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ADOLESCENTS' PERCEPTIONS OF THEIR INFANTS

THE UNIVERSITY OF ARIZONA

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ADOLESCENTS' PERCEPTIONS OF THEIR INFANTS

by

Susan Jo Deering Eavey

A Thesis Submitted to the Faculty of the

COLLEGE OF NURSING

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STATEMENT BY AUTHOR

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This thesis has been approved on the date shown below:

Margarita Kay
Margarita Kay
Professor

5 December 1983
Date

To my mother,

...who would have been proud.

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ABSTRACT

This study evaluated the early perceptions that adolescent mothers have of their first born infants at approximately 48 hours after delivery and at approximately one month postpartum. The purpose of the study was to identify perceptions adolescent mothers have of their infant as a beginning assessment of adolescent behavior with their infants. An analysis of the tool used in this study was also included.

Thirteen English-speaking primiparous women completed four brief questionnaires, the Neonatal Perception Inventory, consisting of two forms, the "Average Baby" and the "Your Baby," and the Subject Information Inventory, developed by the author. Twelve of the subjects had positive Neonatal Perception scores and one of the subjects had a negative Neonatal Perception score. A statistical analysis of the instrument was done.

A recommendation is to use the Neonatal Perception Inventory tool with a larger adolescent population and also to compare the group with a group of older primiparous women.

CHAPTER 1

INTRODUCTION

The conventional sequence for forming a family in our society begins with departure from one's family of origin, usually before, but sometimes concurrently with entrance into marriage. Generally, marriage precedes parenthood and even under the most ideal circumstances in an ideal environment, the formation of a new family is a complex transition (Furstenberg and Crawford, 1978). The repercussions of adolescent pregnancy and childbearing greatly complicate this orderly transition.

Caplan (1961) viewed pregnancy in its entirety as a period of crisis; he stated that pregnancy is similar to the period of adolescence and the climacterium. When the pregnancy occurs in the unwed adolescent, her role must change from irresponsible adolescent to responsible parent (Caplan, 1961). The pregnant teenager has been described as having a syndrome of failure; "failure to fulfill her adolescent functions, remain in school, limit her family, establish stable values, be self-supporting, and have healthy infants" (Waters, 1969, p. 62). If the youthful mother marries, she is at increased risk for divorce and is faced with the additional adult task of assuming the role of a wife; yet another task for which she is ill prepared (Mercer, 1979).

Much research has focused on pregnancy complications in adolescence (Aubry and Pennington, 1973; Grant and Heald, 1972; Ruppertsberg, 1973; Webb et al., 1972; Braen and Forbush, 1975; Klerman, 1975; and

Dott and Fort, 1976), the physiological complications for the adolescent's infant (Grant and Heald, 1972; Webb et al., 1972; and Ruppertsberg, 1973), and the special social and psychological risk she and her infant face (Dryfoos and Belmont, 1979; Burstenberg, 1978; and Oppel and Royston, 1971). Many programs have evolved to provide care for the school age mother during her pregnancy and for the first semester of high school after she delivers. Less research, however, has focused on the teenager in the mothering role as there are few programs to assist her with this role. The lack of knowledge and research about the teenager in the mothering role during her early postpartum period was the focus of this investigation.

This investigator was a volunteer teacher in teenage parenting classes at Catholic Community Services in Tucson, Arizona for one year. The goal of these classes was to assist the pregnant adolescent through the process of her pregnancy and delivery and into the transition of becoming a mother. The classes were held each week and covered topics suggested by the mothers as well as those topics decided by this investigator and a social worker. Some of the subjects included: prenatal and postnatal health care needs of women, process and procedure used during labor and delivery, health care needs of children and basic day-to-day caretaking skills of infants and toddlers. The subjects covered information and skill needed for parenting, but no information was provided on the mothering role. This investigator's involvement in these parenting classes was the impetus to examine more closely ways to assess the teenager in the mothering role and subsequently, ways to assist her in this transition into motherhood.

Statement of the Problem

What are the early perceptions that adolescent mothers have of their first born infants?

Purpose

The purpose of the study was to identify perceptions adolescent mothers have of their infants as a beginning assessment of adolescent behavior with their infants. The adolescents' perceptions of their first born infants were evaluated by scores obtained using the Neonatal Perception Inventory.

Significance of the Problem

Adolescent pregnancy and its associated problems began to receive appropriate national attention in the early 1970's. One in five births in the United States is to a teenager. This increase in the number of teenage pregnancies is found throughout the world. Teenage mothers, world wide, give birth to 10 - 15 percent of all babies born; for a total of 12 - 18 million infants born yearly to teenagers (Population Reports, 1977). Recent reports of this spiraling problem not surprisingly label it as an epidemic as each year in the United States alone over one million teenagers become pregnant. Of these, some 600,000 give birth and approximately 93 percent elect to keep and raise their children (Cannon-Bonventre and Kahn, 1979).

Although there is an abundant amount of research on the pregnant or aborted adolescent, there are few reports on the adolescent as a

mother and caregiver to her infant. The following excerpt seems to typify the feelings, struggles, and frustrations of an adolescent mother:

all those years nobody loved me
 except her I screamed at her spanked her
 threw her on the bed slammed the door when
 i was angry desperate for her father's love,
 i can't undo all those times i frightened her
 she loved me, she still loves me, i can't undo needing
 being tortured with loneliness until i cried out at her,
 who loved me even in my needy loneliness. how
 do mothers, unloved, love their children?
 the wonder is that we do, we
 do not leave the little girl, we do not destroy
 we cry out in terror we love our little girls
 who must have a better life . . .

Alta, "Placenta Praevia," *Momma* 1976, p. 32

Teenage pregnancy and childbearing were once thought to be a problem that soon 'would go away.' Subsequently, the need for health professionals to be concerned and cognizant of the special needs of the youthful parent would be unnecessary. However, teenage motherhood has tremendous adverse and long-term physical, social and psychological implications for the mother as well as her child.

Fortunately, it is now recognized that teenage pregnancy and childbearing is far from being a problem that soon 'would go away.' Efforts of health professionals to meet the needs of the teenage mother and her child are desperately needed. Pregnancy among teenagers is an increasing serious health and sociological problem, especially when considering that one in five births in the United States is to a teenager (Mercer, 1979).

As early as birth, an acquaintance process between a mother and her infant begins. This process of acquaintance forms the basis of subsequent interpersonal behaviors between mother and child

(Erickson, 1978). The first two months seem to be a critical learning period influenced by the way the mother interacts with her infant. Her responses and reciprocal interaction with her infant's cues provide the basis for the physical and emotional climate for fostering her infant's development (Bromwich, 1976; Broussard, 1979; and Sander, 1962). An infant's particular response to visual, auditory, or tactile stimulation further contributes to how the mother will continue or modify her behavior (Osofsky and Danzger, 1974).

This critical acquaintance time, especially in the high-risk adolescent mother-infant situation, is why this investigator believed that assessment of the adolescent's baseline perceptions would be helpful in identifying the quality of environment that the mother provides for the infant. Although further assessment of the adolescent's behavior may be needed to identify behavioral changes or manifestations within the mother-infant dyad, early and appropriate intervention can then be instituted to meet the best interests of the infant and the mother.

Conceptual Framework

The factors relating to adolescence, perception and to Broussard's Neonatal Perception Inventory (NPI) formed the basis for the conceptual framework.

Adolescence

Adolescence is a unique period in a human life which is found only in some cultures (Mead, 1928 - as cited by Thornburg, 1975). The

adolescent period spans the years between childhood and adulthood and is a phenomenon of industrialized, developed societies (Mercer, 1979). It has been divided by various sources as a period of growth and development (Thornburg, 1975; and Ambron, 1975). Adolescence has also been defined as a cultural phenomenon by Sieg (1975, p. 40):

"The period of development in humans that begins when an individual feels that adult privileges are due him which are not being accorded him, and that ends when the full power and social status of the adult are accorded to the individual by his society."

Although adolescence can be considered a developmental entity with many behaviors, dividing it into the substages of early, middle, and late adolescence provides some of the dimensions of the process of becoming an adult.

