ASSESSMENT OF THE CARE-BY-PARENT UNIT AS A TOOL FOR DECREASING ANXIETY IN MOTHERS OF INFANTS REQUIRING INTENSIVE CARE

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We hereby recommend that the thesis prepared under our supervision by Carol Ann Consolvo entitled Assessment of the Care-by-Parent Unit as a Tool for Decreasing Anxiety in Mothers of Infants Requiring Intensive Care

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TABLE OF CONTENTS

TABLE OF CONTENTS CONTINUED

LIST OF TABLES

CHAPTER 1

THE CARE-BY-PARENT UNIT

Since the 1960's and the advent of widespread intensive care facilities for newborn infants, there have been a number of reports in the literature about the effects of the newborn ICU on both infants and parents. Newborn survival rates have improved drastically (Price, 1982). Most observers would note however, that the impact of the intensive care experience on parents and on parent-infant bonding can often have far-reaching effects which are only beginning to be discovered. For example, a grief reaction has been described in parents of prematures, which is unlike that of any other loss (Kaplan & Mason, 1960).

During the past several decades, professionals have sought ways to change hospital practices to help alleviate parents' anxieties at the time of birth. Some of the changes have included allowing fathers in the delivery room and having "open" visiting hours in the newborn ICU.

Bidder, Crowe & Gray (1974) studied a group of parents whose infants had required newborn intensive care and found that there were two times when parents said that they were the most anxious about their infant: 1) at the time of birth and 2) at the time of discharge home from the intensive care unit. Only recently have efforts been made to reduce anxiety for parents at the time of discharge of the infant. One of these efforts has been the

development of a facility in which parents can live in the hospital and assume care for their infant before the infant actually goes home. In some hospitals, this is called a Care-By-Parent Unit. This type of experience is thought to serve as a bridge between the intensive care unit time when the parents are so dependent on others to give care to their baby and the time when they alone will be expected to assume total care for their baby. The goal of NICU personnel has been that the care-by-parent experience will decrease the anxiety of parents about their parenting skills. This will occur as parents assume care-taking responsibilities for their infant with health professionals available as resources.

Problem of Study

Although the Care-by-Parent experience seems to be a logical step in attempting to decrease the anxiety of parents of a high-risk neonate, little research has been conducted to test its effectiveness.

Therefore, this study addressed the question: Is the anxiety of mothers of high risk infants reduced after spending two days in the Care-by-Parent unit with their infants before discharge home?

Justification of Problem

In recent years, investigators have sought answers to problems surrounding the necessity of interrupting the normal events of

labor and delivery and the post partum period to provide special life-saving measures for the infant. Often these measures must be taken when birth is premature and the infant requires life-saving support systems.

In 1960, Kaplan & Mason described reactions of mothers to the birth of a premature infant. These authors postulated that the mothers experienced four different stages as they coped with the stress of premature birth. The fourth of these stages was the preparation for the care of the infant who was "different", that is, the mother had to prepare herself differently than if the baby's birth had been "normal". In addition to the description of these stages, further studies have been conducted on reactions of parents to premature birth. Bidder, Crowe & Gray (1974) described two periods at which parents of premature infants were the most anxious: the time of birth and the time of discharge of the infant from the hospital. It would seem that parents have a great deal of difficulty in believing that they will be able to care for their own infant after that infant has required such specialized care by highly trained personnel.

Peterson & Mehl (1978), in their study, found a relationship between the length of separation of the infant and mother and the amount of attachment. Specifically, the shorter the period of separation, the greater the attachment. In almost all cases where the infant required intensive care, separation of the infant from

the mother was inevitable. This separation contributed to the mother's anxiety along with concerns over the infant's condition.

Mahan (1981) concluded that conditions requiring newborn intensive care after birth represent a crisis of some magnitude for all families. Therefore, it becomes necessary for NICU personnel to assist families in coping with their feelings, and to anticipate that crisis intervention techniques will need to be employed. Parad (1965) noted that the best chance of intervening in the crisis is before maladaptive behaviors have been incorporated into the family rituals.

In 1975, Blake, Stewart & Turcan published reports on long-term follow-up of parents of very low birth weight babies who had been discharged after long hospitalizations. They found that most parents were able to form adequate relationships with their child after discharge from newborn intensive care. Commenting on their work, Dr. Kennell (1975) stated that his experience with allowing parents to live in the hospital before the discharge of the infant seemed to have a positive effect. He further stated that his group had experienced several surprises. For example, mothers asked to have their husbands stay with them as well and often the investigators found that the mothers "made their own nests" in the hospital room, arranging the furniture and surroundings to their liking (p. 287). Dr. Kennell noted that this type of environment required further investigation.

In summary, it has been established that the period surrounding the hospitalization of an infant in the newborn ICU is stressful for families. Authors have suggested that premature birth may precipitate a crisis in families, and much work has been done to demonstrate the effects of early contact in the newborn intensive care unit. However, there has been little published work to demonstrate how parental anxiety can be relieved at the time of discharge of the infant from the hospital. Through the type of research proposed in this paper, it is hoped that health care providers can further assist families with definitive measures to reduce their anxiety.

Theoretical Framework

The theoretical framework for this study embodied two theories. The first was the theory of crisis intervention, described mainly by Gerald Caplan (1959). The second theory was the bonding relationship as it is part of family theory.

In 1959, Gerald Caplan stated that pregnancy is a "biologically determined psychosocial crisis" which upsets family equilibrium. Additionally, Kaplan & Mason (1960) reported that giving birth to a premature infant is different and causes more stress than term birth. Parad, in 1965, called premature birth a "stress situation". Further, Parad noted that a family-oriented preventive casework approach was helpful in working with families

in such situations. He emphasized that such an

> ...approach to prevention must pay attention to the condition to be prevented or anticipated, the vulnerability and accessibility of the object to be changed, and an evaluation of whether the preventive effort actually fulfilled its purpose. (p. 286)

With the establishment of premature birth as stressful for families it has become a responsibility for health care providers to seek measures to alleviate the stress. Parad (1965) stated that

> ...persons in crisis states are usually more ready for, and amenable to, interventive help if it is offered at the right time and at the right place; that is, ...before rigid defenses and related maladaptive solutions have become consolidated by the ego. (p. 289)

Klein & Lindemann (1961) also stated that the basic criterion for success in crisis intervention is that the crisis "must be a recently developed one involving a sense of 'immediacy and urgency' ....as compared to chronic states of disequilibrium (p. 286)."

Following hospitalization of their infant in an intensive care unit, some parents perceive the time of discharge as a time of crisis. In these situations, crisis intervention techniques can be employed to help parents cope. The second theory included in this theoretical framework is that of the bonding relationship. As

maternal and infant mortality have declined in this century, there has been a renewed interest in the relationship between mothers and infants, and the bonding process. Klaus & Kennell (1976) have led the movement in research in recent years by describing the impact of newborn intensive care and the incumbent separation on mothers and infants. Due in large part to the work of Klaus & Kennell, many previously widely-accepted hospital practices have been curtailed. For example, only recently have parents had the opportunity for open "visiting" hours with their infant in the newborn ICU; previously, their visits were limited to several periods of 10-15 minutes per day.

In 1980, Hawkins-Walsh described intervention techniques to diminish anxiety and enhance bonding in the NICU. She stated that a survey of parents in her unit showed that..."they did not begin to feel close to their premature baby - to feel that he was really their own - until they had had close physical contact with him" (p. 34).

