

Rhonda C. Hager. A STUDY OF SIBLING VISITATION IN A NEONATAL INTENSIVE CARE UNIT. (Under the direction of Emilie D. Henning) School of Nursing, December 1988.

The birth of an infant may not always be a joyful experience. When a high risk infant is born the family experiences a crisis. Most Neonatal Intensive Care Units offer flexible visiting hours for parents and some offer sibling visitation. The purpose of this study was to determine if behavioral changes occur in children 3 through 5 years of age after visiting a sibling in a Level III Neonatal Intensive Care Unit (NICU).

A case study approach was used. The sample consisted of 5 mothers with 5 preschool age children and 5 high risk infants who required admission to the NICU. The mothers completed questionnaires based on a modification of The Maternal Perception of Preschool Child Behavior at three different time intervals; one within 72 hours of the high risk infant's admission to the NICU, another at the time of the sibling visit in the NICU, and another at one week following the sibling visit to the high risk infant in the NICU. The Maternal Perception of Preschool Child Behavior focused on four categories of behavior; eating, sleeping, toileting, and general behavior.

The findings showed behavioral changes occurred at some time during the study period in all of the 5 siblings

as reported by their mothers. Most of the changes occurred after the sibling visit as compared to prior to maternal hospitalization. The most noticeable behavioral changes reported by the mothers occurred in the eating, sleeping, and general behavior categories.

More research is needed about the effects on siblings visiting in the NICU. Nurses can play a vital role in helping families of siblings who experience the crisis of having a high risk infant requiring admission to an NICU. The results of this study should provide nurses with information that can be used in anticipatory guidance of parents about common behavioral changes in preschool age siblings. These findings can also be considered in planning strategies to prepare preschool age siblings for visiting in the NICU.

A STUDY OF SIBLING VISITATION
IN A
NEONATAL INTENSIVE CARE UNIT

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Presented to
The Faculty of the School of Nursing
East Carolina University

In Partial Fulfillment
Of the Requirements for the Degree
Master of Science in Nursing

by
Rhonda C. Hager
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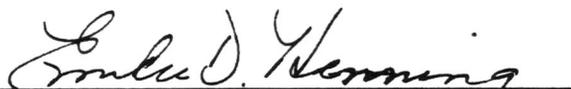
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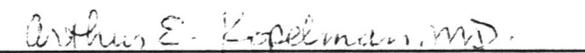
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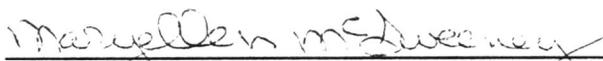
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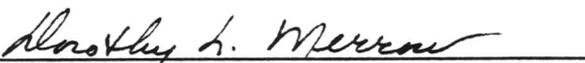
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Chapter I

INTRODUCTION

The birth of a baby is a common experience for the American family. It usually occurs in the hospital setting with the mother choosing support persons or family to attend the delivery. The birth experience has been labeled as a maturational crisis which affects each family member (Aguilera and Messick, 1986). The arrival of a new sibling has been considered the first major crisis experienced by a child (MacLaughlin and Johnston, 1984).

Children in the family react to the birth of their new sibling in different ways which may be somewhat predictable according to the child's age. Young siblings usually do not understand the impact the new baby will make on their lives until he actually arrives (Vestal, 1979).

Sibling preparation classes are a popular occurrence in preparing children for separation from their mothers and what it means to have a baby brother or sister (Bliss, 1980; Goodman, 1982; Rosen, 1985). Separation of the child from the mother for childbirth is usually brief, two or three days. Sometimes the mother may be hospitalized up to a week following delivery if a Cesarean Section was performed or if complications occurred. During the maternal hospitalization the child may stay in the home with extended family members or friends, or stay at the

home of relatives or friends. Family centered care is a popular concept today in hospitals providing maternity services. Many hospitals have visitation policies allowing children to visit their mothers. Many hospitals also permit visualization or actual visiting to the new baby by siblings. The ideal outcome of the birth experience for the sibling is having a happy mother arrive home with a cuddly, somewhat chubby, baby that needs a lot of attention.

The birth of a baby may not always be a joyful experience. The birth of a premature infant presents a situational crisis for the family (Aguilera and Messick, 1986). Siblings may be very confused. Parents may be away from the home frequently and when they are home, be upset and unhappy. Parents may try to explain what is occurring, but the sibling may be too young to understand what is happening. The young preschooler may have distorted fantasies (Mahan, 1983). The baby requiring admission to a Neonatal Intensive Care Unit may require extensive hospitalization, often for months if born prematurely. Several articles cite the importance of sibling visitation in the Neonatal Intensive Care Unit and ways to incorporate the sibling into the altered birth experience (Mahan, 1983; Shogan, 1984; and Consolvo, 1987). Even so, the sibling may demonstrate changes in his behavior as a result of stress related to the crisis.

Many hospitals have developed policies allowing sibling visitation within the Neonatal Intensive Care Unit (NICU) as recommended by the American Academy of Pediatrics (Committee on Fetus and Newborn, 1977). The busy NICU environment is one of many alarm sounds and high technological equipment which may be frightening to the young visitor. The sibling's reaction is dependent upon his age, prior experience, understanding of the situation, parental reaction, and other variables.

Often health care providers do not support sibling visitation in the NICU for fear of the spread of infection to the high risk infant. The infection issue has predominantly been the one related to sibling visitation to be studied by researchers. The increased incidence of neonatal infections as a result of sibling visitations has not been supported. Researchers have compared the incidence of bacterial colonization using groups of visiting and nonvisiting siblings and have found no significant difference (Kowba and Schwirian, 1985; Umphenour, 1980; and Wranesh, 1982).

The immediate effect of visiting in an NICU by siblings has not been found to be psychologically detrimental in school-age children. Maloney, Ballard, Hollister, and Shank (1983) and Schwab, Tolbert, Bagnato, and Maisels (1983) did comparison studies with visiting and nonvisiting siblings. Both groups of researchers found no

significant differences between visiting and nonvisiting siblings in terms of behavioral changes; however, the sample sizes were small. More research is needed pertaining to sibling visitation in Neonatal Intensive Care Units to determine its benefits and risks, particularly to the preschool-age child.

Statement of the Purpose

The purpose of this study was to determine if behavioral changes occur in children three through five years of age after visiting a sibling in a Level III Neonatal Intensive Care Unit (NICU). The research findings will enable nurses and other health professionals to better prepare siblings for the actual visits in the NICU and to assist parents in supporting their child through this family crisis.

Chapter II

REVIEW OF LITERATURE

The literature was reviewed for research focusing on situational crises experienced by preschool age children and their reactions. Included was research to show how older children react to situational crises. Also examined was research pertaining to siblings of hospitalized children and sibling visitation in hospitals, with emphasis on visitation in the Neonatal Intensive Care Unit (NICU).

Overview

Crises encountered by families are varied; however, crises affect each family member. Research has been conducted to examine the effects of specific situational crises, such as hospitalization, divorce, and birth of a sibling upon the preschool age child. The findings have been somewhat controversial because of limited control of variables.

Sibling visitation is becoming more popular as a means of reducing the crisis of having a hospitalized brother or sister, or being separated from a mother for childbirth. However, research has been minimal for determining the behavioral effects upon the sibling visiting in an NICU. Research conducted to determine the incidence of infection with sibling visitation has been more prevalent; the results do not support any increased incidence of

infection (Kowba and Schwirian, 1985; Umphenour, 1980; Wranesh, 1982).

Preschool Age Childrens' Reactions to Situational Crises

A child may experience one or more situational crises during the preschool age years which elicit behavioral changes. Several researchers have studied preschool age children's reactions to one of the most common situational crises, separation from the mother for childbirth and the resulting birth of a sibling.

Trause (1978) assessed firstborn childrens' reactions, age 1 to 3 1/2 years, to the 2 to 6 day separation from their mother related to hospitalization for childbirth and the effects of children's visiting their mothers. Data were collected at three intervals, at the time of maternal discharge and during two home visits. The first home visit occurred before maternal hospitalization and the second visit 1 to 2 weeks after maternal discharge. Several tools utilized for data collection included a questionnaire pertaining to the child's behavior, personal observations during home visits, and filming of the mother/child reunion at discharge. Both groups of children, visiting and nonvisiting, demonstrated significant negative behavioral changes after hospitalization of their mothers. The benefits of visiting may not have been demonstrated since most children only visited once. Significantly, more nonvisiting children than those who visited ignored or

avoided their mothers at the time of discharge and also refused maternal requests for a hug or kiss.

Trause, et. al., (1981) repeated a similar study assessing firstborn childrens' reactions to the 2 to 6 day separation for hospitalization of the mother for childbirth and the effects of maternal visiting. Data were obtained at three different times, 1) 2 to 4 weeks in the home prior to the maternal hospitalization, 2) at the time of maternal discharge, and 3) 1 to 2 weeks in the home after the maternal hospitalization. Data were acquired by questionnaire and personal observations. Children in both the visiting and nonvisiting groups demonstrated significantly more problems in daily routines after maternal hospitalization. Sleeping problems were reported most frequently. However, the nonvisiting children avoided their mothers and refused kisses or hugs significantly more than the visiting children.

Field and Reite (1984) studied physiological and behavioral responses of sixteen children, 2 to 5 years of age, who were separated from their mothers during the birth of a sibling. Data were collected before, during, and after the mothers' hospitalization by videotaping, telemetry monitoring, and administering a questionnaire to the parents. All children were allowed to visit their mothers while hospitalized. Videotaping of play sessions, including a pre- and post-hospitalization session with the

mother and a session with the father while the mother was hospitalized revealed that fantasy play and talk increased significantly across the three sessions. The children in the play sessions with their mothers demonstrated more aggression against the new sibling than against the mother. Activity level and heart rate were elevated above baseline pre-hospitalization level during the hospitalization play session and below baseline at the post-hospitalization session. There was a significant increase in the amount of night crying between Sessions One and Two and a decrease between Sessions Two and Three; however, never a return to baseline. A significant number of children were noted to demonstrate more clinging and aggression during the maternal hospitalization and post- hospitalization.

Knically (1981) compared maternal perceptions of preschool children's behavior who were present or in the next room for childbirth with those who were separated from their mothers for at least 24 hours. The researcher also studied maternal perceptions of the preschool children's behavior before and after the birth of a sibling. There were 22 children who were present or in the next room for childbirth and 21 children in the group that visited after 24 hours. Mothers completed Parts A (demographic data) and B (behavioral statements pertaining to eating, sleeping, toileting and general behavior) of the questionnaire, Maternal Perception of Preschool Child Behavior, during a

prenatal visit. Parts C (questions pertaining to the birth experience) and B were completed during a home visit one month after maternal discharge. There were no significant differences found between the two groups of preschool children nor significant changes in behavior before as compared to after the birth of a sibling. These findings may be related to the delay of one month for data collection.

