EXPECTATIONS FOR INFANT DEVELOPMENT BY PARENTS OF PRETERM INFANTS, EXPERIENCED PARENTS AND EXPECTANT PARENTS

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CHAPTER I

INTRODUCTION

Problem

Innovations and improvements in medical technology in the past decade have increased the incidence of survival of all preterm infants but most especially the very low birth weight infants (under 1500 grams). Extensive medical interventions including vigorous ventilation, oxygenation, drug therapy, and noisy mechanical monitoring of vital signs are used to maintain an artificial environment effective in supporting life for these fragile infants.

According to Caputo and Mandell (1970) prematurity refers to a birth weight of 2500 grams or less. Battaglia and Lubchenco (1967), however, have argued that birth weight is an ineffective measure of prematurity because it encompasses small for gestational age full-term infants and excludes large for gestational age preterm infants. They have proposed that preterm be used to designate all infants born prior to 38 completed weeks of gestation. Werthman (1981) reports that premature labor occurs in 10 percent of the pregnancies of white mothers and 20 percent of the pregnancies of black mothers in the United States.

Schwartz and Schwartz (1977) reported five out of every one hundred newborns or 150,000 newborns per year require treatment in an intensive care nursery. They also reported several factors associated with premature birth. These include:

1. Premature children are 16 times more likely to die in the first month as full-term infants.

2. The incidence of neurological and psychological abnormalities occurring in the first year is four times as high for small prematures as for full-term infants.

3. Premature children are 10 times more likely to be retarded as full-term infants.

4. The preterm infant has a much greater risk of failure to thrive, child abuse, and sudden infant death than a full-term infant.

5. Teenage mothers are at risk for having a preterm child.

6. First children are statistically more likely to be premature.

7. Infants born in rapid succession are more likely to be premature.

8. Multiple pregnancies are more likely to result in premature births.

In addition to these complications associated with prematurity, Caputo and Mandell (1970) have identified three major variables correlated with low birth weight. These include race, socioeconomic status and pregnancy complications. While the dangers for the infant associated with a preterm delivery are obvious, it is also known that the preterm birth effects the parents and in turn the parent-child relationship. Als and Brazelton (1979) describes the parents' reaction in this way:

> Parents seem to be biologically programed to expect full-term normal newborn behavior. Not only are parents of preterm infants deprived of the realization of this expectation by having a preterm infant, but they are at a premature stage of development themselves, deprived of the last weeks and months of readying themselves for interaction with their infant. In addition, they are suffering through

> an inevitable grieving process in the early postnatal period which is likely to retard them in making the adjustment in their behavior necessary for facilitating a premature with his fragile organization. We, thus, are dealing with two premature subsystems of an interactive feedback system in which both subsystems may be showing distorted behavioral patterns (p. 191).

This unfulfilled expectation for normal full-term newborn behavior often continues to plague the parent as the child grows and develops. It is generally recognized that the preterm child develops more slowly than the full-term child during the first two years of life (Field, Dempsey, and Shuman, 1981). Other researchers have found developmental delays resulting from prematurity detectable as late as eight or nine years of age (DeHirsch, Jansky, and Langford, 1966; Hunt, 1981).

The importance of the parents' awareness of the preterm child's needs was discovered by Douglas (1956) who found preterm children of higher socioeconomic status to be less impaired than those of lower socioeconomic status. He attributed this finding to the greater awareness of the needs of preterm infants among parents of higher socioeconomic status.

Purpose

The purpose of this study is to determine the extent to which parents of premature children are modifying their expectations for their child's growth and development during his/her first two years of life to take into account the effects of the child's prematurity. More specifically, the purpose of this study is to assess whether a discrepancy exists between parents of preterm infants, experienced parents and expectant parents in their expectations for infants' attainment of developmental milestones.

Hypotheses

The following hypotheses were examined:

1. There is no significant difference in parents of preterm infants, experienced parents, and expectant parents in their expectations for children's attainment of developmental milestones.
2. There is no significant difference in respondent's expectations for children's attainment of developmental milestones according to the following:
   a) Age of respondent
   b) Sex of respondent
   c) Educational level of respondent

Definitions

Several terms have specific meaning as applied to this study. In order to avoid misinterpretation, the following definitions are given:

Development - "The refinement, improvement, or expansion of a component or skill" (Schuster and Ashburn, 1980, p. 892).

Full-Term - "Term has been referred to as encompassing all infants born with gestational ages from 38th completed week up to but not including the 42nd completed week" (Battaglia and Lubchenco, 1967, p. 159).

Gestational Age - "estimated from first day of last menstrual period and classified by completed weeks" (Battaglia and Lubchenco, 1967, p. 160).

Preterm or Premature - "all infants less than 38 weeks gestational age, i.e. 37 weeks and 6 days or less" (Battaglia and Lubchenco, 1967, p. 160).

CHAPTER II

REVIEW OF LITERATURE

Consequences of Prematurity

With the medical innovations now available in neonatal intensive care units, the survival rate for premature infants of very low birth weight and short gestational age continues to rise. As a result, there is a growing population of infants discharged to families often unprepared for the long-term medical and developmental effects stemming from the child's premature birth.

An historical review of the literature concerning the consequences of a premature birth as compiled by Desmon, Wilson, Alt, and Fisher (1980) reveals conflicting opinions. They report as early as 1849, prematurity was implicated as a possible cause of mental deficiency. In 1862, prematurity was implicated as a factor causing cerebral palsy. In West Germany in 1913 few developmental disabilities were found in older surviving premature children. In 1919 early somatic growth delays persisting through five and six years of age with a high incidence of central nervous system disorders were related to prematurity. In contrast, in Norway in 1930 no direct relationship between IQ and birth weight was found. Older premature children were found to have a high incidence of mental deficiency in a 1934 study.

Even though by 1950 opinions on the outcome of a premature birth were still divergent, the consensus of the research tended to indicate

premature infants as a group, had a higher incidence of central nervous system disorders and more disorders of vision, hearing, behavior, attention, speech and reading than did term infants of comparable ages. Another significant conclusion was that premature children tended to develop more slowly during the first two years of life than did full-term children.

A review of more recent literature continues to point out that the premature infant is at risk for developmental and medical problems. Lubchenco, Delivoria-Papadopoulas, and Searls (1972) report on a study of 133 infants born between 1949 and 1953 with birth weights of 1500 grams or less. The study, conducted 10 years after birth, revealed an overall incidence of handicaps of 66 percent. The highest incidence of handicapping conditions (85%) occurred in the group of children with the lowest gestation and birth weight. Those children with the largest birth weight and longest gestational period had the lowest incidence of handicaps (20%).

DeHirsch et al. (1966) compared 53 term children and 53 preterm children at the end of kindergarten, first and second grade. Although all of the children were within the normal IQ range, the premature children consistently did less well on the battery of tests administered. DeHirsch et al. concluded that the absence of early neurological deficits in the premature children did not rule out learning difficulties in later years. He felt those aspects of the learning process which require a high degree of differentiation, such as reading and spelling, indicate subtle dysfunctions resulting from prematurity persist on into school age.

A study of 95 children born in London between 1966 and 1970 and weighing 1500 grams or less was conducted by Stewart and Reynolds (1974). Their results, based on the children's performance at 2.10 to 7.10 years of age, indicate only 9.5 percent of the children had handicaps which would prevent them from functioning normally in society. Only five of the children had abnormalities which would require special education facilities.

Hunt (1981) studied 114 children born at the University of California in San Francisco between 1965 and 1975. The children's development was assessed from six months to eight years of age. She concluded that four out of ten children weighing 1500 grams or less would experience developmental problems in childhood that would be of consequence and which might require special education efforts. Her research indicated the extent of the handicap was strongly influenced by environmental circumstances. She further concluded that unexpected developmental problems may occur in premature children as late as eight years of age.

Field et al. (1981) in her study of 151 preterm, term, and post term infants born between February 1975 and November 1976, revealed the premature child to be developmentally at risk from birth through two years of age. Her sample of premature infants consisted of 46 children with respiratory distress syndrome with an average birth weight of 1600 grams and an average gestational age of 32 weeks. The premature children showed delays in mental and motor development as early as the newborn period and continuing throughout two years. By two years of age additional delays were noted in social maturity and language production. The premature children were also showing behavior problems

such as hyperactivity and short attention span at the two year assessment.

In summation, the following are among the sequelae of prematurity listed by Caputo and Mandell (1970):

1. There is evidence of significant intellectual impairment among the very low birth weight premature child. The heavier infants appear only minimally impaired.

2. Behavior problems such as hyperactivity and other disorganized behavior are more characteristic of premature children.