Early Adolescence. Early adolescence may be designated as a period roughly from 12 to 14 years of age (Mercer, 1979). Blos (1972) viewed this phase as the most crucial phase as it sets the stage for the later phases. Often the child has undergone biological maturation giving the appearance of an adult body yet emotional maturity lags behind and is at a child's level. It is at this stage that well-meaning parents and teachers push the early adolescent into relationships for which he or she is unready for (Mercer, 1979).

Middle Adolescence. Middle adolescence can be considered approximately from 15 to 16 years of age (Mercer, 1978). It is at this time that the young person disengages from his or her parents and makes a decisive turn toward heterosexual relationships (Blos, 1972). Peer-group allegiances become stronger and seem to replace the earlier

dependency and influence of the parents (Waechter and Blake, 1976). Emotions during this period become very labile, marked by fantasies and infatuations as well as very little predictability from moment to moment (Hatcher, 1976).

Late Adolescence. The time from roughly 17 years of age until adulthood is the late adolescent period (Mercer, 1979). The young person now achieves the ability to maintain stable relationships and the future goals and tasks now take shape (Mercer, 1979). Peer relationships become more intimate with fewer but closer friends. Blos (1972) referred to this time of achievement of relative maturity as a phase of consoliation. In addition this phase is recognizable by the following psychological features: irreversible sexual identity, a respect for his or herself and the ability to form attachments with another person, more independence with less conflict, and a stabilization of mental functioning which guards his or her integrity (Blos, 1972; and Josselyn, 1971).

Perception

A major factor in the reactions of an individual to a stimulus in the environment is the way that person 'sees' or perceives the stimulus. Perception then, is viewed as a cognitive process by which man interprets or 'makes sense' out of the world around him. Wolff (1953, p. 39) explained that "perceptions depend upon a multiplicity of factors including the genetic equipment, basic individual needs and longings, earlier conditioning influences, and a host of life experiences and cultural pressures." From the many stimuli that impinge upon the person, he must then select those which he will attend to and

then interprets them in some meaningful way as the basis for his subsequent behavior (King, 1962). King (1962, p. 32) described perception as, "one of the key concepts in human behavior, a major intervening variable between stimuli and behavior." Perception is a highly subjective concept and it is not actually observed by others. What is observed, consequently is behavior. An individual's perception, not reality, is the determinant of behavior (Rogers, 1951).

Age and maturity are factors in perceptual ability. Adolescent perception is influenced by such things as age, level of maturity, and experience or lack of experience (Ittelson and Kilpatrick, 1974). Chickering (1975, p. 12) described adolescent perceptions as, "...throbbing, pulsating, and participant. Experience rather than knowledge becomes the well-spring of motivation." An adolescent who is faced with the task of parenting may not be able to perceive the role and responsibility of being a parent realistically. The young adolescent mother often has an idealized vision of her role as a parent and most times this transition is unsuccessful. However, with early identification, intervention and mobilization of support systems, the young parent can be assisted in her new role as a parent.

Neonatal Perception Inventory

One tool that has been used to measure perception is the Neonatal Perception Inventory (NPI) (Broussard and Hartner, 1967). The primipara's perception of her infant is the variable being measured. Broussard's (1976, p. 203) opinion is that "for optimal mothering to occur it is essential that the mother be able to idealize her newborn

infant to a certain extent." Broussard pointed out that "in our culture, great emphasis is placed on 'being better than average'" and it seemed logical to assume that a mother with a favorable attitude toward her infant would expect him to be better than average (Broussard and Hartner, 1971, p. 434). To elicit the mother's perception of her infant, Broussard designed the Neonatal Perception Inventories I and II, each of which include the Average Baby Perception Inventories and the My Baby Perception Inventories. The inventories comprised a measure of the mother's perception of the average baby and of her own baby. The mothers were asked to rate the average baby and their own baby on six items: crying, feeding, sleeping, spitting, elimination, and predictability of behavior. These items were selected by Broussard on the basis of her past clinical experience with the concerns young mothers expressed about their babies. The Neonatal Perception Inventory I is administered during the immediate post-partum hospital stay (24-48 hours after delivery) and the Neonatal Perception Inventory II is administered at approximately one month post-partum (4-6 weeks).

The Neonatal Perception Inventories I and II are easily and quickly administered as the items and response formats of the two forms are identical. The wording varies slightly to take into account the age of the infant at the time of administration. For scoring, values of one to five are assigned to each of the scales for each of the inventories. The blank "none" is assigned a value of one and "a great deal" has a value of five. The lower values on the scale represent the more desirable behavior. A total score is obtained for the Average Baby form

and a total score is obtained for the Your Baby form. The total score of the Your Baby form is then subtracted from that of the Average Baby form; the discrepancy constitutes the Neonatal Perception Inventories score.

Infants rated by their mothers as better than average (plus score on the Neonatal Perception Inventory II) are considered at low risk; those infants not rated better than average (minus or 0 score) are considered at high risk for subsequent development of emotional difficulty.

The mother's perception of her infant as measured by the Neonatal Perception Inventories on the first or second postpartum day did not prove to be related to the subsequent development of the child at age four and one half years or at 10 or 11 years (Broussard, 1977). Using the NPI I score as a predictor of the NPI II scores does not hold true and may be explained by the theory of a 'fluid state' of maternal perceptions in the early postpartum period. When both the ratings obtained at the immediate postpartum period (NPI I) and at one month of age (NPI II) are used as a predictive instrument, their combined predictive ability is greater than when NPI II is used alone (Broussard, 1977).

Definitions of Terms

For the purpose of this study, the following definitions were used:

1. Adolescent mothers - primiparous women less than 19 years of age.

2. Early perceptions - a mother's thoughts, feelings, and interpretations of her infant and the average infant as measured by the Neonatal Perception Inventory (NPI).

CHAPTER 2

REVIEW OF THE LITERATURE

For the purposes of this study the literature was searched for studies pertaining to developmental considerations, adolescents as parents, the mothering role, and maternal perceptions of the infant.

Developmental Considerations

The major developmental task of adolescence, according to Erikson (1968), is establishing an "Identity." The emphasis in this stage is the process by which the adolescent establishes a fairly stable concept of herself. Therefore, "identity versus role confusion" is the developmental hurdle for the teenager. The adolescent, at this time, perceives her uniqueness from others and peer acceptance is crucial in the attempt to become independent from adults, particularly her parents.

The task of "Intimacy" is the next developmental stage for the young adult. The young adult who has a newly won identity is now ready to fuse this identity with the identity of others. This process includes the ability to have intimate sexual and social relationships with others that include sharing thoughts and feelings. The developmental hurdle is then, "intimacy versus isolation."

The next and seventh stage of life is that of "Generativity." the main focus during this stage is the establishment and nurturance of

the next generation. This crisis is centered on productivity and creativity. The developmental hurdle is "generativity versus stagnation."

The teenager who is pregnant could very well be straddling all three of these stages (Clark and Affonso, 1979). She is trying to establish her identity at a time when she is also faced with the complicated job of raising her child. In between these two tasks, the task of intimacy may also be entering into her developmental maturational process. An example of her coping with this task is the continuation of her relationship with the father of her baby or with other relationships in her social group (Clark and Affonso, 1979). Erickson (1968) stated that each task must be accomplished to a significant degree before the person can succeed in the subsequent developmental stage. For the teenage mother, this orderly transition is now very scrambled and successful mastery of the developmental tasks becomes very tentative.

Erickson (1968) viewed the prime concerns of adolescents as the tasks of identity and intimacy. Yet neither of these interests, identity nor intimacy, involves parenting. Therefore, it is not difficult to see why adolescents seem to respond very little to the authority or parent figure teaching them to parent.

Adolescents As Parents

Numerous studies and research efforts have documented the medical and obstetrical risks of teenage pregnancy and child bearing (Packer, 1976; Hardy and Melltis, 1977; DeAngelo and Sokol, 1978; Ferris, 1975;

Prichard and MacDonald, 1976). To health professionals however, the crucial and basic issue is: Are teenage mothers capable of successfully raising children?

Parenting has been called an adult role that requires adult skills and maturity for its successful negotiation (Mercer, 1979). However, reports of adolescent mothering are permeated with mothering difficulties and inability to cope with the childrearing demands. The young mother assuming the maternal role cannot begin to anticipate the responsibilities that she will have (Mercer, 1977). Some of these mothering difficulties have been linked to the depressed socioeconomic status of the adolescent mother (Bolton, Laner, and Kane, 1980; Baldwin and Cain, 1980). Having financial problems is yet another stressor to the adolescent who is trying to fulfill her obligations of motherhood.

