

COMPARISON OF PERCEPTIONS OF INFANT BEHAVIORS
AND DEVELOPMENT BY ADOLESCENT
AND NONADOLESCENT MOTHERS

by

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ABSTRACT

This study was designed to compare maternal perceptions of infant behaviors and development in a group of adolescent and nonadolescent mothers. The original hypothesis was that adolescent mothers would have less realistic perceptions of their infants and less knowledge of developmental norms than nonadolescent mothers. There were 17 adolescent and 17 nonadolescent mothers who participated in the study at four to eight weeks postpartum. The mean age of the adolescents was 16.88 years while the mean age of the nonadolescents was 24.47 years. The mothers completed a questionnaire consisting of Broussard's Neonatal Perception Inventory plus questions about common developmental milestones. Demographic data and background information were also obtained. There were no significant differences between the two groups of mothers in their perceptions of their infants. Four of the adolescents and five of the nonadolescents viewed their infants as "average" or "less than average." There were no significant differences between the mothers in their knowledge of total child developmental norms, although the adolescents averaged closer to the correct age for the individual norm of awareness of what "no" meant. There were no significant correlations between the Neonatal Perception Inventory scores and marital status, education,

income, race, previous child care, method of feeding, and resources used for infant questions and regular child care. There were no correlations between these same variables and the mothers' knowledge of developmental norms. There were no significant correlations between the Neonatal Perception Inventory scores and knowledge of developmental norms. Significantly fewer of the adolescent mothers were married (64.7%) when compared with the nonadolescent mothers (100.0%). The adolescents had completed fewer grades, but more of them were attending school (64.7%) than the nonadolescents (11.8%). Income was significantly lower among the adolescent mothers. More of the adolescent mothers bottlefed their infants (64.7%) while more of the nonadolescent mothers were breastfeeding (82.4%). More adolescents used their own mothers for questions about their infants (75.0%) and regular child care (53.8%). The nonadolescents used friends, husbands, and professionals for infant questions (88.2% and regular child care (100.0%). It was concluded that every mother's parenting skills need to be assessed on an individual basis. The mother's age did not affect her perception of her infant or her knowledge of developmental norms.

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CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

Introduction

During the past ten years there has been a steady increase in adolescent pregnancies in the United States. More than 570,000 girls age 19 years and younger gave birth in 1976, and the number is increasing by approximately 3,000 every year (Final Natality Statistics, 1976). In 1975 Utah had 3,777 births to girls 19 years of age and younger out of a total of 31,667 births (Brockert, 1978).

A significant change in the pregnant adolescent population indicates that more of these girls are electing to keep their infants rather than to place them for adoption. A survey in Minneapolis showed that 74.3% of the pregnant teenagers kept their infants (Knox, 1971). Tankson (1976) reported that over 90% of the pregnant adolescents in an educational project did the same. However, when professionals working with these mothers attempted to look at adolescent parenting skills, behaviors, and attitudes, they noted a lack of research in this area. An article in 1973 by Shirley A. Nelson, then director of the Consortium on Early Childbearing and Childrearing, stated:

Although childrearing patterns have been studied from various points of view, including those dealing with the influences of socioeconomic status, parental personality, and environmental influences, the question of how childrearing practices vary according to the age of the mother has not been addressed. (p. 33)

De Lissovoy (1973) observed in his study of adolescent marriages:

The results of research in the field of adolescent marriages has been given considerable attention recently, but surprising little information has been published concerning the adolescents' expectations of and attitudes toward their children. (p. 22)

The authors stated that there is observational and anecdotal evidence that children of adolescent parents are at risk in their development. However, since little research has been done on adolescent parenting, only tentative conclusions could be drawn about the strengths and weaknesses of adolescent childrearing.

In this investigation perceptions of infant behaviors and developmental norms as they related to childrearing were considered in a group of adolescent and nonadolescent mothers. The study attempted to determine whether adolescent mothers had less realistic perceptions of their infants' behaviors and of developmental norms than did nonadolescent mothers. Hopefully the results of this survey will contribute to the information on adolescent parenting, and will permit a more rational intervention by the caregiver.

Review of the Literature

A thorough search of the literature revealed few studies on adolescent

childrearing practices. Published studies on this subject were 10-20 years old, made in other countries, or done as part of larger studies.

Sears, Maccoby, and Levin (1957) asked 379 mothers about their childrearing practices. All the mothers were over 24 years of age at the time of the interview. The younger mothers (when socioeconomic status was controlled) were more quick to punish their children and more likely to express an underlying feeling of hostility. They were apt to urge the child to fight back if attacked, and had a tendency to use withdrawal of privileges as a technique for control.