Lozoff, Brittenham, Trause, Kennell & Klaus (1977) pointed out that although NICU care was introduced to decrease perinatal mortality, there is now...

> a growing body of evidence that these advances inadvertently alter the initiation of the mother-infant relationship and that some mother-baby pairs may be strained beyond limits of their adaptability. (p. 1)

In some NICU settings, according to Schraeder (1980), it is now assumed that...every family whose child remains in the hospital after the immediate post-partum period suffers a disruption of the 'normal' parent-infant relationship (p. 37).

Now that health professionals have data to support the bonding theory (Klaus & Kennell, 1976; Mahan, 1981), it is possible to utilize techniques to enhance bonding. One of these techniques can be allowing parents open visiting hours, 24 hours a day, to accomodate various schedules. Another technique can include having parents assist in their infant's care, such as performing range of motion exercises. In this situation, health professionals can assess the status of the bonding process and intervene in early stages, as necessary, to prevent disruptions in bonding.

Assumption

Parents felt that they were able to choose the Care-by-Parent experience as an alternative to direct discharge from the nursery.

Research Question

Will mothers who choose the Care-by-Parent option experience a significant difference in anxiety level after two days as evidenced by their score on the Spielberger State-Trait Anxiety Scale?

Definition of Terms

1. Mothers were defined as biological mothers, not as adoptive mothers.
2. Significant other included any person, male or female, who was in the home and assisted the mother with infant care.
3. The Care-by-Parent Unit was a hospital room where the infant stayed with the mother and in some cases father and/or significant other for 36-48 hours at discharge. The parent assumed care for the infant gradually under the direction of the nursing and medical staff. Instruction given was individually planned and provided for each family.
4. N.I.C.U. The Newborn Intensive Care Unit was a hospital nursing unit for infants on respirators and/or infants with other life-support devices.
5. Anxiety was defined as feelings of nervousness, tension, worry and apprehension.
6. State Anxiety was defined as feelings that one experienced at a particular point in time, with that point defined by the investigator; a transitory state. (Spielberger, Gorsuch, & Lushene, STAI Manual, 1970)
7. Trait Anxiety: Feelings that persisted over time and did not fluctuate in a given situation; how a person generally felt. (Spielberger, Gorsuch, & Lushene, STAI Manual, 1970)

Limitations

1. Since a small sample was used, results of this study cannot be generalized beyond the group studied.
2. No pre-delivery baseline assessment of parents' levels of anxiety was obtained.

Summary

In this chapter the problem of study was presented along with a justification and a theoretical framework. Assumptions, definitions and limitations were also included.

CHAPTER 2

REVIEW OF LITERATURE

This study was undertaken to determine if the anxiety of mothers of infants requiring intensive care could be reduced following a Care-by-Parent experience. Several relevant areas were reviewed in the literature.

Literature on crisis was reviewed for studies concerning family response to an infant requiring intensive care. The literature also was searched for information on bonding and attachment between mothers and infants requiring intensive care. Finally, the literature was reviewed for intervention methods which helped parents cope with this crisis. Each area provided insight into the complexity of the newborn intensive care environment and ways in which families and hospital personnel cope with the situation.

Crisis of Newborn Intensive Care

In 1933, the neonatal mortality rate in the United States was 58.1/1000 live births; in 1978, it was 13.6 (Price, Micka & Streck, 1982). One of the many factors contributing to this decline was the development of newborn intensive care facilities (Lee, Paneth, Gartner, Pearlman & Gruss, 1980). As the neonatal survival rates improved, health care professionals became more aware of the important new issues, such as long-term follow-up,

and the profound effects (emotional, psychosocial), of neonatal intensive care on families.

Because the birth experience has moved from home to hospital, and because of rapid technological advances, families have been separated--fathers from mothers and mothers from infants. This is particularly true for parents of newborns requiring intensive care.

The hypothesis that parenthood represents a crisis for families was confirmed in a study by LeMasters (1965). Forty-six couples were interviewed to document their feelings after the birth of their "normal" first child. The severity of the crisis varied but a majority perceived birth as a major crisis. The authors postulated that some anxieties were precipitated when couples found out how exhausting, confining, expensive and unromantic parenting could be.

Caplan, Mason & Kaplan (1965) studied crisis events for many years and published a paper on the parents of premature infants. The goal of this work was to further explore the crisis concept by studying premature birth and its impact on families. Certain facts paralleled those described in crisis theory research, including recognition of crisis as a temporary period of disequilibrium.

The research of Caplan and colleagues (1965) was developed to analyze behavior patterns of parents who had experienced a premature birth and how they coped with the situation. An early

observation was that "there may be at least two peaks of upset involved in premature delivery; the more dramatic around the birth and a briefer upset on the baby's homecoming" (p. 152). Interviews were conducted with mothers shortly after premature birth. Predictions made about the outcome of the mother-child relationship were made following these interviews and the outcomes were predicted by the investigators to be "good" or "poor". Results showed a high correlation between the prediction and the actual outcome of the mother-child relationship after birth. This study indicated that poor outcomes could be predicted and therefore, health professionals should know when to intervene to attempt to change the outcome.

A second study by Caplan, Mason & Kaplan (1965), based on earlier work by Kaplan & Mason (1960) outlined four psychological tasks to be performed by mothers of premature infants: preparation for possible loss; acknowledgement of feelings of failure; resumption of infant relations; and understanding how the infant is different (p. 155-156). The authors found that mothers who completed these tasks had a better outcome than those who did not complete the tasks.

Caplan (1960) delineated a pattern of parental responses following the premature birth crisis. He proposed that interventions to assure a mentally healthy outcome be offered to such parents. He suggested that there would be reason to develop

a community-wide program if a large number of health care professionals have knowledge of crisis intervention techniques, a sympathetic approach, and information about family dynamics.

Caplan (1960) reported ten case studies of families experiencing premature birth. From the interview data on mental health outcome, four families had healthy outcomes and six had unhealthy outcomes. From these cases, Caplan developed an "ideal" pattern of parental reactions which included: grasp of the situation, handling of emotions, and provision for help in dealing with tasks and/or feelings.

Recognizing the crisis of prematurity (or other causes that lead to newborn intensive care), Hunter, Kilstrom, Kraybill and Loda (1978) sought to determine if infants who might be victims of later abuse and/or neglect could be identified prospectively in the NICU. Abuse and/or neglect can be outcomes of unresolved family crisis. Hunter and co-workers obtained demographic data on each infant admitted to their NICU. A semi-structured interview was conducted between the parent(s) and child psychiatrist or social worker. A psychosocial risk inventory was used to record the interview. When any infant was thought to be at risk for abuse and/or neglect, efforts were made to involve the family in intervention programs with local agencies. The results of this study were that 3.9% of the 255 infants discharged were reported for abuse/neglect during the first year of life. The families in

whom abuse/neglect were reported showed "severe social isolation... and were frequently characterized by marital maladjustment, financial problems, poor use of medical services..." (p. 632).

Hunter and collaborators concluded that three components contributed to the risk of abuse/neglect of an infant discharged from the NICU: "unsupported families; biologically impaired infants; and, limited parent-infant contact" (p. 635). These conclusions led the investigators to suggest that an intense effort should be made prior to, and at the time of discharge to both prevent these deficiencies and provide resources for the family at risk.