Legg, Sherick, and Woodland (1974) performed a pilot study to gather information from parents, primarily mothers, about their preschool age children's response to the sibling prior to the birth, during the time of maternal hospitalization, and before the infant was brought home with the mother. Based on data gathered by interviews, mothers felt visits by the preschooler to her while hospitalized and the fathers' increased involvement in child care were helpful for the child. Regressive behaviors reported by the mothers were demands for the bottle or pacifier and regression in toilet training accomplishments. Variables associated with difficult adaptation to the new sibling were moving from one house to another, putting the baby's crib in the preschooler's room, or providing continuous day care by woman substitutes for the mother for a considerable length of time prior to the birth of a sibling. All of the mothers in this study had a college education making generalizations impossible.

The subsequent maternal separation the preschool age child experiences with childbirth appears to have a great impact. Behavioral changes have been observed in preschoolers regardless of the occurrence of visitation.

Kendrick and Dunn (1982) observed 40 families with firstborn children between 18 and 43 months of age by visiting in their homes. The visits occurred before the birth of a second child, during the first month following the birth, and when the second child was 8 and then 14 months of age. They documented distinct behavioral changes in the firstborn children during the weeks following the birth of the baby and also changes within the mother/child relationship after the birth. Several factors were associated with the initial reactions of the firstborn children which included gender of the sibling, the introduction of the baby to the sibling, and temperament of the firstborn. At the later visits, the researchers found that many of the problems related to the child's behavior observed earlier had decreased and the child's confrontation level with the mother had returned to the pre-birth state. Children considered to have intense and difficult temperaments demonstrated an increase in fears, worries, and unhappiness during the year following the birth of a sibling. The maternal attentiveness and play with the firstborn child never returned to the pre-birth level.

Kayiatos, Adams, and Gilman (1984) administered a questionnaire to 29 mothers of toddlers, visiting and nonvisiting, to determine their perceptions of behavioral changes in children following the addition of a newborn sibling to their family. At 3 to 6 weeks postpartum, 93% of the mothers reported one or more regressive behaviors in their toddlers. Children who participated in sibling visitation demonstrated less regressive behaviors than those children who did not participate in visitation practices. Generalizations cannot be made because of the small sample size.

Stewart, Mobley, Van Tuyl, and Salvador (1987) studied 41 families from the suburbs of a midwestern metropolitan area to determine the firstborn child's reaction and adjustment to the birth of a sibling. The sample of firstborn children consisted of 25 boys and 16 girls ranging in age from 2 to 4 years. Home observations and interviews were done one month prior to the birth of a new baby and then 1, 4, 8 and 12 months after the birth. During the home visits the family was observed during a semi-structured play situation. Mothers were requested to rate their firstborn child's adjustment on a 10 point scale, with 10 being the most adjusted. At all home visits after the birth of the new sibling, the mothers were asked to indicate from a list of 14 commonly reported behavioral problems, those that the firstborn child had

experienced. Responses of the children at the one month post-birth visit consisted of imitations of the infant or confrontations with the mother or infant. At the 4 month visit, the children demonstrated an increased anxiety level, but they had fewer imitations and confrontations. More confrontations with the new sibling were noted at the 8 and 12 month visits. Findings indicated that mothers reported more problematic behavior with same sex dyads at the one and eight month visits. In observing the family, it was noted that mothers decreased their interactions with the first born child over time while the fathers' interactions remained fairly stable.

Hoyer (1984) examined the influence of secure attachment with the mother and participation in the birth experience on interactive behavior between a 2 to 4 year old and a newborn sibling. She found that children demonstrating secure attachment to their mother had more positive interactions with their new sibling than those who were insecurely attached. It was hypothesized that children observing the birth of a sibling would demonstrate more positive responses to the new sibling than those children in the next room or at home during the actual birth. The least amount of aggression was found in children who were in the next room during the birth experience.

Marecki, Woodridge, Thompson, and Lechner-Hyman (1985) conducted an experimental study to explore what bonding behaviors preschool siblings exhibited in their first meeting with the newborn and the influence of prenatal sibling classes, sex, and age on these behaviors. Ten children received sibling preparation classes and 20 did not. Analysis of videotapes obtained at the time of the mothers' discharge revealed that most of the siblings from both groups (greater than 50%) spent time looking at the newborn, touching, talking to and about, kissing, hugging and calling him by name. Few statistically significant findings were noted in terms of age, sex, and whether the sibling had attended the preparation classes. All children in this study were from two parent families.

Based on research, mothers have reported behavioral changes in preschool age children, specifically regressive in nature, with the addition of a new sibling. These behaviors have continued months after the addition to the family.

Reactions observed in children to other situational crises, such as hospitalization, divorce, and hospitalization of a sibling have also been documented.

Older Childrens' Reactions to Situational Crises

Douglas (1975) studied children in Great Britain for 26 years to determine if hospitalization during the first 5

years of life was associated with later behavioral or learning disturbances in adolescence. Mothers were contacted every two years. Teachers also made out-of-class assessments of behavior when the children were 13 and 15 years of age. Other variables examined included scores on the Watts-Vernon Reading Test when the children were 15 years of age, the occurrence of delinquent behavior between 8 and 17 years of age, and the frequency of job changes among those who dropped out of school before completing five years of secondary school. No disturbance or change was reported in preschool children by 68% of the mothers upon returning home following hospitalization; however, changes in behavior were reported with the occurrence of three or more admissions and in children hospitalized over a month. The behavioral changes included nervousness, clinging, and temper tantrums. Children reported as having disturbed behavior following hospitalization were more likely to be rated by teachers at the ages of 13 and 15 as having troublesome behavior. Only children and children with mothers having been employed within 6 months of the hospitalization exhibited greater behavioral disturbances. Delinquency and frequent job changes in adolescence were associated with frequent and lengthy hospitalizations during the first five years of life.

Prugh, Staub, Sands, Kirschbaum, and Lenihan (1953) examined the effects of brief hospitalization upon parents

and children. A total of 100 children between the ages of 2 and 12 years made up the sample. Fifty children comprised the control group; they were hospitalized before certain policy changes were implemented. Their parents were allowed to visit weekly for a 2 hour period and were not encouraged to participate in the child's care. The other 50 children represented the experimental group; they were hospitalized when the following changes had occurred in policy: daily visiting by parents, earlier ambulation, play program, child preparation for procedures, and parent involvement in care. Parental interviews were done by a social worker following the child's hospital admission. Observations of the child were made by health professionals involved in their care. Follow-up was done following discharge at 3 weeks, 3 months, and at other intervals up to 6 months. The experimental group demonstrated a significantly lower percentage of severe immediate hospitalization reactions than those of the control. Reactions labeled minimal occurred five times more frequently in the experimental group of preschoolers as compared to those of the same age category of the control group. Children demonstrating the most successful adjustment to hospitalization were those who had a better capacity for adaptation, a satisfying relationship with parents, and whose parents had adapted to the child's illness and hospitalization. Significant behavioral

disturbances were observed in the children immediately following discharge which had not been present prior to admission in 92% of the control group and 68% of the experimental group. After 3 months post-discharge, moderate disturbance reactions were found in 58% of the control group and 44% of the experimental group. Interestingly, about half of the children in both groups with disturbed behavior were those less than 4 years of age. The most common manifestation of disturbed behavior for all children at any age level was overt anxiety.

The effects of hospitalization have been minimized with the encouragement of parents to stay and be actively involved in their children's care, introduction of play programs, preparation activities for hospitalization and special procedures, and through an increased awareness for better meeting the psychological needs of children. The preschool age child and younger ones tend to be the most vulnerable.

Block, Block, and Gjerde (1986) studied children's personality functioning prior to their experiencing parental divorce. Children were studied from two nursery schools over a three year period and then followed up to 18 years of age. The final analysis was done on 101 families; 41 experienced separation or divorce and 60 remained intact. Individual assessments were performed at 3, 4, 5, 7, 11, and 14 years of age. California Child Q-Set, a

personality test, was administered at 3, 4, and 7 years of age. There were significant differences found between boys and girls. General personality characteristics of boys from 3 to 7 years during the pre-divorce/pre-separation period included impulsiveness, aggression, restlessness, and non-cooperation. The general personality characteristics of girls contained negative aspects, such as the inability to get along with other children and transient interpersonal relationships. There were also some positive aspects found in the girls. For example, high performance standards set for self and a high intellectual capacity.

It has been recommended that further research is needed about the effects of pre-divorce family life on the child. Disturbances in behavior have been noted before the divorce has actually occurred.

Siblings of Hospitalized Children

Knafl (1982) interviewed 59 sets of parents to obtain information regarding sibling participation in family adjustment during a child's hospitalization. One or both parents were interviewed within 24 hours of their child's admission and in the home 4 to 6 weeks following the child's discharge. Based on parental responses in the admission interview, sibling participation was categorized as active or passive. The active group referred to siblings with added tasks and responsibilities during the

hospitalization. The passive group was only expected to cooperate with necessary changes. Siblings categorized in the active group tended to be greater than 10 years of age and those in the passive group much younger preschoolers. Parents perceived sibling responses as: 13 negative behaviors or emotions, 26 expressions of concern or interest, and 20 with no response. Only 2 siblings were reported as having severe or extended negative behavior and they had experienced a great deal of change during the hospitalization.

Craft, Wyatt, and Sandell (1985) examined feeling and behavioral changes in siblings of hospitalized children. A total of 123 siblings between the ages of 5 and 17 and their parents were interviewed. Siblings reporting significantly more changes were those between 5 and 9 years of age. Significantly more changes were reported by siblings who described their relationship with the ill child as best friends, feared getting the illness of the hospitalized child, had been given a limited explanation of the hospitalization, noted an increase in parental anger, and were siblings of children with a progressive illness. Siblings reported a significantly higher number of changes than the parents.

Sibling Visitation

Craft and Wyatt (1986) examined sibling reactions to hospitalization of children and the benefits of sibling

visitation. There were visiting (16 siblings) and nonvisiting (17 siblings) groups ranging in age from 5 to 17. Data were collected through interview and with completion of questionnaires by siblings and parents. Siblings reported increased difficulty in sleeping. Older siblings reported more changes than the younger siblings. There was no significant difference in the number of reported changes between the visiting and nonvisiting groups. Siblings in both groups reported more changes than their parents.

The hospitalization of a brother and sister affects the sibling. Based on the findings of the studies described above, siblings perceive more changes than parents (Craft, Wyatt, and Sandell, 1985; Craft and Wyatt, 1986).

Visitation in hospitals by children is generally being encouraged and policies written to permit such activity. Hospitals with policies allowing such visitation have varying restrictions.

Shuler and Reich (1982) surveyed 52 state health departments, 36 pediatric hospitals, and 22 physicians regarding policies and opinions about sibling visitation to hospitalized children. Twenty-five of the 52 health departments responded. Only 6 of them reported state established age restrictions for sibling visitation and indicated that the responsibility for health screening was

left to each hospital. Eleven of the 36 pediatric hospitals responded to the survey. Nine of the 11 indicated they had policies allowing visitation by young children. Of the physicians surveyed, 14 of the 22 responded. They were generally favorable to policies allowing children to visit siblings and friends. All of the physicians recognized the lack of empirical data with regard to infection risks.