Stone and Rowley (1966) reported that mothers of children with conduct disorders (problems associated with the expression of impulses) had a younger mean age than mothers of children with personality disorders (problems associated with the over-inhibition of impulses). All the 127 children in the study had mothers older than 19 years of age at delivery.

In a survey of 11,280 seven-year-olds in Scotland Illsley (1967) indicated that IQ was linked to the mother's age at delivery when number of previous pregnancies and social class were controlled. The child's IQ rose as the age of the mother increased at delivery and peaked at approximately 35 years. This was later confirmed by Record, McKewon, and Edwards (1969) in a study of 38,913 births in England.

A New York study by Sauber (1970) on black, white, and Puerto Rican unwed mothers showed that mothers younger than 25 years of age and mothers older than 25 years of age were rated about equally by

social workers in the adequacy of their mothering.

Oppel and Royston (1971) compared social and psychological data on 172 children born in 1952 to adolescent and older mothers in Baltimore. Socioeconomic status, birth weight of the child, number of previous live births, and race of the mother were controlled. Mothers younger than 18 years of age delivered more children during the study period, and were more likely to rear their children in families rated by social workers as unhealthy. The adolescent mothers were less anxious, and believed their firstborn children should be given the freedom to act independently. They had less intense emotional and behavioral involvement with their children. During psychological testing the children of the adolescent mothers were more outgoing, dependent, and distractable. They had more infantile behavioral problems and acting-out difficulties, and were more likely to be shorter, underweight, deficient in reading grade level, and to have lower IQ's.

In a study of 48 adolescent marriages De Lissovoy (1973) noted that teenage parents (14 to 18 years of age) were impatient, insensitive, irritable, and prone to use physical punishment with their children. Only a small number of the mothers expressed enjoyment of their children by spontaneously cuddling or playing with them. Furthermore, the adolescent couples lacked knowledge of child development and had unrealistic expectations of developmental milestones. Results of this study need to be qualified since the parental sample came from a low socioeconomic

group living in an isolated rural area.

Pediatric follow-up care of these children has also been surveyed. Knox (1971) reported that of the 74.3% of adolescent mothers who kept their infants, only 26% had regular pediatric care. In addition, premature and low-birth-weight infants were more commonly seen in the adolescent population. A New York study conducted in an interdisciplinary program for 385 adolescent mothers indicated that the average birth weight of their infants was 11 ounces below the national average. Physical growth for a majority of these infants continued below the 50th percentile during the first year of life. Observations of the mothers and infants before and during the pediatric exam indicated that the adolescent mothers exhibited a relatively high amount of warmth and physical interaction with their infants but little verbal interaction. Their infants scored high on measures of activity but considerably lower on affectivity and responsivity (Osofsky & Osofsky, 1970).

Most of the following information on childrearing was acquired via incidental observation and experience of professionals working with adolescent mothers. Caution must be exercised in drawing conclusions from recall, since deviant rather than modal cases might be best remembered by the caregivers. Nevertheless, the anecdotal evidence did highlight potential problem areas in adolescent childrearing practices.

At the Maternal and Infant Care Project in Atlanta, Georgia, caregivers observed that the younger adolescent mother sometimes failed to

develop a realistic attitude toward her infant. She viewed her child as a "loving doll" rather than as an individual with realistic demands. This might be related to the increasing incidence of adolescent keeping their children at birth, but later signing an adoption release when care became more difficult (Williams, 1974).

The most common experience of the children was exposure to multiple caregivers, since the adolescent mother was attending school, working, or involved with peer group activities. Furstenberg (1976) did three follow-up interviews at two year intervals with 404 adolescent mothers. Over half of the adolescents utilized babysitters because the mother worked outside the home. During the first five years of life 10% of the children lived apart from their mothers at some time during the study. Williams (1974) noted that if another caregiver, such as the grandmother, took over complete care of the child, it was difficult for the adolescent mother to accept her own parental responsibilities.

Williams (1974) observed that teenage mothers viewed stimulation as "spoiling the child." They wanted their infants to be neat, well-behaved, quiet, and patient.

Breastfeeding was rarely practiced among these mothers. Reasons given included physical repulsion, association with poverty, lack of privacy, or conflicting work and school schedules (Williams, 1974).

The adolescent mother tended to be ambivalent in her relationships and inconsistent in her behavior and attitudes. A study on the self-concepts

of 88 pregnant adolescent girls in Florida showed that this group of future mothers exhibited poor self-esteem, had feelings of inadequacy and unworthiness, and were more dissatisfied with their family relationships and physical bodies. There were more instances of conflict, instability, defensiveness, and personality disorders among the pregnant adolescents than among the control group (Zongker, 1977). Certainly these problems inhibit good parenting, especially when combined with immaturity and economic inadequacies.