3. Language development and reading are often delayed in premature children.

4. Deficits in physical growth, motor behavior, and neurological functioning are correlated with prematurity.

Parenting the Preterm Infant

A review of the literature also reveals the consequences a premature birth has on the mother-infant relationship. Kaplan and Mason (1960) have identified four psychological tasks a mother of a premature infant must master beginning with the birth of the infant to insure a future healthy mother-child relationship. The mother must first prepare herself for the possible loss of the child, termed anticipatory grief. Second, the mother must face and acknowledge her own failure to deliver a normal full-term infant. The third task is the resumption of the process of relating to the baby. Finally, the mother must come to understand how a premature infant differs from a normal baby in terms of its special needs and growth patterns.

As pointed out in the literature, the effects of prematurity are especially evident during the first two years of life and possibly on

into school age. The successful completion of this fourth task may therefore be hindered by the mother's expectation that her child will follow the same timetable for attainment of the developmental milestones as a full-term child.

In comparing the attitudes of parents of premature children with those of parents of full-term children, Jeffcoate, Humphrey, and Lloyd (1979) identified four areas of disturbance in the parent-child relationship of families with premature children. They found delays in maternal attachment to the child, negative maternal perceptions of the child as compared with expectations of an "average baby," persistent parental anxiety about leaving the child with a sitter, and abuse or neglect of the premature children. The mothers of the premature children described them as being more difficult than expected and "worse than average" in terms of such behaviors as crying and sleeping.

Summary

The literature clearly indicates the preterm child's development is affected for at least the first two years of life and possibly as late as eight or nine years of age as a consequence of his/her preterm birth. The literature further indicates prematurity causes a crisis in the parent-child relationship. The parent's resolution of this crisis and subsequent realistic expectations for the child's development are critical factors affecting the future development of the child. Other than Field, Widmayer, and Stringer's (1980) work with black teenage mothers, no research on parents' expectations for attainment of developmental milestones could be found. Because of Kaplan and Mason's (1960) fourth task and the findings of Jeffcoate's et al. (1979)

findings about parents' perceptions of premature children, the importance of this study becomes evident.

CHAPTER III

METHOD AND PROCEDURE

Selection of Subjects

This study was conducted during the fall semester of 1982. The 148 subjects in this study were residents of Northeast Oklahoma and were divided into three groups. The subjects in the first group were mothers of preterm children five years of age and under. These 20 respondents were contacted through the Miami Head Start Program, the Miami United Methodist Church's Mother's Day Out Program, Northeast Oklahoma A & M Junior College Faculty and Lab School, an article appearing in the Miami News Record, and various hospital personnel. Letters and telephone contacts explaining the study were used to determine those parents who were willing to participate in the study.

Subjects in both the second and third groups were couples who attended prepared childbirth classes at Miami Baptist Hospital in Miami, Oklahoma during the fall of 1982. The females attending the classes were from six to nine months pregnant. Class participants were divided into two groups based on their previous parenting experience. Subjects in the second group had one or more full-term children and were described as Experienced Parents while those subjects without children were described as Expectant Parents and composed the third group.

Instrumentation

The questionnaire utilized in this study combined the instruments of two previous researchers of parental expectations for children's attainment of developmental milestones. The first questionnaire consisted of ten items, developed by Dr. Vladimir DeLissovoy of Pennsylvania State University (1973) to determine adolescent parents' knowledge of basic norms in child development. Ten additional items were utilized from Dr. Pamela I. Berg's Parental Expectations Questionnaire. Berg's (1975) questionnaire was developed for use in her doctoral dissertation at the University of Southern California to measure abusive parents' knowledge of child development. It consisted of 30 behaviors children can be expected to perform between six months and ten years of age. Those items selected from Berg's instrument were modified to match the form of DeLissovoy's questions. The resulting 20 item questionnaire was administered to subjects in all three groups. The group of preterm parents were mailed the questionnaire following the initial telephone contact. Those respondents in the experienced and expectant groups were administered the questionnaire at their initial childbirth class at Miami Baptist Hospital, Miami, Oklahoma.

In addition, a telephone interview was conducted with the 20 mothers of preterm children. The items on the interview sheet were indicated by the literature as possible concerns experienced by parents of preterm children (Appendix B).

Analysis of Data

Frequencies and percentages were used to analyze various background characteristics of the respondents. Chi-square tests were utilized on

each item on the questionnaire to examine the following hypotheses:

1. There is no significant difference in parents of preterm children, experienced parents, and expectant parents in their expectations for children's attainment of developmental milestones.
2. There is no significant difference in respondent's expectations for children's attainment of developmental milestones according to the following:
   a) Age of respondent
   b) Sex of respondent
   c) Educational level of respondent.

CHAPTER IV

RESULTS

Description of Subjects

A detailed description of the 148 subjects who participated in this study is presented in TabIe I. Fifty percent of the subjects fell within the 19-24 years age range. The sample was 39.2 percent male and 60.8 percent female. Fifty-eight (39.2%) respondents had graduated from high school while 33.1 percent had attended or were attending college. The majority (72.4%) of the subjects resided in hometowns with populations less than 10,000.

All of the respondents in the group of 20 parents of preterm infants were female with 35 percent falling within the 25-29 years age range and 35 percent falling within the 30-42 years age range. Forty percent of these parents had graduated from college. The majority of respondents in this group (55%) were from hometowns with populations of 2,501-25,000.

The largest percentage (37.9%) of the 29 experienced parents were within the 19-24 years age range. Females represented 51.7 percent of this group and males represented 48.3 percent. The highest percentage (44.8%) of these subjects had graduated from high school and lived in hometowns of 2,501-10,000 (34.5%).

The majority (59.6%) of the expectant parents fell within the 19-24 years age range. Females represented 55.5 percent of this sample

TABLE I

CHARACTERISTICS OF ALL RESPONDENTS

Variable	Classification	Parents of Preterm Infants N=20 No.	%	Experienced Parents N=29 No.	%	Expectant Parents N=99 No.	%	All Respondents N=148 No.	%
Age	16-18	2	10	0	0	7	7.1	9	7.1
	19-24	4	20	11	37.9	59	59.6	74	50.0
	25-29	7	35	8	27.6	20	20.2	35	23.6
	30-42	7	35	8	27.6	7	7.1	22	14.9
	No response	0	0	2	6.9	6	6.1	8	5.4
Sex	Male	0	0	14	48.3	44	44.4	58	39.2
	Female	20	100	15	51.7	55	55.5	90	60.8
Respondents' Highest Level of Education	Attended or Attending High School	1	5	3	10.3	8	8.1	12	8.1
	Graduated from High School	5	25	13	44.8	40	40.4	58	39.2
	Attended or Attending College	6	30	9	31.0	34	34.3	49	33.1
	Graduated from College	8	40	4	13.8	17	17.2	29	19.6
Size of Hometown	Farm	2	10	6	20.7	26	26.3	34	23.0
	Less than 1,000	2	10	3	10.3	12	12.1	17	11.5
	1,001-2,500	1	5	6	20.7	15	15.2	22	14.9
	2,501-10,000	5	25	10	34.5	19	19.2	34	23.0
	10,001-25,000	6	30	3	10.3	18	18.2	27	18.2
	25,001-50,000	1	5	0	0	5	5.1	6	4.1
	50,001-100,000	0	0	0	0	1	1.0	1	.7
	100,001 or more	3	15	1	3.4	3	3.0	7	4.7

and males represented 44.4 percent. The largest percentage (40.4%) of this group had graduated from college and lived on a farm (26.3%).

Table II presents the order in which respondents ranked seven sources of expectations for children's development. Parents of preterm children listed their own parents and/or family members, own husband, and classes in child development and/or parenting as their first three sources of expectations. Those respondents in the expectant group ranked husband or wife, parents and/or family members, and the church/minister/Bible as their first three sources of expectations.

TABLE II

SOURCES OF PARENTING INFORMATION*

Source	Ranking			
	Total Sample	Preterm Parents	Experienced Parents	Expectant Parents
Husband or Wife	1	2	1	1
Parents and/or Family Members	2	1	2	2
Friends/Neighbors	6	6	6	6
Professional Consultant	3	4	3	4
Classes in Child Development/Parenting	5	3	5	5
Church/Minister/Bible	4	5	4	3
Media	7	7	7	7

*Questionnaire #6 - Rank the following sources of parenting information in order of their influence upon your expectations for children. Most influence = 1, least influence = 7.

Expectations for Development

Respondents were asked to report the age at which children were expected to attain 20 developmental milestones or behaviors. Developmental milestones included smiling, turning from stomach to back, sitting alone, grasping voluntarily, standing with help, walking, toilet training for bowel and bladder, drinking from a cup, babbling two syllables, saying first word, waving bye-bye, and following simple instructions. Behaviors included sleeping through the night, recognizing mother's face, responding to name, age to begin teaching the child to mind, understanding "no", amount of crying, and age child knows he/she has done something wrong.