Bonding and Attachment

In the past decade there has been much work in support of the concept of the mother-infant bond. Kennell, Trause, and Klaus (1975) advocated that there is a significant period in the mother-infant attachment process. This period, which occurs shortly after birth, is important even when the infant requires newborn intensive care.

Hales, Lozoff, Sosa & Kennell (1977) attempted to determine the limits of the sensitive period. In this study they began to define the limits of the sensitive period described by Klaus and Kennell (1976). They hypothesized that the initial, critical mother-infant contact period lasts for approximately 36 hours after delivery.

Hales & colleagues (1977) randomly assigned sixty primiparous Guatemalan mothers to an "early contact", "delayed contact", or "control group". Observations were made by a person unaware of the group assignment. The findings showed that "early contact" mothers demonstrated significantly more affectionate behaviors than "delayed contact" or control mothers.

Further studies have demonstrated the importance of this sensitive period in bonding. Lozoff, Brittenham, Trause, Kennell & Klaus (1977) reviewed data regarding mother-infant relationships in several countries. They focused on underdeveloped versus sophisticated areas of the world, noting some of the modern health care practices that create separations between mothers and infants. The authors postulated that practices which impose lengthy separation are often at the mothers'-infants' "limits of adaptability" (p. 8). Lozoff, et al, made several recommendations: every possible aspect of care that can be should be left to parental choice; new information about the abilities of newborns should be shared with parents; and, hospital routines that promote separation should be abolished.

Garrow and Smith (1976) examined the relationship between the amount of separation of mother and infant in the first week of life and problems in the subsequent six months. Their sample included 22 women with at least 2 children. Each mother had been separated from one at birth, but not the other. Results showed no

significant differences in the problems experienced in either group within the first six months. A trend appeared, however, showing increased difficulties in the infants separated from their mothers at birth after the child was 6 months of age.

Further support for the importance of early contact was provided in a study by Peterson and Mehl (1978). The investigators interviewed 46 caucasian, middle and upper class families before birth, and at four intervals after birth. They also observed each mother during her labor and delivery. The purpose of this research was to quantitate significant factors in maternal-infant attachment. Results showed that the most important variable affecting maternal attachment was the amount of separation between mother and infant. Specifically, greater separation was associated with less attachment. The authors suggested that health professionals should make every effort to keep mothers and infants together after birth whenever possible.

In addition to information on the crisis surrounding birth and significant periods for bonding to be initiated, there have been several studies and reports that specify times when the parents feel the crisis of an infant requiring intensive care is most acute. Bidder, Crowe and Gray (1974) investigated the hypothesis that the mother of a pre-term child would have more concern for that child than for a term infant. Secondly, they investigated whether or not the mother would perceive her preterm infant as

different from her idea of a perfect child. Mothers studied were those who had delivered both a term and a pre-term infant. Results showed that after two years, mothers felt that their pre-term infant was weaker than their term infant. Further analysis showed that mothers of pre-term infants were especially anxious at two times; once, immediately after birth, and again, upon discharge of the infant to the home.

DuHamel, Lin, Skelton and Hantke (1974) reported their informal observations of parents of infants requiring intensive care. Some parents had been involved in a support group composed of a nurse, physician, social worker and psychologist. After interviewing these families, the authors noted that many parents were frightened by the NICU, and some parents reported feelings of inadequacy. Many parents also felt that, once at home, their infant would need the same emergency equipment and care of the NICU. The authors suggested a controlled and systematic evaluation of parents' behaviors and feelings to further define these findings.

Lamb (70:1982; 101:1982) has disputed the work of Klaus, Kennell and others on the significance of early mother-infant contact. He noted that a number of studies could not be replicated and that the short-or long-term effects of early contact could not be shown. Further, he questioned whether the significance that has been associated with early contact

has..."created a legion of parents who feel they have missed something terribly important" if they did not have early contact (Lamb, 1982; 101:p. 556).

Commenting on Lamb's papers, Korsch (1983) stated that... "there is little indication that there has been significant biologic or emotional harm to anyone" (p. 250) from the works of Klaus, Kennell and others, and that there is "evidence for improved experiences for some" (p. 250). She noted that many health practices are acceptable if they "relieve suffering, if they satisfy, if they give pleasure" (p. 249). In 1983, Klaus and Kennell responded to Lamb's critiques of their work, and supported the notion that additional research is needed. They noted

> ...that if the present controversy over the nature and consequences of our work leads to more and better research on all aspects of this field, including consequences for those in today's hospital environment who must be separated from their babies immediately after birth, we welcome it. (p. 576)

Therefore, it appears a discussion of the merits of early infant contact will continue and further studies will be undertaken. The evidence seems clear, however, that birth and additionally the NICU environment create a crisis situation, one that disturbs the development of bonding, and one where efforts must be made to overcome stressors impeding parent-infant relationships.

Interventions

There is a wealth of description in the literature concerning measures undertaken to help alleviate the crisis situation parents face when their infant requires newborn intensive care. Barnett, Leiderman, Grobstein and Klaus (1970) proposed some modifications in care for sick newborns and described the feasibility of such changes. In the authors' clinical experience, they found that mothers felt close to their infants when performing caretaking tasks, such as feeding. To investigate their hypothesis that mothers deprived of infant contact will be less responsive than those allowed contact, the authors developed a pilot study which permitted increased contact for some mothers in the premature nursery. Results showed that differences in mothers could be categorized into three groups: (1) commitment to the infant, (2) the mother's self-confidence, and (3) behavior toward the infant. The authors thought that further studies were necessary for more definitive results.

Although prematurity commonly results in newborn intensive care hospitalization, infants with congenital anomalies frequently require newborn ICU care as well. Drotar, Baskiewicz, Irvin, Kennell and Klaus (1975) described the reactions of 20 mothers and 5 fathers, parents of 20 infants with congenital malformations. They found that the parents' reactions fell into five identifiable

patterns: shock, denial, sadness and anger, adaptation, and reorganization. During reorganization, parents coped by becoming involved in their infant's care, and by recognizing the normal aspects of the infant. The authors emphasized that if health care providers understood these patterns, they could give more effective support through out the crisis period for parents of an infant born with malformations.

Another crisis parents sometimes face is the transfer of their newborn to a regional NICU. Benfield, Lieb and Reuter (1976) studied attitudes, feelings, and behaviors of such parents in a study of 101 mother-father pairs (97% of the families were white and average maternal age was 25 years). Parents were given a questionnaire at the time of discharge of their infant from the regional center. Data analysis showed that mothers experienced more anticipatory grief than fathers and the mothers reported more feelings of sadness, loss of appetite and feelings of guilt and anger than their husbands. The authors questioned the validity of their results because the questionnaire was administered at the time of discharge, not at the more ideal time of admission to the regional center. They concluded, however, that parents have intense anxieties about the transfer of their newborn.

Christensen (1977) reviewed her involvment with the parents of a premature infant hospitalized for several months. She noted the responses by the parents to interventions made by nurses and

physicians. In one instance, parents were angered when their infant was removed from the cardiac monitor before they felt he was ready. Further, Christensen described a mother's desolate feeling about leaving her infant in the hospital after discharge from the postpartum unit. She summarized that the families were able to handle problems as they occurred because of the individual attention given to them and their infant in the NICU.

