A support group for parents of premature infants

Gayle Sue King

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A SUPPORT GROUP FOR PARENTS OF PREMATURE INFANTS

A Project
Presented to the
Faculty of
California State
University, San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
in
Psychology

by
Gayle Sue King
March 23, 1987
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Approved:
Chair Psychology
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Date
ABSTRACT

Modern technology is saving more and more infants who are born prematurely. Many families may not be prepared for the extra stress that premature birth brings. The purpose of this project was to develop a support group for parents of premature infants. The subjects were to have been 30 English-speaking non-primiparous, married couples (maternal age: 20-30 years) from a local hospital who have given birth to a single birth, non-malformed premature infant. Fifteen couples were to have been placed in the experimental group and 15 couples in the control group. Pre and post tests to evaluate the hypotheses included State-Trait Anxiety Inventory, Locke-Wallace Marriage Inventory, Parental Perception Inventory and background information. It was hypothesized that participation in the support group would (1) decrease the stress as perceived by the parents, (2) increase marital satisfaction and (3) improve the parental perception of the infant. Due to the lack of cooperation by local hospitals, however, it was not possible to obtain data on the experimental portion of this project.
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Introduction

Miracles are happening every day in hospitals as more and more infants are surviving the trauma of a premature birth. Just 10 years ago, some of these infants would have died. Now many infants, however, are going home with medical and psychological problems created by the same technology that saved their lives. No one is sure what the long-term effects of these special births will be on these babies and their families (Henig, 1981; Jeffcoate, Humphrey, Lloyd, 1979).

There are several factors that make having a premature infant especially difficult for parents. First, the parents of a premature infant miss out on the final weeks of pregnancy, and are unable to make final plans for the baby's arrival. Then, the parents are presented with an infant that doesn't yet look like a full-term baby. It has a high-pitched cry, if it has the strength to cry at all. It may also have a number of medical problems that may be potentially life-threatening. Additionally, the financial burdens of the baby may seem overwhelming to the parents. All of this, combined with a feeling of failure for not producing a healthy baby, may leave the parents with a tremendous burden and a sense of depression. Many parents feel guilty and puzzled, wondering "What did I do
wrong?" They may search for some reason for labor beginning too soon. The underlying guilt is that there is something terribly wrong with the woman for not producing a healthy, full-term baby. This feeling of inadequacy may be increased by the actions of the hospital staff. The infant is taken away from the mother and given to trained personnel, which may in turn deepen the mother's sense of guilt and lessen her self-confidence (Goldberg & DiVitto, 1983; Henig, 1983; Jeffcoate et al., 1979; Kaplan, 1960; Kennell & Klaus, 1971).

Parents of premature babies may benefit from support during this stressful period. The purpose of this project was to develop a support group for parents of premature infants. The support group would ideally be available to parents while their infants are still in the hospital. Since this is the most stressful period for the parents, it is proposed that the support group will reduce the stress, give the parents useful information that can be called on in later months, and help them to feel more in control of this difficult situation. Toward this end, the project is organized in the following manner. First, the definition and cause of prematurity, along with the physical attributes of the premature infant will be described. Second, the behaviors and characteristics of the premature infant will be explained. Third, the
implications for the parents will be examined. Finally, the project curriculum will be presented.

Definition and Causes of Prematurity

Premature births are generally defined as births that occur prior to the 37th week of a 40-week pregnancy period. Infants with a birth weight of less than 2,500 gm. (e.g., 5 lbs.) may be considered to be premature (Keller, 1981). Since gestational age is sometimes difficult to determine, birth weight is often the preferred method of determining prematurity. However, growth weights may also vary among individual fetuses. Taken separately, neither measurement of prematurity is entirely satisfactory. For the greatest accuracy, any measurement of prematurity is one based on both the gestation and birth weight factors. Cunningham, Williams Hawes & Madore (1974) computed a scale of neonatal mortality rates by gestation and birth weight factors, which indicates that the optimal survival rate in the general population is reached at a birth weight of 3,000 to 4,250 gm. (e.g., 6 lbs. 9 ozs. to 9 lbs. 6 ozs.) and a gestation period of 34 to 42 weeks (Keller, 1981). Since the operational definition of prematurity tends to vary among studies, it is important to interpret findings relative to the criteria established initially for prematurity. (For example, if a study uses 2,500 gm. as a definition of prematurity, it
will produce very different results from a study that uses 1,300 gm. as its definition.)