Since her self-concept is not well established, the adolescent mother may feel insecure in her parenting role and experience failure in her life goals. A nationwide study by Card and Wise (1978) analyzed the short-term and long-term impact of adolescent childbearing on both parents' futures. Results showed that the young parents had acquired less education than their contemporaries, were limited to less prestigious jobs, had lower incomes, and had greater job dissatisfactions. Their marriages were more unstable, and they had more children than they had planned. Furstenberg (1976) reported essentially the same findings. Frustrations encountered by the adolescent mother could certainly affect her behavior toward her child, and might, as De Lissovoy (1973) suggested, increase the risk of child neglect and abuse.

In response to the educational difficulties encountered by pregnant adolescents, the federal government encouraged public school systems to make classes available to them. Sidney P. Marland, former Commissioner

of Education, issued a policy statement in 1972 which said in part:

Every girl in the United States has a right to and a need for the education that will help her prepare herself for a career, for family life, and for citizenship. To be married or pregnant is not sufficient cause to deprive her of an education and the opportunity to become a contributing member of society. . . . In serving both young women and young men experiencing or anticipating early parenthood, we also serve the children involved and promote a strengthening family structure (Braen & Forbush, 1975, p. 258).

Since then, programs for adolescent mothers have been established in many communities throughout the United States. Three basic models for educating adolescents have been described in the literature. One is a hospital-based program in which the girls receive their education in a hospital setting with all its available resources (Grady, 1975). A second model is a regular school-based program. The girls remain in their regular high school classes during their pregnancy and after delivery (Klein, 1975). In the third model pregnant girls are separated from the regular school system and placed in special classes before and after their children are born (Washington, 1975). Day care centers for the children may or may not be provided as part of these models.

Other programs have also been described. Long-term residential care for both the adolescent mother and her child is available in a California program (Benas, 1975). A combination of the basic models is used by some communities (Bennett & Bardon, 1977; Tankson, 1976). Home instruction is available in many school systems but is not well used by the adolescent mothers (Bennett & Bardon, 1977).

Several studies have been made on the educational programs developed for pregnant teenage girls. Evaluations have shown a positive influence on short-term goals set for the programs, especially in more education and better health for the mothers and their infants (Benas, 1975; Bennett & Bardon, 1977; Osofsky & Osofsky, 1970; Tankson, 1976).

Nelson (1973) acknowledged that the responsibility of an infant might distort the mother's own adolescent development. The adolescent girl needs to achieve her own developmental goals which could interfere with her ability to perform as a mother.

On the positive side, success at achieving her developmental goals can enhance the adolescent's potential as a mother. Her energy level and obvious enjoyment in playing with her child is viewed as a plus in child-rearing (Williams, 1974). Her immaturity and insecurity can be overcome at this age by building her self-confidence. She is more easily influenced and will learn more readily since she truly wants to be successful at her childrearing (Nelson, 1973).

A pervasive hypothesis in human development is that in infancy and childhood basic characteristics of the individual's personality and potentialities are established. Experiences of childhood have vital importance in not only shaping the temporary state of the child, but also in influencing future cognition, perceptual abilities, behavior, and personality. This does not discount the role of constitutional and biological factors, but it puts great emphasis on the influence of experiences, learning, and the

environment (Yarrow, 1973).

To illustrate this theory Barnard (1976) developed a model for predicting child health outcomes. She theorized that perinatal factors, such as premature birth, influenced both parental and infant characteristics. One parental characteristic was the mother's perception of her child. Such characteristics determined ongoing parent-child interactions and response patterns which eventually affected physical, cognitive, and social outcomes of the child.

It has been generally assumed that when a woman becomes a mother she has certain expectations about herself as a mother and about what type of child she will have. After the child is born the mother-child relationship develops into a cyclical pattern. How the mother relates to her child will be modified by her perception of the infant's appearance and behavior. In turn the infant's behavior will be affected by her handling (Broussard & Hartner, 1971).

Broussard and Hartner developed a Neonatal Perception Inventory and administered it to 120 mothers of fullterm, firstborn infants. Each mother rated her infant's characteristic behavior in comparison to what she felt was the "average" infant's behavior. A strong relationship appeared to exist between the mother's perception of her infant at one month of age and the child's mental health at 4 1/2 years of age. More psychopathology occurred in children whose mothers viewed them as "average" or "less than average." Broussard and Hartner also indicated

that mothers who perceived their one-month infants as "average" or "less than average" tended to score higher on the Psychosomatic Anxiety Symptoms, Depression, and Negative Aspects of Child Rearing Scales than mothers who viewed their infants as "better than average" at one month (Broussard & Hartner, 1970).