Hawkins-Walsh (1980) described practices used to help parents of infants in the NICU cope with their anxiety. With maternal transports, she noted, it was sometimes possible for the NICU staff to be alerted so that they could talk with the mother when she arrived at the regional center while she was in early labor. Hawkins-Walsh suggested recording parent contacts with health professionals chronologically. This simple record assured that important issues were not overlooked. Additionally, this data could assist health professionals in planning ways to help alleviate parental anxieties and promote attachment. Although open visitation for parents was a policy in this NICU, Hawkins-Walsh noted that parents needed frequent encouragement to spend time with their infant. Moreover, a survey of parents in Hawkins-Walsh' unit showed that "they did not begin to feel close to their premature baby until they had close physical contact with him" (p. 34). Because of these findings, parents were urged to spend several days with their infant in the NICU prior to

discharge. Hawkins-Walsh concluded that early intervention was essential to relieve parental anxieties and enhance the parent-infant relationship.

In 1976, Barnard reviewed the results of studies by Klaus, Jerauld & Kreger (1972), and also discussed Reva Rubin's (1961) work with maternal behavior. After establishing that research by Klaus, Rubin, and others showed the importance of early contact between mothers and infants in later relationships, Barnard stated that many hospitals did not allow contact between mothers and those infants requiring specialized care. Barnard categorized these infants as: premature; full-term with non-chronic physiological problems; and, those with chronic problems, often life-threatening. She postulated that care should be individualized for each mother-baby pair. Basically, Barnard pointed out that all parents should be able to see and to touch their infant. If an infant's condition permitted, the mother should be able to assist with the feedings. Further, Barnard urged that nurses observe the mother during these interactions. She reviewed factors proposed by Kennedy (1973) which could interfere with the bonding process, such as the mother's relationship with her own mother and her anticipation of the pregnancy. Barnard (1976) stated that parents could model caretaking by watching their infant's nurse.

Kopf and McFadden (1973) observed that the hospital

environment often "potentiates" the premature birth crisis, rather than relieving it. They noted that "usual" hospital mechanisms are often not adequate. For example,

> A mother and father whose initiation into parenthood is complicated by the birth of an exceptional child on Saturday morning will be hard pressed to delay their coping for Monday or Tuesday, 9 a.m.-5 p.m. when the social service referral or psychiatric consult is duly processed. We...must accept that...the only constant person immediately available in the hospital-based crisis is the nurse. (p.13)

These observations prompted Kopf & McFadden (1973) to participate in creating a family-centered environment in the special care nursery. This included "open" visiting hours for parents and encouraging them to participate in their infant's care. The nurses perceived that they were role models for the parents. One of the more important areas, they believed, was reinforcing parenting activities. They noted that increased interventions are needed when the parents show a peak of anxiety at the time of discharge due to the loss of support personnel at the hospital. Parents also should be urged to call the nurse after returning home for answers to questions about their infant's care.

Mahan (1981) described methods for interacting with families of infants requiring intensive care. She stated that it is the responsibility of health professionals to attempt to reduce anxiety in such families as well as to promote the bonding process. Mahan also stated that intervention should begin with families as soon as a problem is detected, and described practices to assist the family whose infant requires transport. One such practice was detailed in a nursery that showed parents a videotape of the newborn intensive care unit after the infant had left the referring hospital. According to Mahan, mother-infant separation and the parent's understanding of the medical factors affect intervention. Further, the author provided guidelines for the NICU staff in assisting parents in the care of their infant.

Mahan (1981) also discussed the outcomes of discharge, and of death. Mahan noted that some NICUs are now providing opportunities for parents to stay in the hospital with their infant before discharge. When this was not possible, Mahan urged that parents spend significant blocks of time in the hospital. She provided guidelines for staff members to help families cope with their infant's death. Mahan closed by stating that the NICU experience is a crisis for families whether or not the infant survives. She indicated that the NICU staff can intervene successfully with the family if they know how and when to do so.

Miller (1978) used a case presentation to discuss management

of families with high-risk infants. She noted that because the birth of such a high-risk infant is a potential crisis for families, helping the family meet the crisis is a nursing priority. The author cited from the work of Barnett, Leiderman, Grobstein & Klaus (1970) three components of parent-infant bonding: "timing and duration, the senses involved, and the care-taking nature" (p. 198). Miller (1978) stated that in some cases, although the environment in the intensive care nursery can have a negative effect on the development of the bonding relationship, a nurse can intervene to enhance development of the parent-infant relationship. For example, Miller described her positive reinforcement of the parents' efforts to have eye-to-eye contact with their infant. In closing, Miller noted that extra support of parents at the beginning of the NICU stay promotes a healthy parent-infant bond.

Schraeder (1980) described an intervention program for parents whose sick newborn infants required prolonged hospitalization. Rubin's (1963) model was used to develop a program for parents to promote attachment and bonding. Specifically, Schrader (1980) developed a chart to show stages of parenting behaviors on a continuum from "get acquainted" to a "final stage called identity" (p. 37). It was assumed that "normal" attachment processes were interrupted due to special intensive care because the infant could not return home with the mother after the usual post-partum

hospitalization. A case presentation was used to demonstrate the intervention program. Schraeder (1980) described the parents' reactions to their critically ill infant and their progress as the intervention program was implemented. Specifically, she noted the significance of role modeling by the infant's nurses in teaching the parents appropriate behaviors such as touching and caressing. Schraeder noted that several parents had taken their infants home after participating in the program and that home care had gone well; however, the author did not discuss the details of the discharge plan.

Although the time of discharge from the NICU has been shown to be a time of anxiety for parents, only a few investigators have proposed specific programs designed to reduce anxiety. Littman and Woodridge (1976) described one case of a sick neonate requiring intensive care as a model for discussing nurse and physician roles in helping the family. The case setting was a newborn intensive care unit in which "open" visitation was permitted, but where there was no facility for parents to stay with their infant on a 24-hour basis. Additionally, these authors pointed out the difficulties many parents experience when their infant requires specialized care, such as not wanting to see or touch the infant, and not coming to the hospital to visit the infant after the mother's discharge. Littman & Woodridge (1976) proposed that intervention by nurses and doctors was essential in

helping families to cope with the stresses of a sick newborn. They pointed out that intervention at the time of discharge is especially important so that parents can ask specific questions about routine care for the infant as well as air their concerns about long-term sequellae.

Lampe (1977) conducted a study of parents of infants with congenital malformations. He sought to determine what effects on the parent-infant relationship a short period spent at home prior to rehospitalization had on parental anxiety. Results showed that significantly more hospital visiting was done by parents whose infants had been at home for at least two weeks prior to rehospitalization. The author then postulated from these results that the period at home allowed parents to assume full caretaking responsibilities for their infant and to establish a close bond. He concluded that a period at home for such infants may be very beneficial and when this is not possible, parents should have an opportunity to live-in at the hospital and assume caretaking functions when appropriate.

Blake, Stewart and Turcan (1975) used taped interviews to review the cases of 160 low birth weight infants and their parents. They distinguished three behavioral phases after discharge of the infant from the NICU: a "honeymoon phase" for 7-10 days; a phase of exhaustion for several days or weeks; and, a

phase when problems disappear and mothers are anxious to relate their experiences. Blake and colleagues inferred that knowledge of these phases shows that parents do not resolve the crisis of having an infant in the NICU until they are home and assume full caretaking responsibilities.