Younger, Coulton, Welton, Juknialis, and Jackson (1984) interviewed head nurses of 78 intensive care units by telephone regarding policies allowing children visitation. Head nurses were from 37 hospitals in northeastern Ohio. Most of the intensive care units were adult medical and surgical units. Only 11% of the intensive care units had official policies regarding children visitation while 91% reported having allowed children less than 12 years of age to visit at sometime. Frequent children visitation was reported by only 3% of the intensive care units.

Poster and Betz (1987) mailed 212 questionnaires to the nursing administration of hospitals in southern California to determine actual children visiting policies and their rationale for them. Forty percent of the questionnaires were returned. Siblings were allowed to visit in 86% of the hospitals; however, 92% of the hospitals had some form of restriction limiting this type

of visitation. The restrictions centered around age, when visiting was permitted, and the actual length of visits.

Health care providers and hospitals are changing policies to allow more hospital visitation by children. More research is needed to determine the psychological risks and benefits to the visiting child.

Sibling Visits to the Healthy Neonate
and the Incidence of Infection

Traditionally, infection control was a primary reason to bar child visits to the hospital, particularly those to their mother and new sibling on the postpartum unit. This fact has led researchers to explore the actual infection risks.

Umphenour (1980) examined the effects of sibling visitation on bacterial colonization in newborns. Prior to the implementation of a policy allowing sibling visitation, swab specimens were obtained from the newborn's nares and umbilical cord upon admission to the nursery and on the day of discharge. These newborns comprised the control group. The experimental group included newborns admitted to the nursery after sibling visitation was initiated. Swab specimens were obtained at the same intervals as with the control group. There was no significant difference in the bacterial colonization rate between the two groups after the implementation of sibling visitation.

Wranesh (1982) also studied the effects of sibling visitation upon bacterial colonization rate in newborns. A retrospective chart review was done to obtain results of nasal and umbilical cord swab specimens done at discharge. All newborns having had sibling visits during their hospital stay comprised the experimental group, whereas, the control group included newborns who had not received visits from siblings. There was no significant difference in umbilical and nasal culture results between the two groups.

Kowba and Schwirian (1985) performed a two-phase experimental study to determine the association between neonatal contact with siblings and bacterial colonization in the newborn. In Phase I, 23 healthy newborns were part of the experimental group and another 21 newborns made up the control group. The experimental group had direct contact with siblings and the control group did not. Nasal and umbilical cord swab specimens were collected upon admission and at the time of discharge. There was no significant difference in the bacterial colonization rate between the groups. In Phase II, both the experimental and control groups were composed of 33 healthy newborns. The newborns in the experimental group had at least one sibling, however, those in the control group had no siblings residing with the parents. Admission swab specimens from the nares and umbilical cord were obtained

from both groups. The experimental group also had swab specimens done prior to the sibling contact. The experimental group was cultured 12 to 24 hours after the sibling visit, and the control group was also re-cultured during this time frame. There was no significant difference in newborn bacterial colonization between the two groups.

Sibling visits with newborns have not been found to result in a higher infection rate. The involvement of the sibling with the newborn before discharge is occurring more and more without major concern for cross-infection. Many hospitals with sibling visitation have a screening process included to prevent the spread of infection.

Sibling Visitation in the Neonatal Intensive Care Unit (NICU)

Some Neonatal Intensive Care Units are including siblings into their visitation policies. However, there is limited research dealing with the psychological or emotional effects of the NICU visit on the sibling.

Maloney, Ballard, Hollister, and Shank (1983) examined sibling visitation to an NICU to determine if it was harmful, medically or psychologically, to the siblings or the hospitalized infants. Siblings were randomly assigned to either the control group (26) or experimental group (31). The mean age for boys was 7.8 years and 6.0 years

for girls. The experimental group was given appointments to visit at the earliest convenient time and the control group did not visit. Parents of siblings in both groups completed the Missouri Behavior Checklist (MBC). The MBC was used to screen siblings for any baseline emotional problems. The parents and siblings in the experimental group participated in a structured interview two weeks following the NICU visit and completed a battery of rating scales with regard to behavioral or emotional changes since the visit. They also completed the MBC again. During the interview, siblings were asked questions about their visit and to draw a picture of the infant. The siblings in the control group were also interviewed and rating scales were completed by parents 2 weeks following the first MBC. Charts of infants with siblings in both groups were examined for a three week period to compare infection rates. Results of the MBC revealed that the siblings' behavior in the control group was worse than of those in the experimental group. Significantly more parents of the experimental group subjects reported on the rating scales that the siblings were better behaved as compared to responses of parents of the control group subjects. Ninety-four percent of the siblings in the experimental group admitted enjoying the NICU visit and wishing to see the infant again during the follow-up interview. During the three weeks of chart reviewing, there were no

significant differences in infection rates in those visited and those not visited.

Schwab, Tolbert, Bagnato, and Maisels (1983) also examined the effects of sibling visitation in an NICU. Sixteen siblings, between 4 and 7 years of age, of infants admitted to the NICU were randomly assigned to a visiting or nonvisiting group. Siblings were observed for a two week period following the admission of the infant to the NICU. An investigator accompanied the sibling and parent while visiting in the NICU to observe sibling reactions. Both groups of siblings were interviewed afterwards using a set of predetermined, consistent questions. All parents completed a questionnaire pertaining to the sibling's behavior in four areas of daily routine: eating, sleeping, toileting, and general behavior. The questionnaire was completed at three different times; immediately following the NICU admission, one week after the NICU admission or prior to the visit or control interview, and one week after the visit or control interview. There were no significant changes in behavioral scores for either group nor a significant difference between the groups. Fifty-five percent of the siblings in the visiting group touched the infant and most smiled and talked to the infant. Siblings over 5 years of age were found to need more encouragement to interact physically with the infant. The sample size was very small, therefore, prohibiting generalizations.

The findings of these two studies on sibling visitation to an NICU has not been shown to be psychologically detrimental to the sibling; in fact, one study had a positive effect. The siblings in both studies were at least 4 years of age. The psychological effects may differ for various age groups.

Summary

According to studies reported in the literature, situational crises experienced by the family have an effect on children of all ages. The situational crises which have been predominant in the literature are the hospitalization on the child or the sibling, maternal separation for childbirth, the addition of a sibling to a family, and divorce. Behavioral changes have been perceived by parents of preschool age children to all of these crises.

The crisis of the birth of a high risk infant has been discussed and predominantly researched in terms of the effect on the parents. The major recommendation for minimizing this family crisis has been parental visitation and sibling involvement. Sibling visitation has also been encouraged but with little research performed to examine the emotional risks and benefits. The fear of cross-infection to the newborn by the sibling has not been supported.

Chapter III

CONCEPTUAL FRAMEWORK

Overview

Crisis theory as defined by Caplan, Aguilera and Messick, as well as, child developmental theories, are described and related to the sibling's reaction to the birth of a high risk infant and visitation to the Neonatal Intensive Care Unit. The theories are appropriate in providing the framework for investigating behavioral changes in siblings who visit in an intensive care unit environment.

Crisis Theory

Crisis may occur when an individual or family experiences a problem that seems insolvable (Aguilera and Messick, 1986). There is an increase in inner tension, signs of anxiety are exhibited, and emotional upset occurs. When not facing a crisis, a person is considered to be in a state of equilibrium and maintains this through effective problem-solving abilities. If disequilibrium occurs a person is considered to be in crisis. What may provoke a crisis state for one individual may not for another (Aguilera and Messick, 1986). Caplan has described crisis as a four part developmental phase:

1. there is an initial rise in tension as habitual problem-solving techniques are tried.
2. there is a lack of success in coping as the stimulus continues and more discomfort is felt.

3. a further increase in tension acts as a powerful internal stimulus and mobilizes internal and external resources.
4. if the problem continues and can be neither solved nor avoided, tension increases and a major disorganization occurs (Aguilera and Messick, 1986, p. 68).

There are balancing factors that help a person return to a state of equilibrium. These include the perception of the event, available situational supports, and coping mechanisms. Situational supports refer to people in the environment who can be depended upon to help solve the problem. The need for situational supports is stronger when an individual has low self-esteem and when the threat is perceived as being great. Coping mechanisms are used by persons faced with a problem. These strategies may be overt or covert and used consciously or unconsciously. Coping mechanisms are generally classified into the following behavioral responses: withdrawal, repression, regression, and aggression. The selection of a response is related to what has reduced tension and relieved anxiety in past experiences (Aguilera and Messick, 1986).

Crises have been defined as maturational or situational. Maturational crises are considered a normal part of growth and development, for example, transition to early adulthood. Situational crises are stressful events that threaten a person's state of equilibrium resulting in a certain degree of increased inner tension (Aguilera and Messick, 1986). The outcome of a crisis is either adaptive

or maladaptive. An adaptive outcome occurs when a person resolves the problem in a healthy manner. A maladaptive outcome occurs when a person moves to a lower level of functioning and can no longer cope with previously non-threatening experiences (Johnson, 1986).

A child's personality development begins at birth and develops through a series of stages until adulthood (Caplan, 1974). It is considered to be labile and influenced by the child's interactions with his environment. The child's personality may return "... to earlier and outmoded patterns of functioning" when he is having difficulty coping with a present threat (Caplan, 1974, p. 71). This type of behavior is called regression. Any change in a child's behavior should be investigated (Caplan, 1974). The family crisis that occurs with the birth of a high risk infant will vary in intensity. It may not be as stressful for children in the family when there are support systems present and parents are coping effectively as when support is not available. Regardless of how parents are coping, children in the home may demonstrate their stress through behavioral changes.

Child Development

Child development refers to more than the development of personality. It includes physical, emotional, and cognitive development. All of these components of

development can be described as on a continuum beginning with birth and progressing through adulthood.

Emotional responses "... become less diffuse, random, and undifferentiated" as the child grows older (Hurlock, 1978, p. 193). Characteristically, the preschooler's emotions are intense, appear frequently, are transitory, reflect individuality, change in strength, and are displayed by behavioral symptoms. Common emotional patterns of preschool age children include fear, anger, jealousy, joy, pleasure, delight, curiosity, and affection (Hurlock, 1978).

A child's level of understanding is demonstrated by his ability to apply previously learned knowledge to new situations and experiences (Hurlock, 1978). Understanding is based on concept development moving from simple to complex, concrete to abstract, and specific to general (Hurlock, 1978).

The preschooler's cognitive level includes egocentrism and transductive reasoning, "... the association of one event with a simultaneous event ..." (Whaley and Wong, 1987, p. 632). The preschooler's thinking is commonly described as magical. By the age of three, the child has learned how to interact with others, appropriate sex-role functions and socially acceptable behavior, and the difference between right and wrong (Whaley and Wong, 1987). The preschooler has a great need for routine and sameness

(Smith, Goodman, and Ramsey, 1987). The manner in which the preschooler reacts to the premature birth of a high risk sibling and the hospitalization will be dependent on his current development, emotional, cognitive, and level of understanding.