At one extreme, there is some evidence citing child abuse and maltreatment by adolescents in the parent role (Bolton, Lanner, and Kane, 1980; deLissovoy, 1973). The crying three-week old who does not respond to his mother's love may frustrate her expectations and become the victim in the battered child syndrome (Anderson, 1976).

Three main longitudinal research investigations have been cited in the literature that examined the adolescent as a parent (Osofsky et al., 1970; Furstenberg, 1978; Sugar, 1979). Osofsky et al., (1970) conducted research with 450 girls, over a five year period, in an interdisciplinary program designed for the young mother. The social, medical, and educational outcomes were evaluated and included interaction between mother and baby and infant development. Although adolescent mothers

exhibited physical tenderness and warmth with their infants, they lacked verbal stimulation and interaction with their babies.

Furstenberg (1978) conducted research on 400 low income predominantly black teenage mothers over a span of about six years. Evaluation of the mothers at one year showed that about 70 percent stated they felt less negative about their pregnancy now, than they had at the beginning of their pregnancy. Yet only about one-third of this study population described themselves as being very happy. At the conclusion of this study, the investigator thought that these young teenage mothers had consistently a more difficult time in completing their life plans. The pregnancy and subsequent birth of their infant had disrupted their education, there were increased financial stressors, difficulties if they did marry with subsequent problems in limiting the size of their families and problems in child rearing.

Sugar (1979) conducted research on 481 mothers ranging from 13 to 46 years of age. His research centered on the mothers' stimulation of the infants in the first six months of life. Infant behaviors such as cooing, eating, sleeping and play patterns, recognition of the voice and face of the mother, and the age of the onset of thumbsucking and the social smile were studied. His findings suggested that the adolescent mother gave significantly less adequate stimulation to her infant in the first six months postpartum than the adult mother.

Williams (1974) reported a study of 10 young mothers in British Columbia. The results indicated that mothers under 18 years were less likely to rear their children in healthy family settings and exhibit

less nurturing behavior than older mothers. The younger the mother, the less likely she displayed the typical adult maternal behaviors of touching and talking with her baby (Williams, 1974; McAnarney and Lawrence, 1979; Jones, Green and Krauss, 1980).

The Mothering Role

In contrast to the mothering role in animals which many times is instinctual, the mothering role in human females is derived from many complex factors. Such factors as native background and culture as well as a long history of interpersonal relations within the family network contribute to development of maternal behavior (Jones, Green and Krauss, 1980). Maternal behaviors have been categorized as adaptive or maladaptive (Cropley, 1979). According to Cropley, adaptive behaviors are those which are indicators of maternal-infant attachment and meet both the infant's and mother's needs. Maladaptive behaviors are those which indicate a lack of maternal infant attachment and result in unmet infant's and/or mother's needs.

Cropley (1979) points out that cultural differences in maternal behaviors also must be considered and that certain behaviors may not have equal importance in all cultures. Our Western industrialized nation, for example, considers visual, auditory, and affective modes of interaction between a mother and her infant as very important.

The incorporation of a new role involves learning the appropriate behaviors for acting the role and ordering the lifespace so it includes a new social position of that role (Mercer, 1979). As a woman gives birth to a child, certain tasks inherent in the mothering role must be

learned. As this process evolves, she simultaneously assumes the position of "mother" in her social structure. Role taking is both a behavior and an affective cognitive process formed through the active interaction with another person (Mercer, 1979). Once the gestures, vocalizations, and other behaviors are relayed to the other person or partner, the role taker then receives input back on how the other person perceives the behavior. The behavior of the role taker is then subsequently modified or adapted (Mead, 1934).

Thornton and Nardi (1975) have described role acquisition as a dynamic process with these four stages: anticipatory, formal, informal, and personal. All stages involve the individual interacting with the external expectations in the environment. The anticipatory stage is prior to actually moving into the social position and where generalized and stereotyped expectations of the role are learned. The formal stage occurs as the role taker assumes a position within the social structure and conforms to the expected required behaviors. The third stage, informal, is when the role taker shapes the role to fit herself in view of past experiences and future goals. The fourth and final stage, personal, is when a sense of balance is achieved between the self and the role. The anticipatory stage of the maternal role begins with the pregnancy and she moves through the rest of the stages following the birth of her child.

Rubin (1967) described five operations of maternal role attainment: mimicry, role play, fantasy, introjection-projection-rejection, and grief work. Mimicry and role play focus on learning about

expectations and performancy in a role. Fantasy and introjection-projection-rejection involve the start of internalizing the role. The woman imagines herself in the role and searches for models that fit her fantasy. Once the models are judged, the role taker accepts or rejects the models. The incompatible models are relinquished in the fifth stage of grief work. The maternal role is internalized as part of the mother's identity when there is a sense of comfort with the prescribed role. This sense of harmony and comfort in the role is congruent with Thornton and Nardi's (1975) final stage, personal.

The maternal role may be considered attained when the mother feels internal harmony with the role and its expectations. Her concern and competency in caring for her child in addition to providing love and affection for and pleasure in her infant express her acceptance of the responsibilities posed by the role (Mercer, 1979). Mercer (1979) outlined four phases in adolescent maternal role attainment that are, in part, related to the work of Thornton and Nardi (1975) and Rubin (1967). The four phases are; 1) fairyland phase, 2) reality shock phase, 3) a give-and-take phase, and 4) an internalization of the maternal role phase. The fairyland phase is when motherhood is considered a rewarding experience and the young mother often views her infant as "cute" and "precious." The attention, praise and gifts that the new young mother receives give the initial impression that being a mother is wonderful.

The second or reality shock phase begins after the woman leaves the hospital. All of the good things with being a mother now are overshadowed by the harsh realities of a very demanding infant rather than

a "precious" baby. Feeding, plus changing and washing diapers are part of the tasks in this role--no longer the sweet smelling infant in the fairyland phase.

The give-and-take phase is a transitional one reached about the fifth month postpartum where there is a balance between the perceived gratifications and deprivations in the role. There is identity restructuring and now the young woman decides how much she is going to "take" from life as well as how much of her life she can "give."

From the sixth to the eighth month is generally when the internalization of the role phase occurs. Gratifications now outweigh deprivations and the infant's recognition of his mother and his physical approach are very rewarding. Feelings of competency emerge as mothers begin to feel secure about their decisions in this new role. Once the internalization phase occurs, the youthful parent has much pleasure and satisfaction in her role, although she realizes that it was very difficult.

The first task of mothering to develop is generally the skill in feeding the infant and she is sure to start on this task while she's in the hospital. In addition to eating however, there are several other basic infant behaviors that need to be learned and adjusted to in the early days postpartum. These behaviors include; sleeping, elimination, crying, vomiting or spitting up and settling down to a predictable pattern of eating and sleeping. Several studies of these behaviors have been reported (Wolff, 1959; Brazelton, 1962; Parmalee, 1964; Craig, 1970; Bell and Ainsworth, 1972).

According to Robson and Moss (1970), human maternal feelings appear to depend largely on the infant's capacity to exhibit behaviors that are characteristic of adult forms of social communication. Each mother-infant relationship is unique, and a function of the individual characteristics of both mother and infant. Characteristics of the very early interactions during feeding and other forms of interacting may have implications for the type of interactions that occur as the infant grows older (Thoman, 1975). An infant's behavioral style influences how others, especially the mother, will react to him. Subsequently, the mother, as she cares for the child, responds to his temperament.

Maternal Perceptions of the Infant

Broussard and Hartner (1967) measured maternal perceptions of the newborn using a scale they developed, the Neonatal Perception Inventory (NPI). This tool assesses maternal perceptions and is a significant screening tool of early interactional patterns between the mother and her infant. It acts as a significant tool of prevention as it detects early, potential disturbances in a child's developmental course (Broussard, 1964), according to its developers.

The NPI was developed by Broussard on the premise that for a short time after the birth of her baby, the development of optimal mother-infant interactions is vulnerable due to the lasting influence the mother's initial perception has on her subsequent parenting of her child. The ways that the mother interacts with her infant will be influenced by

her perceptions of the infant's appearance and behaviors. The infant's behavior will in turn, be influenced by the way the mother interacts and handles the infant.