James & Wheeler (1968) described a care-by-parent unit developed at a university hospital for children on the general pediatric service. In this unit, parents assumed total care for their child; no hospital personnel were present from 10:30 p.m. - 6:30 a.m. Any child requiring professional nursing care was admitted to the traditional pediatric ward. One of the unit's major advantages, the authors noted, was that mothers could be taught skills, such as temperature-taking, and then could be evaluated on these skills while their child was still hospitalized. Although they did not conduct a study, these authors perceived the care-by-parent setting as a very positive one for their patients.

Summary

In summary, the literature review supported the concept of NICU care as a crisis situation with a peak in the crisis occurring at the time of discharge. Although a number of supportive interventions have been attempted to assist parents, care-by-parent experiences have been described for older children

only. However, a multitude of investigators agree that parents should have extended opportunities for contact and infant care before discharge.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

An exploratory, nonexperimental one group, pre-, post-test research design was employed in this study. The effect of staying in the hospital and assuming care for an infant who was previously hospitalized in the intensive care nursery was investigated. This investigator attempted to determine if the mother's anxiety could be significantly reduced by a stay in the hospital with her baby and assumption of care for the infant before discharge. An anxiety scale was given to mothers upon entry into the Care-by-Parent Unit and at discharge, 36-48 hours later.

The cross-sectional design permitted the researcher to examine what effect the Care-by-Parent experience in the hospital had on the mother's anxiety. Blake (1975) noted that it was not until the mother took the baby home that the crisis of prematurity could be resolved. This investigator attempted to ascertain if the Care-by-Parent experience in the hospital could affect the anxiety level of the mother at the time of discharge.

Setting

The setting for this study was a newborn intensive care unit (NICU) at a university teaching hospital within the medical center of a large southwestern city. All mothers who participated in the study had an infant in this nursery.

The newborn ICU annually admitted approximately 500 patients. These patients came from a 150-mile radius which was served by a helicopter transport service. The survival rate (for inborn and outborn patients) was approximately 85%. About 425 infants were discharged annually.

Population and Sample

All parents whose infants were discharged from the NICU were offered the Care-by-Parent experience. Annually, this included approximately 425 subjects. Mothers for whom there was a known psychiatric disturbance or who had significant medical problems which would have prevented them from assuming "normal" caretaking responsibilities for the infant were excluded from the study. This information was determined by meeting with the attending physician and reviewing the chart.

The sample included 14 patients who used the Care-by-Parent Unit (CBPU). Twenty-nine mothers were included initially. Mothers who left the Care-by-Parent Unit before 36 hours were excluded from the sample. Mothers under 18 years were excluded due to the special problems of this group. All other mothers who stayed in the Care-by-Parent unit and met the criteria were asked to participate in the study.

Protection of Human Subjects

The ethical provisions for the protection of human subjects in

this study consisted of:

1. approval by the Human Investigation Committee of Texas Woman's University, the hospital, and the affiliated university medical school;
2. an explanation of the study to all physicians who admitted patients to the NICU;
3. written permission of the physicians whose clients were to be included in the study;
4. a written explanation of the study to all mothers before questionnaires were distributed;
5. the opportunity for all to choose not to participate in the study or to withdraw from the study at any time; and
6. a written consent form signed by all participants.

Instrument

The Spielberger State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch & Lushene, 1970) was used to measure the anxiety of mothers of infants hospitalized in the NICU. This instrument was developed by Spielberger and consists of two separate scales, the state scale and the trait scale. Trait anxiety was measured with an instrument composed of 20 statements in which the mother was asked to describe how she generally felt. It differentiates individual differences with regard to susceptibility to anxiety. The state scale also has 20 statements but in this scale, the

mother is asked to rate how she feels at a particular moment in time with that moment defined by the investigator. This scale measures the transitory emotional state induced by a specific situation. The investigator used situations defined in the literature as being anxiety-producing. First, a situation was described in which the discharge occurred much more imminently than planned. DuHamel (1974) stated that the NICU seems to cause parents to feel that "they will have to be constantly on the alert and ready to respond to medical crises" (p. 1005) (see Table II "A").

Secondly, a situation where the grandmother came to assist when the infant was discharged was described (Table II, "B"). Kennell & Klaus (1976) observed that mothers of sick infants are often jealous of others who want to become involved in their infant's care at home (p. 145).

Bidder (1974) and his colleagues concluded that mothers of infants born prematurely were anxious in areas associated with practical problems, such as "handling of a small, delicate child and its susceptibility to infection and illness" (p. 769). Two situations were given to mothers that related to this area (Table II, "C" and "D"). Additionally, trait anxiety was measured before and after the CBPU experience using Spielberger's scale.

Test-retest reliabilities for the trait scale as established by Spielberger were .73 to .86 (Spielberger, Gorsuch & Lushene,

1970). The state scale, intended to fluctuate over time, depending on the situation, shows low test-retest reliability, ranging from .16 to .54. However, both the trait and state scales were indicated to have a high degree of internal consistency (Spielberger, Gorsuch & Lushene, 1970). It has been shown that the Spielberger test correlates well with the Taylor and IPAT measures of anxiety in ranges from .75 to .85 for concurrent validity (Kaplan & Saccuzzo, 1982, p. 419). Evidence for construct validity was shown in a study of 977 students given the scale with standard instructions and then asked to respond in regard to how they would feel just before the final exam. The mean score for the state scale was considerably higher for the pre-exam scores (Spielberger, Gorsuch & Lushene, p. 10). Further, correlations between the STAI, the IPAT and the TMAS were "moderately high for both college students and patients" (Spielberger, Gorsuch & Lushene, p. 10).

Demographic information was collected from the mothers who were studied. This included age, race, marital status, other children and persons with whom they lived and upon whom they relied for support. Group differences were analyzed to determine if there was a difference in response between mothers of different ethnic groups or those with or without husbands. Hunter, Kilstrom, Kraybill & Loda (1978) showed that social setting was a factor in the developing relationship between NICU infants and

their parents; they also analyzed age and the presence of other children, but did not analyze race.

Data Collection

All mothers whose infants had been in the NICU, who met the criteria and whose infants were candidates for discharge were asked to participate in the study. Each mother was offered the Care-by-Parent experience by the infant's physician. The investigator was notified prior to the discharge of the infant to the Care-by-Parent Unit. If the mother agreed to participate, at the time of entry to the Care-by-Parent Unit, she was asked to complete the questionnaire. The instrument was given again on the second day, just prior to discharge of the infant. All mothers were advised by the physician, and it was also stated in the explanatory sheet, that participation in the study would have no impact on the amount of physician contact or treatment of the patient and mother.

Treatment of Data

The completed questionnaires were reviewed by the investigator and the answers transferred to data sheets. Using Spielberger's guidelines (Spielberger, Gorsuch, & Lushene, 1970, p. 5), each pre- and post-questionnaire answer was graded and a total score derived by the investigator. A separate score was determined for trait and for each of the four situations used in the state

questionnaires. Finally, demographic data was obtained from the infants' hospital charts.

The scores from the questionnaires were subjected to the paired t-test. This test was selected because it demonstrated whether there was a difference between two different sets of data (two sets of scores, pre- and post-test). The significance level was set at $p=0.05$. Computer facilities with commercial programs were utilized.

The five variables were subjected to a principal component analysis to determine subgroups of variables which contained highly correlated members. Computations for this multivariate technique were done using the SPSS 'factor' procedure. The principal components were rotated using the Varimax method (Table III).