Table III describes the respondents' answers in relation to their parenting experience: parent of a preterm infant, experienced parent, or expectant parent. The largest percentage of respondents in each of the three groups of parents are in agreement on the age at which they expect infants to perform 13 (65%) of the 20 items on the questionnaire. These items included turning from stomach to back, grasping voluntarily, sleeping through the night, recognizing mother, standing with help, drinking from a cup, babbling two syllables, saying first word, waving bye-bye, responding to name, teaching to mind, amount of crying, and knowing when they have done something naughty.

Respondents agreed children would turn from stomach to back between three and five months of age. Schuster and Ashburn (1980) report the average age for the development of this skill to be three months. Respondents expect a voluntary grasp to occur at three months or less. Schuster and Ashburn report the average age for this to occur is four months, and that by three months of age 70 percent of infants are

TABLE III

BEHAVIOR EXPECTATIONS ACCORDING TO PARENTING EXPERIENCE

Behavior	Preterm N=20		Experienced Parents N=29		Expectant Parents N=99	
	No.	%	No.	%	No.	%
Smile						
1 week	0	0	5	17.2	27	27.3
3 weeks	8	40	11	37.9	43	43.4
4-8 weeks	11	55	13	44.8	29	29.3
6 months	1	5	0	0	0	0
Turn Over						
2 months or less	8	40	6	20.7	35	35.4
3-5 months	10	50	21	72.4	52	52.5
6 months or more	2	10	2	6.9	12	12.1
Sit Alone						
5 months or less	6	30	12	41.4	26	26.3
6-7 months	12	60	12	41.4	47	47.5
8 months or more	2	10	5	17.2	26	26.3
Grasp Voluntarily						
3 months or less	11	55	22	75.9	73	73.7
4-6 months	7	35	5	17.2	18	18.2
7 months or more	1	5	2	6.9	8	8.1
No response	1	5	0	0	0	0
Sleep Through Night						
3 months or less	12	60	17	65.5	52	52.5
4-6 months	7	35	9	31.0	23	23.2
7 months or more	1	5	3	10.3	20	20.2
No response	0	0	0	0	4	4.0
Recognize Mother						
2 months or less	12	60	22	75.9	83	83.8
3 months or more	8	40	8	27.6	15	15.2
No response	0	0	1	3.4	1	1.0
Stand with Help						
6 months or less	1	5	6	20.7	30	30.3
7-10 months	15	75	20	69.0	61	61.6
11 months or more	4	20	3	10.3	8	8.1
Walk						
10 months or less	5	25	14	48.3	58	58.6
11-14 months	14	70	12	41.4	34	34.3
15 months or more	1	5	3	10.3	6	6.1
No response	0	0	0	0	1	1.0
Bladder Trained						
18 months or less	7	35	18	62.1	71	71.7
19-30 months	13	65	11	37.9	27	27.3
No response	0	0	0	0	1	1.0
Bowel Control						
18 months or less	1	5	10	34.5	41	41.4
19-24 months	9	45	13	44.8	43	43.4
25 months or more	9	45	6	20.7	12	12.1
No response	1	5	0	0	3	3.0

TABLE III (Continued)

Behavior	Preterm N=20		Experienced Parents N=29		Expectant Parents N=99	
	No.	%	No.	%	No.	%
Drink from Cup						
4-12 months	9	45	17	58.6	46	46.5
13-18 months	7	35	9	31.0	23	23.2
19-36 months	4	20	2	6.9	29	29.3
No response	0	0	1	3.4	1	1.0
Babble Two Syllables						
2-7 months	7	35	11	37.9	41	41.4
8-12 months	9	45	15	51.7	44	44.4
13-24 months	4	20	3	10.3	13	13.1
No response	0	0	0	0	1	1.0
Say First Word						
8 months or less	3	15	5	17.2	11	11.0
9-12 months	8	40	14	48.3	48	48.5
13-17 months	3	15	3	10.3	7	7.1
18 months or more	6	30	7	24.1	32	32.3
No response	0	0	0	0	1	1.0
Wave Bye-Bye						
8 months or less	5	25	6	20.7	24	24.2
9-12 months	12	60	19	65.5	51	51.5
13 months or more	3	15	4	13.8	23	23.2
No response	0	0	0	0	1	1.0
Respond to Name						
1-5 months	6	30	11	37.9	28	28.3
6-11 months	10	50	16	55.2	45	45.5
12 months or more	4	20	2	6.9	23	23.2
No response	0	0	0	0	3	3.0
Teach to Mind						
6 months or less	7	35	8	27.6	30	30.3
7-12 months	11	55	19	65.5	50	50.5
13 months or more	2	10	2	6.9	17	17.2
No response	0	0	0	0	2	2.0
Understand "No"						
7 months or less	5	25	5	17.2	37	37.4
8-11 months	6	30	13	44.8	22	22.2
12 months or more	9	45	11	37.9	38	38.4
No response	0	0	0	0	2	2.0
Follow Instructions						
1-12 months	8	40	12	41.4	40	40.4
13-18 months	8	40	10	34.5	24	24.2
19-48 months	4	20	6	20.7	35	35.4
No response	0	0	1	3.4	0	0
Amount of Crying						
Not at all	3	15.0	0	0	5	5.1
Very little	0	0	3	10.3	32	32.3
Depends on baby	17	85.0	25	86.2	60	60.6
A lot	0	0	1	3.4	2	2.0
Know When They've Done Something Naughty						
5-12 months	9	45	12	41.4	47	47.5
13-18 months	7	35	10	34.5	22	22.2
19 months - 60 months	4	20	7	24.1	29	29.3
No response	0	0	0	0	1	1.0

sleeping through the night. The majority of respondents in this study expected the behavior at three months of age or earlier. The majority of respondents in all three groups agreed infants would stand with help between 7 and 10 months. Schuster and Ashburn give 10 months as the average age for this behavior to occur. While the largest percentage of respondents in all three parenting groups indicated they expect children to drink from a cup without spilling between 4 and 12 months, Schuster and Ashburn indicate 18 months is the average age for this skill to develop. Babbling two syllables was predicted by the largest percentage of all respondents between 8 and 12 months. Schuster and Ashburn report babbling occurs in most infants by four to five months of age. While respondents predict the children will say their first word between 9 and 12 months, Schuster and Ashburn indicate 12 months is the average age for the behavior to occur. Caplan (1971) reports infants will wave bye-bye at nine months of age. Respondents agreed this behavior would occur between 9 and 12 months. Eight months is the age Caplan reports infants will respond to their name. The respondents agreed this behavior would occur between 6 and 11 months.

The largest percentage of preterm (55%) and experienced parents (44.8%) report expecting the baby to smile between four and eight weeks of age while 43.4 percent of the expectant parents expect a smile at three weeks of age. DeLissovoy (1973) reports six weeks as the average age for this behavior indicating preterm and experienced parents had more accurate expectations for this behavior. Six to seven months is the age at which 60 percent of the preterm and 47.5 percent of the expectant parents expect a child to sit alone. Experienced parents are equally divided (41.4%) between sitting alone at five months or less

and six to seven months. Schuster and Ashburn (1980) report eight months is the average age for this behavior to occur. Preterm infants' parents expect children to walk between 11 and 14 months (70%) while both experienced (48.3%) and expectant parents (58.6%) expect children to walk at 10 months or less. Parents of preterm infants were closer to the average age of 12 months that walking actually occurs (Schuster and Ashburn, 1980). Nineteen to 30 months is the age the majority (65%) of preterm parents expect bladder control. The majority of experienced (62.1%) and expectant parents (71.7%) predict children will have bladder control at 18 months or younger. Bowel control is expected by experienced (44.8%) and expectant parents (43.4%) between 19 and 24 months. Preterm parents are equally divided between 19 to 24 months and 25 months or later. Schuster and Ashburn give 2.6 years as the average age of toilet training, indicating parents of preterm infants had the most accurate expectations for these skills.

The largest percentage of preterm (45%) and expectant parents (38%) expect children to understand what "no" means at 12 months or later. Experienced parents (44.8%) expect this behavior between 8 and 11 months. Caplan (1971) agrees to expect children to understand "no" at 11 months of age. Forty percent of preterm parents expect children to follow simple instructions between 1 and 12 months and 40 percent between 13 and 18 months. The largest percentage of experienced (41.4%) and expectant parents (40.4%) expect this behavior at 12 months or younger. Schuster and Ashburn (1980) however, indicate the average age for this behavior is 18 months.