The causes of prematurity are varied. First, chromosomal or genetic abnormalities may cause the infant to be aborted early, due to defects in the fetus. Second, Rh incompatibility between the mother's and infant's blood may cause an early birth. Third, the placenta can be located in an area of poor uterine vascular supply, which is inadequate in providing the fetus with sufficient nutrition (Werthmann, 1981). The placenta also can be implanted in an inappropriate section of the uterus, or it may be too small and unable to properly nourish the infant. Fourth, multiple births can cause prematurity. Due to a limited amount of room in the uterus, the incidence of prematurity increases as the number of fetuses increase (Rosenblith & Sims-Knight, 1985). Also, if the mother uses drugs (including alcohol), she increases the risk of having a premature birth. Smoking, for example, has been responsible for early births or for small-for-date babies. Toxemia, a hypertensive disease found in pregnant women, is also a condition that can cause prematurity (Werthmann, 1981).

There are also socioeconomic factors that influence maternal prenatal outcome. Race and maternal age contribute to the factors that cause prematurity (Rosenblith & Sims-Knight, 1985). Caucasian women, for example, have a
10% chance of having a premature birth, while the incidence increases to 20% for black mothers. Additionally, when a woman has one premature infant, her chances of having a second are increased to 25% (Werthmann, 1981). Maternal age of 25 to 29 years has a 5% chance of having a low-birth weight infant. Maternal age of 18 to 19 years has an 8% chance. However, mothers who are 40-to-44-years old have only a 7% chance of giving birth to a low-weight infant (Keller, 1981).

Physical Characteristics

Physically, the premature infant does not look like a full-term infant. The first sight of an infant in an intensive care unit can be a shock for the parents. The smaller the baby, the greater the surprise and worry. Lorenz (1943), an ethologist who has studied the appearance of the young of many species, has defined a cluster of features in newborns that are appealing to adults which appear to release "positive" parental responses toward the infant. These features include a large head, flat nose, broad cheeks, large eyes, and smooth, soft body surfaces (Goldberg & DiVitto, 1983). The preterm infant, however, has not had enough time in the womb to develop the physical features that elicit these parental responses. Fat is the last infant feature to form between seven and nine months of gestation, and it is this layer of fat that gives the full-term babies their soft, rounded appearance.

The skin of a premature infant looks almost transparent. The veins and arteries are visible through the skin, since the infant may also have a ruddy color. In black infants, the pigment in the infant's skin has not yet darkened, giving them the appearance of having "white" skin (Henig, 1983). The skin of these babies looks very fragile, and tends to make parents afraid to touch them. In addition, the normally-developing fetus in utero needs to be protected from the amniotic fluid, and a fine hair called lanugo (which disappears in the last months of gestation) appears to provide this protection. This protective hair, which is still visible in preemies, can make the premature infant look even more strange to the parents (Henig, 1983).

Since cartilage also forms in the final months of gestation, the absence of cartilage in the preterm baby may be evident in the ear formation. The ears may fold flat on the infant's head, giving the undeveloped ear the appearance of being deformed (Henig, 1983).

The genitals may also appear to be underdeveloped. The testicles descend into the scrotum in the last few weeks in the uterus, and the foreskin does not cover the penis of premature boys. The outer folds of the labia are
not completely formed in girls, so the inner folds can be seen. These physical indications of sex are very worrisome to parents who want to be sure that their baby is normal in every way (Henig, 1983).

