hospital in a Southwestern city with a population of approximately 100,000. It is the only hospital in the area which has a labor and delivery suite, nursery, and postpartum unit. Primiparous mothers selected for the study were postpartum patients who had delivered vaginally full-term infants weighing at least 2,500 grams with Apgar scores of at least 7 at 1 minute and 8 at 5 minutes after delivery and considered to be

in good health by their physician. Eighty women in two age groups completed the questionnaires: 41 adolescents, 13-18 years of age, and 39 adults, 21-30 years of age.

Broussard's Neonatal Perception Inventory (NPI) (Broussard, 1979) was administered to the mothers twice after they had received an explanation of the study and their permission to participate in the study had been given. The NPI asked the mother to describe her perceptions about the "average" infant and her infant by rating six infant behaviors on a 5-point scale (a great deal = 5, a good bit = 4, moderate amount = 3, very little = 2, and none = 1). The six infant behaviors are: crying, trouble with feeding, spitting and vomiting, difficulty with sleeping, difficulty with bowel movements, and the establishment of predictable patterns of eating and sleeping.

Mothers were given the "average baby" form to answer first followed by the "your baby" form. The number of points for each "baby" were totaled with a potential scoring range of 6-30. The score obtained for "your baby" was subtracted from the score obtained for the "average baby"; the resulting numbers represented

the NPI difference score and may be positive or negative. These difference scores between the mother's perception of the average baby and her baby reflect the degree of her favorable (positive scores) or unfavorable (negative scores) perception of her infant. The inventory had two forms. Form I was used 24-48 hours postpartum and Form II was used 30-34 days postpartum. Data for Time 1 were collected in the hospital's postpartum unit; data for Time 2 were collected during a home interview or by mail when a home interview could not be obtained.

The difference score provided the principal dependent measure which is consistent with Broussard's use of the NPI. Adolescent and adult mother scores were analyzed. Racial and marital status effects were also analyzed.

Hypotheses 1 and 2 predicted that adolescent mothers would perceive their babies as more difficult to care for compared to their expectations of average babies than would adult mothers at 24-48 hours and 30-36 days respectively. No support was found for these hypotheses and the mean group scores were in the opposite direction.

Hypotheses 3, 4, 5, and 6 tested the stability of NPI measures from 2 days to 1 month. Hypothesis 3

(average baby scores for adolescent mothers), 4 (my baby for adolescents), and 5 (average baby for adult mothers) were accepted. Hypothesis 4 (my baby for adults) was rejected.

Additional analyses showed that adolescent mothers, but not adult mothers, altered their perceptions from 2 days to 1 month toward perceiving both their baby and the average baby as easier to care for. Further analysis revealed racial differences. Spanish American mothers compared to Black and White mothers perceived their babies as easier to care for compared to average babies.

#### Discussion of Findings

The original expectation that adolescent mothers would perceive their infants as more difficult to care for compared to perceptions of average babies than would adult mothers was not confirmed. Perhaps the assumption that adolescent mothers would not be as pleased with their infants was ill founded. Conclusions about adolescent maternal perception were extrapolated from a review of the literature on adolescent motherhood.

Clearly, certain aspects of this literature should be questioned in light of these results. In the available literature, most authors imply a negative relationship between adolescent motherhood and childrearing (Cohen, Belmont, Dryfoos, & Stein, 1979; Field et al., 1970; Klein, 1978). The literature is abundant with articles which describe the adverse circumstances and long-range effects of adolescent motherhood (Hardy, Welcher, Stanley, & Dallas, 1978; Thompson et al., 1979). The adolescent mother experiences less education, more job insecurity, unstable marital and sexual relationships, more dependence on welfare programs, and a higher number of life-time pregnancies compared to her peers who did not become mothers as adolescents. Given such negative circumstances a logical conclusion would be that the adolescent mother feel herself as deprived as the literature describes her and that consequently she would view her baby as an added burden.