Apparently the processes for successful mother-child interaction begin in the first few weeks of life. According to Broussard and Hartner, the relationship may exist because of the neonate's unique personality characteristics which are detected early by the mother. On the other hand, the mother's perceptions may serve as a self-fulfilling prophecy. If the mother has succeeded in early coping she is more likely to have a sense of accomplishment and view her infant as "better than average." Her child's later development and ability to cope with life may depend to a large part on the mother's positive hopefulness (Broussard & Hartner, 1971).

Snyder (1976) administered the Neonatal Perception Inventory to 193 mothers after delivery and at four to six weeks postpartum. The mothers' perceptions as a whole remained unchanged during that interval as far as rating their infants as "less" or "better than average," but individual perceptions changed in both directions. Two areas that demonstrated the greatest difference in expectations were sleeping difficulties and schedule predictability. Mothers who changed the perception of their infants from "above average" to "below average" were depressed, tired,

and had difficulty adapting to motherhood. They described their infants as having adjustment problems. Snyder noted that if a mother's early perception of her infant has a strong predictive outcome, it is most essential to assess and intervene early when it is easier to change perceptions. One example of early intervention involves the assessment of the newborn's behavioral characteristics plus a session of sharing some of the child's capabilities and individualities with the mother.

To study early intervention Kang (1976) collected 11 mother-infant pairs and divided them into experimental and control groups. The experimental group received home visit teaching in the two week period after delivery. The control group received no special teaching. The experimental group demonstrated a significant difference of perceptions on the Neonatal Perception Inventory, i.e. they showed more positive perceptions of their infants after the teaching sessions.

Since the adolescent mother may be expected to have difficulty coping with her own insecurities, frustrations, and developmental tasks, it was hypothesized that she would demonstrate less positive perceptions of her infant on the Neonatal Perception Inventory by one month post-partum.

Another area governing childrearing practices is that of maternal perceptions of developmental norms. The mother's knowledge of these milestones greatly influences the child's general environment in addition to his immediate experiences (De Lissovoy, 1971). Unrealistic perceptions

of developmental norms result in an unawareness of developmental delays or a lack of stimulation for optimal development. On the other hand, the mother may push the child beyond present capabilities and behave toward him or her in an unrealistic way. Her attitudes could have long-term effects on the child's life.

It was hypothesized that the adolescent mother would have less realistic perceptions of developmental norms and milestones because of insufficient knowledge about infant development than nonadolescent mothers.

CHAPTER II

METHODOLOGY

The study sample consisted of 17 adolescent mothers 18 years of age and younger, and 17 nonadolescent mothers aged 19 years and older. It was felt that at 19 years of age, or post high school, the girls would more likely be classified as young adults rather than adolescents.

Subjects were selected from obstetrical clinics in Salt Lake and Tooele Counties, Utah, during the period of February, 1978, through October, 1978. Adolescents and nonadolescents were asked to participate at four to eight weeks postpartum. The mothers had delivered viable full-term infants who had no gross abnormalities or prolonged hospitalizations.

Permission for participation in the study was obtained from the subjects. A signed consent form stated that anonymity would be maintained.

The questionnaire consisted of three parts: demographic and background data, the Broussard Neonatal Perception Inventory, and Perceptions of Developmental Norms.

The demographic data and background questions concerned marital status, race, education, work, income, living situation, past infant experiences, method of feeding, and resources used for child care and

questions (Appendix A).

The Broussard Neonatal Perception Inventory included the Average Baby Perception Inventory and the Your Baby Perception Inventory. Broussard's behavioral items in the inventories were feeding, spitting, elimination, sleeping, crying, and predictability (Appendix B). These items were selected by Broussard on the basis of her clinical experience regarding concerns mothers expressed about their infants. The inventories have shown both construct and criterion validity. A Chi-square analysis performed to determine the relationship of the Probability-of-Risk rating of the child at one month of age and the subsequent need for intervention was highly significant ($\chi^2=16.432$, $p < .001$) (Broussard & Hartner, 1970).

Perceptions of Developmental Norms consisted of questions about common developmental milestones of a child during the first two years of life. Those norms selected were vision, hearing, teething, laughing, standing, crawling, walking, aware of naughtiness or "no," and toilet training (Appendix C).

CHAPTER III

RESULTS AND DISCUSSION

Statistical analysis was performed on the data using the SPSS system of the Univac 1108 computer at the University of Utah Computer Center. The data obtained were classified at both the categorical and interval level.

Chi-square analysis was performed for the demographic data and background information for the adolescent and nonadolescent mothers (Table 1). Crosstabulations were also made on the demographic data and background information with the Neonatal Perception Inventory scores.