In addition, an even more frightening sight to the parents is all of the equipment that is needed to keep the infant alive. The tubes and wires that enable the infant to survive may appear very threatening to the parents. The parents may not even be able to see much of the baby's face due to the eye patches, which function to protect the infant from the bili lights that break down bilirubin in the bloodstream.

The first view of the infant in this disturbing setting is especially overwhelming to parents if it is their first child. The father may first see the child alone while his wife recovers from childbirth. Some men are totally unprepared for this experience, particularly if the mother has been more involved than they have with the doctors and the hospital environment before the birth. This may contribute to new fathers feeling confused, frustrated and lonely in the intensive care nursery (Henig, 1983).

Behaviors and Characteristics of Premature Infants

Crying. Crying is the most effective infant behavior for getting the attention of adults. In full-term infants, the amount of crying subsides as they learn other means of
communication. However, the premature baby may actually cry less in the beginning due to the amount of energy that it requires to cry. When they develop more strength, they may cry for longer periods than full-term infants because they lack motoric control needed to stop crying and to divert their attention elsewhere (Goldberg & DiVitto, 1983).

Crying is also a physical signal for parents. The infant's cry contains information about the health of the baby. The cry of the premature infant is higher in pitch and has a different timing than that of a healthy full-term infant, which makes their crying harder to understand than that of full-term infants for the parents (Frodi & Lamb, 1978; Goldberg, 1979; Goldberg & DiVitto, 1983). When adults have been asked to rate the cries of babies, the cries of preterm infants have been judged to be more unpleasant and irritating than those of full-term babies (Goldberg & DiVitto, 1983). Frodi and Lamb (1978), for example, found the cry of the preterm baby to be so aversive in some cases that a predisposed adult may be more apt to be triggered into aggressive, harmful behavior. Furthermore, they found that the parents in this study reported less eagerness overall to interact with the premature infant.

When an infant cries a great deal and is difficult to soothe, the parents may become less responsive (and
potentially more abusive) toward the infant. The response may continue even when the infant is no longer crying. In one study, mothers whose babies cried frequently and for long periods of time were found to have decreased affectionate contact with the child later on (Frodi & Lamb, 1978).

The preemie may also have physical problems with their lungs, which may not supply enough oxygen to make them comfortable. The constant struggle for adequate oxygen may make the baby very irritable compared to a full-term baby due to the constant discomfort they experience (Henig, 1983).

Sociability. The premature baby has a special interactive style, characterized by an unwillingness (or inability) to "socialize" as full-term infants of equivalent ages do during the early months of life (Henig, 1983). These babies tend to smile and vocalize less than full-term infants. This has been said to be related to an immature nervous system, such that the brain cells which are not completely developed are unable to transmit all of the numerous signals needed for human interaction (Henig, 1983). Perhaps due to their overall decreased responsiveness compared to full-term infants, prematures may have a significant impact on their parents' behavior. For example, Henig (1983) found that mothers of eight-month-old
preemies were less likely to interact with these infants than mothers of full-term infants.

A potential consequence of the lack of interplay between the parents and the infant may be a sign of (or predispose a parent toward) parental "burnout." During the early weeks of life, the parents may be trying to elicit responses from an infant whose nervous system is too immature to respond. Later, when the developing infant is ready to respond to others, the parents may have "turned off" to the infant's cues. As a result, the preemies may become less responsive to the parents (Henig, 1983). Infants give cues to the caregiver that ultimately shape the caregiver's reactions and behavior toward the baby. However, when the infant provides less distinctive cues to guide the caregiver (which is characteristic of premature infants), and contributes less to maintaining a flow of communication between them, it is not surprising that the infant-parent communication can break down (Field, Goldberg, Stern & Sostek, 1980; Henig, 1983; Tinsley & Parke, 1983).