Birth of a Sibling

Firstborn children react to the birth of a sibling in distinct ways. The birth will trigger certain ambivalent feelings and responses in the firstborn child. Some of these feelings include love, hate, jealousy, and protectiveness, and they continue throughout the rest of the child's life (Brenner, 1984). Sibling jealousy tends to be greater if the children are less than three years apart in age and of the same sex (Neeson and May, 1986). Regression may occur with the birth of a sibling as a means of gaining love and attention. It usually resolves within 4 to 6 weeks (Neeson and May, 1986). Children three to four years of age often become demanding and difficult (Dunn, 1985). The manner in which the child responds is also related to his personality and relationship with the parents prior to the birth (Dunn, 1985).

Birth of a High Risk Infant

Children in families having experienced the birth of a high risk infant probably detect something is wrong, but do

not fully understand. The child may "... become the forgotten family member" (Klaus and Kennell, 1982, p. 120). Children have been found to function better when they remain in the home and experience the family crisis than those who have been sent to a relative's or friend's home (Klaus and Kennell, 1982). Klaus and Kennell (1982) recommended that parents discuss the high risk infant's problems with the sibling, but after first considering what is actually wrong with the infant and secondly, how they are feeling and why. The child's reaction to the high risk infant and what is occurring in the family will be related to what he has been told and his level of understanding.

Visiting in an NICU

Visitation in the Neonatal Intensive Care Unit is encouraged in order to provide the sibling the opportunity to see where the infant is and to gain a better understanding of what the family is experiencing (Klaus and Kennell, 1982; Streeter, 1986). The child's perceptions and reactions are influenced by his age. The NICU environment may be overwhelming to the child causing him to withdraw or become hyperactive and noisy (Streeter, 1986). Sibling visitation is an opportunity for the child to get acquainted with his new sibling. The ability of the child to cope with visiting in the NICU will be demonstrated through his behavior and ability to verbalize feelings (Figure 1).

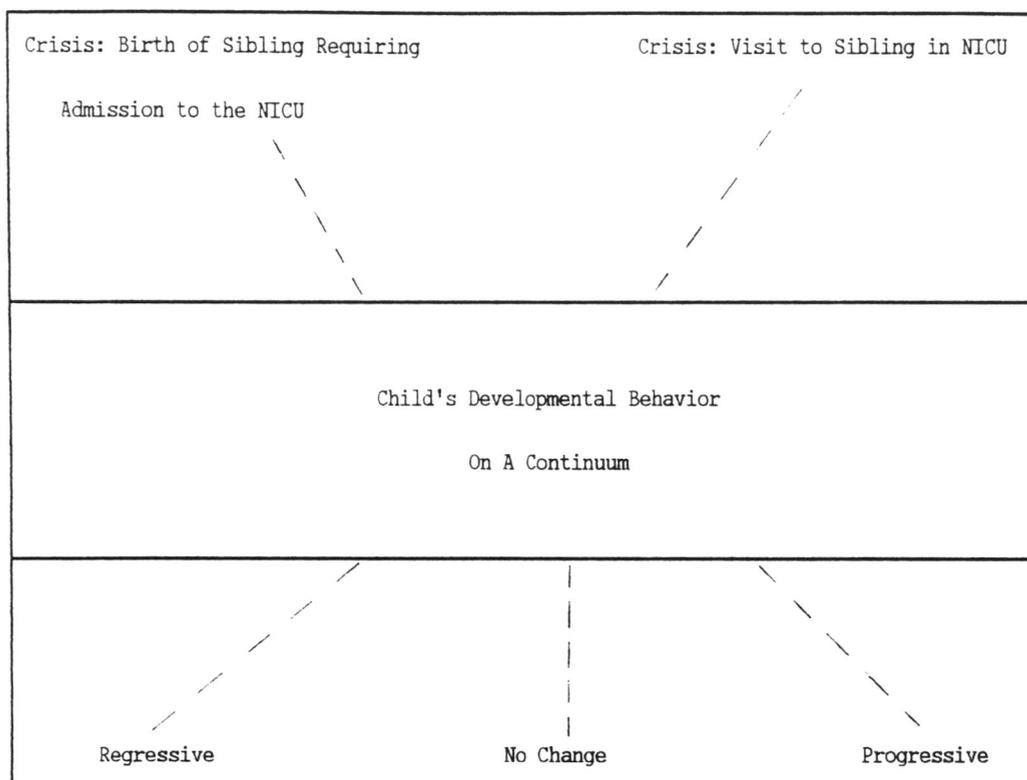


Figure 1: CONCEPTUAL MODEL

Operational Definitions

Preschool age child/preschooler refers to a child between 3 and 5 years of age inclusive.

High risk infant for the purpose of this study is any infant who has "... an increased chance of dying or becoming seriously compromised in the newborn period ..." because of maternal or fetal conditions; therefore, requiring admission to the NICU and skilled nursing care (Harper and Yoon, 1987, p. 115). This does not include infants with observable gross deformities.

Situational crisis is an unexpected event that threatens "... the individual's or family's security, control, or equilibrium ..." and demands a change in behavior (Clements and Roberts, 1983, p. 148). The event in this study is the birth of a high risk infant with subsequent admission to the Neonatal Intensive Care Unit and visit by the preschooler within this environment.

Regressive behaviors refers to defensive reactions to crisis situations. The child loses recently mastered developmental milestones when he regresses (Smith, Goodman, and Ramsey, 1987). These behaviors may be observed in one or all of the following categories: eating, sleeping, toileting, and general behavior.

Summary

The birth of a high risk infant requiring admission to a Neonatal Intensive Care Unit is a crisis experienced by all family members. The impact of the birth and visiting in the NICU on the sibling will depend upon his developmental level. This type of experience may cause the sibling to progress or regress on the development continuum.

Chapter IV

METHODOLOGY

Overview

The methodology utilized in this study is presented in the following discussion of the problem statement, the setting and sample, data collection tools, and the research procedure.

Problem Statement

What behavioral changes occurred in children visiting a sibling in the Neonatal Intensive Care Unit as reported by their mothers?

The research questions were as follows:

1. What did mothers report, retrospectively, as the behavior of their 3 through 5 year old children prior to the birth of a sibling requiring admission to the Neonatal Intensive Care Unit?
2. What did mothers of 3 through 5 year olds report as their children's behavior following maternal separation for childbirth and prior to the sibling visit to the Neonatal Intensive Care Unit?
3. What did mothers of 3 through 5 year olds report as their children's behavior following the first visit made to the sibling in the Neonatal Intensive Care Unit?

The research hypotheses were as follows:

1. There will be no difference in the 3 through 5 year olds' behavior following the sibling visit as compared to the children's behavior before maternal hospitalization.
2. There will be no regression in behavior in the 3 through 5 year old children from before the sibling visit as compared to one week after the visit.

Setting

Participants for the study were recruited from mothers who delivered infants requiring intensive care in a major teaching and referral hospital in southeastern United States. The Level III Neonatal Intensive Care Unit served a rural 29 county area. The unit provided both intensive care and intermediate care. The intermediate care unit was comprised of infants no longer requiring ventilator support and considered to be medically stable. Infants in the intensive care unit required ventilatory management, special intravenous drips, or close monitoring because of their unstable condition. The total licensed bed capacity was 29. Sibling visitation was permitted in the Neonatal Intensive Care Unit at any time except during physician rounds. Siblings were screened using a special unit card pass before visiting (Appendix A). This pass contained questions regarding recent exposure to communicable diseases and the presence of common cold symptoms. There was no formal sibling preparation offered by the NICU staff; however, nursing staff consulted with parents regarding questions and concerns.

Sample

The criteria for inclusion in the study were mothers who:

1. Had a child between the ages of 3 and 5 years of age inclusive.
2. Gave written consent to participate.
3. Had a child that had never visited in a Neonatal Intensive Care Unit.
4. Planned to have their child visit within 2 weeks of the sibling birth.
5. Had a high risk infant hospitalized in the NICU that fit the operational definition.

All children and their mothers fitting into the above criteria were included in the six month period of data collection. For the first 5 months of data collection only mothers who had infants of 34 weeks or less gestational age and who met the high risk infant definition, and who had been discharged from the hospital prior to the sibling visit were included in the study. The criteria were changed the last month of data collection to increase the number of potential subjects by including all infants admitted to the NICU, regardless of gestational age and without observable defects, and whose mothers had not been discharged at the time of the sibling visit.

Data Collection Instruments

The three questionnaires utilized for this study were each comprised of two parts (Appendix B). Part A of Questionnaire 1 included open-ended questions pertaining to the parent's history and the preschool child's history,

including child care experience and separations from the mother. Questions in Part A of Questionnaire 2 pertained to the mother's contact with the preschooler during her hospitalization. Part A of Questionnaire 3 had questions related to the sibling visit to the NICU including the child's reactions during the week following the visit.

The second part of all three questionnaires was the same. This section was exactly like Part B of the Maternal Perception of Preschool Child Behavior developed by Knicely (1981). It contained statements pertaining to four major categories of behavior; eating, sleeping, toileting, and general behavior. A Likert-type scale was provided for responses to each statement and it was marked by the researcher either "always, mostly, sometimes, seldom, or never". Each mother was given a card with the possible responses written on it. After the researcher read each statement, the mother verbally indicated one of the five responses that best described the sibling's behavior. The Maternal Perception of Preschool Child Behavior had been adapted from one originally developed by Trause. Trause's instrument was used in a study of children experiencing the birth of a new sibling (Trause, 1978 and Trause, et al, 1981). Knicely developed the Maternal Perception of Preschool Child Behavior instrument to compare behavior of children not separated from their mothers with those that were separated for childbirth (Knicely, 1982). Two

pediatric nurse clinicians were consulted by Knicely in the development of her instrument. Knicely had five mothers of preschool age children evaluate the instrument for clarity and ease of response before using it in her study. No reliability or validity data were reported for the instrument.

In this study, the first two questionnaires were given to the mothers to complete, except for Part B which was read to the mothers by the researcher. The mother's consent was obtained and the first questionnaire completed within 72 hours of the high risk infant's admission to the NICU. The second questionnaire was completed at the time of the preschool child's visit to the NICU. If the mother was still hospitalized at the time of the visit, then questions from Part A of Questionnaire 2 regarding maternal hospitalization contact were asked at the time the third questionnaire was administered. The entire third questionnaire was administered to the mothers verbally over the telephone by the researcher one week after each preschool child's visit.

Responses were indicated in the boxes to the right of each behavioral statement based on what the mothers reported. Each statement was designated as being negative, positive, or descriptive (Appendix C). Positive behaviors were scored accordingly, 1 (Never) to 5 (Always). Negative behaviors were scored from 5 (Never) to 1 (Always). Total

scores for positive and negative behaviors for each category (eating, sleeping, toileting, and general behavior) were computed for the three time intervals as reported by the mothers (before maternal hospitalization, at the time of the sibling visit, and one week after the sibling visit). Total scores for the four behavior categories ranged as follows: eating (11 to 55), sleeping (8 to 40), toileting (5 to 25), and general behavior (6 to 30).