T-tests were performed on the individual and total Perceptions of Developmental Norms scores of the adolescents and nonadolescents (Table 2). Pearson r correlations and crosstabulations of the developmental norm scores were made on the demographic data, background information, and the Neonatal Perception Inventory scores.

There were 17 adolescents and 17 nonadolescents who participated in the investigation. The mean age of the adolescent mothers was 16.88 years; the mean age of the nonadolescent mothers was 25.47 years. Thirty-two of the subjects were Caucasian and two were Spanish-American.

Table 1
 Significant Differences of Demographic
 Data and Background Information

Demographic Data/Background Information	χ^2	p
Marital Status	5.06	.0245
Present Living Situation	8.81	.0122
Completed Grades	23.77	.0047
Presently in School	7.97	.0048
Income	8.86	.0312
Method of Feeding	5.95	.0147
Resources used for Baby Questions	16.27	.0027
Resources used for Baby Care	13.45	.0093
Race	N.S.	
Previous Baby Care	N.S.	
Main Source of Income	N.S.	
Working Status	N.S.	

Demographic Data and Background Information

Table 1 summarizes significant differences between the adolescent and nonadolescent mothers in relation to the demographic data and background information.

Eleven (64.7%) of the adolescent mothers and 17 (100.0%) of the nonadolescent mothers were married in this study. Furstenberg (1976) noted that 25% of the adolescent mothers in his study were married by the time of their deliveries. Bemis, Diers, and Sharpe (1976) reported that 60% of the adolescent mothers in a nationwide survey married while in school. Reasons for the marriages were not explored in this study but pressures exerted by the families to legalize the premarital pregnancies may have played a part.

All but one of the adolescent couples lived in their own homes. Five single adolescent mothers and one adolescent couple were living with their families, an indication that the pregnancies and infants were accepted by immediate relatives. One single mother reported that she lived alone.

Eleven (64.7%) of the adolescents and two (11.8%) of the non-adolescents were presently attending school. The adolescent mothers had completed fewer grades than the nonadolescent mothers. The large number of adolescent mothers still in school may be related to the fact that 88.2% of the adolescents in this study were Caucasian. The value

of a high school diploma may have been recognized by the white adolescent girl, her husband, and her family as a worthwhile goal and an opportunity for a better future. School attendance might have been quite different in a population of predominately nonwhite low income subjects who did not receive support from their families or husbands to finish school.

Nevertheless, studies show that the future education of these adolescent mothers is in jeopardy. Trussell (1976) reported that teenage childbearing was associated with less schooling at both high school and college level. The educational deficiencies were confirmed by Furstenberg (1976) and by Card and Wise (1978).

Both Salt Lake and Tooele Counties conduct special classes for their adolescent mothers. In addition to their regular curriculum the girls receive instruction in child development and parenting skills from nurses or child education instructors. All the adolescent mothers in this study who were still attending school had been exposed to the child care classes.

Income was significantly lower among the adolescent mothers when compared with the nonadolescent mothers. Furstenberg (1976) and Trussell (1976) reported lower incomes in studies of adolescent parents, a difference which persisted throughout their lives. Card and Wise (1976) indicated that the adolescent couples, especially the women, were more limited in their career opportunities. They had less prestigious jobs and were more dissatisfied with their work than contemporaries who had delayed

their childbearing.

Each mother was asked whom she used as a resource person when she had questions about her infant. More adolescents (75.0%) than non-adolescents (11.8%) named their own mothers. The nonadolescents were apt to use friends, doctors, nurses, and books as resources in parenting questions. In addition, more of the adolescents (53.8%) used their own mothers for regular child care while the nonadolescents used their husbands or a babysitter. In this study no nonadolescent mothers used their own mothers for regular child care.

The role of the grandmother has been considered in the literature. Smith (1975) described the changing relationship between the mother and daughter when the adolescent has a child of her own. Often, for the adolescent mother, her own mother continues to be a significant figure in her life. Many adolescents seem to need the dependency on their mothers and readily accept their experience and knowledge. Other adolescents feel an intense need for independence and resent the grandmother's interference. The conflicts which occur after the arrival of the infant were reported by Bryan-Logan and Dancy (1974). Neither the grandmother nor the mother can function in the role normally assigned to her. In many areas the grandmother becomes the decision-maker for both the adolescent and her child. Child care, independence, finances, and education are all potential areas of conflict. Such conflicts are commonly dealt with by arguments. Mother and daughter must constantly

work out their role relationships and adapt to the changing situations.