Parents of premature babies have to work harder to get the infant's attention. This has been observed at birth and also at four months of age. The parents of preemies must change their infant's position, juggle the bottles, and so on during feedings in order to maintain the infant in an alert state (Goldberg, 1978). In
contrast, the parents of responsive full-term infants do not need to stimulate the infants as much to keep them alert.

Getting acquainted with an infant in an intensive care nursery is difficult. Even in hospitals that allow parents to visit, handle, and care for their babies, this environment is not comparable to what full-term parents experience. The atmosphere is not conducive to socializing. Parents need to develop skills in learning how to socialize with the preemie. There are few opportunities in the nursery to learn to read the infant's cues. As parents observe the infant's behavior and make decisions about social interaction, they can then better evaluate their effectiveness in terms of the infant's response. When the decision is correct and the infant responds in a positive way, the parents feel more competent as parents. A full-term infant is more "readable" to parents. They give clearer messages about their needs. The parents are reinforced more often for understanding whether the infant is tired, hungry, or ready to socialize. Since predictability is the key to many successful interactions, knowing the infant's behavior patterns makes it easier to respond correctly (Goldberg, 1978). However, premature infants are not as predictable as full-term babies.

If the parents do not have the opportunity to learn to read the behaviors of the infant in the hospital, they
may start to feel less competent as parents. According to Seashore, Leifer, Barnett and Leiderman (1973), mothers were asked to choose either themselves or one of five other caregivers (e.g., a nurse, grandmother, or other relative) to care for their infant. Mothers who had not been able to handle their first-born, preterm infant chose themselves less often compared to a sample group of mothers of full-term infants. These mothers did not appear to have much self-confidence.

Field (1983) has a recipe for a healthy conversation with a preemie: "Imitate the infant's behavior, repeat phrases, allow your baby a turn at initiating interaction and give her breaks when she seems to get too worked-up. One of the most important ingredients is sensitivity" (cited in Henig, 1983, p. 192). Mothers and fathers can learn to interact with their infants by imitating the infant's behavior. When they display the same behavior as the infant, it may help the infant to assimilate the parents' behavior. The parents can also become more sensitive to the cues that the infant is sending, thus avoiding the problem of inadequate communication.

Prematurity and developmental delay. One of the many worries that a new parent of a premature infant has is: "Will my child be normal in its development?" It is very difficult during the first year to predict whether or not a premature infant will suffer from any developmental
delays, since any test given before the age of two is fairly unreliable (Henig, 1983; Siegel, 1981). In addition, developmental status in the first year is not a good predictor of problems later in life. Children grow at different rates and some may grow out of their initial slowness.

Although early follow-up studies of the long-term consequences of prematurity were not encouraging (Drillien, 1967), the incidence of severe handicaps such as blindness, deafness, cerebral palsy and severe mental retardation are steadily going down, and the prognosis is improving for preterm infants. Today, however, these disorders can still be found in the very small premature infant, since smaller infants tend to be more at risk. Premature infants have been at an especially high risk for developing neurological, emotional and intellectual impairment (Drillien, 1964; Hunt, 1981). Specifically, lower I.Q. scores, perceptual and motor problems, poor language development, hyperactivity, impulsiveness, and aggressive personalities have been linked to low birth weight. The outcome for preterm infants on these measures is improving, however, and it is a challenge for the medical community to detect and to intervene where possible to reduce serious long-term effects of early birth.

The financial aspects of prematurity also cannot be ignored. Neonatology is expensive. The costs may be too
much for families to bear, with the financial burden potentially draining a family both economically and emotionally.