Certainly the adverse conditions associated with adolescent motherhood are true, but it appears that the logical implication that these mothers would perceive their infants as more difficult to care for than adult mothers who do not experience such adverse conditions

is not true. Perhaps researchers and reviewers (and others who do not experience such adverse conditions) logically assume that if they had to care for an infant before they were 19 years of age, under such adverse conditions day in and day out, they would perceive their babies negatively, difficult to care for, and an added burden. If a projection of this type does occur on the part of researchers and reviewers, then the attitudes toward adolescent motherhood in the literature is partly a function of researchers' social class and racial bias. It is safe to assume that most researchers are among the educated White middle and upper class; probably few if any researchers were adolescent mothers themselves. They may be biasing their interpretations of adolescent mothers without self-awareness. Thus, one explanation of the unanticipated results is that middle class researchers have not accurately researched the actual attitudes adolescent mothers have toward their babies, and in part project what they think their attitudes would be if they were the adolescent mother.

For further analyze the unexpected failure to support Hypotheses 1 and 2, it must be added that most articles included in the review of literature were



written for populations in large metropolitan areas in the midwest, Northeast, and California, and not the more rural Southwest which may have different cultural expectations and attitudes. Possible environmental and sociocultural differences were not taken into account when these hypotheses were formulated.

Furstenberg (1976) emphasized the importance of comparing adolescent mothers with their peers who did not become mothers. Furstenberg indicated few studies of adolescent mother utilized a control group of adolescents who did not become pregnant and subsequently mothers. Statements about adolescent pregnant women when they are not being compared to a like aged non-pregnant control group are of questionable value and may even be misleading according to Furstenberg (1976).

Another limitation of the literature is the relative absence of psychological studies. The literature which was reviewed did not address the question, "Does the adolescent mother like her baby; does she value her baby positively; and does she find her baby relatively easy to care for?" The literature tended to describe the adolescent mother in terms of her socioeconomic conditions using sociological variables principally.

The principal hypotheses for this study about adolescent attitudes and perceptions were consequently extrapolated from the sociological literature. Sociological perspectives are most useful in describing the general characteristics of these mothers, their social roles, their environmental relationships, their economic and educational constraints, but they fail to describe in depth the internal attitudes, values, beliefs, and perceptions these women hold. What seems to be missing in the current literature are studies of a psychological perspective which interview adolescent mothers directly. What is missing and needed is to know how these women feel about themselves, about becoming pregnant, and about becoming a mother who cares for her baby. This study adds to the psychological literature because adolescent perceptions were studied directly.

Few researchers report on the positive aspects of adolescent motherhood as did LaBarre (1972) who stated that for her lower socioeconomic group of blue collar workers, early pregnancy and motherhood was expected and supported by their families. For these women, early pregnancy and motherhood was a source of pride and self-esteem. A valued role had been attained.

LaBarre's (1972) work would seem to be supported by the present results. The majority (66%) of the adolescent sample of primiparous mothers belong to minority cultures, and could reasonably be assumed to represent the lower socioeconomic groups.

Regardless of our culture's general disapproval of adolescent motherhood, the adolescent mother may well experience enough peer and familial support from her intimate relationships to enable her to experience pleasure and satisfaction in caring for her baby. Despite their external conditions in life, they manifest as positive attitudes toward their babies as do adult mothers. American culture may not approve of their pregnancies, but adolescent mothers seem to enjoy their babies. Of particular interest in this study is the fact that from 2 days to 30 days the mean scores for adolescent mothers showed a significant increment in their perception of the ease they experienced and expected in taking care of their babies (16.3 to 13.9 for "my baby," and 18.2 and 16.5 for "average baby," Table 3). In contrast the mean scores for adult mothers did not change significantly (15.0 to 15.0 and 16.5 to 17.0 respectively). Somehow in the perception of the

adolescents, babies in general and their babies in particular become easier to care for after 30 days. The lack of change with adults may be explained in part that since adults may know better what to expect before birth, their perceptions do not change after 30 days. But since this sample was entirely primiparous adult mothers who have had no previous experience caring for or interacting with their own babies, this may be a somewhat limited explanation.