There are two often conflicting forces at play that influence the mother's perception of her infant. The first is the mother's initial reaction to her infant's temperament, behaviors, and physical appearance. The second and perhaps more rigid and bothersome is the mother's hopes and fears, which have tempered her preconception of what the infant should be like. This preconception is in a large part influenced by the socially valued "special" or "better-than-average" individual (Broussard, 1964).

The predictive validity of the NPI was established through a longitudinal study begun in 1963 by Broussard to determine the relationship between the primipara's perception of her neonate and the child's subsequent emotional development (Broussard, 1977). The original study population consisted of 318 primiparas, between 14 - 41 years of age, delivering single, full-term, normal firstborn infants weighing 2.42 kg (5 lbs. 5 oz.) or more, in five Pittsburgh hospitals during a 2½-month period in 1963. The selection of a population of newborns, physically healthy during their hospital stay, ensured that the infants were within the range of normal development. They were biologically equipped to elicit response from the mother and not handicapped in their ability to respond to the care of the mother. Based on the NPI at Time II, the population was categorized into High-Risk and Low-Risk groups for the development of subsequent emotional disorder. Mothers who did not

perceive their infants as better than average at one month (negative perception) were judged to have infants at High Risk ($n = 123$). Infants rated better than average (positive perception) were considered Low Risk ($n = 195$) (Broussard, 1976).

The hypothesis that the mother's perception of her one-month old infant was associated with the child's subsequent emotional development was first tested when 120 of the original population of firstborns were evaluated at $4\frac{1}{2}$ years of age by two child psychiatrists who had no knowledge of the children's predictive risk ratings (Broussard and Hartner, 1970; 1971). Children categorized as Low Risk at one month of age had less emotional disorder at $4\frac{1}{2}$ years than did those categorized as High Risk ($\chi^2 = 16.43, p > .001$). The mother's perception of the infant as measured by the NPI at Time I was not related to the child's development at age $4\frac{1}{2}$ years.

To determine to what extent the mother's perception of her infant continued to be predictive of the child's emotional development up to the pre-adolescent phase, 104 of the firstborns were evaluated when they ranged in age from 10 years 3 months to 11 years 9 months. Except for racial distribution due to the loss of the 20 black subjects in the original population, the demographic data for the original population were comparable with the data for the present subpopulation. The proportion of children rated at High Risk was almost identical in the original and follow-up groups (39 percent versus 40 percent). There was no statistically significant difference between the groups with regard to other descriptive data (e.g., health of mother, type of delivery).

With respect to these data, the 104 children were judged representative of the original 318 (Broussard, 1976).

Broussard then concluded that the critical variable associated with the child's emotional development in this study is judged to be the mother's early perception of him. The data indicate that the association between the maternal perception of the neonate and the subsequent emotional development of the child have persisted over time and is predictive of the probability of mental disorder at age 10/11 years among her firstborns in the original study population (Broussard, 1976).

Palison (1980) however, failed to replicate the relationship reported by Broussard and Hartner that mothers' perception of their infants at one month of age were predictive of social emotional development at 4½ years of age. In Palison's original investigation, 183 mother-child pairs were selected that most closely matched the demographic variables in Broussard's study. In the follow-up sample, 4½ years later, 50 subjects from the original population participated and completed the investigation.

In the follow-up study by Palison, eight children were identified as needing professional help, and of these, four had been high risk and four low risk at one month. Of the remaining 42 children for whom intervention was not indicated, 13 had been high risk and 29 low risk. A χ^2 analysis of the relationship between these two indices was not significant.

The criterion for defining need for intervention was to include all those children who did not receive a diagnosis of healthy. This

resulted in 25 children being classified as needing intervention, seven who had been high risk and 18 low risk at one month. Of the 25 who were classified as healthy, 10 had been high risk and 15 low risk. The χ^2 analysis of this distribution was also not significant. In addition, a χ^2 analysis was also done of the relationship between risk and need for intervention and the results of the Palison study was again not significant.

Failure of the Palison study to replicate the findings of Broussard and Hartner is difficult to explain. The usefulness of the NPI to be used as a predictor of emotional development was not substantiated by the results of the Palison study. However, only after further testing with the NPI in similar replication efforts will the value of the NPI be known.

Cullen (aka Hackley, 1978) administered the NPI to 33 primiparous women (15 - 29 years of age) who were divided into two groups; one group that participated in prepared childbirth classes ($n = 17$) and one group that did not participate in any prepared childbirth classes ($n = 16$). The NPI was administered at Time I (24 - 48 hours after birth) only. The hypothesis for this portion of the study was that women who enroll in a childbirth education course will have a more positive perception of their firstborn infant than those who do not take a childbirth education course. This hypothesis was rejected. The Non-prepared women in the study actually had a high mean score (1.44) (more positive maternal perception) than the Prepared women (1.35) although the results were not statistically significant ($p = .878$).

Another study by Hackley with Mercer (1980) is being conducted utilizing the NPI at Time I and Time II on 199 primiparous women in the San Francisco Bay area. This is a longitudinal study in progress from which only the preliminary data that involve the shifts of the results from Time I to Time II are summarized. The age ranges of the study population were: 19 years and under (n = 26), 20 - 29 years of age (n = 111), and 30 - 42 years of age (n = 62).

A chi-square analysis was done to determine significant differences in distribution of the four possibilities for the NPI I and NPI II scores; Group 1, negative to negative (--), N = 16; Group 2, negative to positive (-+), N = 33; Group 3, positive to negative (+-), N = 41; and Group 4, positive to positive (++), N = 109. The variables tested included prior experience with infants as a child or as an adult, separation from parents before 12 years, married or unmarried, vaginal or cesarean birth, type of anesthesia for cesarean and vaginal births, intrapartum or postpartum complications, husband in labor and delivery rooms, other person in labor and delivery rooms, and a female or male infant. The results showed that none of the variables accounted for differences that were substantially significant.

One study was conducted by Mercer (1980) with a teenage population that utilized the NPI as part of a study on teenage motherhood. In the sample of 12 teenagers, ages 14 - 19, she applied the NPI to study the impact of motherhood on them and their infants. She found that three of the teenagers rated their infants as below average at one month. Of the nine infants whose mothers rated them as above average,

two infants suffered pathology that could be related to mothering disabilities (i.e., one had failure-to-thrive syndrome and one had a fractured skull) (Mercer, 1980). Six of the teenage mothers who perceived their infants as above average were warm, nurturing mothers and had no untoward difficulties with the mothering role. Mercer (1980) concluded that the young mother's failure to cue-in and to respond sensitively to a growing infant's needs during the year suggest the need for very close follow-up.

This literature review has provided insight in the areas of adolescent development, the adolescent in the mothering role and as a parent and maternal perception of the infant. These reports support the need for the research question of this investigation, what are the early perceptions that adolescent mothers have of their first born infants?

CHAPTER 3

METHODOLOGY

This was a descriptive study designed to answer the following question: What are the early perceptions that adolescent mothers have of their first born infants? The following topics are presented in this chapter: setting and sample population, protection of human subjects, data collection instruments, method of data collection, limitations, and analysis of data.

Setting and Sample

The 13 participants in this study were a convenience sample from two hospitals in a southwestern community. One hospital was a county teaching hospital and the other was a community teaching hospital.

The study sample of 13 women was selected according to the following specific criteria:

1. Primiparas less than 19 years of age.
2. Able to read and speak English.
3. Had healthy infants free of anomalies.
4. Participated in the study within 48 hours after delivery of the infant and again at about one month postpartum.

Protection of Human Subjects

The proposal for this study was submitted to the Ethical Review Committee of the University of Arizona College of Nursing and was deemed exempt (Appendix A). Permission to conduct the investigation was obtained from the two hospitals (Appendix B and C). The subjects were told the purpose of the study and what was required of each participant. They were given the right to refuse to participate in the study and were informed that they could withdraw from the study at any time without affecting their relationship with any physician or nurse, or their treatment and care in any way. Subjects were also advised of the costs, benefits, demands, and risks of the study. Individual anonymity and confidentiality of replies were assured. The consent involved a disclaimer statement given to each participant (Appendix D).

Data Collection Instruments

A Subject Information Inventory and the Neonatal Perception Inventory (NPI) were the tools used for the data collection in this study. The Subject Information Inventory (Appendix E) was prepared by the investigator and was used to obtain background and demographic data about the subjects. Broussard's (1964) NPI was used with permission from the author after paying a two dollar charge per NPI tool (Appendix F). At her request, Broussard will be sent summative data from this investigation.