Table IV shows at what age the 20 behaviors are expected according to the respondents' ages. The largest percentage in all four age

TABLE IV

BEHAVIOR EXPECTATIONS ACCORDING TO AGE OF RESPONDENT

Behavior	16-18 Years N=9		19-24 Years N=74		25-29 Years N=35		30-42 Years N=22	
	No.	%	No.	%	No.	%	No.	%
Smile								
1 week	0	0	22	29.7	8	22.9	1	4.5
3 weeks	6	66.7	31	41.9	15	42.9	7	31.8
4-8 weeks	3	33.3	21	28.4	12	34.3	13	59.1
6 months	0	0	0	0	0	0	1	4.5
Turn Over								
2 months or less	3	33.3	21	28.4	14	40.0	9	40.9
3-5 months	6	67.7	42	56.8	19	54.3	10	45.5
6 months or more	0	0	11	14.9	2	5.7	3	13.6
Sit Alone								
5 months or less	3	33.3	18	24.3	13	37.1	10	45.5
6-7 months	3	33.3	35	47.3	19	54.3	7	31.8
8 months or more	3	33.3	21	28.4	3	8.6	5	22.7
Grasp Voluntarily								
3 months or less	7	77.8	54	73.0	24	68.6	18	81.8
4-6 months	1	11.1	13	17.6	10	28.6	4	18.2
7 months or more	1	11.1	7	9.5	0	0	0	0
No response	0	0	0	0	1	2.9	0	0
Sleep Through Night								
3 months or less	3	33.3	39	52.7	21	60.0	14	63.6
4-6 months	6	66.7	17	23.0	9	25.7	5	22.7
7 months or more	0	0	17	23.0	2	5.7	3	13.6
No response	0	0	1	1.4	3	8.6	0	0
Recognize Mother								
2 months or less	7	77.8	63	85.1	22	62.9	19	86.4
3 months or more	2	22.2	11	14.9	11	31.4	3	13.6
No response	0	0	0	0	2	5.7	0	0
Stand with Help								
6 months or more	2	22.2	20	27.0	7	20.0	5	22.7
7-10 months	7	77.8	47	63.5	25	71.4	12	54.5
11 months or more	0	0	7	9.5	3	8.6	5	22.7
Walk								
10 months or more	4	44.4	39	52.7	19	54.3	9	40.9
11-14 months	5	55.6	30	40.5	12	34.3	11	50.0
15 months or more	0	0	5	6.8	3	8.6	2	9.1
No response	0	0	0	0	1	2.9	0	0
Bladder Trained								
18 months or less	7	77.8	51	68.9	21	60.0	12	54.5
19-30 months	2	22.2	23	31.1	13	37.1	10	45.5
No response	0	0	0	0	1	2.9	0	0
Bowel Control								
18 months or less	1	11.1	30	40.5	13	37.1	3	13.6
19-24 months	7	77.8	30	40.5	16	45.7	11	50.0
25 months or more	0	0	13	17.6	5	14.3	6	27.3
No response	1	11.1	1	1.4	1	2.9	2	9.1

TABLE IV (Continued)

Behavior	16-18 Years N=9		19-24 Years N=74		25-29 Years N=35		30-42 Years N=22	
	No.	%	No.	%	No.	%	No.	%
Drink from Cup								
4-12 months	4	44.4	38	51.4	17	48.6	10	45.5
13-18 months	3	33.3	17	23.0	8	22.9	7	31.8
19-36 months	1	11.1	18	24.3	10	28.6	3	13.6
No response	1	11.1	1	1.4	0	0	2	9.1
Babble Two Syllables								
2-7 months	4	44.4	29	39.2	12	34.3	10	45.5
8-12 months	4	44.4	36	48.6	14	40.0	10	45.5
13-24 months	1	11.1	9	12.2	8	22.9	2	9.1
No response	0	0	0	0	1	2.9	0	0
Say First Word								
8 months or less	1	11.1	9	12.2	3	8.6	4	18.2
9-12 months	5	55.6	35	47.3	16	45.7	11	50.0
13-17 months	0	0	7	9.5	3	8.6	2	9.1
18 months or more	3	33.3	23	31.1	12	34.3	5	22.7
No response	0	0	0	0	1	2.9	0	0
Wave Bye-Bye								
8 months or less	3	33.3	16	21.6	8	22.9	6	27.3
9-12 months	5	55.6	43	58.1	19	54.3	11	50.0
13 months or more	1	11.1	15	20.3	7	20.0	5	22.7
No response	0	0	0	0	1	2.9	0	0
Respond to Name								
1-5 months	2	22.2	20	27.0	14	40.0	7	31.8
6-11 months	5	55.6	38	51.4	14	40.0	10	45.5
12 months or more	2	22.2	14	18.9	6	17.1	5	22.7
No response	0	0	2	2.7	1	2.9	0	0
Teach to Mind								
6 months or less	2	22.2	26	35.1	8	22.9	8	36.4
7-12 months	6	66.7	41	55.4	20	57.1	9	40.9
13 months or more	1	11.1	7	9.5	5	14.3	5	22.7
No response	0	0	0	0	2	5.7	0	0
Understand "No"								
7 months or less	2	22.2	26	35.1	10	28.6	7	31.8
8-11 months	3	33.3	24	32.4	8	22.9	4	18.2
12 months or more	4	44.4	23	31.1	17	48.6	11	50.0
No response	0	0	1	1.4	0	0	0	0
Follow Instructions								
1-12 months	3	33.3	33	44.6	14	40.0	8	36.4
13-18 months	3	33.3	21	28.4	9	25.7	7	31.8
19-48 months	3	33.3	20	27.0	11	31.4	7	31.8
No response	0	0	0	0	1	2.9	0	0
Amount of Crying								
Not at all	0	0	4	5.4	2	5.7	2	9.1
Very little	1	11.1	24	32.4	5	14.3	4	18.2
Depends on baby	8	88.9	44	59.5	27	77.1	16	72.7
A lot	0	0	2	2.7	1	2.9	0	0
Know They've Done Something Naughty								
5-12 months	4	44.4	34	45.9	15	42.9	11	50.0
13-18 months	2	22.2	20	27.0	11	31.4	4	18.2
19-60 months	3	33.3	18	24.3	9	25.7	7	31.8
No response	0	0	2	2.7	0	0	0	0

categories are in agreement as to the age 11 (55%) of the questionnaire items are expected. Items of agreement include turning over, grasping voluntarily, recognizing mother, standing with help, trained for bladder control, drinking from a cup, saying first word, waving bye-bye, beginning to teach child to mind, amount of crying, and knowing when they have done something naughty.

The respondents agreed that children would turn from stomach to back between three and five months. The average for this behavior to occur is three months (Schuster and Ashburn, 1980). Respondents expected children to grasp voluntarily at three months or earlier whereas Schuster and Ashburn indicate the average age for this behavior is four months. Schuster and Ashburn report 2.6 years is a more accurate expectation. Drinking from a cup without spilling occurs on the average at 18 months according to Schuster and Ashburn, however, respondents report expecting this behavior between 4 and 12 months. Respondents expect children to say their first word between 9 and 12 months. Schuster and Ashburn reported 12 months is the actual average for this skill. The ability to wave bye-bye is expected by respondents in all age categories between 9 and 12 months which agrees with Caplan (1971) who reports this occurs at nine months of age.

The largest percentage of respondents (66.7%, 41.9%, and 42.9%) in the age categories under 30 expect an infant to smile at three weeks. The majority (59.1%) of the respondents in the 30-42 age range expect smiling at four to eight weeks. DeLissovoy (1973) agrees with the 30-42 year old respondents in that six weeks is the average age for infants to smile.

Adolescent parents (16-18 years) are equally divided (33.3%) at

the age at which they expect a child to sit alone. The majority of respondents 19-24 years (56.8%) and 25-29 years (54.3%) expect children to sit alone between six and seven months of age while 45.5 percent of expectant parents expect this milestone at five months or less. Schuster and Ashburn (1980) report eight months is a more accurate average for this behavior. The majority of adolescent parents (66.7%) predict infants will sleep through the night between four and six months. The majority of respondents in the other three age groups expect this behavior at three months or less which agrees with Schuster and Ashburn's report that 70 percent of infants sleep through the night at three months of age. Walking is expected by the largest percentage of parents 16-18 years (55.6%) and 30-42 years (50.0%) between 11 and 14 months. This agrees with Schuster and Ashburn who report 12 months as the average age for walking. Both respondents in the 19-24 years range (52.7%) and the 25-29 years range (54.3%) expect walking at 10 months or younger.

The largest percentages of respondents in the 16-18 years range (77.8%), the 25-29 years range (45.7%) and the 30-42 years range (50.5%) expect bowel control at 19-24 months. Those respondents in the 19-24 years range are equally divided with 40.5 percent expecting bowel control at 18 months or younger and 40.5 percent at 19-24 months. Schuster and Ashburn (1980) report 2.6 years as the average age for both of these skills.

Respondents in both the 16-18 and 30-42 years range are equally divided between two and seven months and eight to twelve months as the age when children will babble two syllables. The largest percentage in both 19-24 years range (48.6%) and the 25-29 years range (40.0%)

felt this would occur between eight and twelve months. Four to five months is the average age Schuster and Ashburn (1980) give for babbling.

The largest percentage of respondents 16-18 years (55.6%), 19-24 years (51.4%) and 30-42 years (45.5%) agreed children will respond to their name between six and eleven months. Of those respondents in the 25-29 years range, 40 percent felt it would occur between one and five months and 40 percent between six and eleven months. Eight months is the average age for this response according to Caplan (1971).