The simplest and perhaps best explanation would be that experience alters the adolescents' perceptions. Adolescent mothers may have felt less prepared and experienced with babies and so expected their babies to be more difficult to care for than did adult mothers while they were in the hospital. However, a brief experience at home with their babies may "correct" their perceptions. Adolescents may also find that they have the interest, energy, and ability to care for their babies after a short initial experience and, thus, find their babies easier to care for than adult mothers do after 30 days.

Several interesting speculations can be made which, of course, would require further research to demonstrate.

Given these significant perception changes for adolescents from 2 days to 1 month about average babies as well as their own, it may be that both their own experience with their babies and the changed attitudes they receive from significant others in their postpartum experience influenced this perception change. American culture may disapprove of adolescent pregnancies--and thus of the adolescents while they are pregnant--but after they give birth, and bring their babies home, their immediate culture supports them in caring for their babies and so they manifest more favorable perceptions toward babies.

Some epidemiological data support adolescent pregnancies. Merritt et al. (1980) concluded after analyzing three large sets of data (55,711 pregnancies collected by the Collaborative Perinatal Project of the National Institute of Neurological and Communicative Disorders and Stroke; 4,000 pregnancies from the University of Kansas Medical Center; and 6,087 pregnancies at the Regional Perinatal Center at the University of Rochester Strong Memorial Hospital) that the childbearing years with the lowest perinatal mortality are in late adolescence, 16-19 years of age. The adolescent mother is

not at a medical disadvantage unless she is a very young adolescent.

In this sample the majority of adolescent mothers was 18 years of age (21 or 41 or 51%) and thus may not be a typical sample of "teenage mothers." The majority of adolescent mothers was also from minority groups which may influence these data. In this community motherhood at 18 may be an acceptable age to have babies particularly in Black and Spanish American communities. Most of the 18 year old mothers were out of high school, close to finishing, or have terminated their schooling for some time; 18 is the age of majority and women in particular are considered adults at this age. The literature reviewed frequently failed to state precisely the age of the adolescents being studied (Broussard, 1978, 1979). Perhaps many studies are referring to mothers primarily 17 years of age and younger (Moore, Hofferth, Wertheimer, Caldwell, & Waite, 1979; Stine, 1964).

In her studies with the NPI, Broussard never listed precise ages for her subjects so the age distribution is not known. Her sample may have been quite different from this sample. Broussard (1976, 1979) also conducted

her studies in Pittsburgh, Pennsylvania, a very different geographical, sociocultural area from the Southwest. Her longitudinal study was begun in 1963 with 318 first-born, healthy, full-term infants of mixed socioeconomic and racial groups but no frequency distributions were given. The NPI was completed by the mothers on their second postpartum day (Time 1) and 46.5% of Broussard's mothers rated their infants as better than average. At Time 1, 68% of the mothers in the present study rated their infants as better than average. A month later at Time 2, 61.2% of Broussard's mothers rated their infants better than average compared to 74% for the mothers in the present study. The higher percentage of favorable difference scores in the present study at both Times 1 and 2 may be related to cultural differences in the Southwest compared to the Northeast. Families in the Southwest may be more supportive toward the single adolescent mother (and even to mothers in general); families within this population often date back for several generations in the same area. The Black families have roots in this community and many have lived here for generations, dating their history to slavery days. These are the Blacks who did not move

North but chose to stay with their extended families. Grandmothers typically raise these babies while the young single mothers go to work or school. One anecdote supports this. For years before school integration, it was the custom for Black women in this community to bring their babies to school with them on the day of their high school graduation. They were shown with pride.

Data suggest that perhaps there is a cultural difference. Spanish American cultures maintain very strong extended families and intergenerational ties. For these families, early marriage is expected and children are very important. The predominantly Roman Catholic influence and proximity to Mexico provides a strong cultural identity. The positive perception of these mothers toward their infants compared to average babies is striking in contrast to Black and White groups.