The Neonatal Perception Inventory (NPI) consists of two brief forms, each consisting of six single answer scales. The "Average Baby" form elicits a mother's perceptions of the average infant on six

behavioral items: crying, feeding, vomiting or spitting up, sleeping, elimination, and predictability of sleeping and eating patterns. The "Your Baby" form elicits a mother's perception of her infant on the same six behavioral items. The subjects are requested to rate or check the blank that best describes each behavior of the infant (average and her own). A Likert Scale is used to obtain ratings: a great deal, a good bit, a moderate amount, very little, and none. Both forms of the NPI have shown construct and criterion validity (Broussard and Hartner, 1967). No reliability scores were reported for this instrument. This topic is addressed in a later section.

Method of Data Collection

According to the specified directions of the NPI, the tool is to be administered at Time I, which is within 48 hours after delivery and while the subject is still in the hospital. The Subject Information Inventory was also completed by the participants. As part of the demographic data collected, a telephone number was given to the investigator and was used to contact the subjects for a meeting at about one month after delivery of their infants. This is Time II and the same forms of the NPI were again given to the subjects to complete.

The sequence and protocol of administering the tool at Time I and Time II followed Broussard's (1964) directions. In addition, when both the ratings are obtained at Time I and Time II and are used as a predictive instrument, their combined predictive ability is greater than when the NPI is given at Time II only (Broussard, 1977). Instructions for completion of the inventories were done by the investigator when

given to the mother. The mother first completed the "Average Baby" form and she then completed the "Your Baby" form of the NPI. The Subject Information Inventory was the last form to be completed at Time I. The maximum time needed to complete the tools at Time I and Time II was 10 minutes. After completion of the tools at Time II, the investigator then answered any questions subjects had about general child care.

Limitations

1. The subjects may have selected those answers that are not representative of their true feelings but are actually the more socially desirable response.
2. There may be a time bias as subjects may remember the tool which was given twice, about four weeks apart.

Analysis of Data

Scoring of the Neonatal Perception Inventory was according to the method used by Broussard and Hartner (1967). Each of the forms of the NPI has five single-item Likert scales which can be answered: a great deal, a good bit, a moderate amount, very little, or none. An answer of "a great deal" was valued at five points; and an answer of "none" was given the lowest value of one point. Therefore, a possible score of six points to 30 points can be the range of scores on each of the scales. The Neonatal Perception Score is determined by subtracting the score of the "Your Baby" form from the score of the "Average Baby" form. A positive Neonatal Perception Score indicates that the mother had a positive perception of her infant and has a plus score. A minus or zero Neonatal

Perception score indicates the mother did not perceive her infant as being better than average. Infants whose mothers do not have positive Neonatal Perception scores are identified as high risk for the development of emotional difficulties.

The Neonatal Perception Inventory score at Time I and the Neonatal Perception Inventory score at Time II were plotted on a grid and percentages obtained on those subjects who:

- 1) had a negative perception score at Time I and at Time II.
- 2) had a positive perception score at Time I and at Time II.
- 3) had a negative perception score at Time I and a positive score at Time II, and
- 4) had a positive perception score at Time I and a negative perception score at Time II.

The relation of each of those factors elicited by the Subject Information Inventory (i.e., age, attendance of prenatal classes, previous experience giving care to young babies, who gave them advice about taking care of their baby, the desired sex of their baby and the actual sex of their baby) on maternal perception was also determined.

A Pearson correlation coefficient (correlation matrix) was done on each of the NPI scales: "Average Baby" Time I and Time II and "Your Baby" Time I and Time II, to see how well related each item was to each other item in the scale. Reliability coefficients were done using Cronbach's alpha on the NPI tool: on "Average Baby" Time I and Time II and "Your Baby" Time I and Time II, to test for equivalence or measures of internal consistency of the tool. This was done to see if all of the items in the scale matched well.

A paired t-test was used on the tool as a basic parametric procedure to test differences in group means on each of the scales: "Average Baby" Time I and Time II and "Your Baby" Time I and Time II. A chi-square was applied directly to the actual frequencies in the categories of previous child care experiences and sexual preference of baby to the scores elicited in the NPI II, to analyze the significant of differences among groups.

This chapter described the methodology of the study to assess what perceptions adolescent mothers have of their first born infants. Discussions of setting and sample population, protection of human subjects, data collection instruments, method of data collection, limitations and analysis of data were made.

CHAPTER 4

PRESENTATION OF FINDINGS

The findings and analysis of data collected by the four questionnaires of the NPI tool and the Subject Information Inventory from adolescent mothers who had their first born infants are presented in this chapter. The findings related to the mothers' perceptions of their infants are described first. The factors influencing maternal perception were analyzed according to two periods in maternal experience: within 48 hours after delivery and again at one month postpartum. The final section of this chapter is an analysis of the NPI tool as used in this study.

Mothers' Perception of Their Infants

The sample consisted of 13 English speaking primiparous women less than 19 years of age. Data were collected at Time I or within 48 hours after their delivery in the hospital using the NPI I ("Average Baby" and "Your Baby" forms) and the Subject Information Inventory. About one month later, at Time II, data were again collected using the NPI II ("Average Baby" and "Your Baby" forms) at the mother's home.

A mother's Neonatal Perception score is the differential score of the "average Baby" form and the "Your Baby" form scores. A positive value for the Neonatal Perception score indicates the way the mother perceives her infant as being better than average; whereas a negative or

zero value of the Neonatal Perception score indicates the mother does not perceive her infant as being better than average. Twelve (92 percent) of the 13 subjects had positive Neonatal Perception scores at Time II. One (eight percent) of the 13 subjects had a negative Neonatal Perception score. Table 1 presents the analysis of the subjects' perception of their infants.

Table 1 Numbers of Mothers with Positive and Negative Perceptions of Their Infants at Time II

Perception	Number	Percent
Positive	12	92
Negative	1	8
Total	13	100

The Neonatal Perception Inventory score for all subjects at Time I and the Neonatal Perception Inventory score at Time II were calculated into a percentage by those subjects who: 1) had a negative perception score at Time I and at Time II, 2) had a positive perception score at Time I and at Time II, 3) had a negative perception score at Time I and a positive perception score at Time II, and 4) had a positive perception score at Time I and a negative perception score at Time II. Table 2 presents these data.

Table 2 Number of Mothers with Positive and Negative Perception of Their Infants at Time I and Time II.

	Time I	Time II	Number	Percent
Perceptions	(-)	(-)	1	8
	(+)	(+)	7	54
	(-)	(+)	5	38
	(+)	(-)	0	0
Total			13	100

Analysis of Factors Influencing Perception

The Subject Information Inventory was developed to collect data which may have an influence on the perceptions that young mothers have of their first born infants. During the time before birth (prehospitalization) many things influence the developing relationship and subsequent perceptions a mother may have about her infant. There were two factors of the Subject Information Inventory that this study chose to evaluate that may influence the developing relationship and subsequent perceptions a mother may have of her infant before birth. They were age and attendance at prenatal classes. The range of ages for the subjects was from 15 - 18 years with a mean age of 17.1 years. Four (31 percent) of the 13 subjects attended some type of prenatal childbirth class, although none of the subjects completed the entire series.

Five factors were identified for study which related to the mother's experience while caring for her infant at home after discharge from the hospital at approximately one month postpartum. These factors were previous experience giving care to young babies, who gave them advice about taking care of their baby, the desired sex of their baby, the actual sex of their baby, and the NPI score at Time II. Table 3 presents this analysis. All of the subjects had some experience in giving care to young babies. Two (15 percent) of the 13 subjects had very little experience, three (23 percent) had a moderate amount of experience, five (38 percent) had a good bit of experience and three (23 percent) had a great deal of experience in caring for young babies.

When the 13 subjects were asked about who had given them advice about taking care of their baby, 11 (85 percent) listed their mother, seven (54 percent) chose friends, eight (62 percent) listed close relative, and three (23 percent) chose the "other" category which was explained as the hospital. Eight (62 percent) of the 13 subjects said that they had no preference of the sex of their baby. Four (30 percent) said they desired a boy baby and one (8 percent) desired a girl baby. Of the four subjects who desired a boy baby, two (50 percent) had girls. The only subject who had a negative neonatal perception score was a subject who said she desired a boy baby but had a girl baby.