The direction and amount of change from Time 1 (before maternal hospitalization) to Time 3 (one week after sibling visit), and then from Time 2 (at the time of the sibling visit) to Time 3 was used to determine the change scores. The positive and the negative statement summed scores were compared at the three different time intervals to compute the change scores. For example, if at Time 1 the category score for negative behavior was 28 and 33 at Time 3, then the change score would be +5. Also, if at Time 2 the category score for positive behavior was 9 and 7 at Time 3, then the change would be -2. Change score interpretation was based on the following:

+2 or greater = progression

-2 or less = regression

less than +2 and greater than -2 = no change

Descriptive statements were defined as positive or negative depending on what type of change would result

from moving "never" to "always". Change scores for descriptive statements were then derived by comparing the total positive and negative statement scores for the three time intervals. For example, if at Time 2 the positive statement score was 13 and 10 at Time 3, then the change score would be -3 (Wilford and Andrews, 1986).

A Neonate Acuity Checklist was completed by the researcher at the time of the sibling visit (Appendix D). This sheet included descriptors of devices and equipment commonly used in the NICU. Also which one of the two units the neonate was in was noted on this checklist. The "other" section was used for descriptors not listed on the checklist or for notes.

Research Procedure

Permission for the study was obtained from the head nurses of the NICU, the Department Chief of Neonatology, the Pitt County Memorial Hospital Institutional Review Board and the East Carolina University Protection of Human Subjects Committee. The charts of all daily neonatal admissions to the NICU were reviewed by the researcher to identify those infants with siblings meeting the age criteria. After identification of those who met the age criteria, the researcher visited the mother within 72 hours of the neonatal admission to explain the purpose of the study and obtain consent. If the mother agreed to

participate in the study she was asked to sign a consent form (Appendix E).

After written consent was obtained, the mother was asked to complete Questionnaire 1 for descriptive baseline behavior of the child. The researcher gave the mother phone numbers in order for her to notify the researcher of the planned sibling visit. If the sibling visit did not occur within two weeks following the neonatal admission the family was excluded from further participation. Also excluded for the first five months of the data collection period were families in which mothers were still hospitalized at the time of the sibling visit.

The sibling was screened according to an NICU visitation pass by the researcher upon the mother's and child's arrival to the NICU. Screening was done by NICU staff personnel if the sibling was permitted in the unit before the researcher's arrival. Prior to or immediately after the sibling visiting in the NICU, the mother was asked to complete Questionnaire 2 regarding sibling behavior since maternal hospitalization and sibling birth. The researcher completed the Neonate Acuity Checklist at the time of the sibling visit. The researcher did not accompany the mother and sibling during the visit. Any questions or comments reported by the mother or sibling after the visit were recorded. At this time the mother was given a card reminding her of the mutually agreed upon

date and time for the telephone administration of Questionnaire 3. The card also listed the five possible responses for each behavioral statement.

One week following the sibling visit the researcher contacted the mother by telephone and verbally administered Questionnaire 3. Any additional information given by the mother regarding the sibling visit was also recorded.

Data Analysis

Data analysis began with the examination of demographic data, specifically the age and sex of the visiting child, the child's history, parental history, and other family data. Positive and negative statement scores for each behavior category were summed for the three time intervals and change scores computed to test the research hypotheses. Because of the small sample size, statistical analysis was not possible. Instead the degree of change in behavior for the three time intervals was used to determine acceptance or rejection of the hypotheses by the researcher. The sibling's interaction with the infant during the first visit as well as the sibling's reaction as reported by the mother was analyzed.

Summary

This chapter contained a description of the problem statement, the related research questions, the setting, the sample, the instruments, and the procedure used for data collection. Plans for data analysis and measures to protect human subjects' rights were also included.

Chapter V

ANALYSIS OF DATA

Introduction

This chapter describes demographic information about the siblings' mothers, fathers, their older and younger brothers and sisters, and themselves. A discussion addressing the reported sibling/infant interaction and comments made by the siblings during the visit to the NICU is included. Reported behavioral changes in the siblings with regard to the hypotheses have been examined. A case study format was utilized because of the small sample size. Additional study findings from anecdotal notes are discussed.

Descriptive Findings of the Study Sample

The original sample consisted of 31 mothers with 35 preschool age children who met the criteria for inclusion in the study. Sixteen of the mothers completed the first questionnaire. The remaining mothers did not complete Questionnaire 1 for a variety of reasons, including inability to contact the mother, no plans for the sibling to visit, or the physical condition of the mother, infant, or sibling prohibited such visits. The loss of subjects in completing the second and third questionnaire occurred because of transfer of the high risk infant to the newborn

nursery before the sibling visit, failure of mother to notify the researcher of the sibling visit, or no visitation occurred by the sibling to the NICU. All three questionnaires were completed by 5 mothers with 5 preschool age children. These 5 mothers ranged in age from 22 to 33 and all were members of the black race. As for their education, 2 mothers had less than 12 years of education and 3 had obtained some college credits. Three were married and 2 were single. All mothers were the natural mothers of their preschool age children. All of the mothers had been employed full time prior to their hospitalization for childbirth and stated plans to return to work in the future. Four of the mothers had required hospitalization during their pregnancy other than for childbirth. All of the mothers identified some complication that required hospitalization immediately before the high risk infant's birth. The most common pregnancy complication cited was preterm labor. The preterm labor was frequently associated with other problems; preeclampsia, gestational diabetes, pelvic cyst, and uterine fibroids. Mothers were hospitalized before the birth of the baby for varying periods of time; 3 were hospitalized for less than 2 days before the birth, one for a week, and another for 2 weeks before delivery.

The fathers of the siblings ranged in age from 22 to greater than 42 years old. One father had less than 12

years of education, two had finished high school, one had completed some college credits, and another had held a college degree. Four fathers lived in the home with the mother and sibling. The one father that did not, had not lived in the home since the sibling was born and does not maintain contact with the family.

Three of the five siblings had at least one older brother or sister. The brothers and sisters were predominantly of school age, ranging from 6 to 12 years old.

There were four 4 year olds and one 5 year old. Three of the children were male, and two were female. All children were of the black race. Three of the children had required hospitalization during their life. They were all less than 2 years of age when it occurred and the mothers reported no behavioral changes after discharge. All of the children, except for the one 5 year old, had been separated from their mothers for overnight at least once. The separations were for less than a week and all involved staying with a grandmother. All of the children had required some form of child care provided by someone other than their mothers since all mothers were employed before childbirth. Three of the children were cared for by a grandmother, mostly in the child's home. The remaining 2 received care in a day care center. The 5 year old child was the only one who attended kindergarten and a day care center.

Maternal Hospitalization

During the mother's hospitalization three of the children were cared for by a relative and/or spouse in the child's home. The other 2 children were cared for by a relative in the relative's home. All children talked to their mothers over the telephone at least two or three times per week during the maternal hospitalization. There was only one child that did not visit during the mother's hospitalization.

Sibling Visit to the NICU

Three of the siblings visited the NICU less than one day after the mothers were discharged. One sibling visited after the mother had been discharged 4 days and another visited while the mother was still hospitalized. At the time of the sibling visit, 3 of the infants were in the intermediate care unit and the other 2 were in the intensive care unit. All visiting by the siblings occurred within the first week following the neonatal admission. Four of the siblings interacted in some manner with the infant. Four of the mothers described the children's general behavior in the units in positive terms and reported no disruptions or emergencies that required them to leave the unit. One mother reported that her child began acting like a baby and wanted her father to hold her on his lap. Sibling concerns or worries described by

mothers pertained to the infants' tubes. These concerns or worries were expressed by the children that only visited in the intensive care unit. Mothers reported different ways that they had prepared the sibling for the visit. Some used pictures that had been taken of the infant and all told their children where they were going and why. After the visit, the most common questions asked by the sibling were "When is the baby coming home?" and "Why can't the baby come home?" Within the week following the first visit, only 2 of the 5 siblings visited the infant again.

Description of the Infants in the NICU

Four of the five infants were born prematurely, before 34 weeks gestation. At the time of the sibling visit, all but one infant weighed less than 2500 grams. Four of the infants were in isolettes and the other was in a radiant warmer. All infants were attached to cardiopulmonary monitors and had an intravenous line in an upper extremity, hand or arm. Four of the infants only had on a diaper and the other was nude. Three of the infants had a pulse oximeter probe taped on the toe, foot, or hand. Three of the infants had a feeding tube, secured in place with tape, nasogastrically or orogastrically for gavage feedings or gastric decompression. One infant was receiving phototherapy and had a bilimask on at the beginning of the visit. Another infant was receiving continuous positive

airway pressure (CPAP) from a ventilator via a nasopharyngeal feeding tube. The other infant was receiving intermittent ventilations from a ventilator via an oral endotracheal tube. This infant was also receiving fluids through two umbilical catheters and had a transcutaneous oxygen monitor (TCOM) electrode attached to the skin.

Sibling Behavioral Changes

There were behavioral changes in all of the 5 siblings after the visit to the NICU as reported by their mothers (Appendix F). Most of the changes were reported at Time 3, one week following the sibling visit to the NICU, when compared with Time 1, prior to maternal hospitalization. The most noticeable behavior changes occurred in the eating, sleeping, and general behavior categories. Three of the siblings demonstrated mostly regression in the different categories of behavior. One sibling displayed an almost equal amount of progression and regression, and one sibling progressed.

Child A, age 4, progressed in eating, sleeping, and general behavior from Time 1 (prior to maternal hospitalization) to Time 3 (one week following the sibling visit to the NICU) (Appendix F). The child's appetite improved and he fooled around less at the table. The child was not as restless and dressed himself more often. There

was no change reported in toileting behavior during the study period. Behavioral changes in sleeping patterns were progressive with changes occurring between Time 1 and Time 3, as well as between Time 2 (at the time of the sibling visit) and Time 3 (Appendix F, Tables 2 and 6). There was a decrease in the incidence of crying when put to bed and need to sleep with a special blanket or toy.

Child B, age 4, demonstrated regression in two of the four categories. Most of the changes occurred between Time 1 and Time 3 (Appendix F). The greatest change was in the category of sleeping (Appendix F, Table 6). She no longer took a nap. She also needed to be sung to or read to in order to go to sleep. She slept more in the mother's room or bed. There was regression in general behavior. She became clingy, began using comforters, and requesting help in dressing. There was progressive change in toileting habits and there was no change in eating patterns.

Child C, age 5, demonstrated the most behavior changes of the 5 subjects. Most of the changes were regressive and occurred almost equally from Time 1 to Time 3 and from Time 2 to Time 3 (Appendix F). This sibling had some regression in eating and toileting; however, the most regressive changes were associated with general behavior (Appendix F, Table 8). The child asking for assistance dressing increased in frequency. The child was not as willing to play away from the mother as before maternal

hospitalization. This child did demonstrate progression in the sleep category (Appendix F, Table 6). There was a reduction in his prolonging bedtime and less getting up after being put to bed.