There was a significant difference between the adolescent and non-adolescent mothers in their feeding methods. More of the adolescent mothers (64.7%) bottlefed their infants while more of the nonadolescent mothers (82.4%) were breastfeeding. No studies documented this difference, but observers had previously noted the preponderance of bottlefed infants in the adolescent population (Williams, 1974). Osofsky and Osofsky (1970) reported that low-birth-weight infants of adolescent mothers began to catch up by six months of age and then fell behind. The investigators speculated that the good weight gains in the first months of life were due to early feeding of formula which was readily available to the low income mothers. With the introduction of solid foods, poverty or ignorance of good nutrition affected later weight gains. If malnutrition is a factor in the physical growth of the infant, it may also influence the mother's health. Therefore, encouragement of breastfeeding may not be suitable for these mothers, especially for those who have a history of inadequate dietary intake. Failure-to-thrive breastfed infants who responded to a change in formula have been observed by some caretakers. Some of these infants appeared to breastfeed adequately but did not gain weight. Perhaps the quality or quantity of breastmilk differs in mothers who are younger or malnourished. This is obviously an area for further research.

Neonatal Perception Inventory

Chi-square analysis performed on the Neonatal Perception scores and the two groups of mothers showed no significant differences between the adolescents and nonadolescents. Four of the adolescent mothers perceived their infants as "average" or "less than average" and five of the nonadolescents viewed their infants as "average" or "less than average." It appeared from this investigation that the adolescent mothers had a highly visible support system during the time they were attending school. Public health nurses, social workers, teachers, and physicians were all interested in helping them adjust to their mothering roles. Perhaps such support gave more adolescent mothers the confidence and optimistic outlook to perceive their infants as "above average" during the first month of life. It would be interesting to see results of the Neonatal Perception Inventory after graduation when these support systems were removed.

There were no significant relationships between the Neonatal Perception Inventory scores and marital status, education, income, race, previous child care, method of feeding, and resources used for infant questions and regular child care.

Perceptions of Developmental Norms

The total score for correct individual developmental norms was

96. Developmental norm scores ranged from a low of 54 to a high of 131. The mean total developmental norm score for the adolescent mothers was 82.59 and the mean total developmental norm score for the nonadolescent mothers was 95.06. T t-test performed on the mean scores were not significant.

One explanation may be that the adolescent mothers had been exposed to classes on child development in the school system. Since most of the adolescent mothers in this study were presently in school, they may have retained information from those classes. Furthermore, some nonadolescent mothers commented that they were aware of present developmental norms for their infants, but were less certain of future developmental milestones. Their concern was for the present and not for the child's developmental status in the months ahead.

The adolescent mothers scored significantly closer to the norm of awareness of naughtiness or "no" (Table 2). Both groups of mothers scored close to the correct month for the norms of vision and hearing. These results were most encouraging since the mother tends to provide stimulation based on her knowledge of her child's present capabilities. Obviously, these mothers were aware of their infant's early sensory capabilities.

Many of the mothers' answers averaged within one or two months of the correct age for the other developmental milestones. Only on toilet training did the mothers' answers differ widely from the accepted

Table 2

Mean Developmental Norms Scores, Standard Deviations
(S.D.), and Significant Score Differences

Developmental Norm	Average Age (months)	Adolescents		Nonadolescents		Significance t (32)
		Mean Score	S.D.	Mean Score	S.D.	
First Tooth	6	6.11	1.36	7.11	2.22	N.S.
Crawls	8	6.47	1.54	7.41	1.69	N.S.
Laughs	2	3.76	2.16	4.29	3.50	N.S.
Vision	1	1.24	.41	2.11	1.69	N.S.
Pulls to Stand	7	7.94	2.65	8.18	3.37	N.S.
Hears	1	1.24	.53	1.06	.24	N.S.
Toilet-Urine	24	17.88	5.31	18.53	3.14	N.S.
Toilet-Bowels	24	17.76	5.51	19.41	2.90	N.S.
Walks	12	10.24	1.87	12.24	2.98	N.S.
Naughtiness (Knows "No")	11	9.94	2.69	14.71	5.49	2.17*

* $p = .039$

norm. The mothers thought that toilet training should be accomplished 5-6 months before the child was physically or emotionally ready to be trained.

Total developmental scores were divided into "below average" (below 96) and "above average" (above 96) scores. Scores below 96 represented mothers whose answers indicated children would accomplish the milestones earlier than the accepted norm. Scores above 96 represented mothers whose answers indicated children would accomplish milestones later than normal. There were no significant differences between the number of adolescents and nonadolescents who scored below or above the total average score of 96.

There were no significant relationships between the "above average" and "below average" developmental norm scores and between the mothers who scored "above average" or "below average" on the Neonatal Perception Inventory. In this study the mother's positive or negative perception of her infant was not affected by her knowledge of developmental norms.