Additionally, non-parametric correlations using Kendall's tau were used to analyze some of the demographic data in relation to the scores. Age of the mother, race, and the presence of another sibling were analyzed with the difference in scores before and after CBPU. Additionally, the marital status of the mother was used as a delimiter. The length of stay of the infant in the NICU was also analyzed with scores before and after CBP to determine if length of stay (short or long) correlated with anxiety.

Summary

In this chapter, the setting and sample were explained and the

ethical provisions employed for the protection of human subjects were enumerated. Further, the Spielberger State-Trait Anxiety Inventory (STAI), which was used as the test instrument, was reviewed. Finally, the data collection procedures and the plan for treatment of data were given.

CHAPTER 4

ANALYSIS OF DATA

In this chapter, the sample is described and the results of analysis of the data are discussed. Data analysis indicated that in the illness situation, in which anxiety was measured on the state scale, anxiety was decreased significantly after the Care-by-Parent experience.

Description of Sample

A sample of 14 mothers was used for this study. Each mother had an infant who had been hospitalized in the NICU and the mother stayed in the Care-by-Parent Unit (CBPU) for at least 36 hours. The ages of the mothers ranged from 19-34 years. Two mothers were black; 12 were white. All mothers were married. Five mothers had a child other than the one who was hospitalized. The length of hospitalization for the infants ranged from 6-126 days (see Table I).

Findings

Four hypothetical situations were developed to measure state, or transitory anxiety. These situations were developed from reports in the literature of events that are anxiety-producing for mothers of infants hospitalized in the NICU (Table II).

Principal components analysis was performed to determine if there were subgroups of the 4 situations used for the state scale

and the trait scale. Analysis revealed three factors that explained 80% of the variance in the ten sets of scores (Table III). Neighbor and illness situations comprised the first factor; trait and discharge were the second factor. The grandmother situation made the third factor.

Using the paired t-test, each mother's scores were analyzed before and after the CBPU for trait anxiety and state anxiety using the four situations in Table II. Analysis revealed a significant decrease in anxiety, $p=0.04$ for the illness situation. Ten mothers had decreased anxiety, one had no change and three had increased anxiety (Table IV and V). The results of this analysis indicated that mothers felt less anxious about the potential illness of their infant after the Care-by-Parent experience. The changes for the neighbor situation were not significant ($p=0.06$). In this instance, the mothers showed no significant decrease in anxiety after CBPU in a situation where a neighbor wished to hold the infant. Ten mothers had decreased anxiety, one had no difference and three had increased anxiety (Table IV and V).

For the discharge situation and trait anxiety, values were not significant, $p=0.08$ and $p=0.09$ respectively. The mothers showed no significant decrease in anxiety after CBPU when presented with imminent discharge. In the discharge situation, nine mothers had decreased anxiety, one had no change and four had increased

anxiety. There was also no significant decrease in trait anxiety, however, trait anxiety was not expected to decrease as it depicts how an individual generally feels. On the trait scale, nine had decreased anxiety and five had increased anxiety (Table IV and V).

In the grandmother situation, differences in anxiety scores were not significant ($p=0.23$) (Table IV). When presented with the potential situation of an alternate caretaker, the mother's mother, there was no significant decrease in anxiety. Seven mothers had decreased anxiety and six had increased anxiety. One mother did not complete this scale.

Analysis of length of stay with anxiety scores revealed no significant difference. Age was negatively correlated with the scores in the neighbor situation (pre-test) at the $p=0.05$ level (Kendall's Tau= -0.52) and also the illness situation (post-test) at the $p=0.01$ level (Kendall's Tau= -0.55). The non-parametric test, Kendall's tau, was applied to the age data because of the wide variation in ages, 19-34 years. The negative correlation shows that the older the patient, the smaller the difference in anxiety on pre- and post-test scores.

Summary of findings

Analysis of scores on the state anxiety scale revealed a significant decrease in anxiety for the illness situation and no significant difference for discharge, neighbor, mother, and

trait. These results indicate that mothers felt less anxious about the potential illness of their infant after spending time in the CBPU. Mothers were taught to recognize signs of illness in their infant and had extended opportunities to hold and observe their infant in CBPU. These activities may have facilitated the decrease in anxiety in this one situation.

Length of stay and number of siblings showed no relation to outcome. Age was negatively correlated with outcome in the illness situation (pre-test) and with the neighbor situation (post-test).

The hypothesis that mothers would experience a significant decrease in anxiety after CBPU was shown only for one situation, illness, on the state score of the Spielberger State-Trait Anxiety Scale.

TABLE I

DISTRIBUTION OF SUBJECTS ACCORDING TO DEMOGRAPHIC INFORMATION

	AGE OF MOTHER (YEARS)	RACE	MARRIED	SIBLINGS	INFANT STAY (DAYS)
1.	34	White	Yes	No	102
2.	31	White	Yes	No	19
3.	30	White	Yes	No	28
4.	30	White	Yes	Yes	124
5.	30	White	Yes	No	6
6.	29	White	Yes	No	71
7.	29	Black	Yes	No	126
8.	29	White	Yes	Yes	91
9.	28	White	Yes	Yes	76
10.	28	White	Yes	No	106
11.	28	White	Yes	No	71
12.	21	Black	Yes	Yes	49
13.	20	White	Yes	No	8
14.	19	White	Yes	Yes	10

TABLE II
HYPOTHETICAL SITUATIONS FOR STATE ANXIETY MEASUREMENT

SITUATION "A": DISCHARGE

Your baby is now one month old and as his medical problems have resolved, he is ready for discharge. The doctor has just called you and has said the baby can go home today. You had planned on discharge 3-5 days from now.

SITUATION "B": GRANDMOTHER

Your baby is one month old and ready for discharge and your mother has just called and told you that she is coming to stay with you for the first two weeks after the baby is home. She is very strong-willed and always assists when a baby is born in your family.

SITUATION "C": NEIGHBOR

You've just arrived home with your four pound baby and the neighbors are there to greet you. One of the neighbors asks if she can pick up and "hold your tiny baby".

SITUATION "D": ILLNESS

The baby was taken over to some friends house while you had dinner. The friends have a six-year old child. Your friend calls you the next day and tells you that their child is ill with fever, vomiting, and diarrhea.

TABLE III

PRINCIPLE COMPONENTS ANALYSIS

FACTOR 1	FACTOR 2	FACTOR 3
Neighbor	Discharge	Grandmother
Illness	Trait	

*(Explaining 80% of variation in data)

TABLE IV

RESULTS OF THE PAIRED t-TEST FOR BEFORE AND AFTER SCORES ON THE SPIELBERGER STATE-TRAIT SCALE

Variable	Decreased Anxiety at Discharge	No Difference	Increased Anxiety at Discharge	P Value Paired t df (p)
Grandmother	7	0	6	1.3 12(p=0.23)
Neighbor	10	1	3	2.1 13(p=0.06)
Discharge	9	1	4	1.9 13(p=0.08)
Illness	10	1	3	2.3 13(p=0.04)
Trait	9	0	5	1.8 13(p=0.09)

TABLE V
INDIVIDUAL SCORES ON THE
SPIELBERGER STATE-TRAIT SCALE

		BEFORE CBPU	AFTER CBPU
PATIENT #1			
State:	Mother	38	39
	Neighbor	39	34
	Discharge	41	34
	Illness	40	43
Trait:		42	34
PATIENT #2			
State:	Mother	29	26
	Neighbor	37	30
	Discharge	44	29
	Illness	52	37
Trait:		50	33
PATIENT #3			
State:	Mother	35	32
	Neighbor	36	31
	Discharge	25	24
	Illness	42	38
Trait:		29	32
PATIENT #4			
State:	Mother	63	42
	Neighbor	33	20
	Discharge	62	62
	Illness	33	40
Trait:		52	46
PATIENT #5			
State:	Mother	31	32
	Neighbor	35	35
	Discharge	35	33
	Illness	47	38
Trait:		33	26