A frequency distribution of the responses for all of the scales at Time I and Time II was done (Table 4). This frequency distribution describes which items were selected and the number of responses for each item.

Table 3 Factors which may Influence Perception After Discharge from the Hospital at Approximately One Month Postpartum and the NPI score at Time II

Sub- ject	Age	Previous Experience	Who Gave Advice	Desired Sex	Sex	NPI score
1	16	a good bit	mother, friend close relative	did not matter	boy	+1
2	15	a great deal	mother, close re- lative, friend	did not matter	boy	+2
3	18	a great deal	mother, close re- lative, hospital	did not matter	boy	+2
4	16	a moderate amount	mother, close relative	did not matter	boy	+4
5	18	a moderate amount	mother, hospital	female	girl	+1
6	17	very little	mother	did not matter	girl	+12
7	18	a good bit	mother, friend	did not matter	girl	+4
8	18	a moderate amount	friend	male	boy	+6
9	18	a good bit	mother, friend close friend	male	girl	0
10	18	a good bit	mother, close relative	male	girl	+1
11	18	very little	mother, friend, close relative	did not	boy	+3
12	15	a good bit	mother, friend, close relative	male	boy	+7
13	18	a great deal	hospital	did not matter	boy	+4

Table 4 Frequency of Responses to Items on "Average Baby" and "Your Baby" scale at Time I and on "Average Baby" and "Your Baby" scale at Time II.

Time I:		Great Deal	Good Bit	Moderate Amount	Very Little	None
"Average Baby"	Item I		5	8		
	Item II	1		3	8	1
	Item III		3	7	2	1
	Item IV		1	3	6	3
	Item V			5	7	1
	Item VI	1		5	7	
"Your Baby"	Item I	1	2	8	2	
	Item II		1	2	10	
	Item III	1	2	8	2	
	Item IV	1	1	4	7	
	Item V		1	5	7	
	Item VI		1	4	8	
Time II:		Great Deal	Good Bit	Moderate Amount	Very Little	None
"Average Baby"	Item I		5	7	1	
	Item II	1	1	5	6	
	Item III		4	6	3	
	Item IV		2	4	6	1
	Item V	1	3	5	4	
	Item VI		2	7	4	
"Your Baby"	Item I		1	10	2	
	Item II				9	4
	Item III		1	5	6	1
	Item IV		2	3	6	2
	Item V		1	5	6	1
	Item VI			4	9	

In tool construction, the options that can be selected are provided to lose the least amount of data when answering the questionnaire. Therefore, it is ideal for the selection of responses to be equally spread over all the options provided in the tool. It can be seen in Table 4 that most of the responses stay away from the extreme answers of "a great deal" and/or "none". Part of this result may be that the subjects may select the more "socially desirable response" or as a result of tool construction. If the tool is used again and similar results are found, then modification of the tool or even elimination of those extreme responses may be appropriate.

Analysis of the Instrument

This section includes a discussion of the measures of internal consistency and reliability of the Neonatal Perception Inventory tool. Because no data were available in the literature that reported the statistical analysis of the NPI tool used in Broussard's investigations, it seemed important to analyze the instrument.

Measures of Internal Consistency

A correlation matrix was done on each of the scales ("Average Baby" at Time I and Time II and "Your Baby" at Time I and Time II) to see how well related each item was to each other. Included at the bottom of each scale is the standardized item alpha or Cronbach's alpha. A "good" or stable item to item correlation would yield a value between .3 to .7. A value less than .3 may mean the items are unrelated to each other and a value greater than .7 may mean the items are redundant to

one another. It is ideal if a scale measures variables that are distinct from one another and yet share a common theme of the tool.

Table 5 describes the internal consistency on the "Average Baby" scale of the NPI at Time I. This table reveals that the item to item matching of this scale is not very strong with Item I: crying matching in the .3 to .7 range with only three other items. Item III: spitting/vomiting and Item V: bowel movements correlate with only one other item.

The Cronbach's alpha or standardized item alpha provides an estimate of reliability by expressing an average correlation of all the items multiplied by a corrections factor. The desired value of the alpha is .7 or greater. An alpha value less than .7 is acceptable in early scale development, but in the NPI which has been used before this measure would be expected to be higher. The Cronbach's alpha of the "Average Baby" scale at Time I (Table 5) is .546, which is a value less than .7 and therefore has low reliability. However, alpha values are built on the correlations (correlation matrix) which in this investigation were "unstable" and may explain the low alpha results.

Table 6 describes the internal consistency on the "Average Baby" scale of the NPI at Time II. This table reveals Item I: crying and Item II: feeding matching in the .3 to .7 range with two other items, Item III: spitting/vomiting and Item IV: sleeping match with only one item each. These infrequent item to item correlations results in low internal consistency for this tool in this study.

The Cronbach's alpha or standardized item alpha on the "Average Baby" scale at Time II shows a value of .637 which is closer to the

Table 5 Correlation Matrix Between Individual Items on the
"Average Baby" scale of the NPI at Time I.

	Item I	Item II	Item III	Item IV	Item V	Item VI
<u>Item I:</u> Crying	1.00					
<u>Item II:</u> Feeding	-.158	1.00				
<u>Item III:</u> Spitting/ Vomiting	.455	.340	1.00			
<u>Item IV:</u> Sleeping	.591	.215	.661	1.00		
<u>Item V:</u> Bowel Movements	.382	.212	.047	2.04	1.00	
<u>Item VI:</u> Pattern of Eating/ Sleeping	-.015	-.107	-.265	-.025	.386	1.00

(Standardized Item Alpha = .546)

Table 6 Correlation Matrix Between Individual Items on the
"Average Baby" scale of the NPI at Time II.

	Item I	Item II	Item III	Item IV	Item V	Item VI
<u>Item I:</u> Crying	1.00					
<u>Item II:</u> Feeding	-.154	1.00				
<u>Item III:</u> Spitting/ Vomiting	.295	.382	1.00			
<u>Item IV:</u> Sleeping	.580	.063	.433	1.00		
<u>Item V:</u> Bowel Movements	-.320	.776	.221	-.153	1.00	
<u>Item VI:</u> Pattern of Eating/ Sleeping	.694	-.060	.184	.562	-.107	1.00

(Standardized Item Alpha = .637)

desired .7 level. The Cronbach's alpha for the "Average Baby" at Time I and Time II, however, has a nine point spread (from .546 to .637) which does not follow the logic that "average" is average and should have some stability over time.

Table 7 describes the internal consistency on the "Your Baby" scale at Time I. This table shows four items matching with Item I: crying and only one item matching with Item II; spitting/vomiting, Item IV: sleeping, and Item V: bowel movements. This table does have better item to item correlations than the rest of the scales but still has many items that seem "unrelated" or redundant to one another.

The Cronbach's alpha or standard item alpha of the "Your Baby" scale at Time I (Table 7) does result in a value of .724 which also indicates that the items on this scale, even with the small sample has a stronger reliability than the other scales of the NPI.

Table 8 describes the internal consistency on the "Your Baby" scale at Time II. This table shows very poor "matching" of items as Item I: crying, Item II; feeding, and Item V: bowel movements match with only one item in this study.

The Cronbach's alpha or standard item alpha of "Your Baby" scale at Time II also reveals a very low figure of .368. This value plus the results of the correlation matrix, indicate that this scale has poor internal consistency in this study.

A paired t-test was done on the group means on the "Average Baby" scale at Time I and Time II (Table 9) and on the "Your Baby" scale at

Table 7. Correlation Matrix Between Individual Items on the "Your Baby" scale of the NPI at Time I.

	Item I	Item II	Item III	Item IV	Item V	Item VI
<u>Item I:</u> Crying	1.00					
<u>Item II:</u> Feeding	.394	1.00				
<u>Item III:</u> Spitting/ Vomiting	-.040	.064	1.00			
<u>Item IV:</u> Sleeping	.397	-.107	.397	1.00		
<u>Item V:</u> Bowel Movements	.303	.169	.461	.687	1.00	
<u>Item VI:</u> Pattern of Eating/ Sleeping	.327	.031	.170	.779	.529	1.00

(Standardized Item Alpha = .724)

Table 8 Correlation Matrix Between Individual Items on the
"Your Baby" scale of the NPI at Time II.