CHAPTER IV

SUMMARY AND RECOMMENDATIONS

Summary

This study was designed to compare maternal perceptions of infant behaviors and development in a group of adolescent and nonadolescent mothers. The original hypothesis was that adolescent mothers would have less positive perceptions of their infants and less knowledge of developmental norms than nonadolescent mothers. There were 17 adolescent and 17 nonadolescent mothers who participated in the study at four to eight weeks postpartum. The mean age of the adolescents was 16.88 years while the mean age of the nonadolescents was 24.47 years. The mothers completed a questionnaire consisting of Broussard's Neonatal Perception Inventory plus questions about common developmental milestones. Demographic data and background information were also obtained.

There were no significant differences between the two groups of mothers in their perceptions of their infants. Four of the adolescents and five of the nonadolescents viewed their infants as "average" or "less than average." There were no significant differences between the

mothers in their knowledge of total child developmental norms, although the adolescents averaged closer to the correct age for the individual norm of awareness of what "no" meant. There were no significant correlations between the Neonatal Perception Inventory scores and marital status, education, income, race, previous child care, method of feeding, and resources used for infant questions and regular child care. There were no correlations between these same variables and the mothers' knowledge of developmental norms. Also, there were no significant correlations between the Neonatal Perception Inventory scores and knowledge of developmental norms scores.

Significantly fewer of the adolescent mothers were married (64.7%) compared with the nonadolescent mothers (100.0%). The adolescents had completed fewer grades but more of them were attending school (64.7%) than the nonadolescents (11.8%). Income was significantly lower among the adolescent mothers. More of the adolescent mothers bottlefed their infants (64.7%) while more of the nonadolescent mothers were breastfeeding (82.4%). More adolescents used their own mothers for questions about their infants (75.0%) and for regular child care (53.8%). The non-adolescents used friends, husbands, and professionals for infant questions (88.2%) and for regular child care (100.0%).

It was concluded that every mother's parenting skills need to be assessed on an individual basis. In this study the age of the mother did not affect her perception of her infant or her knowledge of developmental

norms.

Recommendations

Although no significant results were obtained with the Neonatal Perception Inventory scores in this study, the population of adolescent mothers still need special attention. Not all adolescent mothers have the opportunity or motivation to continue their education or to be exposed to classes in parenting skills and child development. Pregnancy continues to be the major cause for school drop-outs among adolescent girls in the United States (Atkyns, 1968). It would be interesting to determine whether adolescents who drop out of school have less realistic perceptions of their infants and less knowledge of developmental norms than their counterparts who complete high school.

Assertiveness training should be included in educational programs since adolescents need help in making and carrying out decisions about themselves and their infants. The adolescent mother needs to be encouraged to continue her education during and after her pregnancy. Support systems, such as her husband or family, should be made aware of the importance of an education for better personal and employment opportunities. Long-term research on adolescent participants of educational projects is essential to determine if the programs actually minimize the effects of early childbearing.

Both adolescents and nonadolescents should be educated regarding

their infants' capabilities and individualities. Inquiries regarding each of the behaviors described on the Neonatal Perception Inventory will determine whether there are any problems in those areas. The Neonatal Perception Inventory can be used as a screening tool in the early post-partum weeks to pinpoint high-risk infants. Mothers who perceive their infants as "average" or "less than average" need special guidance and follow-up. Their feelings about their infants and general life situation should be explored by the caregiver and appropriate intervention should begin if necessary.

The child's present development should be discussed with the mother and the expected development should be anticipated before the next contact. Stimulation suggestions should be appropriate to the child's present and potential capabilities.

One result of this study suggests that the adolescent continues to be dependent on her mother for questions about her child and for regular child care. Beliefs and practices of the infant's grandmother need to be assessed to determine whether they might contradict or interfere with other suggestions which the adolescent mother is receiving from caregivers. A healthy relationship between mother and daughter should be supported and fostered. The adolescent girl still has her own mothering needs, and fulfilling those needs can help her become a giving, caring person to her child. At the same time fostering self-confidence in the adolescent can help her take over her mothering role independently.

Since many adolescent mothers are married, the putative father needs to be considered as a partner in education for child care and parenting skills.

Finally this study suggests that age is not a significant factor in a mother's perception of her infant and child development. It is possible that this group of adolescent mothers were unusually positive in their perceptions and had more knowledge of developmental norms because of their education and support systems. However, the study supports the realization that each mother must be considered individually whether she is an adolescent or nonadolescent, and that assessments of her mothering skills are essential.