Respondents in the 19-24 years range (35.1%) felt children would understand what "no" means at seven months or less. The largest percentages in the other three age ranges agreed this behavior would occur at 12 months of age or later while Caplan (1971) reports eight months is the average age for this behavior. Adolescent parents were equally divided at 33.3 percent in each category as to the age children could follow simple instructions. The largest percentages in the other three age ranges agreed this behavior would occur at 12 months or younger. Eighteen months is the average age this skill occurs according to Schuster and Ashburn (1980).

Table V reports the ages behaviors are expected for infants by sex of respondents. The largest percentages of answers for ages at which behaviors were expected were the same for both sexes on 18 of the 20 items (90%) on the questionnaire. Respondents disagreed as to the age infants will smile. The largest percentage of male subjects (34.5%) predicted this behavior would occur at one week while 47.8 percent of the females predicted it would occur at three weeks. Both sexes expected smiling earlier than DeLissovoy's (1973) reported average of six weeks. Male respondents were equally divided as to the age children

TABLE V

BEHAVIOR EXPECTATIONS ACCORDING TO SEX OF RESPONDENT

Behavior	Male N=58		Female N=90	
	No.	%	No.	%
Smile				
1 week	20	34.5	12	13.3
3 weeks	19	32.8	43	47.8
4-8 weeks	19	32.8	34	37.8
6 months	0	0	1	1.1
Turn Over				
2 months or less	21	36.2	28	31.1
3-5 months	29	50.0	54	60.0
6 months or more	8	13.8	8	8.9
Sit Alone				
5 months or less	15	25.9	29	32.2
6-7 months	23	39.7	48	53.3
8 months or more	20	34.5	13	14.4
Grasp Voluntarily				
3 months or less	38	65.5	68	75.6
4-6 months	11	19.0	19	21.1
7 months or more	9	15.5	2	2.2
No response	0	0	1	1.1
Sleep Through Night				
3 months or less	25	43.1	56	62.2
4-6 months	14	24.1	25	27.8
7 months or more	16	27.6	8	8.9
No response	3	5.2	1	1.1
Recognize Mother				
2 months or less	47	81.0	70	77.8
3 months or more	10	17.2	19	21.1
No response	1	1.7	1	1.1
Stand with Help				
6 months or less	21	36.2	16	17.8
7-10 months	29	50.0	67	74.4
11 months or more	8	13.8	7	7.8
Walk				
10 months or less	29	50.0	48	53.3
11-14 months	22	37.9	38	42.2
15 months or more	6	10.3	4	4.4
No response	1	1.7	0	0
Bladder Trained				
18 months or less	44	75.9	52	57.8
19-30 months	13	22.4	38	42.2
No response	1	1.7	0	0
Bowel Control				
18 months or less	24	41.4	28	31.1
19-24 months	25	43.1	40	44.4
25 months or more	6	10.3	21	23.3
No response	3	5.2	1	1.1
Drink from Cup				
4-12 months	26	44.8	46	51.1
13-18 months	15	25.9	24	26.7
19-36 months	15	25.9	20	22.2
No response	2	3.4	0	0

TABLE V (Continued)

Behavior	Male N=58		Female N=90	
	No.	%	No.	%
Babble Two Syllables				
2-7 months	23	39.7	36	40.0
8-12 months	27	46.6	41	45.6
13-24 months	7	12.1	13	14.4
No response	1	1.7	0	0
Say First Word				
8 months or less	7	12.1	12	13.3
9-12 months	23	39.7	47	52.2
13-17 months	6	10.3	7	7.8
18 months or more	21	36.2	24	26.7
No response	1	1.7	0	0
Wave Bye-Bye				
8 months or less	11	19.0	24	26.7
9-12 months	29	50.0	53	58.9
13 months or more	17	29.3	13	14.4
No response	1	1.7	0	0
Respond to Name				
1-5 months	16	27.6	29	32.2
6-11 months	26	44.8	45	50.0
12 months or more	13	22.4	16	17.8
No response	3	5.2	0	0
Teach to Mind				
6 months or less	19	32.8	26	28.9
7-12 months	27	46.6	53	58.9
13 months or more	12	20.7	9	10.0
No response	0	0	2	2.2
Understand "No"				
7 months or less	21	36.2	26	28.9
8-11 months	10	17.2	31	34.4
12 months or more	26	44.8	32	35.6
No response	1	1.7	2	2.2
Follow Instructions				
1-12 months	20	34.5	40	44.4
13-18 months	17	29.3	25	27.8
19-48 months	20	34.5	25	27.8
No response	1	1.7	0	0
Amount of Crying				
Not cry	5	8.6	3	3.3
Very little	14	24.1	21	23.3
Depends on baby	36	62.1	66	73.3
A lot	3	5.2	0	0
Know When Theyve Done Something Naughty				
5-12 months	26	44.8	42	46.7
13-18 months	14	24.1	25	27.8
19-60 months	17	29.3	23	25.6
No response	1	1.7	0	0

were capable of following simple instructions. Both 1-12 months and 19-48 months received 34.5 percent of the male responses. Female respondents gave 1-12 months for 44.4 percent of their answers. Neither sex gave 18 months which is the average for this skill according to Schuster and Ashburn (1980).

Table VI details respondents' answers on behaviors according to their highest level of education. Four education levels were reported by the respondents. The largest percentage of ages for behaviors were the same for all four levels on only seven of the 20 (35%) items. Behaviors with common percentages included turning over, grasping voluntarily, recognizing mother, standing with help, waving bye-bye, age to begin teaching to mind and amount of crying.

The largest percentage (41.7%) of parents who attended or are attending high school reported behaviors would occur at ages different than the other three educational levels on five of the 20 items (25%). Those who attended or are attending high school reported smiling would occur (41.7%) between four and eight weeks which includes the actual average of six weeks according to DeLissovoy (1973), while respondents in the other three categories agreed it would occur at three weeks. The majority (58.3%) of those respondents who attended or are attending high school felt an infant would sit alone at eight months or later. The largest percentages in the other categories agreed this behavior would occur between six and seven months. Schuster and Ashburn (1980) give eight months as the actual average for this behavior. The three upper educational levels agreed infants would sleep through the night at three months or younger, which is the age Schuster and Ashburn list as the norm for this behavior, while the majority of those respondents

TABLE VI

BEHAVIOR EXPECTATIONS ACCORDING TO RESPONDENTS' LEVEL OF EDUCATION

Behavior	(1)[a] N=12		(2)[b] N=58		(3)[c] N=49		(29)[d] N=29	
	No.	%	No.	%	No.	%	No.	%
Smile								
1 week	4	33.3	15	25.9	10	20.4	3	10.3
3 weeks	3	25.0	26	44.8	21	42.9	12	41.4
4-8 weeks	5	41.7	17	29.3	18	36.7	13	44.8
6 months	0	0	0	0	0	0	1	3.4
Turn Over								
2 months or less	0	0	17	29.3	23	46.9	9	31.0
3-5 months	9	75.0	35	60.3	24	49.0	15	51.7
6 months or more	3	25.0	6	10.3	2	4.1	5	17.2
Sit Alone								
5 months or less	1	8.3	17	29.3	15	30.6	11	37.9
6-7 months	4	33.3	27	46.6	25	51.0	15	51.7
8 months or more	7	58.3	14	24.1	9	18.4	3	10.3
Grasp Voluntarily								
3 months or less	11	91.7	44	75.9	28	57.1	23	79.3
4-6 months	1	8.3	10	17.2	16	32.7	3	10.3
7 months or more	0	0	4	6.9	5	10.2	2	6.9
No response	0	0	0	0	0	0	1	3.4
Sleep Through Night								
3 months or less	4	33.3	35	60.3	28	57.1	14	48.3
4-6 months	6	50.1	12	20.7	13	26.5	8	27.6
7 months or more	1	8.3	11	19.0	7	14.3	5	17.2
No response	1	8.3	0	0	1	2.0	2	6.9
Recognize Mother								
2 months or less	10	83.3	49	84.5	36	73.5	22	75.9
3 months or more	2	16.7	9	15.5	12	24.5	6	20.7
No response	0	0	0	0	1	2.0	1	3.4
Stand with Help								
6 months or less	3	25.0	19	32.8	12	24.5	3	10.3
7-10 months	7	58.3	33	56.9	35	71.4	21	72.4
11 months or more	2	16.7	6	10.3	2	4.1	5	17.2
Walk								
10 months or less	4	33.3	34	58.6	29	59.2	10	34.5
11-14 months	6	50.0	20	34.5	18	36.7	16	55.2
15 months or more	2	16.7	4	6.9	2	4.1	2	6.9
No response	0	0	0	0	0	0	1	3.4
Bladder Trained								
18 months or less	10	83.3	41	70.7	31	63.3	14	48.3
19-30 months	2	16.7	17	29.3	18	36.7	14	48.3
No response	0	0	0	0	0	0	1	3.4
Bowel Control								
18 months or less	6	50.0	22	37.9	16	32.7	8	27.6
19-24 months	5	41.7	23	39.7	22	44.9	15	51.7
25 months or more	0	0	11	19.0	11	22.4	5	17.2
No response	1	8.3	2	3.4	0	0	0	0
Drink from Cup								
4-12 months	8	66.7	31	53.4	22	44.9	11	37.9
13-18 months	2	16.7	12	20.7	14	28.6	11	37.9
19-36 months	2	16.7	14	24.1	13	26.5	6	20.7
No response	0	0	1	1.7	0	0	1	3.4