Another possible explanation for the more favorable scores in this overall sample compared to Broussard's could be related to the limitation in this sample to mothers whose infants had Apgar scores of at least 7 at 1 minute and 8 at 5 minutes. Broussard does not mention if infants were screened on the basis of Apgar



scores. This restriction may have excluded babies who were indeed more difficult to care for.

### Conclusions and Implications

1. Since adolescent mothers do not perceive of their infants more negatively than adult mothers as the literature seemed to predict, the literature which relates to adolescent motherhood needs to be evaluated more carefully and perhaps reinterpreted. The reader should be aware of the possibility of author, cultural, and geographical bias. Studies tend to be sociological and not psychological; consequently more studies are needed which study adolescent mothers in depth on ascertain their values, experiences, perceptions, and attitudes. Socioeconomic and educational limitations do not appear to result in more negative perceptions about childrearing for adolescent mothers.

2. Adolescent mothers alter their perceptions of the average baby as well as their own baby during the first month postpartum. The results showed that at 2 days they saw babies as more difficult to care for when compared to adult mothers, but an opposite pattern tended to be true 30-36 days later. It was the

adolescent mothers who changed to more favorable perceptions whereas the adult mothers did not alter their perceptions. Consequently, studies of adolescent mothers done in postpartum units may have questionable validity--at least if they assess attitudes and perceptions about parenting functions. Studies which assess adolescent mothers after they have had some experience with their babies are desirable.

#### Recommendations for Further Study

The following recommendations are based upon the conclusions of this study:

1. Further research is needed to investigate the early experiences adolescent mothers have with their babies and with their psychological support systems after they bring their babies home from the hospital.
2. Racial, cultural, and geographical differences necessitate further investigation. Single adolescent motherhood for Blacks may be a very different experience than it is for Whites. Adolescent motherhood for Spanish American women may be more valued in their culture than it is for Whites.

3. Age differences within the adolescent years require more careful investigation. Pregnancy at age 14 years is very different from ages 16-19 years medically. Important psychological differences may also exist within this age span in respect to adolescent mothers.

## APPENDIX A

TEXAS WOMAN'S UNIVERSITY  
Box 23717, TWU Station  
Denton, Texas 76204

1610 Inwood Road  
Dallas Inwood Campus

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Faith Kopplin Center: Dallas  
Address: 8261 Shadow Wood Dr. Date: 8/15/80  
Waco, Texas 76710

Dear Ms. Kopplin:

Your study entitled Mothers' Perceptions of Infant Behavior

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.

       Other:

XX No special provisions apply.

Sincerely,

*Estelle L. Furst*

Chairman, Human Subjects  
Review Committee

at       Dallas

## APPENDIX B

**TEXAS WOMAN'S UNIVERSITY**

**DENTON, TEXAS 76204**

**THE GRADUATE SCHOOL**


September 17, 1980

Ms. Faith Kopplin  
8261 Shadow Wood Drive  
Waco, Texas 76710

Dear Ms. Kopplin:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,

  
Robert S. Pawlowski  
Provost

RP:d1

cc Dr. Beth Vaughn-Wrobel  
Dr. Anne Gudmundsen  
Graduate Office



## APPENDIX C

TEXAS WOMAN'S UNIVERSITY  
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY\*

THE \_\_\_\_\_  
GRANTS TO FAITH KOPPLIN, R.N.  
a student enrolled in a program of nursing leading to a  
Master's Degree at Texas Woman's University, the privilege  
of its facilities in order to study the following problem.

"Mothers' Perceptions of Infant Behavior"

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: August 7, 1980

Faith Kopplin R.N.  
Signature of Student

\_\_\_\_\_  
Signature of Agency Personnel  
Bob C. Chapman, M.Ed. R.N. Ed.S.  
Signature of Faculty Advisor

\*Fill out & sign three copies to be distributed as follows:  
Original - Student; First copy - Agency; Second copy - TWU  
College of Nursing.