PATIENT #6

State:	Mother	27	30
	Neighbor	51	34
	Discharge	56	36
	Illness	38	34
Trait:		37	36

PATIENT #7

State:	Mother	37	28
	Neighbor	38	23
	Discharge	27	29
	Illness	54	34
Trait:		43	32

PATIENT #8

State:	Mother	33	29
	Neighbor	51	55
	Discharge	45	50
	Illness	68	65
Trait:		36	45

PATIENT #9

State:	Mother	53	0
	Neighbor	26	40
	Discharge	37	40
	Illness	46	42
Trait:		32	36

PATIENT #10

State:	Mother	69	74
	Neighbor	50	48
	Discharge	49	30
	Illness	66	70
Trait:		43	36

PATIENT #11

State:	Mother	35	30
	Neighbor	44	39
	Discharge	50	36
	Illness	43	36
Trait:		39	36

PATIENT #12

State:	Mother	22	28
	Neighbor	29	35
	Discharge	31	30
	Illness	45	43
Trait:		27	28

PATIENT #13

State:	Mother	39	30
	Neighbor	46	37
	Discharge	38	34
	Illness	60	31
Trait:		38	30

PATIENT #14

State:	Mother	37	41
	Neighbor	60	45
	Discharge	32	41
	Illness	66	66
Trait:		51	49

CHAPTER 5

SUMMARY OF THE STUDY

The purpose of this study was to determine if the Care-by-Parent (CBP) experience could decrease the anxiety of mothers of infants who had required care in the NICU. An anxiety scale was used to measure the mother's anxiety just prior to the Care-by-Parent experience and again at discharge. Several demographic variables such as mother's age and race were also analyzed to determine if there was a relationship between these variables and anxiety scores. In this chapter, the study will be summarized and discussed, and conclusions and implications for further study will be proposed.

Summary

In 1974, Bidder and colleagues determined that parents of infants hospitalized in the NICU were anxious about their infants at the time of discharge. Mahan (1981) concluded that the NICU environment presents a crisis of some magnitude for all families.

Recently, a number of measures have been undertaken by health professionals to attempt to reduce the anxiety of parents while their infants are in the NICU. For example, many NICU's have a policy which permits parents to visit their infant at any time. However, a search of the literature indicated that few measures had been undertaken to attempt to diminish the anxiety of parents

at the time of discharge of their infant from the NICU.

In this study, fourteen mothers completed the STAI anxiety inventory prior to entering the Care-by-Parent Unit (CBPU) with their infant and again at discharge from CBPU, 36-48 hours later. State, or transitory anxiety was measured by presenting hypothetical situations that have been shown to be anxiety-producing to mothers. These included situations involving an alternate caretaker (grandmother), potential illness of the infant, imminent discharge and neighbor holding the infant (Table II). Trait anxiety was also measured.

Each completed set of scores was analyzed to determine if there was a significant decrease in the mother's anxiety after her baby was discharged from the CBPU. A paired t-test was used to analyze the data. Anxiety was significantly reduced ($p=0.04$) in one measure of State Anxiety with a situation involving potential illness of the infant. (See Table IV.)

Discussion of findings

In this study, the hypothesis was to determine if mothers who chose the Care-by-Parent Unit would experience a significant difference in anxiety after two days as evidenced by their score on the Spielberger State-Trait Anxiety Scale. The State-Trait Scale utilized one scale to measure trait anxiety and four scales with hypothetical situations to measure state anxiety (Table II).

The results showed that in only one of the hypothetical situations used to measure state anxiety was there a significant decrease in the mother's anxiety after the Care-by-Parent Unit experience. This was the situation in which the involved infant was exposed to a potential illness. The mothers in the sample showed significantly less anxiety for this situation ($p=0.04$) after the Care-by-Parent Unit experience. During the CBPU, the mother had an opportunity to assume the 24-hour caretaking role. She also had opportunities to observe her infant's patterns of eating, sleeping, etc. These opportunities for increased interaction between mother and infant may have allowed the mother to feel more secure in her abilities to care for her infant. Further, while the mother was in the CBPU, the staff discussed signs and symptoms of illness in the infant and the mother may have felt less anxious about her abilities to recognize illness.

DuHamel, Lin, Skelton and Hantke (1974) reported that mothers felt they were inadequate to care for their infant at home after the NICU experience. These mothers reported that they felt their infants would require the same emergency environment at home that the NICU had provided. It is possible that the CBPU experienced helped to allay some of this anxiety.

In the study done by this investigator, there was a trend toward decreased anxiety in situations of imminent discharge and of a neighbor asking to hold the infant. The less-threatening

atmosphere of the CBPU, in which the mother assumed full care with health professionals near by to teach and assist, may have enhanced the mother's feelings of adequacy in infant care and decreased her feelings of anxiety.

There was no significant decrease in anxiety from entry to CBPU to discharge in relation to the situation in which the grandmother planned to come for a visit. This may have occurred because the mother felt comfortable with her own parenting skills and was not concerned about an alternate caretaker, the grandmother. Additionally, the CBPU experience may have reinforced the mother's feeling of being special and important to the care of her infant, and thus, less anxious that the grandmother could "take over" her special tasks or responsibilities.

Conclusions and Implications

Several conclusions can be drawn from the results of this study. For the sample used, mothers showed significantly less anxiety on one measure of State Anxiety only after CBPU. On three other measures, mothers showed no significant difference. From these results, several implications can be made.

First, a larger sample might have permitted more significant differences to emerge. Also, a larger sample that included more diversity, such as unmarried and married mothers, may have permitted further analysis of the relationship between confounding variables, differences between ethnic groups, and anxiety. In

this study sample, all mothers were married, and 12 of the 14 mothers were white.

The results indicate that some reduction in anxiety was experienced. However, many questions remain unanswered. It would be useful to know if the same results could be achieved by other means, such as a visiting nurse after direct discharge home. Also, it would be helpful to know if anxiety could be reduced further with a longer CBPU experience. Lastly, it would be of benefit to know, for clinical application, if certain types of mothers would derive the greatest reduction in anxiety from this experience. If the CBPU experience can reduce anxiety in mothers, then consideration of its use should be a routine part of all infants' NICU discharge planning.

Recommendations for Further Study

In consideration of the results achieved in this study, several recommendations are proposed:

1. A control group should be studied to determine if the CBPU causes a reduction in anxiety or if the passage of time with the infant can achieve the same results.
2. The study should be expanded to include a larger sample.
3. Additional outcomes should be measured, such as the number of times mothers call for help after discharge or the number of unscheduled medical visits.

4. A newborn intensive care unit with more rigid rules about parental involvement with their infants should be studied to determine if the CBPU has the same impact on anxiety reduction for parents whose infants were hospitalized in units with "open" parental privileges and those in "closed" units.

5. Anxiety of fathers who are involved in the care of their infants should be measured.

6. Other variables, such as the mount of time prior to discharge that the mother and/or father visited, should be controlled and possibly used as a variable.