TABLE VI (Continued)

Behavior	(1)[a] N=12		(2)[b] N=58		(3)[c] N=49		(4)[d] N=29	
	No.	%	No.	%	No.	%	No.	%
Babble Two Syllables								
2-7 months	2	16.7	28	48.3	17	34.7	12	41.4
8-12 months	8	66.7	21	36.2	29	59.2	10	34.5
13-24 months	2	16.7	9	15.5	3	6.1	6	20.7
No response	0	0	0	0	0	0	1	3.4
Say First Word								
8 months or less	1	8.3	8	13.8	6	12.2	4	13.8
9-12 months	5	41.7	30	51.7	26	53.1	9	31.0
13-17 months	0	0	5	8.6	4	8.2	4	13.8
18 months or more	6	50.0	15	25.9	13	26.5	11	37.9
No response	0	0	0	0	0	0	1	3.4
Wave Bye-Bye								
8 months or less	3	25.0	11	19.0	12	24.5	9	31.0
9-12 months	7	58.3	34	58.6	28	57.1	13	44.8
13 months or more	2	16.7	13	22.4	9	18.4	6	20.7
No response	0	0	0	0	0	0	1	3.4
Respond to Name								
1-5 months	6	50.0	12	20.7	15	30.6	12	41.4
6-11 months	3	25.0	33	56.9	24	49.0	11	37.9
12 months or more	2	16.7	12	20.7	10	20.4	5	17.2
No response	1	8.3	1	1.7	0	0	1	3.4
Teach to Mind								
6 months or less	4	33.3	15	25.7	18	36.7	8	27.6
7-12 months	7	58.3	36	62.1	22	44.9	15	51.7
13 months or more	1	8.3	6	10.3	9	18.4	5	17.2
No response	0	0	1	1.7	0	0	1	3.4
Understand "No"								
7 months or less	5	41.7	19	32.8	15	30.6	8	27.6
8-11 months	3	25.0	15	25.7	14	28.6	9	31.0
12 months or more	3	25.0	23	39.7	20	40.8	12	41.4
No response	1	8.3	1	1.7	0	0	0	0
Follow Instructions								
1-12 months	7	58.3	21	36.2	19	38.8	13	44.8
13-18 months	2	16.7	21	36.2	10	20.4	9	31.0
19-48 months	3	25.0	15	25.9	20	40.8	7	24.1
No response	0	0	1	1.7	0	0	0	0
Amount of Crying								
Not cry	0	0	5	8.6	2	4.1	1	3.4
Very little	3	25.0	19	32.8	7	14.3	6	20.7
Depends on baby	8	66.7	33	56.9	40	81.6	21	72.4
A lot	1	8.3	1	1.7	0	0	1	3.4
Know they've Done Something Naughty								
5-12 months	8	66.7	27	46.6	19	38.8	14	48.3
13-18 months	2	16.7	17	29.3	11	22.4	9	31.0
19-60 months	2	16.7	13	22.4	19	38.8	6	20.7
No response	0	0	1	1.7	0	0	0	0

[a]Attended or Attending High School

[b]Graduate from High School

[c]Attended or Attending College

[d]Graduated from College

who attended or are attending high school (50.1%) predicted it would occur at four to six months. The majority (50.5%) of those respondents who attended or are attending high school predicted bowel control would be attained at 18 months or younger while the largest percentages in the other educational levels agreed it would occur between 19 and 24 months. Both of these ranges are younger than the norm of 2.6 years given by Schuster and Ashburn (1980). The largest percentage of the respondents attending high school predicted children would understand "no" at seven months or earlier while the largest percentage of the other respondents reported this behavior occurring at 12 months or later. Eleven months is the actual average age for this skill according to Caplan (1971).

The majority of respondents who attended or are attending high school (50%) and those respondents who graduated from college agreed children would walk between 11 and 14 months. This range includes the actual average age of 12 months given by Schuster and Ashburn. Of respondents who graduated from high school and those who are attending or attended college, the majority (58.9% and 59.2%) predicted children would walk at 10 months or less.

The largest percentage of those respondents who graduated from college were equally divided (48.3%) between 18 months or younger and 19-30 months as the age children would gain bladder control. The majority of all other respondents agreed this behavior would occur at 18 months or less. This is an earlier age than the actual average of 2.6 years as reported by Schuster and Ashburn. The college graduates were also divided as to the age children would drink from a cup. Equal percentages of this group (37.9%) predicted this ability between four

and twelve months. The average age for this skill according to Schuster and Ashburn (1980) is 18 months.

The majority of respondents who attended or are attending high school (66.7%) and those respondents who attended or are attending college (59.2%) agreed children would babble two syllable sounds between eight and twelve months. The largest percentages of those respondents who graduate from high school (48.3%) and those who graduated from college (41.4%) agreed this milestone would occur between two and seven months of age. Schuster and Ashburn gives four to five months as the actual range for this behavior. The majority of respondents who graduated from high school (51.7%) and those who attended or are attending college (53.1%) predicted children would say their first word between nine and twelve months which is consistent with Schuster and Ashburn's average age of 12 months. The largest percentage of respondents who are attending or attended high school (50.0%) and those who graduated from college (37.9%) predicted this behavior would occur at 18 months or later. Fifty percent of those respondents attending or who attended high school and 41.4 percent of those who graduated from college predicted children would respond to their name between one and five months. Six to eleven months was the age for this behavior predicted by 56.9 percent of high school graduates and 49 percent of those respondents who attended or are attending college. Eight months is the average age for this behavior according to Caplan (1971).

A child's ability to follow instructions between one and twelve months was predicted by 58.3 percent of those respondents who attended or are attending high school and 44.8 percent of those respondents who graduated from college. Of the respondents who graduated from high

school, 36.2 percent predicted this ability would occur between one and twelve months and 36.2 percent between 13 and 18 months. Nineteen to 48 months was the age predicted by 40.8 percent of those respondents who attended or are attending college. Schuster and Ashburn (1980) report on the average, children obtain this skill at 18 months.

The largest percentages of those respondents who attended or are attending high school (66.7%), who graduated from high school (46.6%) and those who graduated from college (48.3%) agreed children would know when they have done something naughty between five and twelve months. Of those respondents who attended or are attending college 38.8 percent predicted this ability occurring between five and twelve months and 38.8 percent between 19 and 60 months.

Interview Responses

A telephone interview was conducted with the parents of preterm children to determine how parents viewed the effects of the prematurity on both their child's development and their own parenting experience. Of the 20 families interviewed, two families had twins and five had experienced more than one preterm birth. The infants' births ranged from 2.5 weeks to 12 weeks prior to due date with 7 weeks being the mean. Birth weights ranged from 2 pounds 3 ounces to 5 pounds 15 ounces and hospital stays ranged from 3 to 97 days. Sixty-five percent of the mothers had no warning the birth would be preterm.

The most common medical complication was respiratory distress syndrome with six infants experiencing it. Other medical complications due to prematurity were jaundice, apnea, brain hemorrhage, bradycardia, and hydrocephalus. When questioned as to how long parents felt their

child's prematurity would effect development, responses ranged from not at all to life. Seventy percent of the respondents indicated the effects would continue for 18 months or less.

Common concerns parents expressed about bringing their preterm child home included feeding difficulties (the infants required frequent small feedings) and fear of further medical complications. Two families mentioned their child's lack of adequate immunities and subsequent susceptibility to infections as difficulties as it confined both mother and baby to the home. One mother expressed concern that she would not be as competent in the care of her infant as the nurses.

Three of the mothers expressed frustration at not being able to experience full-term pregnancies. As one mother expressed it, she felt "cheated" at not being able to experience the last trimester. These feelings seemed to reflect Als and Brazelton's (1979) findings that

> Not only are parents of preterm infants deprived of the realization of this expectation by having a preterm infant, but they are at a premature stage of development themselves, deprived of the last weeks and months of readying themselves for interactions with their infant (p. 191).

Other mothers expressed relief at their shortened pregnancy once they felt their child was out of danger.

Examination of Hypotheses

Hypothesis 1: There is no significant difference in parents of preterm children, experienced parents and expectant parents in their expectations for children's attainment of developmental milestones.