## APPENDIX D

A Copy of the Letter Given to Physicians to  
Request their Permission to Approach the Obstetrical  
Patients to Ask their Participation in this Study

I give my permission for Faith Kopplin, R.N. to approach my obstetric patients who have delivered healthy newborns to request their voluntary participation in a research study which she is conducting during August and September, 1980 to meet requirements for the Master of Science degree from Texas Woman's University. Patient involvement in this study is limited to their answering the Broussard Neonatal Perception Inventory at 1-2 days postpartum in the hospital and 30-36 days postpartum at their home. The patients will be assured that participation is voluntary and that they may withdraw from this study at any time without consequence.

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Physician's Signature

## APPENDIX E

## Explanation of Study

The script I will follow for the initial interaction with a potential subject will assume this form:

"Hello, (state the subject's name and wait for her to respond affirmatively) my name is Faith Kopplin. I am a registered nurse and a graduate student at Texas Woman's University. Part of my graduate work includes talking with new mothers about their babies. Your physician, Dr. \_\_\_\_\_, has approved my approaching you."

I will then pause to give the potential subject an opportunity to ask questions or make a comment.

"I am interested in learning more about the experiences of mothers and their babies during the first few weeks after delivery. The more nurses can learn about mothers and their babies, the better we will be able to help other mothers with their babies. I would appreciate it if you would help other mothers by answering a few questions."

If the potential subject responds affirmatively, I will continue with the following script:

"The study consists of two sets of short questionnaires, the Neonatal Perception Inventory. The first set of questions will be answered today. The second set of

questions I will give to you at your home in approximately 30-36 days. It will take about five minutes of your time to answer each set of questions."

I will ask the potential subject if she will be interested in participating in this study. If she responds affirmatively, I will state that I need her permission to participate in this study and I will give her a copy of the consent form to read. After she has read the consent form, I will paraphrase each paragraph with her to be sure she understands the meaning of each paragraph.

## APPENDIX F



Consent Form  
TEXAS WOMAN'S UNIVERSITY  
COLLEGE OF NURSING

Consent to Act as a Subject for Research and Investigation:

1. I hereby authorize Faith Kopplin  
to perform the following investigation.

I am interested in learning more about the experiences of mothers and their babies during the first few weeks after delivery. The more nurses can learn about mothers and their babies, the better we will be able to help other mothers with their babies. I would appreciate it if you would help other mothers by answering a few questions.

The study consists of two sets of short questionnaires, the Neonatal Perception Inventory. The first set of questions will be answered today. The second set of questions will be answered at my home in approximately 30-36 days. It will take about five minutes of my time to answer each set of questions.

2. The investigation described in Statement 1 has been explained to me by Faith Kopplin.
3. (a) I understand that there is no risk involved to me or my baby in answering these questions. The questionnaire will not contain my name. All information will be kept confidential.  
  
(b) I understand that the care my baby and I receive will not be affected by participation in this study.  
  
(c) I understand that the investigation described in Statement 1 will not benefit me directly, but will help nurses know more about new mothers and their babies.  
  
(d) I understand that no medical service or compensation is provided to subjects by the university as a result of injury from participation in this research.

Date \_\_\_\_\_

Signatures (one required)

Date \_\_\_\_\_

---

Date

Date \_\_\_\_\_

Date \_\_\_\_\_

## APPENDIX G

# NEONATAL PERCEPTION INVENTORY (Pretest)

## AVERAGE BABY

Although this is your first baby, you probably have some ideas of what most little babies are like. Please check the blank you think best describes the AVERAGE baby.

How much crying do you think the average baby does?

a great deal    a good bit    moderate amount    very little    none

How much trouble do you think the average baby has in feeding?

a great deal    a good bit    moderate amount    very little    none

How much spitting up or vomiting do you think the average baby does?

a great deal    a good bit    moderate amount    very little    none

How much difficulty do you think the average baby has in sleeping?

a great deal    a good bit    moderate amount    very little    none

How much difficulty does the average baby have with bowel movements?

a great deal    a good bit    moderate amount    very little    none

How much trouble do you think the average baby has in settling down to a predictable pattern of eating and sleeping?

a great deal    a good bit    moderate amount    very little    none

Form A<sub>2</sub>

## YOUR BABY

You have had a chance to live with your baby for about a month now. Please check the blank you think best describes your baby.