Child D, age 4, showed progression in the eating category (Appendix F, Tables 1 and 5). He demonstrated both progression and regression in general behavior (Appendix F, Tables 4 and 8). He used comforters at naptime and bedtime more frequently. This child's mother reported behavioral changes only from Time 1 to Time 3 as she was still hospitalized at the time of the sibling visit. There was no change in sleeping or toileting.

Child E, age 4, demonstrated a mixture of regression and progression within three of the four behavior categories as reported by his mother. These changes occurred equally between Time 1 and Time 3, and between Time 2 and Time 3. Progression occurred to the greatest degree in eating behavior (Appendix F, Table 1). His appetite improved and there was less fooling around at the table. The greatest degree of regression occurred in sleeping (Appendix F, Table 6). He had to be sung to or read to and he wanted a special blanket or toy in order to go to sleep. There was some regression in general behavior. There was no change in toileting habits. In summary, the mothers reported three of the siblings progressed in their eating behavior, another had no

change, and the other showed regression. In sleeping, two siblings progressed, two regressed, and one showed no change. In toileting behavior, three showed no change, one progressed, and one regressed. In general behavior, three regressed and two progressed. Thus, the greatest degree of change reported by the mothers was in general behavior. The researcher sought additional information with each questionnaire related to demographics, sibling contact during maternal hospitalization, and sibling reaction to the NICU visit.

It was hypothesized that there would be no difference in the 3 through 5 year olds' behavior before maternal hospitalization. There were reported behavioral changes in all children so the hypothesis was rejected. It was also hypothesized that there would be no regression in behavior of the 3 through 5 year old children from before the sibling visit as compared to one week after the visit. There were reported regressive behavioral changes mostly in general behavior and sleeping; therefore, the hypothesis was rejected. Both hypotheses were rejected based on the researcher's clinical judgment specific to the degree of behavioral change and not on statistical analysis.

Additional Findings

Many of the mothers who completed the first questionnaire only, as well as the mothers in the study,

reported noticeable behavioral changes in their preschool age children during the pregnancy. Several of the mothers also reported they had experienced a situational crisis during their pregnancy including a family move and the death of a 53 close extended family member.

During the telephone call made to administer the third questionnaire, 2 of the 3 mothers whose infants had been transferred to their local community hospitals reported that there were sibling visitation restrictions and this had caused their preschool age children to become very upset. One child was allowed to look through a nursery window and the other was not allowed to go beyond the hospital lobby.

Summary

This chapter included demographic information about the 5 preschool age children and their families. Reported events and comments made by the children during the sibling visit and afterwards were discussed. Behavioral changes in the children were described generally and then in a short narrative about each child. Both research hypotheses were rejected. The mothers reported behavioral changes in the children at the time of the sibling visit to the high risk infant in the NICU and subsequent to the visit.

Chapter VI

CONCLUSIONS

In this chapter a discussion of the study findings and limitations are presented. Also recommendations for further research and nursing practice implications are described.

Discussion of Findings

Most of the mothers in this study had required hospitalization during their most recent pregnancy because of one or more complications. The length of hospitalization prior to the birth of a high risk infant was at least one day for 4 of the 5 mothers in the study. Maternal separation may have affected the preschool age children's behavior more than the birth of a high risk infant. All the children were cared for by a father or relative that they knew well during the maternal separation, which may have reduced some of the stress experienced.

The behavior and reactions of the siblings during their first visit to the NICU were reported as positive by four of the mothers. Only one child did not talk to or touch the high risk infant. This was in congruence with what Schwab and others (1983) found in their study of siblings who visited in an NICU.

All siblings had behavioral changes as reported by their mothers at some time during the study period. Many

mothers reported noticing behavioral changes in their children during their pregnancy. This may have been associated with maternal separations during prior hospitalizations. Regressive changes in behavior occurred mostly in the sleep and general behavior categories. Other researchers have found sleeping problems to occur in children experiencing a maturational or situational crisis (Craft and Wyatt, 1986; Trause et al, 1981).

Interestingly, Schwab and others (1983) did not find significant changes in behavior scores of children visiting in an NICU as part of their study. The child who had the most frequent behavioral changes in this study was the one whose mother had the longest length of hospital stay prior to childbirth. One 4 year old child who had only progressive behavioral changes was the one whose mother had been discharged for the longest period of time before the sibling visit occurred.

There were three major limitations with regard to determining differences and generalizing from the findings. First, the sample size was very small and secondly, may not be representative of others who commonly visit in the Neonatal Intensive Care Unit. Thirdly, the instrument used for determining behavioral changes did not have established validity and reliability.

Relationship of the Findings to
the Conceptual Framework

The theories utilized for the conceptual framework for this study were crisis theory and child development theory. The main area of focus pertaining to child development was emotional responses. Emotional responses in preschool age children are commonly expressed through their behavior.

It was proposed that the crisis of experiencing the birth of a high risk infant and subsequent visiting in the NICU would produce changes in the preschool age child. The change would be dependent upon the child's development level.

All children progressed, regressed, or had no change in their behavior following the sibling visit as compared to prior to maternal hospitalization. Maternal separation for hospitalization may have had a major impact on the children as the child whose mother had been discharged for the longest period of time had only progressive changes in behavior. The 2 children demonstrating the most regression had mothers who had only been discharged for a few hours. The changes may have been present before the sibling visit, but the mothers may not have noticed them because of the short length of contact with the child between maternal discharge and the sibling visit to the NICU.

Implications for Nursing Practice

The results of this study emphasize the importance of including preschool age children in the assessment of the family's reaction to the high risk pregnancy. Perinatal nurses are in a position to provide anticipatory guidance for the parents about how the sibling may react to the stress experienced by worried expectant parents and how they can prepare the sibling for the birth of a high risk infant. When maternal hospitalization is required because of pregnancy complications, the perinatal nurse should encourage the mother to maintain contact with the preschool age child by telephone calls or visits.

When a high risk infant is born the parents are frequently overwhelmed and frightened. The neonatal nurse needs to educate parents that siblings also experience stress and that this is often displayed through their behavior. If parents know that regressive behavior is common then their general disappointment and frustration may be decreased. Strategies to minimize disruptions that commonly occur within families that experience the birth of a high risk infant may be shared. Continuing the child's routines as much as possible and keeping the child in the home during the crisis may be helpful.

Based on this study preschool age children did not demonstrate adverse effects during the visit to a sibling in the NICU. The neonatal nurse should ensure that some form

of preparation has been done with the sibling prior to visiting in the NICU environment. Neonatal nurses can play a major role in the development of coloring books, pamphlets, or films for preparing preschool age children for visiting in the NICU. Parents should be encouraged to participate in this process as they best know their children's level of understanding and comprehensive abilities. They may choose to show the preschool age child pictures of their high risk infant and describe what the child will experience in the NICU, i.e., alarming cardiopulmonary monitors and infusion pumps, isolettes, very small infants, sound of ventilators, and the presence of many NICU personnel.

Sibling visitation in the NICU provides an opportunity for the child to begin developing a sibling relationship with the high risk infant. Neonatal nurses need to become actively involved in educating hospital administrators, physicians, and other nurses about the need for sibling/infant interaction in high risk situations and developing policies to support sibling visitation in the NICU.

Recommendations for Research

The following recommendations for further research are suggested:

1. Further studies to determine the behavioral effects of hospitalization of mothers with high risk pregnancies on the preschool age child.
2. A study of the differences in behavior of preschool age children based on the length of maternal hospitalization.
3. A comparative study of the effects on siblings who were permitted to visit in an NICU and those restricted from visiting.
4. A comparative study of the effects on siblings who are permitted to visit in the NICU but restricted from visiting after the high risk infant is transferred back to the referring community hospital.
5. A study of the first sibling/infant interaction in an NICU using siblings of different age groups.
6. Replication of this study using a larger sample.
7. Replication of this study using families from different socioeconomic groups.
8. Replication of this study by the addition of another time interval after the sibling visit.
9. Replication of this study using a different procedure for data collection to decrease

attrition; possibly involving the NICU staff nurses in collecting the data.

10. Further testing of the instrument to determine its validity and reliability.
11. Further refinement of the instrument to increase its objectivity.
12. Revision of the instrument for use with individuals with low reading levels.

Summary

The findings from this study indicated that preschool age children demonstrate changes in behavior after the birth of a high risk infant and subsequent visiting in an NICU. It is impossible to say which one of the following events caused the greatest amount of change; maternal separation for childbirth, birth of the high risk infant, or sibling visitation to the NICU.

Consideration of the small sample size with similar characteristics must be viewed with caution when interpreting the study findings. Implications for nursing practice were addressed, as well as recommendations for further research.

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APPENDIX A: SCREENING PASS

Has your child had been exposed to measles, mumps,
chicken pox, or any communicable disease within
the last two weeks? yes_____ no_____

Has your child had a fever? yes_____ no_____

Has your child had a sore throat? yes_____ no_____

Has your child had a runny nose? yes_____ no_____

Has your child had a cough? yes_____ no_____

Has your child had a cold? yes_____ no_____

APPENDIX B: QUESTIONNAIRES

7. Does your child attend kindergarten?
 Yes
 No
8. Has your child ever been separated from you overnight before your present hospitalization?
 Yes
 No
 If no, please skip to # 11.
9. Who took care of your child during the separation and for how long? _____

10. How old was your child at the time of the most recent overnight separation? _____
11. Who is taking care of your child now while you are in the hospital?
 spouse or child's father
 friend
 relative
 other (please describe) _____

12. Where is your child staying?
 own home
 relative's home
 neighbor's home
 other (please describe) _____

13. How well does your child know the person caring for him/her?
 very well
 well
 not very well
 not at all
14. Check the statement that best describes your usual contact with your child:
 with child every day, all day
 with child every other day, most of the day
 with child every day, less than 12 hours per day
 with child every day, mornings only
 with child every day, evenings only
 with child every day, nights only
 with child on occasional days
 other (describe) _____

Family Demographic Data

- | | | |
|---|-----|---|
| 1. Mother's age | () | 17 or under |
| | () | 18 - 21 |
| | () | 22 - 25 |
| | () | 26 - 29 |
| | () | 30 - 33 |
| | () | 34 - 37 |
| | () | 38 - 41 |
| | () | 42 or over |
| 2. Mother's highest education level | () | less than 12 years |
| | () | high school grad. |
| | () | partial college, community college or vocational training after high school |
| | () | college degree |
| | () | graduate degree |
| 3. Mother's marital status | () | single |
| | () | married |
| | () | widowed |
| | () | separated |
| | () | divorced |
| 4. Are you the child's natural mother? | () | Yes |
| | () | No |
| 5. Child's father's age | () | 17 or under |
| | () | 18 - 21 |
| | () | 22 - 25 |
| | () | 26 - 29 |
| | () | 30 - 33 |
| | () | 34 - 37 |
| | () | 38 - 41 |
| | () | 42 or over |
| 6. Child's father's highest education level | () | less than 12 years |
| | () | high school graduate |
| | () | partial college, community college or vocational training after high school |
| | () | college degree |
| | () | graduate degree |

PART B

Instructions: I will read each statement under the four behavior categories: eating, sleeping, toileting, and general behavior. I will check the box to the right of each statement as you instruct me to describe behavior characteristic of your preschool child prior to your admission to the hospital for childbirth.