APPENDIX A

QUESTIONNAIRE

Demographic Data and Background Information

Age _____

Your birth date _____

Birth date of your baby _____

Marital Status

1. Single
2. Married
3. Divorced
4. Separated

Are you in attending school now?

1. Yes
2. No

Grades completed in school

1. Grade 1 2 3 4 5 6 7 8 9 10 11 12
2. College 1 2 3 4
3. Other _____

Do you work?

1. Yes
2. No

If yes, do you work

1. Full-time
2. Part-time

Do you live

1. By yourself
2. With your husband or boyfriend

3. With relatives
4. With a friend
5. In a home with other mothers or foster home

Income

1. Less than \$399/month
2. \$400-\$699/month
3. \$700-\$1099/month
4. \$1100 and above/month

Source of Income (Main Source)

1. Husband or Father of baby
2. Job
3. DFS Assistance
4. Your family or relatives
5. Other _____

Race

1. White
2. Black
3. Spanish American
4. Other _____

Who cares for your baby while you are work or school?

1. Friend
2. Babysitter
3. Husband or boyfriend
4. Day care center
5. Your mother
6. Another relative

Where do you go first when you have questions about your baby?

1. Your mother
2. Friend
3. Another relative
4. Nurse
5. Doctor
6. Book, magazine
7. Other _____

Have you cared for babies before you had your own?

1. Yes
2. No

If yes, was it

1. Babysitting
2. At a day care center
3. Younger relatives (brothers, sisters, nieces, nephews)

Method of feeding your baby

1. Breast
2. Bottle
3. Both

APPENDIX B

NEONATAL PERCEPTION INVENTORY

Average Baby Perception Inventory

1. How much crying do you think the average baby does?

a great deal a good bit moderate amount very little none

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

a great deal a good bit moderate amount very little none

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

a great deal a good bit moderate amount very little none

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

a great deal a good bit moderate amount very little none

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

a great deal a good bit moderate amount very little none

6. 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

Your Baby Perception Inventory

1. How much crying has your baby done?

a great deal
 a good bit
 moderate amount
 very little
 none

2. How much trouble has your baby had feeding?

a great deal
 a good bit
 moderate amount
 very little
 none

3. How much spitting up or vomiting has your baby done?

a great deal
 a good bit
 moderate amount
 very little
 none

4. How much difficulty has your baby had in sleeping?

a great deal
 a good bit
 moderate amount
 very little
 none

5. How much difficulty has your baby had with bowel movements?

a great deal
 a good bit
 moderate amount
 very little
 none

6. 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

The mother was given the Average Baby Perception Inventory with this explanation: "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."

When the mother had completed this part, she was given the Your

Baby Perception Inventory with this statement: "You have had a chance to live with your baby for at least a month now. Please check the blank you think best describes your baby."

Both inventories had six single-item scales, with values of one to five assigned to each of the scales. The blank signifying "none" was valued at one, and "a great deal" was valued at five. The lower scales represented the more desirable behavior.

The six scales were totaled and a score was obtained from each question set. The final Neonatal Perception Inventory score was the Your Baby Perception Inventory score subtracted from the Average Baby Perception Inventory score. Positive scores were considered "better than average" while negative and zero scores were considered "below average."

APPENDIX C

PERCEPTIONS OF DEVELOPMENTAL NORMS

1. At what age (in months) do you think the average baby gets his first tooth?
2. At what age (in months) do you think the average baby begins to crawl?
3. At what age (in months) do you think the average baby laughs?
4. At what age (in months) do you think the average baby is able to see?
5. At what age (in months) do you think the average baby can pull himself to stand?
6. At what age (in months) do you think the average baby can hear?
7. At what age (in months) do you think the average baby can be toilet trained for urinating or wetting?
8. At what age (in months) do you think the average baby can be toilet trained for bowels?
9. At what age (in months) do you think the average baby begins to walk?
10. At what age (in months) do you think the average baby knows he is naughty or knows "no"?

The mother was handed the Perceptions of Developmental Norms with the following explanation: "You probably have some ideas about how babies develop. Please circle the month in which you think the average baby is able to do the following things."

The Perceptions of Developmental Norms were scored by adding each month circled by the mother and obtaining a total developmental norm score. The mother's total score was then compared to 96 which was the total score for the accepted months of the developmental norms. Frankenberg and Dodds (1967) and Caplan, 1971, 1977) were used as a basis for the accepted developmental norms. The average month was the one in which 50% of the children passed the developmental milestone.

Scores below 96 were assigned a negative sign and scores above 96 were assigned a positive sign. Negative scores represented those mothers whose answers indicated children would accomplish the milestones earlier than the accepted norm. Positive scores represented mothers whose answers indicated children would accomplish the milestones later than normal.

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