How much crying has your baby done?

a great deal    a good bit    moderate amount    very little    none

How much trouble has your baby had feeding?

a great deal    a good bit    moderate amount    very little    none

How much spitting up or vomiting has your baby done?

a great deal    a good bit    moderate amount    very little    none

How much difficulty has your baby had in sleeping?

a great deal    a good bit    moderate amount    very little    none

How much difficulty has your baby had with bowel movements?

a great deal    a good bit    moderate amount    very little    none

How much trouble has your baby had in settling down to a predictable pattern of eating and sleeping?

a great deal    a good bit    moderate amount    very little    none

Form B<sub>2</sub>

# NEONATAL PERCEPTION INVENTORY (Posttest)

## AVERAGE BABY

Although this is your first baby, you probably have some ideas of what most little babies are like. Please check the blank you think best describes the AVERAGE baby.

How much crying do you think the average baby does?

a great deal    a good bit    moderate amount    very little    none

How much trouble do you think the average baby has in feeding?

a great deal    a good bit    moderate amount    very little    none

How much spitting up or vomiting do you think the average baby does?

a great deal    a good bit    moderate amount    very little    none

How much difficulty do you think the average baby has in sleeping?

a great deal    a good bit    moderate amount    very little    none

How much difficulty does the average baby have with bowel movements?

a great deal    a good bit    moderate amount    very little    none

How much trouble do you think the average baby has in settling down to a predictable pattern of eating and sleeping?

a great deal    a good bit    moderate amount    very little    none

Form A<sub>2</sub>

## YOUR BABY

You have had a chance to live with your baby for about a month now. Please check the blank you think best describes your baby.

How much crying has your baby done?

a great deal    a good bit    moderate amount    very little    none

How much trouble has your baby had feeding?

a great deal    a good bit    moderate amount    very little    none

How much spitting up or vomiting has your baby done?

a great deal    a good bit    moderate amount    very little    none

How much difficulty has your baby had in sleeping?

a great deal    a good bit    moderate amount    very little    none

How much difficulty has your baby had with bowel movements?

a great deal    a good bit    moderate amount    very little    none

How much trouble has your baby had in settling down to a predictable pattern of eating and sleeping?

a great deal    a good bit    moderate amount    very little    none

Form B<sub>2</sub>

## APPENDIX H

PERMISSION TO USE THE NEONATAL PERCEPTION INVENTORIES

Permission is hereby granted to use the Neonatal Perception Inventories in the study as outlined by you on the form entitled "Information Regarding Proposed Use of the Broussard Neonatal Perception Inventories," dated 5/8/70, with the following conditions:

- 1) that the NPI be administered in accordance with the method described on that form;
- 2) that you provide me with the results of your study, including the individual raw data scores of the Neonatal Perception Inventories. Please use the attached Data Report form.

I HAVE READ THE ABOVE AND AGREE TO THE CONDITIONS OUTLINED.

Signed: Barth Kengle R.N. 5-9-70

Witness: Donald Kengle R.D. 5-9-70  
date

Permission Granted: Elsie R. Broussard, M.D. 5-9-70  
date



**University of Pittsburgh**

GRADUATE SCHOOL OF PUBLIC HEALTH  
Department of Health Services Administration  
209 Parran Hall

May 16, 1980

Ms. Faith Kopplin  
8261 Shadow Wood Drive  
Waco, Texas 76710

Dear Ms. Kopplin:

In response to your letter of May 9, permission is granted for you to xerox sufficient forms for 60 subjects for a token fee of \$25.00. An invoice is attached.

My doctoral dissertation entitled "A Study to Determine the Effectiveness of Television in Providing Anticipatory Counselling to Primiparae in the Post Partum Period," 1964, should be available through microfilm at the University of Michigan, 300 N. Zeeb Road, Ann Arbor, Michigan 48106.