The mother naturally provides a stimulating prenatal environment for the infant while she is pregnant. The fetus is constantly being touched, rocked and bombarded with sounds from both internal and external sources. By contrast, the isolette in an intensive care nursery is stationary, bright and operating with a constant humming noise. Researchers have tried to duplicate the mother's natural prenatal environment for preemies, in an attempt to make up for the weeks naturally missed in the stimulating womb. Extra handling, rocking hammocks, oscillating waterbeds, recordings and various combinations of these systems have all been tried with generally beneficial results for preemies (Schaefer, Hatcher, Barglow, 1980). The extra handling includes picking the infant up and placing it on the shoulder of the caregiver. This position allows for not only tactile stimulation, but also the opportunity to scan the environment. Infants placed on waterbed floatations have been found to have significantly fewer apneic episodes. (Apnea is a short period of no breathing.) Significantly higher weight gain is the consistent result in studies done with oscillating waterbeds and rocking hammocks. In one study where recordings of heartbeats and women's voices were used along with
rocking waterbeds, the infants were found to gain more weight, show an increase in the amount and length of quiet sleep and scored higher on motor maturation evaluations compared to a control group (Schaefer et al., 1980). By providing the stimulation to the infant after its premature birth, researchers are attempting to lessen the extent of developmental delay.

Many medical centers are doing research into the intellectual outcome of their premature babies. There are two reasons for this interest by the hospitals. First, the very small preterm infant is a new population to study, one that is rapidly increasing in numbers. The demand for services is also increasing. Second, hospitals and doctors need to know if their procedures are helpful or harmful to the developing infants (Hunt, 1981). There are so many conditions that can damage the infant neurologically that it is a wonder that some infants survive without damage.

Some neurological and behavioral deficits are often transient and the infant may recover normal functioning. In Hunt's (1981) longitudinal study, unexpected problems such as visual-motor integration difficulties which often accompanied reading difficulties, continued to occur as late as eight years of age in some children, while in others any apparent developmental delays are gone by the age of four to six years. The extent of the handicap may
in part be influenced by the infant's environment. When Hunt (1981) considered neurological damage due to premature birth, she found that the environmental influences such as socioeconomic status and parent education seemed to play a significant role in the child's development. The infant may or may not be born with brain damage, but the parents may play a critical role in the outcome by improving a stimulating environment.

Attachment and consequences of early separation. Many researchers believe that attachment (or "bonding") happens in the first few hours after birth. Klaus and Kennell (1976) developed a theory of a "sensitive period" after birth when bonding is at its optimum level for the development of the mother-infant attachment (Klaus & Kennell, 1976). There has also been speculation that there is a critical time after birth when a female may have a hormone that will facilitate attachment. In studies with rats, Rosenblatt (1965) found that there are hormonal changes during pregnancy that made the female rat more responsive to infants (Leifer, Leiderman, Barnett & Williams, 1972; Rosenblatt, 1965). Turnbull (1974) also reported that the blood level of the hormone estradiol increases during the last seven weeks of pregnancy. This hormone has been shown to induce mothering behavior in virgin female rats and even in male rats. The standard hospital procedure has been to remove the newborn from the
mother right after birth and place it in isolation. This procedure has been followed for both full-term and prema-
ture infants. While full-term infants have been allowed visits to the mother to be held and fed, the mothers of the premature newborns have typically not been allowed to touch or feed their infants for weeks or even months after delivery. The parents in these situations have been denied the "sensitive time" immediately after the birth that Klaus and Kennell (1976) argue is so essential for satisfactory bonding. The medical necessities have for the most part taken precedence over the stroking, cooing, and looking into the baby's eyes that works like epoxy to attach the parents to the infant (Henig, 1983).

However, there are challenges to the concept of the "sensitive time" after birth. Human mothers, for example, may attach very easily to their adopted infants. Although the period after birth may be an ideal time to form attachments, it may not be critical. The original hypothe-
sis of critical periods such as those discovered in biological research may or may not be operative for psychological events (Rosenblith & Sims-Knight, 1985).