Of the Chi-square values obtained comparing respondents' answers according to parenting experience on each of the 20 items of the

questionnaire, only two were significant at the $p<.01$ level. Question 9 asked respondents when toilet training for bladder control should begin. A Chi-square value of 10.51 was obtained indicating a significant difference at the $p<.01$ level (Table VII). Question 10 asked respondents to indicate when children will be trained for bowel movements. A Chi-square value of 16.4 was obtained indicating a significance at the $p<.01$ level (Table VII). Therefore, it is concluded the null hypothesis can be rejected at the $p<.01$ level on only these two items on the questionnaire and accepted on 18 items (90%) on the questionnaire. On the two items in which a significant difference was indicated, a greater proportion of parents of preterm infants expected both bladder and bowel control at later ages than did respondents in the other two groups.

TABLE VII

DIFFERENCES IN EXPECTATIONS ACCORDING TO PARENTING EXPERIENCE

Behavior	Preterm N=20	Experienced Parent N=29	Expectant Parent N=99	X^2	Level of Significance
Start Potty Training to Stay Dry					
18 months or less	7	18	71	10.51	.01
19-30 months	13	11	27		
No response	0	0	1		
Trained for Bowel Movements					
18 months or less	1	10	41		
19-24 months	9	13	43	16.40	.01
25 months or over	9	6	12		
No response	1	0	3		

Hypothesis 2a: There is no significant difference in respondent's expectations for children's attainment of developmental milestones according to age of the respondent.

Analysis of the data suggest the null hypothesis can be accepted at the $p<.01$ level on all 20 items of the questionnaire. This indicates no significant difference was found in respondents' expectations for children's attainment of developmental milestones according to age of the respondent.

Hypothesis 2b: There is no significant difference in respondents' expectations for children's attainment of developmental milestones according to sex of the respondent.

Analysis of the data suggests the null hypothesis can be accepted at the $p<.01$ level on 17 items (85%) on the questionnaire and rejected on three items (15%).

Question 1 asked parents at what age a smile could be expected. A Chi-square value of 9.50 was obtained in comparing males and females indicating a significant difference at the $p<.01$ level. It should be noted only one female, preterm parent answered Question 1 with Answer "D" (at six months or later). Because this represents only .06 percent of all responses, it was not included in the statistical analysis (Table VIII). The data indicate that male respondents expected infants to smile at an earlier age than did female respondents.

A Chi-square value of 10.08 was obtained when comparing male and female subjects' responses to Question 5 which asks at what age infants will sleep through the night. This indicates a significant difference at the $p<.01$ level (Table VIII). A greater proportion of female respondents expected infants to sleep through the night at an earlier age than male respondents.

TABLE VIII

DIFFERENCES IN EXPECTATIONS ACCORDING TO SEX OF RESPONDENT

Behavior	Male N=58	Female N=90	X^2	Level of Significance
Smile				
1 week	20	12		
3 weeks	19	43	9.50	.01
4-8 weeks	19	34		
No response	0	1		
Sleep Through Night				
3 months or less	25	56		
4-6 months	14	25	10.08	.01
7 months or more	16	8		
No response	3	1		
Stand With Help				
6 months or less	21	16		
7-10 months	29	67	9.26	.01
11 months or more	8	7		

A significant difference was indicated at the $p<.01$ level by a Chi-square value of 9.26 on Question 7. Question 7 asked subjects at what age a child would be able to stand with help (Table VIII). A larger percentage of male respondents expected infants to stand with help at an earlier age than did female respondents.

Hypothesis 2c: There is no significant difference in respondents' expectations for children's attainment of developmental milestones according to educational level of the respondent.

Analysis of the data suggests the null hypothesis can be accepted at the $p<.01$ level on all 20 items of the questionnaire. This indicates

there is no significant difference in respondents' expectations for children's attainment of developmental milestones according to educational level of the respondent.

CHAPTER V

DISCUSSION AND IMPLICATIONS

The purpose of this study was to determine the extent to which parents of premature children are modifying their expectations for their child's growth and development during his/her first two years of life to take into account the effects of the child's prematurity. One hundred forty-eight subjects participated in this study. Twenty mothers with premature children under five years of age were the first group of respondents. Two other groups of respondents who were included in the study, experienced parents and expectant parents, attended prepared childbirth classes at Miami Baptist Hospital, Miami, Oklahoma during the fall of 1982. There were 29 respondents in the experienced parent group and 99 in the expectant group.

The instrument used was a 20 item questionnaire combining items from previous research by Dr. Vladimire DeLissovoy (1973) and Dr. Pamela I. Berg (1975). In addition, parents of preterm children answered a 12 item telephone interview developed by the investigator.

The data were examined to determine the age at which each group of respondents expected children to perform 20 developmental milestones and behaviors. The hypotheses were tested by Chi-square analysis. The findings of this research were as follows:

Evidence was presented to suggest that in this sample a significant difference does not exist in the expectations of parents of preterm

infants, the expectations of experienced parents of full-term infants and expectations of expectant parents for infants' attainment of developmental milestones during the first two years of life. On only 2 of the 20 items on the questionnaire was a significant difference in the three groups of respondents found. Both of these items involved toilet training the infant. Parents of preterm infants expected infants' attainment of both bladder and bowel control at later ages than respondents in the other two groups.

Previous research on the effects of prematurity on a child's development (Field et al., 1981; Hunt, 1981; Stewart and Reynolds, 1974; Caputo and Mandell, 1970; DeHirsch et al., 1966) has consistently indicated developmental delays in motor and mental development during the first two years of life. Hunt (1981) even concluded unexpected developmental problems may occur as late as eight years of age. The responses on both the questionnaire and interview provided by this study's sample of parents of preterm children indicates they have the same expectations for their child as those parents with or expecting full-term children. This indicates the mothers interviewed may not have successfully completed Kaplan and Mason's (1960) fourth psychological task of understanding how her premature infant differs from a full-term baby in terms of its special needs and growth patterns.

It is recognized several factors may have influenced the results of this study. Among these factors is the age of the preterm infants of the mothers interviewed. Because these children ranged in age from 2.5 months to 5 years, it is possible those mothers of the older children may have forgotten what expectations they had for their child under age two. Further, while the preterm children in this study

ranged in birth weight from 2 pounds 3 ounces to 5 pounds 15 ounces, Caputo and Mandell (1970) presented evidence indicating development is generally more delayed in the infants with lower birth weights.

The location of the families in this study may also be an influencing factor. The majority of the preterm infants in this study were hospitalized in perinatal units some distance from the parents' homes. While it is recognized most perinatal units operate a parent education unit in conjunction with their developmental follow-up of preterm infants, due to transportation factors, preterm children in this area often fail to maintain contact with these centers and thus eliminate the continued education of the parents in terms of their children's development. As one mother of a preterm child commented, even though at the time her infant was discharged from the hospital she was aware of the probable difference in development between full and preterm infants, once she returned to her community, family and peer pressure was such that she found herself again expecting full-term behavior from her infant.

Evidence was also presented from these three groups' responses to items on the questionnaire which showed that in 85 percent of the responses a significant difference did not exist between the expectations of males and females for infants' development. The three behaviors on which a significant difference existed were smiling, sleeping through the night and standing with help. Males expected infants to smile and stand with help at earlier ages than did females while males expected infants to sleep through the night at a later age. Finally, evidence was presented that indicated a significant difference does not exist among these respondents' expectations for development when age and educational levels of the respondents are considered.

Implications of the Study

The results of this study indicate a need for a continuing educational program for parents of preterm children. The system for providing information to these families should be within close proximity to the parents' home community and could include developmental follow-up of the infant. The results of this study could be of value to perinatal centers in providing a linkage between their institutions and local health department or child development personnel.

Recommendations for Further Study

As a result of this study, the writer presents the following suggestions for further investigation:

1. A larger, random sample be used to insure a more valid assessment.
2. A similar study be conducted with parents regularly attending follow-up appointments at a perinatal center to determine if their expectations are appropriate.
3. Use of the instrument in parenting classes and child development programs to determine if participants have realistic expectations for infants.

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APPENDIXES

APPENDIX A

QUESTIONNAIRE

Face Sheet for Experienced and Expectant Parents

Please do not write your name on the questionnaire.

Please answer all the items.