Child Behaviors

Eating Behavior

1. Has a good appetite
2. Has "feeding problems"
3. Is spoon fed
4. Has many spills or accidents
5. Uses a bottle
6. Plays with food
7. Wants to eat more often than usual
8. Uses a spoon to feed self
9. Feeds self with a spoon and fork
10. Drops food on the floor on purpose
11. Uses a special training cup
12. Has a decreased appetite
13. Meals are pleasant and relaxed for you and your preschool child
14. Has reverted back to more infantile feeding habits
15. "Fools around" at the table
16. Eats with fingers
17. Eating behavior has been typical of his/her usual eating behavior

Always	Mostly	Sometimes	Seldom	Never

Sleeping Behavior

1. Takes one nap a day
2. Has a special blanket or toy to go to sleep with
3. Sleeps soundly through the night
4. Usually takes two or more naps a day
5. Cries when put to bed
6. Is happy when he/she wakes up
7. Has to be rocked to go to sleep
8. Prolongs bedtime by complaining of aches and pains, asking for a glass of water, or other
9. Sleeps in his/her own room
10. Wants to sleep more often than usual
11. Has "sleeping problems"

Always	Mostly	Sometimes	Seldom	Never

12. Has to be sung to or read to in order to go to sleep
13. Gets up after being put to bed
14. Sleeps in his/her own bed
15. Sleeping behavior has been typical of his/her usual sleeping behavior
16. Sleeps in your room or bed
17. Complains of nightmares

Always	Mostly	Sometimes	Seldom	Never

Toileting Behavior

1. Is bladder trained both day and night
2. Goes to the bathroom by himself/herself.
3. Has "accidents" during the night
4. Is bowel trained during the day
5. Has "accidents" during the day
6. Wears diapers
7. Asks for help in toileting
8. Wears training pants
9. Is bladder trained during the day
10. Has "toilet training problems"
11. Is bowel trained both day and night
12. Toileting behavior has been typical of his/her usual toileting behavior

Always	Mostly	Sometimes	Seldom	Never

General Behavior

1. Uses comforters (special blankets, toys, pacifier, fingers or thumb sucking) at naptime and/or bed time only
2. Has been overly active or restless
3. Dresses himself/herself
4. Is more "clingy"
5. Goes out to play by himself/herself 1-3 times per week
6. Has temper tantrums
7. Uses comforters (special blankets, toys, pacifier, fingers or thumb sucking) during daytime and at night

Always	Mostly	Sometimes	Seldom	Never

	Always	Mostly	Sometimes	Seldom	Never
8. Has been unusually quiet					
9. Is willing to play in a room or area away from you					
10. Goes out to play by himself/herself 4-7 times per week					
11. Requests help in dressing					
12. General behavior has been typical of his/her usual general behavior					

8. Has been unusually quiet
9. Is willing to play in a room or area away from you
10. Goes out to play by himself/herself 4-7 times per week
11. Requests help in dressing
12. General behavior has been typical of his/her usual general behavior

Code Number _____

Questionnaire 2

Today's Date _____

PART A

Instructions: Please place an X between the parentheses () by the most appropriate answer; for example (X). Write in your response for those questions that are followed by a blank line _____.

Please answer the following questions pertaining to your preschool child who will be or just finished visiting in the Neonatal Intensive Care Unit.

1. Did your child talk with you over the telephone while you were in the hospital?

() Yes
() No

If yes, how often?

() daily
() 2-3 times per week
() once a week
() never
() other (please specify) _____

2. Did your child visit you while you were in the hospital?

() Yes
() No

If yes, how often?

() daily
() 2-3 times per week
() once a week
() never
() other (please specify) _____

3. How many days has it been since you were discharged from the hospital?

PART B

Instructions: I will read each statement under all four behavior categories. I will check the box to the right of each statement as you instruct me to describe behavior characteristic of your preschool child since your hospitalization and birth of a sibling.

Child Behaviors

Eating Behavior

Always	Mostly	Sometimes	Seldom	Never

1. Has a good appetite
2. Has "feeding problems"
3. Is spoon fed
4. Has many spills or accidents
5. Uses a bottle
6. Plays with food
7. Wants to eat more often than usual
8. Uses a spoon to feed self
9. Feeds self with a spoon and fork
10. Drops food on the floor on purpose
11. Uses a special training cup
12. Has a decreased appetite
13. Meals are pleasant and relaxed for you and your preschool child
14. Has reverted back to more infantile feeding habits
15. "Fools around" at the table
16. Eats with fingers
17. Eating behavior has been typical of his/her usual eating behavior

Sleeping Behavior

Always	Mostly	Sometimes	Seldom	Never

1. Takes one nap a day
2. Has a special blanket or toy to go to sleep with
3. Sleeps soundly through the night
4. Usually takes two or more naps a day
5. Cries when put to bed
6. Is happy when he/she wakes up
7. Has to be rocked to go to sleep
8. Prolongs bedtime by complaining of aches and pains, asking for a glass of water, or other
9. Sleeps in his/her own room
10. Wants to sleep more often than usual
11. Has "sleeping problems"

12. Has to be sung to or read to in order to go to sleep
13. Gets up after being put to bed
14. Sleeps in his/her own bed
15. Sleeping behavior has been typical of his/her usual sleeping behavior
16. Sleeps in your room or bed
17. Complains of nightmares

Always	Mostly	Sometimes	Seldom	Never

Toileting Behavior

1. Is bladder trained both day and night
2. Goes to the bathroom by himself/herself.
3. Has "accidents" during the night
4. Is bowel trained during the day
5. Has "accidents" during the day
6. Wears diapers
7. Asks for help in toileting
8. Wears training pants
9. Is bladder trained during the day
10. Has "toilet training problems"
11. Is bowel trained both day and night
12. Toileting behavior has been typical of his/her usual toileting behavior

Always	Mostly	Sometimes	Seldom	Never

General Behavior

1. Uses comforters (special blankets, toys, pacifier, fingers or thumb sucking) at naptime and/or bed time only
2. Has been overly active or restless
3. Dresses himself/herself
4. Is more "clingy"
5. Goes out to play by himself/herself 1-3 times per week
6. Has temper tantrums
7. Uses comforters (special blankets, toys, pacifier, fingers or thumb sucking) during daytime and at night

Always	Mostly	Sometimes	Seldom	Never

	Always	Mostly	Sometimes	Seldom	Never
8. Has been unusually quiet					
9. Is willing to play in a room or area away from you					
10. Goes out to play by himself/herself 4-7 times per week					
11. Requests help in dressing					
12. General behavior has been typical of his/her usual general behavior					

8. Has been unusually quiet
9. Is willing to play in a room or area away from you
10. Goes out to play by himself/herself 4-7 times per week
11. Requests help in dressing
12. General behavior has been typical of his/her usual general behavior

6. What comments or questions has your child made since the visit? _____

7. How did you prepare your child for the visit? _____

8. Has your child visited the unit again?

() Yes

() No

If yes, when, how many times, and with whom? _____

PART B

Instructions: I will read each statement under all four behaviorcategories. I will check the box to the right of each statementas you instruct me to describe behavior characteristic of yourpreschool child since the sibling visit to the Neonatal Intensive Care Unit.

Child Behaviors

Eating Behavior

1. Has a good appetite
2. Has "feeding problems"
3. Is spoon fed
4. Has many spills or accidents
5. Uses a bottle
6. Plays with food
7. Wants to eat more often than usual
8. Uses a spoon to feed self
9. Feeds self with a spoon and fork
10. Drops food on the floor on purpose
11. Uses a special training cup
12. Has a decreased appetite
13. Meals are pleasant and relaxed for you and your preschool child
14. Has reverted back to more infantile feeding habits
15. "Fools around" at the table
16. Eats with fingers
17. Eating behavior has been typical of his/her usual eating behavior

Always	Mostly	Sometimes	Seldom	Never

Sleeping Behavior

1. Takes one nap a day
2. Has a special blanket or toy to go to sleep with
3. Sleeps soundly through the night
4. Usually takes two or more naps a day
5. Cries when put to bed
6. Is happy when he/she wakes up
7. Has to be rocked to go to sleep
8. Prolongs bedtime by complaining of aches and pains, asking for a glass of water, or other
9. Sleeps in his/her own room
10. Wants to sleep more often than usual
11. Has "sleeping problems"

Always	Mostly	Sometimes	Seldom	Never

12. Has to be sung to or read to in order to go to sleep
13. Gets up after being put to bed
14. Sleeps in his/her own bed
15. Sleeping behavior has been typical of his/her usual sleeping behavior
16. Sleeps in your room or bed
17. Complains of nightmares

Always	Mostly	Sometimes	Seldom	Never

Toileting Behavior

1. Is bladder trained both day and night
2. Goes to the bathroom by himself/herself.
3. Has "accidents" during the night
4. Is bowel trained during the day
5. Has "accidents" during the day
6. Wears diapers
7. Asks for help in toileting
8. Wears training pants
9. Is bladder trained during the day
10. Has "toilet training problems"
11. Is bowel trained both day and night
12. Toileting behavior has been typical of his/her usual toileting behavior

Always	Mostly	Sometimes	Seldom	Never

General Behavior

1. Uses comforters (special blankets, toys, pacifier, fingers or thumb sucking) at naptime and/or bed time only
2. Has been overly active or restless
3. Dresses himself/herself
4. Is more "clingy"
5. Goes out to play by himself/herself 1-3 times per week
6. Has temper tantrums
7. Uses comforters (special blankets, toys, pacifier, fingers or thumb sucking) during daytime and at night

Always	Mostly	Sometimes	Seldom	Never

Always	Mostly	Sometimes	Seldom	Never

8. Has been unusually quiet
9. Is willing to play in a room or area away from you
10. Goes out to play by himself/herself 4-7 times per week
11. Requests help in dressing
12. General behavior has been typical of his/her usual general behavior

APPENDIX C: CLASSIFICATION OF BEHAVIORAL STATEMENTS

Classification of Behavioral Statements

KEY

P = positive

N = negative

D = descriptive

Eating Behavior

- P 1. Has a good appetite
- N 2. Has "feeding problems"
- D 3. Is spoon fed (N)
- N 4. Has many spills or accidents
- D 5. Uses a bottle (N)
- N 6. Plays with food
- N 7. Wants to eat more often than usual
- D 8. Uses a spoon to feed self (P)
- D 9. Feeds self with a spoon and fork (P)
- N 10. Drops food on the floor on purpose
- D 11. Uses a special training cup (N)
- N 12. Has a decreased appetite
- P 13. Meals are pleasant and relaxed for you and your preschool child
- N 14. Has reverted back to more infantile feeding habits
- N 15. "Fools around" at the table
- D 16. Eats with fingers (N)
- P 17. Eating behavior has been typical of his/her usual eating behavior