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AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Hermann Hospital

GRANTS TO Carol Ann Consolvo, R.N.
a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

"Evaluation of Care by Parent Unit in Relieving Parental Anxiety"

The conditions mutually agreed upon are as follows:

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

Date: February 8, 1983

Catherine W. Vasbel
Signature of Agency Personnel

Carol Ann Consolvo
Signature of Student

Signature of Faculty Advisor

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

/bc

EXPLANATION OF STUDY

My name is Carol Ann Consolvo, R.N., and I am working with the staff of the Newborn Intensive Care Unit to study parents' feelings around the time of discharge of their infant from the NICU. I am also a graduate student at Texas Woman's University.

I would like to ask you to complete a questionnaire now, just before you go to the Care-by-Parent Unit, and again to complete the same questionnaire just before you leave.

The questionnaire I would like you to complete contains questions about how you feel, in general, and also has four situations that might happen to you. These are situations that have happened to other families with infants in the NICU and I would like you to pretend that they are happening to you, telling me how you feel.

There are several guidelines which will be followed during this study:

1. All information will be confidential and no names will be used to identify any information.
2. It should take you approximately 20 minutes to complete the questionnaire.
3. You are free to withdraw at any time you choose. Choosing to withdraw will not in any way affect your care.

If you agree to participate, you will be asked to sign a written consent form. You may keep this sheet for your information and the consent form if you wish. Thank you.

We and other MD's have noted that parents of ill babies are anxious at two particular points in their baby's illness: the first is at the time of birth; the second is at the time of discharge. In an attempt to reduce anxiety, we have developed a Care-by-Parent Unit (CBPU) which will be offered to you as a routine option prior to your baby's discharge. The Care-by-Parent Unit is a part of our routine patient care.

In order to study the effectiveness of the Unit in relieving anxiety, Ms. Consolvo would like to ask you a series of questions. These will be administered at two times - before CBP and at the time of discharge. Each test will take about 20 minutes. If at any time during your participation you have questions, they will be answered. Your performance on this test in no way affects the care given your infant or the time of discharge of your infant. Your answers will be kept in strictest confidence and be available only to Dr. Denson and Ms. Consolvo. The parents participating in this evaluation will not be identified at any time. The results will be available only to the principal investigator.

By participating in this study you may gain insight into your own feelings about your baby.

You are free to withdraw your consent and discontinue participation in this project at any time without any affect on your infant's care. Refusal to participate in the study does not prevent participation in the Care-by-Parent Unit.

_____
Mother

_____
Father

_____ _____
Witness Investigator

SELF-EVALUATION QUESTIONNAIRE

STAI FORM X-2

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	①	②	③	④
22. I tire quickly	①	②	③	④
23. I feel like crying	①	②	③	④
24. I wish I could be as happy as others seem to be	①	②	③	④
25. I am losing out on things because I can't make up my mind soon enough	①	②	③	④
26. I feel rested	①	②	③	④
27. I am "calm, cool, and collected"	①	②	③	④
28. I feel that difficulties are piling up so that I cannot overcome them	①	②	③	④
29. I worry too much over something that really doesn't matter	①	②	③	④
30. I am happy	①	②	③	④
31. I am inclined to take things hard	①	②	③	④
32. I lack self-confidence	①	②	③	④
33. I feel secure	①	②	③	④
34. I try to avoid facing a crisis or difficulty	①	②	③	④
35. I feel blue	①	②	③	④
36. I am content	①	②	③	④
37. Some unimportant thought runs through my mind and bothers me	①	②	③	④
38. I take disappointments so keenly that I can't put them out of my mind	①	②	③	④
39. I am a steady person	①	②	③	④
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	①	②	③	④

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

NAME _____ DATE _____

THE SITUATION: The baby was taken over to some friends house while you had dinner. The friends have a 6 year old child. Your friend calls you the next day and tells you that their child is ill with fever, vomiting, and diarrhea.

DIRECTIONS: Read each statement below and blacken the appropriate number to the right of the statement to indicate how you feel right now, that is, at this imagined moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings in this situation.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I am regretful	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel rested	①	②	③	④
9. I feel anxious	①	②	③	④
10. I feel comfortable	①	②	③	④
11. I feel self-confident	①	②	③	④
12. I feel nervous	①	②	③	④
13. I am jittery	①	②	③	④
14. I feel "high strung"	①	②	③	④
15. I am relaxed	①	②	③	④
16. I feel content	①	②	③	④
17. I am worried	①	②	③	④
18. I feel over-excited and "rattled"	①	②	③	④
19. I feel joyful	①	②	③	④
20. I feel pleasant	①	②	③	④

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

NAME _____ DATE _____

THE SITUATION: Your baby is now 1 month old and as his medical problems have resolved he is ready for discharge. The doctor has just called you and said the baby can go home today. You had planned on discharge 3-5 days from now.

DIRECTIONS: Read each statement below and blacken the appropriate number to the right of the statement to indicate how you feel right now, that is, at this imagined moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings in this situation.	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I am regretful	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel rested	①	②	③	④
9. I feel anxious	①	②	③	④
10. I feel comfortable	①	②	③	④
11. I feel self-confident	①	②	③	④
12. I feel nervous	①	②	③	④
13. I am jittery	①	②	③	④
14. I feel "high strung"	①	②	③	④
15. I am relaxed	①	②	③	④
16. I feel content	①	②	③	④
17. I am worried	①	②	③	④
18. I feel over-excited and "rattled"	①	②	③	④
19. I feel joyful	①	②	③	④
20. I feel pleasant	①	②	③	④

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

NAME _____ DATE _____

THE SITUATION: You've just arrived home with your four pound baby and the neighbors are there to greet you. One of the neighbors asks if she can pick up and "hold your tiny baby".

DIRECTIONS: Read each statement below and blacken the appropriate number to the right of the statement to indicate how you feel right now, that is, at this imagined moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings in this situation.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I am regretful	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel rested	①	②	③	④
9. I feel anxious	①	②	③	④
10. I feel comfortable	①	②	③	④
11. I feel self-confident	①	②	③	④
12. I feel nervous	①	②	③	④
13. I am jittery	①	②	③	④
14. I feel "high strung"	①	②	③	④
15. I am relaxed	①	②	③	④
16. I feel content	①	②	③	④
17. I am worried	①	②	③	④
18. I feel over-excited and "rattled"	①	②	③	④
19. I feel joyful	①	②	③	④
20. I feel pleasant	①	②	③	④

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

NAME _____ DATE _____

THE SITUATION: Your baby is one month old and ready for discharge and your mother has just called and tells you she is coming to stay with you for the first two weeks the baby is home. She is very strong-willed and always assists when a baby is born in your family.

DIRECTIONS: Read each statement below and blacken the appropriate number to the right of the statement to indicate how you feel right now, that is, at this imagined moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings in this situation.	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I am regretful	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel rested	①	②	③	④
9. I feel anxious	①	②	③	④
10. I feel comfortable	①	②	③	④
11. I feel self-confident	①	②	③	④
12. I feel nervous	①	②	③	④
13. I am jittery	①	②	③	④
14. I feel "high strung"	①	②	③	④
15. I am relaxed	①	②	③	④
16. I feel content	①	②	③	④
17. I am worried	①	②	③	④
18. I feel over-excited and "rattled"	①	②	③	④
19. I feel joyful	①	②	③	④
20. I feel pleasant	①	②	③	④

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