1. Sex
   ___1. Male
   ___2. Female

2. Age ___

3. Educational status:
   ___1. Below high school
   ___2. High school but did not graduate
   ___3. Graduated from high school
   ___4. Attended or attending college but have not graduated
   ___5. Graduated from college
   ___6. Completed graduate work

4. How many children do you have?
   ___1. None
   ___2. One
   ___3. Two
   ___4. Three
   ___5. Four
   ___6. Five
   ___7. Six
   ___8. Seven or more

5. Size of hometown:
   ___1. I live on a farm
   ___2. Less than 1,000
   ___3. 1,001-2,500
   ___4. 2,501-10,000
   ___5. 10,001-25,000
   ___6. 25,001-50,000
   ___7. 50,001-100,000
   ___8. 100,001 or more (or suburb of a city this size)

6. Rank the following sources of parenting information in order of their influence upon your expectations for children. Most influence = 1, least influence = 7.
   ___1. Own husband or wife
   ___2. Own parents and/or family members (brothers, sisters, aunts, etc.)
   ___3. Friends and/or neighbors
   ___4. Professional consultant (pediatrician, nurse, counselor, dietician, teacher)
   ___5. Class or classes in child development and/or parenting
   ___6. Church/minister/Bible
   ___7. Media (television, magazines, books, newspapers, radio, movies)

Face Sheet for Parents of Preterm Infants

Please do not write your name on the questionnaire.

Please answer all the items.

1. Sex
   ___1. Male
   ___2. Female

2. Age ___

3. Educational status:
   ___1. Below high school
   ___2. High school but did not graduate
   ___3. Graduated from high school
   ___4. Attended or attending college but have not graduated
   ___5. Graduated from college
   ___6. Completed graduate work

4. Please give the following information on each of your children:

	Child 1 (Oldest)	Child 2	Child 3	Child 4	Child 5	Child 6
Age	_____	_____	_____	_____	_____	_____
Sex	_____	_____	_____	_____	_____	_____
Term or Preterm	_____	_____	_____	_____	_____	_____

5. Size of hometown:
   ___1. I live on a farm
   ___2. Less than 1,000
   ___3. 1,001-2,500
   ___4. 2,501-10,000
   ___5. 10,001-25,000
   ___6. 25,001-50,000
   ___7. 50,001-100,000
   ___8. 100,001 or more (or suburb of a city this size)

6. Rank the following sources of parenting information in order of their influence upon your expectations for children. Most influence = 1, least influence = 7.
   ___1. Own husband or wife
   ___2. Own parents and/or family members (brothers, sisters, aunts, etc.)
   ___3. Friends and/or neighbors
   ___4. Professional consultant (pediatrician, nurse, counselor, dietician, teacher)
   ___5. Class or classes in child development and/or parenting
   ___6. Church/minister/Bible
   ___7. Media (television, magazines, books, newspapers, radio, movies)

HERE IS SOMETHING ABOUT CHILDREN

Babies grow fast. Here are some questions about growing babies and young children. Some questions ask for a specific answer, others ask you to make a choice. Don't be afraid to guess and answer each question. Please answer in number of weeks or months.

1. Coming home with a new baby is exciting. It has been a long wait. The baby finds that he is now part of a family. You can expect a smile from the baby? Please circle answer.
   a. In about a week after he is born
   b. At about three weeks
   c. Sometime in the second month: 4-8 weeks
   d. At six months or even later

2. After baby starts turning over it is a good thing to check it to see that it is not in an uncomfortable position. How old will baby be when he/she can turn over from stomach to back? _____

3. How old do you think most babies are when they can sit alone without any support? _____

4. Babies are born with a reflex that causes them to grasp objects that touch their hands. When can baby voluntarily grasp their parents' hands? _____

5. Babies wake several times during the night when they come home from the hospital. How old will baby be when he/she sleeps through the night? _____

6. Although babies see at birth, things appear fuzzy. When will baby recognize mother's face? _____

7. You can expect baby to stand up when you help or he may even pull himself up by using furniture at about how many months? _____

8. Off he goes on his first steps without help; how old is he? _____

9. When is a good time to start potty training to help baby to stay dry? _____

10. When do you think baby will be trained to have bowel movement on the toilet or potty, of course, we know that accidents will happen! _____

11. When do you think baby will be able to drink from a cup without spilling? _____

12. Babies begin talking by babbling two syllable sounds like "mama," "dada," and "baba." How old is baby when these sounds begin?

    _____

13. You will hear a lot of gurgling and gooing. How old do you think baby will be when he says his first real word--something more than dada? _____

14. How old is baby when she/he will wave bye-bye? _____

15. When will baby respond when you call his/her name?_____

16. When is a good time to start teaching him to mind? About how old will he be? _____

17. How old is baby when he/she understands what "no" means? _____

18. When will baby be able to follow simple instructions? _____

19. Let's say the baby is fed and dry. How much crying can you expect from baby for almost no reason. Please circle answer.
    a. Should not cry at all
    b. Very little but then only when he wants something
    c. Maybe it depends on the baby. Some cry more than others
    d. You can expect a lot of crying

20. How old is baby when he knows he did something naughty? (Like spilling milk or wetting or breaking something?) _____

APPENDIX B

INTERVIEW FOR PARENTS OF PRETERM INFANTS

Interview for Parents of Preterm Infants

1. How many weeks prior to your due date was your baby born?
2. Did you have any warning this would be a preterm delivery?
3. What was your baby's birthweight?
4. How long was your baby hospitalized?
5. Where was she/he hospitalized?
6. How often were you able to visit your baby when she/he was in the hospital?
7. Did your baby have any medical complications following birth?
8. How did you feel about not having the extra time to prepare for your baby's birth?
9. What were you most concerned about during the time your baby was hospitalized?
10. What was the most difficult part of bringing your baby home?
11. Has your baby been different in anyway from what you expected since you brought him/her home?
12. How long do you think your baby's prematurity will affect his/her development?

Additional Comments:

APPENDIX C

CORRESPONDENCE

NEO Faculty:

I am a graduate student at Oklahoma State University attempting to complete a Master's thesis on parental expectations for premature children's development. I am searching for subjects to complete a short questionnaire and a telephone interview. To qualify, subjects must be a parent of a premature child under 5 years of age. Premature is being defined as born 2 or more weeks prior to due date.

If you would qualify as a subject or have friends, relatives, or students who would, I would appreciate your help. All responses will be held confidential. Please fill in the information below and place it in Dr. Maxine Edward's box and I will contact you.

Your assistance in completing this project is greatly appreciated.

(Signed) Sharon Kinsey

Sharon Kinsey
410 I NW
Miami, OK
542-4521

You may contact the following parents of premature children:

_____	_____
Parent's name	Parent's name
_____	_____
Address	Address
_____	_____
Phone	Phone

Dear Head Start Parents:

I am a graduate student at Oklahoma State University working on a research project concerning premature children. I am trying to find parents who have premature children under 5 years of age. I need these parents to answer a short questionnaire which takes approximately 10 minutes to complete. If you have a child under 5 years of age who was born at least two weeks before their due date and would be willing to answer some questions for me, please fill out the information below and return it to the Head Start teachers. Also, if you have any family members or friends who have premature children, I would appreciate their names.

Your participation in this project is voluntary and is in no way required by Head Start. Thank you for your help.

(Signed) Sharon Kinsey

I have a premature child under 5 years of age.

_____
Parent's name

_____
Address

_____
Phone

Friends or relatives with premature children.

_____ Parent's name	_____ Parent's name
_____ Address	_____ Address
_____ Phone	_____ Phone

Dear Lab School Parents:

I am a graduate student at Oklahoma State University writing a thesis on parenting premature children. I am trying to find parents who have premature children under five years of age. I need these parents to answer a short questionnaire which takes approximately 10 minutes to complete. If you have a child under 5 years of age who was born at least two weeks prior to their due date and would be willing to answer some questions for me, please fill out the information below and return it to Dr. Edwards or Mrs. Price. Also, if you have any family members or friends who have premature children, I would appreciate their names.

Thank you for your assistance!

(Signed) Sharon Kinsey

I have a premature child under 5 years of age.

_____
Parent's name

_____
Address

_____
Phone

Friends or relatives with premature children.

_____	_____
Parent's name	Parent's name
_____	_____
Address	Address
_____	_____
Phone	Phone

VITA

Sharon Louise Kinsey

Candidate for the Degree of

Master of Science

Thesis: EXPECTATIONS FOR INFANT DEVELOPMENT BY PARENTS OF PRETERM INFANTS, EXPERIENCED PARENTS AND EXPECTANT PARENTS

Major Field: Family Relations and Child Development

Biographical:

Personal Data: Born in Vinita, Oklahoma, March 12, 1954, the daughter of Mr. and Mrs. J. B. Kinsey.

Education: Graduated from Vinita High School, Vinita, Oklahoma, in May, 1972. Attended Oklahoma State University, Stillwater, Oklahoma, from 1972 to 1976; received a Bachelor of Science in Home Economics degree from Oklahoma State University in 1976; completed requirements for an Early Childhood Education and an Elementary Teaching Certificate in 1976; completed requirements for the Master of Science degree in Family Relations and Child Development at Oklahoma State University in May, 1983.

Professional Experience: Kindergarten teacher, Spiro Public Schools, Spiro, Oklahoma, 1976-1980; Child Development Specialist for Oklahoma Department of Health at the Ottawa County Guidance Center, Miami, Oklahoma, September 1980 to present.