	Item I	Item II	Item III	Item IV	Item V	Item VI
<u>Item I:</u> Crying	1.00					
<u>Item II:</u> Feeding	.243	1.00				
<u>Item III:</u> Spitting/ Vomiting	.100	-.034	1.00			
<u>Item IV:</u> Sleeping	.066	-.264	-.034	1.00		
<u>Item V:</u> Bowel Movements	.318	.413	.586	-.146	1.00	
<u>Item VI:</u> Pattern of Eating/ Sleeping	.108	.083	.034	.264	-.413	1.00

(Standardized Item Alpha = .368)

Time I and Time II (Table 10). The t-test is a test of significance of the difference between two means. For the test to be statistically significant the level of the 2-tail probability should be less than .05.

Table 9 presents the computed t-test for the means of the "Average Baby" scales and indicates the level of significance as .08 which is greater than the desired .05 level. Table 10 presents the t-test for the means of the "Your Baby" scales at .11 which is also greater than the desired .05 level of significance. The paired t-test computed on the scales of the NPI were not statistically significant in this study.

In summary, based on the results of this study using the NPI, only one subject was found to have a negative neonatal perception of her infant. The frequency distribution of the NPI revealed responses that were not equally spread to the options provided but are centered on the less extreme responses.

The Subject Information Inventory did not provide statistically significant data to describe the relation of factors influencing maternal perception. On the other hand, direction was interesting to consider when using some of the data revealed in Table 3. The chi-square test was applied directly to the actual frequencies in the categories of previous child care experience and sexual preference of baby to the scores elicited in the NPI II. This test can be used to analyze the significance of differences among groups that are being compared to in terms of qualitative variables (Abdellah and Levine, 1979). Theoretically,

Table 9 Paired t-test Between Group Means on "Average Baby" scale at Time I and Time II.

Number	Average Baby Scale	
	t-Value	2-Tail Probability
13	-1.91	.08

Table 10 Paired t-test Between Group Means on "Your Baby" scale at Time I and Time II.

Number	Your Baby Scale	
	t-Value	2-Tail Probability
13	1.75	.11

the chi-square test does not work well in studies where the frequencies in any of the cells are less than 10, as in this study. However, for illustrative purposes the test is applied to the data.

Table 11 describes the computation for the table of previous child care experience with high and low scores of the NPI II. Arbitrarily, much experience was assigned to those subjects who responded with "a good bit" or "a great deal" options. Little experience was assigned to those subjects who responded with "very little" or "a moderate amount" options. A high NPI score was +4 and above and a low NPI score was +3 and below. Ideally, a .05 level of significance would then result in a value of 3.8 or above. The chi-square of Table 11 revealed a value of .9 which is not statistically significant.

Table 12 describes the computation for the sexual preference of the baby's sex in terms of "desired sex", "did not matter" and "wrong sex" with the NPI II score. The frequencies of each of the categories were computed and divided among the high NPI II score which again was +4 or above and a low NPI II score which was +3 or below. At a .05 level of significance, a value at 6.0 or above would be statistically significant. The results of the chi-square on Table 12 however, revealed a value of 2.3 which again is not statistically significant.

Although the chi-square test was not significant with this sample, it does illustrate another way of interpreting the results of the data collected in this study. When applied to a larger population, the chi-square test may be a very useful test for computation of data that fall into categories.

Table 11 Chi-square Test on Previous Child Care Experience With High and Low Scores of the NPI at Time II.

		Observed			Theoretical		
		Much	Little	Total	Much	Little	Total
N P I S C O R E	High	3	4	7	3.5	3	6.5
	Low	4	2	6	3.5	3	6.5
	Total	7	6	13	7	6	13

Degrees of freedom = 1.0

Chi-square Value in this sample = 0.9

Table 12 Chi-square Test on the Sexual Preference of the Baby's Sex With the Score of the NPI at Time II

		Observed				Theoretical			
		Got Desired Sex	Did not care	Wrong Sex	Total	Got Desired Sex	Did Not Care	Wrong Sex	Total
N P I S C O R E	High	a 2	b 4	c 0	6	a 1.5	b 4	c 1	6.5
	Low	d 1	e 4	f 2	7	d 1.5	e 4	f 1	6.5
	Total	3	8	2	13	3	8	2	13

Degrees of freedom = 2

Chi-square Value in the sample = 2.3

In the analysis of the instrument, the values resulting from this investigation do not support measures of internal consistency in the NPI tool. The paired t-tests done of the group means on the "Average Baby" scale at Time I and Time II and on the "Your Baby" scale at Time I and Time II were not statistically significant. The chi-square test done on previous child care experience and sexual preference of baby category with the NPI II score was not statistically significant.

CHAPTER 5

CONCLUSIONS AND IMPLICATIONS

A discussion of the conclusions of this investigation is presented in this chapter. The areas of discussion are selected elements from the conceptual framework, mothers' perceptions of their infants, the factors influencing perception, and field problems. Finally, the implications of this study for nursing practice and recommendations for future study are presented.

Mother's Perceptions of Their Infants

The purpose of this study was to identify the perceptions that adolescent mothers have of their infants. The Neonatal Perception Inventory (NPI) was chosen because as Broussard and Hartner (1971, p. 434) stated, "in our culture, great emphasis is placed on 'being better than average.'" Thus, it seemed logical to assume that a mother with a favorable attitude toward her infant would expect him to be better than average. The primipara's perception of her infant was the variable being measured.

The subjects were 13 English-speaking adolescent mothers who delivered their firstborn infants in two hospitals in a southwestern community. Data were collected using the NPI I and the NPI II ("Average Baby" and "Your Baby" forms) and the Subject Information Inventory. The NPI questionnaires sought to determine a mother's perceptions of the

"average" infant and her own infant's behavior. These perceptions were based on specific infant behaviors. The Subject Information Inventory asked questions relating to demographic data and factors that may influence maternal perception. Data were collected from the mother on two different occasions, at Time I which was within 48 hours after delivery and at Time II, which was about one month postpartum. At Time I the NPI I and the Subject Information Inventory were the tools utilized to collect data. The NPI II was used at Time II to collect data for this investigation.

The findings of this study revealed that 12 (92 percent) of the study's participants perceived their infants as being better than average, a positive perception, while one (8 percent) did not perceive her infant as being better than average, a negative perception.

Factors Influencing Perception

The relationship of factors which may influence the perceptions young mothers have of their first born infants in two time periods, within 48 hours after delivery and at approximately one month postpartum was analyzed. The Subject Information Inventory was given at Time I and asked questions to provide some information on the factors relating to perception.

In this investigation, the single factor that was isolated which may have influenced the perception of the subject with a negative NPI score may have been that she desired a boy baby but had a girl baby. Other than this factor, no other reasons could be attributed to the mother's negative perception of her infant.

Field Problems

At the beginning of this study 20 women were selected who met the criteria for the study and answered the NPI I and Subject Information Inventory at Time I. However, one subject failed to answer most of the questions on part of the NPI tool and so was eliminated from the study at that time.

At Time II or within one month after delivery of their infants, the remaining 19 subjects were contacted and arrangements were made to meet them at their homes. Six of the subjects were not available to complete the NPI II even with prior telephone arrangements. These subjects were contacted many times until it was clear that they really did not wish to complete the study and yet preferred not to tell this investigator when they were contacted by telephone.

When calling for the follow-up visit, often the teenage mother was not at home, yet her baby was home and being cared for by the grandmother. Frequently, the maternal grandmother seemed to be the primary caretaker of the infant. Even when visiting the client's home, the grandmother often seemed to be the one caring for the baby and readily would give information about the baby to the investigator.

Using an adolescent population in research investigations is at best, difficult. Providing what would seem to be the least threatening tool (straight-forward question in check list form that is not lengthy) and meeting with the subjects at their own convenience was still not enough to secure participants for this investigation. The value system of the adolescent population is very difficult to understand and

subsequently to secure involvement in investigations will probably always be a struggle. The vital importance of continuing this struggle is imperative however, as adolescents, especially adolescent mothers need health care services.