Several researchers have stressed that adapting to a premature infant takes great emotional effort and a good support system. When inner strengths and outer support are not present, then positive attachment is made more

**Implications for Parenting**

**Anxiety, fear, guilt and grief.** In our society, parents take the credit for children raised successfully. When a child does not begin life the way parents think it should for a successful outcome, they know that they will be blamed for their "failure." If they are first-time parents with no prior successes to fall back on, the responsibility can be overwhelming. They have not proven their worth as parents. They have not learned that there are no ideal parents and that every infant enters the world differently. The birth of a healthy full-term infant is a substantial boost to the parents' self-esteem, whereas the birth of a preterm baby can be a devastating blow (Beckwith & Cohen, 1978; Trout, 1983).

Parents may suffer a loss of self-esteem by not having produced a healthy infant that they can interact with immediately after birth. It has been speculated that this lack of self-confidence may not be felt as strongly by the father as it is by the mother (Jeffcoate et al., 1979). The father's expectations and self-esteem may not be disturbed in the same way since it is the mother who bears the child and expects to be the major caregiver.

The small, immature baby is subject to a variety of problems that are life-threatening. The parents must face
the possibility that their baby may not survive. They may protect themselves from the pain of their potential loss by not attaching themselves to the baby. Since the preemie's condition is constantly changing, the parents may have a more difficult time adjusting to the birth. When the infant's condition looks critical, they may detach themselves from the baby (Trout, 1983). They may not want the infant to die, but they may be ready for it to happen at any time. Then, if the infant recovers, they have to begin the process all over and reattach themselves to their newborn.

The emotional experience of having a preemie has been described as a roller coaster ride (Henig, 1983). One day the parents may feel euphoric about the baby's chances and the next day the infant can have a serious setback which depresses them. The parents may feel that no one could possibly know how worried and afraid they are. The hospital personnel may be perceived as being so competent and confident in caring for the infant that many parents express a feeling that the baby really does not belong to them. These factors may make the sense of guilt for producing a less-than-perfect baby even greater (Trout, 1983).

Parents of healthy full-term newborns also have many fears; for example, that they will hurt the baby in some way. The baby is viewed as being very helpless, and if it
is the parents' first child, they may feel very inexperienced at most care-giving tasks. Preemies, with all of the special equipment that they require, look even more fragile to the parents.

Parental and familial relationships. Parents are typically extremely distressed after the birth of their preemie (Caplan, 1960; Kaplan & Mason, 1960; Trause & Kramer, 1983). Kaplan and Mason (1960) argue that an increase in anxiety is a healthy response to a preemie birth, as a low level of anxiety may indicate denial of the infant's condition. However, Klaus and Kennell (1976) suggest that too much anxiety may lead to disturbance in the development of a bond between parent and child. Although anxiety is an inevitable response to an infant's hospitalization, Klaus and Kennell (1976) believe that there will be a poorer mother-child relationship later on if those feelings are not confronted.

What happens to the relationship between husband and wife? Trout (1983) studied the social breakdown of families with children from birth to 30 months of age, and found that the premature birth of an infant affected the parents' marital relationship. The parents frequently ruminated on why the premature birth occurred. If there was not a clear explanation for the early birth, the parents tended to attack each other for acts that they did during pregnancy. Blaming one another was found to be a
common, although unnecessary, part of resolving the guilt that parents may feel. Ironically, just when the couple needs each other's support the most, "wedges" appear (such as the above) which tend to keep them apart (Trout, 1983). The guilt, grief and fears need to be addressed so that the couple can comfort each other during this stressful time.

The birth of a premature infant impacts not only the parents -- the grandparents may also be involved (Trout, 1983). Grandparents have been found to have two primary worries about a preemie. First, they are as concerned about the preemie's health as the parents are, but they may also be worried about their own adult child. The grandparents may also share some of the parents' feelings of guilt (Henig, 1983).

The birth of a premature infant may also intensify conflicts which already exist in the family relationship. The grandparents may place most of the blame on the son-in-law or daughter-in-law, whom they may dislike. They may give unsolicited advice that is more hurtful than helpful. "Don't visit the baby too often," they may say, "you won't want to become too attached in case something happens." Advice like that can put a long-lasting strain on the family relationship patterns (Henig, 1983).