Sleeping Behavior

- D 1. Takes one nap a day (P)
- D 2. Has a special blanket or toy to go to sleep with (N)
- P 3. Sleeps soundly through the night
- D 4. Usually takes two or more naps a day (N)
- N 5. Cries when put to bed
- P 6. Is happy when he/she wakes up
- D 7. Has to be rocked to go to sleep (N)
- N 8. Prolongs bedtime by complaining of aches and pains, asking for a glass of water, or other
- D 9. Sleeps in his/her own room (P)
- D 10. Wants to sleep more often than usual (N)
- N 11. Has "sleeping problems"
- D 12. Has to be sung to or read to in order to go to sleep (N)

- N 13. Gets up after being put to bed
- D 14. Sleeps in his/her own bed (P)
- P 15. Sleeping behavior has been typical of his/her usual sleeping behavior
- D 16. Sleeps in your room or bed (N)
- N 17. Complains of nightmares

Toileting Behavior

- D 1. Is bladder trained both day and night (P)
- D 2. Goes to the bathroom by himself/herself (P)
- N 3. Has "accidents" during the night
- D 4. Is bowel trained during the day (P)
- N 5. Has "accidents" during the day
- D 6. Wears diapers (N)
- N 7. Asks for help in toileting
- D 8. Wears training pants (N)
- D 9. Is bladder trained during the day (P)
- N 10. Has "toilet training problems"
- D 11. Is bowel trained both day and night (P)
- P 12. Toileting behavior has been typical of his/her usual toileting behavior

General Behavior

- D 1. Uses comforters (special blankets, toys, pacifier, fingers or thumb sucking) at naptime and/or bed time only (N)
- N 2. Has been overly active or restless
- D 3. Dresses himself/herself (P)
- N 4. Is more "clingy"
- D 5. Goes out to play by himself/herself 1-3 times per week (P)
- N 6. Has temper tantrums
- D 7. Uses comforters (special blankets, toys, pacifier, fingers or thumb sucking) during daytime and at night (N)
- N 8. Has been unusually quiet
- P 9. Is willing to play in a room or area away from you
- D 10. Goes out to play by himself/herself 4-7 times per week (P)
- D 11. Requests help in dressing (N)
- P 12. General behavior has been typical of his/her usual general behavior

APPENDIX D: NEONATE ACUITY CHECKLIST

Neonate Acuity Checklist

Infant Code # _____
 Date of Admission _____
 Gestational Age _____ Birth Weight _____ Today's Weight _____
 Child's Code # Visiting _____ Age _____
 Date of Visit _____
 Intermediate Care Unit _____ Intensive Care Unit _____

Descriptor

In overbed warmer on ISC _____
 In isolette on manual control _____
 In isolette on ISC _____
 In bassinett or crib _____
 Clothes on _____
 No clothes with diaper _____
 No clothes or diaper _____
 On monitor _____
 On ventilator _____
 On CPAP with nasal apparatus _____
 Under oxyhood _____
 Under phototherapy with bilimasks over eyes _____
 Has NG, OG, or ND (circle appropriate one) _____
 Has IV(s) _____
 How many: _____
 Where: _____
 Has UAC or UVC (circle appropriate one) _____
 Has on urine bag _____
 Has urinary catheter _____
 Has wound/surgical dressings _____
 Where: _____
 Has TCOM attached _____
 Attached to pulse oximeter _____
 Other _____

APPENDIX E: CONSENT FORM

CONSENT FORM

My name is Rhonda Hager and I am a graduate student at the School of Nursing at East Carolina University. I am studying preschool children visiting a sibling in the Neonatal Unit.

I would like for you to participate in this study. Your participation will consist of:

- a. your preschool child visiting in the first two weeks following the birth of your baby.
- b. your willingness to answer three questionnaires. One at the time your permission is given, another when your child visits, and another a week later by telephone. Each will take approximately 15-20 minutes.
- c. notifying me of the day and time when your preschool child will visit.

Your participation in this study is voluntary and you can withdraw from it at any time. Withdrawal from the study will not affect the care provided to your baby.

This study will not hurt your child or yourself in any way. The only cost to your child and yourself is your time. You will not be paid to participate in this study. All information provided will be kept confidential. All data will be coded with numbers instead of names. Your signature below indicates consent.

Mother's Signature

Date

APPENDIX F: TABLES

TABLE 1: Totals for Positive and Negative Statements and Change Scores for Selected Time Intervals Related to Eating

CHILD	POSITIVE STATEMENTS					NEGATIVE STATEMENTS				
	T1	T2	T3	T3-T1	T3-T2	T1	T2	T3	T3-T1	T3-T2
A	12	13	12	0	-1	29	32	31	+2*	-1
B	14	14	14	0	0	34	34	33	-1	-1
C	14	10	14	0	+4*	33	30	28	-5*	-2*
D	7	N/A	9	+2*	N/A	20	N/A	22	+2*	N/A
E	13	13	12	-1	-1	23	23	28	+5*	+5*

* = change in behavior, ≥ 2 = progressive change
 ≤ -2 = regressive change

T1 = before maternal hospitalization

T2 = at the time of the sibling visit to the NICU

T3 = one week following the sibling visit to the NICU

TABLE 2: Totals for Positive and Negative Statements and Change Scores for Selected Time Intervals Related to Sleeping

CHILD	POSITIVE STATEMENTS					NEGATIVE STATEMENTS				
	T1	T2	T3	T3-T1	T3-T2	T1	T2	T3	T3-T1	T3-T2
A	12	11	11	-1	0	17	15	17	0	+2*
B	12	12	9	-3*	-3*	13	13	10	-3*	-3*
C	13	10	12	-1	+2*	15	18	17	+2*	-1
D	12	N/A	12	0	N/A	15	N/A	16	+1	N/A
E	15	15	13	-2*	-2*	21	21	22	+1	+1

* = change in behavior, ≥ 2 = progressive change
 ≤ -2 = regressive change

T1 = before maternal hospitalization

T2 = at the time of the sibling visit to the NICU

T3 = one week following the sibling visit to the NICU

TABLE 3: Totals for Positive and Negative Statements and Change Scores for Selected Time Intervals Related to Toileting

CHILD	POSITIVE STATEMENTS					NEGATIVE STATEMENTS				
	T1	T2	T3	T3-T1	T3-T2	T1	T2	T3	T3-T1	T3-T2
A	5	5	5	0	0	20	20	20	0	0
B	5	5	5	0	0	18	18	20	+2*	+2*
C	4	4	4	0	0	16	17	14	-2*	-3*
D	5	N/A	5	0	N/A	12	N/A	13	+1	N/A
E	5	5	5	0	0	18	18	18	0	0

* = change in behavior, ≥ 2 = progressive change
 ≤ -2 = regressive change

T1 = before maternal hospitalization

T2 = at the time of the sibling visit to the NICU

T3 = one week following the sibling visit to the NICU

TABLE 4: Totals for Positive and Negative Statements and Change Scores for Selected Time Intervals Related to General Behavior

CHILD	POSITIVE STATEMENTS					NEGATIVE STATEMENTS				
	T1	T2	T3	T3-T1	T3-T2	T1	T2	T3	T3-T1	T3-T2
A	7	8	8	+1	0	7	10	12	+5*	+2*
B	9	8	7	-2*	-1	12	9	9	-3*	0
C	9	9	7	-2*	-2*	11	15	12	+1	-3*
D	6	N/A	8	+2*	N/A	11	N/A	13	+2*	N/A
E	10	10	7	-3*	-3*	14	14	16	+2*	+2*

* = change in behavior, ≥ 2 = progressive change
 ≤ -2 = regressive change

T1 = before maternal hospitalization

T2 = at the time of the sibling visit to the NICU

T3 = one week following the sibling visit to the NICU

TABLE 5: Totals for Descriptive Positive and Negative Statements and Change Scores for Selected Time Intervals Related to Eating

CHILD	POSITIVE STATEMENTS					NEGATIVE STATEMENTS				
	T1	T2	T3	T3-T1	T3-T2	T1	T2	T3	T3-T1	T3-T2
A	10	10	10	0	0	19	18	18	-1	0
B	10	11	10	0	-1	20	20	20	0	0
C	10	10	10	0	0	20	18	18	-2*	0
D	8	N/A	10	+2*	N/A	16	N/A	16	0	N/A
E	10	10	10	0	0	18	18	20	+2*	+2*

* = change in behavior, ≥ 2 = progressive change
 ≤ -2 = regressive change

T1 = before maternal hospitalization

T2 = at the time of the sibling visit to the NICU

T3 = one week following the sibling visit to the NICU

TABLE 6: Totals for Descriptive Positive and Negative Statements and Change Scores for Selected Time Intervals Related to Sleeping

CHILD	POSITIVE STATEMENTS					NEGATIVE STATEMENTS				
	T1	T2	T3	T3-T1	T3-T2	T1	T2	T3	T3-T1	T3-T2
A	9	13	13	+4*	0	22	20	27	+5*	+7*
B	15	15	5	-10*	-10*	28	28	24	-4*	-4*
C	9	8	12	+3*	+4*	25	24	24	-1	0
D	8	N/A	7	-1	N/A	22	N/A	23	+1	N/A
E	13	13	13	0	0	29	29	24	-5*	-5*

* = change in behavior, ≥ 2 = progressive change
 ≤ -2 = regressive change

T1 = before maternal hospitalization

T2 = at the time of the sibling visit to the NICU

T3 = one week following the sibling visit to the NICU

TABLE 7: Totals for Descriptive Positive and Negative Statements and Change Scores for Selected Time Intervals Related to Toileting

CHILD	POSITIVE STATEMENTS					NEGATIVE STATEMENTS				
	T1	T2	T3	T3-T1	T3-T2	T1	T2	T3	T3-T1	T3-T2
A	25	25	25	0	0	10	10	10	0	0
B	25	25	25	0	0	10	10	10	0	0
C	25	23	25	0	+2*	10	10	10	0	0
D	23	N/A	22	-1	N/A	10	N/A	10	0	N/A
E	25	25	25	0	0	10	10	10	0	0

* = change in behavior, ≥ 2 = progressive change
 ≤ -2 = regressive change

T1 = before maternal hospitalization

T2 = at the time of the sibling visit to the NICU

T3 = one week following the sibling visit to the NICU

TABLE 8: Totals for Descriptive Positive and Negative Statements and Change Scores for Selected Time Intervals Related to General Behavior

CHILD	POSITIVE STATEMENTS					NEGATIVE STATEMENTS				
	T1	T2	T3	T3-T1	T3-T2	T1	T2	T3	T3-T1	T3-T2
A	13	14	15	+2*	+1	12	13	13	+1	0
B	11	11	12	+1	+1	15	15	11	-4*	-4*
C	15	13	10	-5*	-3*	14	15	13	-1	-2*
D	5	N/A	5	0	N/A	10	N/A	8	-2*	N/A
E	9	9	9	0	0	13	13	11	-2*	-2*

* = change in behavior, ≥ 2 = progressive change
 ≤ -2 = regressive change

T1 = before maternal hospitalization

T2 = at the time of the sibling visit to the NICU

T3 = one week following the sibling visit to the NICU