Best wishes, I am

Sincerely,

A handwritten signature in cursive script that reads "Elsie Broussard M.D." followed by a flourish.

Elsie R. Broussard, M.D., Dr.P.H.  
Professor, Public Health Psychiatry  
Coordinator, Health Services Program

/amr

Enclosures



## APPENDIX I

### Further Explanation of Data Collection

The sample of subjects were the first 45 adolescents and the first 45 adults who met the criteria for inclusion. Mothers had to deliver vaginally full-term healthy infants who weighed 2500 grams or more, who were considered in good health by their physician, and who received Apgar scores of at least 7 at 1 minute and 8 at 5 minutes after delivery. Adolescent mothers were 13-18 years of age and adult mothers were 21-30 years of age. Data were collected between September 5, 1980 and November 19, 1980 for adult mothers, and between September 5, 1980 and December 30, 1980 for adolescent mothers.

Each subject participated voluntarily and signed an informed consent form. One adult and one adolescent chose not to participate. Time 1 data were collected in the hospital with the first 24-48 hours postpartum. Time 2 data were collected 30-36 days postpartum through home visits if possible, and if not, through mail. Eighty of the 88 subjects provided complete data.

The following procedure was used to collect Time 2 data. Most subjects (63) were telephoned at home 28-32 days later to arrange a time for an interview in their home to complete Form II of the NPI (Time 2): 13 subjects

could not be reached by telephone (telephone had either been disconnected, was not in service, or a wrong number had been given and a correct number could not be obtained). Three mothers had requested at the initial interview (Time 1) that Form II be mailed to them to avoid the necessity of being visited in their homes a month later. Nine subjects did not have telephones; during the initial interview a time of day was selected when they would likely be home to answer Form II a month later.

Home visits were attempted for 58 subjects (Time 2). Data were obtained for 53 subjects during these visits. Five subjects were not home at the time of the attempted visit. All visits were scheduled at a time 30-34 days after the first interview. All subjects were contacted once at their home if prior arrangements had been made for that visit either by telephone or during the initial contact in the hospital. If the subject was not home at the scheduled time, Form II was left in the mail box along with directions for completing it and a return addressed stamped envelope.

When it was not possible to schedule or attempt a home visit, Form II was mailed to the subject with full instructions for completing and returning Form II by mail

in the enclosed addressed stamped envelope. When possible, telephone calls also reviewed these directions. Of the 35 NPI forms which were mailed to subjects or left at their homes, eight were not returned and 27 were returned. Of these 27 who returned Form II by mail two were not at home when visited; three requested in the hospital that they be allowed to return Form II by mail to avoid a home visit; three lived too far from the hospital for a home visit; four had no telephone and travel directions were insufficient; five could not be reached by telephone (out of service, disconnected, wrong number, no answer repeatedly, not at home repeatedly); ten were reached by telephone but a visit could not be scheduled, including five adolescents for whom a scheduled visit was not possible because of their Christmas holiday.

Of the eight subjects who did not complete Form II, one was not at home at the time of the scheduled visit; Form II was left and a follow-up telephone call failed to elicit a returned form. Two mothers had no telephones and were not at home at the time of a unscheduled visit, but Form II was left at their homes. Two mothers were reached by telephone, a visit could not be scheduled; Form II was mailed but follow-up telephone calls also

failed to secure the completed form. Three mothers could not be reached by telephone, visits were not possible, and Form II was mailed to them.

(Time 2)

## Method for Collection of Form II Data

	Adolescent	Adult	Total
Home Visit	23	30	53
Mail Collection	18	9	27
Not home on visit	1	1	2
Rejected home visit	2	1	3
Too distant	0	3	3
No phone, home not located	3	1	4
Not reached by phone	3	2	5
Phoned, unable to schedule visit	<u>9</u>	<u>1</u>	<u>10</u>
Totals	41	39	80

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