Implications for Nursing Practice

Nurses working in labor and delivery, postpartum, and nursery areas of hospitals should be aware of the needs mothers and their families have when a new infant is born. However, when the mother is an adolescent, this transition into motherhood may be even more difficult. Maternal perceptions influence the mother, no matter what age, in her response to the infant and in turn his response to her. The role of the nurse is to interpret behaviors of both the infant and mother and support both as they become a family unit.

The unavailability or inability of this investigator's subjects to complete the second portion of this study is a major implication for nurses and other health professionals. When providing health care teaching to adolescent mothers and their infants it may be necessary to do so in the hospital setting after delivery. Planning to have continued health care follow-up after discharge from the hospital may be difficult or impossible with the mobility of these young mothers. Preplanned classes for these adolescent mothers probably will be a futile effort as established meetings or "classes" are associated synonymously with "school". At this point in their lives the adolescent, especially an adolescent mother, does not feel that "school" has a high value or priority. Follow-up health care meetings in the home by health

professionals seem to be very threatening and the priority of health care follow-up may be very low with these young mothers. Perhaps another way to provide health care teaching for these young mothers may be through the use of informal "rap" sessions done in the office or clinic. Meeting with these mothers or mother-to-be on a one-to-one basis prior to their medical appointment could provide an excellent avenue to give individualized health care teaching. Whatever the reason or circumstances however, the time to provide any type of health care teaching must be done prior to or at the time of delivery as health care follow-up after discharge from the hospital may be impossible.

Recommendations for Future Study

The recommendations based on this study are the following:

- 1) Use of the NPI tool with a larger adolescent population divided into age groups for comparison; i.e., 13 year olds, 14 years olds, 15 year olds, etc.
- 2) Use of the NPI tool with primiparous adolescent population comparing it with a study done on a group of older primiparous women.

CHAPTER 6

SUMMARY

This study evaluated the early perceptions that adolescent mothers have of their first born infants at approximately 48 hours after delivery and at approximately one month postpartum. The purpose of the study was to identify perceptions adolescent mothers have of their infants as a beginning assessment of adolescent behavior with their infants.

The problem is significant as one in five births in the United States is to a teenager (Mercer, 1979). The transition into motherhood, when the mother is an adolescent, may be very difficult. However, maternal perceptions influence the mother, no matter what age, in her response to the infant and in turn his response to her.

This descriptive study was designed to provide insight into the early perceptions of adolescent mothers. The literature review contained studies pertaining to developmental considerations, adolescents as parents, the mothering role and the maternal perceptions of the infant. These articles provided insight in the areas of adolescent development, the adolescent in the mothering role and as a parent and perceptions of infants by their mothers.

Maternal perception was measured using the Neonatal Perception Inventory (NPI) designed by Broussard (1964). A Subject Information Inventory was prepared by the investigator and was used to obtain background and demographic data about the subjects. Thirteen English-speaking

primiparous women completed the four questionnaires of the NPI and the Subject Information Inventory. Twelve (92 percent) of the 13 subjects had positive neonatal perception scores at Time II. One (8 percent) of the subjects had a negative neonatal perception score.

In the analysis of the instrument, the values resulting from this investigation do not support measures of internal consistency in the NPI tool. The paired t-tests and the chi-square tests done on the tool were not statistically significant.

This difficulty doing this research on the adolescent population parallels the difficulty of providing consistent and adequate health care to adolescent mothers. Health teaching and follow-up health care may be sporadic as adolescent mothers do not feel that health care has a high value or priority. Yet, the adolescent population, and especially adolescent mothers and their infants desperately need the attention of health professionals. Adolescent mothers and their infants are at "high risk" for many physiological problems that may have long term psychological and sociological consequences.

APPENDIX A

PERMISSION TO CONDUCT STUDY

THE UNIVERSITY OF ARIZONA COLLEGE OF NURSING
MEMORANDUM

TO: Susan Jo Deering Eavey, R.N.

3555 N. 1st Avenue E-11, Tucson, 85719

FROM: Ada Sue Hinshaw, R.N., Ph.D.
Director of Research

Jan Atwood, R.N., Ph.D.
Chairman, Research Committee

DATE: March 15, 1982

RE: Human Subjects Review: "Adolescent's Perceptions of Their Infants"

Your project has been reviewed and approved as exempt from University review by the College of Nursing Ethical Review Sub-committee of the Research Committee, and the Director of Research. A consent form with subject signature is not required for projects exempt from full University review. Please use only a disclaimer format for subjects to read before giving their oral consent to the research. The Human Subjects Project Approval Form is filed in the office of the Director of Research, if you need access to it.

We wish you a valuable and stimulating experience with your research.

ASH:ss
4/81

APPENDIX B

· PERMISSION TO CONDUCT STUDY
FROM HOSPITAL



THE UNIVERSITY OF ARIZONA

HEALTH SCIENCES CENTER
TUCSON, ARIZONA 85724

UNIVERSITY HOSPITAL

March 23, 1982

Ms. Susan J. Eavey, R.N., B.S.N.
3555 N. 1st Ave., E-11
Tucson, Arizona 85719

Dear Ms. Eavey:

It is a pleasure to approve your research; "Adolescents' Perceptions of Their Infants" to be conducted at the Arizona Health Sciences Center. Ms. Becky Hull, Assistant Director for Nursing in the OB/GYN area, will serve as your contact person.

We would ask that you plan to share the results of your study with the nursing staff on its completion. You are investigating an area which is of interest to a number of professionals.

If you have questions, please don't hesitate to contact either Ms. Hull (626-7577) or myself (626-6353). Good luck with your research!

Sincerely,

Ada Sue Hinshaw /jox

Ada Sue Hinshaw, R.N., Ph.D.
Associate Director of Nursing for Research
Nursing Department
University Hospital
Professor, Director of Research
College of Nursing
University of Arizona

cc: Ms. Becky Hull

APPENDIX C

PERMISSION TO CONDUCT STUDY
FROM HOSPITAL



KINO
COMMUNITY
HOSPITAL

2800 E. AJO WAY/TUCSON, AZ 85713
PHONE 294-4471

March 3, 1982

Ms. Susan Eavey
3555 North 1st Ave.
Apartment E-11
Tucson, Arizona 85719

Dear Ms. Eavey:

This letter is to give you permission to conduct your research projects in our Labor and Delivery Department.

You should keep Susan Matte, Nurse Care Manager in the O.B. area, appraised of any changes or problems that you might encounter during your time here.

Good luck and let us know if we can be of assistance to you.

Sincerely,

NANCY S. MARTIN, R.N., M.S.
Assistant Administrator for
Patient Care Services

NSM:vr

cc: Susan Matte

APPENDIX D

PARTICIPANT'S CONSENT FORM

CONSENT FORM

I am requesting your voluntary participation in the completion of the questionnaires entitled, "Neonatal Perception Inventory" and "Subject Information Inventory." The purpose of this study is to learn more about the experiences of mothers and their babies during the first few weeks after delivery. By responding to the questionnaires, you will be giving your consent to participate in the study. The completion of the questionnaires will require meeting with the investigator on two different occasions. The first meeting is now, while you are in the hospital, and the second meeting will be in about one month. Your name is not on the questionnaires, and you may choose not to answer some or all of the questions, if you so desire. The questionnaires will take about ten minutes to complete. There are no risks or costs involved. You will, however, have an opportunity to ask the investigator about general child care. You are free to withdraw from the study at any time without affecting your relationship with any nurse or physician, or your treatment and care in any way. Please feel free to ask me any questions that you may have now or you may contact me by telephone later, if questions do arise. All information from the study will remain strictly confidential. Thank you.

Principal Investigator
293-4263

APPENDIX E

SUBJECT INFORMATION INVENTORY

SUBJECT INFORMATION INVENTORY

1. Age _____
2. Did you attend prenatal classes? yes _____ no _____
3. How many classes did you attend? _____
4. Where were the classes held? _____
5. What type of prenatal classes? (Lamaze, CEA, Catholic Social Services, other)? _____
6. How much experience have you had giving care to young babies?

a great deal	a good bit	a moderate amount	very little	none
-----------------	---------------	----------------------	-------------	------
7. Who has given you advice about taking care of your baby?

mother _____	close relative _____
friend _____	other (please explain) _____
8. Were you hoping for a:

girl baby _____	boy baby _____	did not matter _____
-----------------	----------------	----------------------
9. Sex of your baby: _____

APPENDIX F

NEONATAL PERCEPTION INVENTORY

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