If there are any siblings, they may also need help in dealing with their anxieties. Other children in the
family can also face a lot of anxiety. They may experience sibling rivalry in an intensified way. The baby is in the hospital, unseen, a complete stranger to the older sibling and yet it is causing a great deal of stress in the family. The child may have no warning about the sudden birth of a sibling prior to its early arrival. Many other children may share the parents' sense of worry about the preemie's welfare (Ballard, Maloney, Shank & Hollister, 1984; Henig, 1983).

Ballard et al. (1984) studied the effects of siblings visiting the newborn in intensive care units. She concluded that there was no emotional harm done to the children, as the child and the family appeared to function better after the visits. One major concern about sibling visits has been the health of the newborn preemie. However, no significant increase in infectious diseases among the infant population due to visitations has been found. In fact, the benefits for the siblings outweigh the problems of such visits (Ballard et al., 1984).

Summary. In summary, this stressful time is shared by all in the family. The patterns of communication that are established in part to determine whether a family system will be drawn together or pulled apart by the experience. Parents may also need a social and emotional support system to help them make a positive attachment to their baby. New parents often feel inadequate, and this
feeling is intensified in parents of preemies, who may feel like failures for the unexpected early birth. Other people, strangers to them, appear to know how to care for their baby when they do not. When it is time for them to take their infants home, they may feel incompetent. Such feelings can lead to an emotional withdrawal from the baby. The problem of feeling inadequate can lead to behaving inadequately (Goldberg & DiVitto, 1983; Ourth & Brown, 1961).

Premature birth stresses the family unit. The ways that the family copes with this stress is important for the child's later development. When the family functions harmoniously, the infant benefits in such areas as language, cognition, motor skills and general health (Goldberg, 1978).

**Purpose of Study**

The purpose of the following project was to create a support group for parents of premature infants while the infant was still in the hospital. A support group format was chosen because of its effectiveness with helping people in stressful situations (Yalom, 1975). The specific aims of this support group for parents of premature infants are (1) to give parents a sense that they are not alone, that others are feeling the same stress and anxiety that they are, and to give them hope for the future, (2) to educate parents about developmental trends and the
special needs of premature infants, (3) to help reduce stress on the marital relationship, (4) to reduce stress on the family during the hospitalization of the infant, (5) to help integrate the premature infant into the family, and (6) to create a sense of group cohesiveness that can be used to form a network for later support. It is hypothesized that participation in the support group will 1) decrease the stress as perceived by the parents, 2) increase marital satisfaction, and 3) reframe (i.e., improve) the parents' perceptions of the infant.

Method

Subjects

Thirty English-speaking, non-primiparous, married couples (maternal age: 20-30 years) from a local hospital who have given birth to a single-birth, non-malformed premature infant (30 to 37 weeks gestation age) will be included in this study. Half of these couples (n = 15) will be the experimental group while the other half will be matched with the experimental group for SES and will serve as the control group.

Instruments

Three instruments and items regarding the subject's demographic background will be included, and will be completed separately by both the infant's mother and father.
State-Trait Anxiety Inventory (STAI). The STAI (Spielberger, 1983) measures anxiety-proneness (trait) and current level of anxiety (state). This scale is being used in this study to assess the current level of anxiety for couples who have just delivered a premature infant. The inventory consists of two 20-item self-report scales (Appendix A). The manual includes extensive validity and normative data.

Locke-Wallace Marriage Inventory. The Locke-Wallace Marriage Inventory (Locke & Wallace, 1959) measures marital adjustment and satisfaction, and discriminates between "successful" and "unsuccessful" marriages. It is included in this study to assess the level of marital happiness at the time of the birth of the premature infant to help rule out the possibility that the anxiety is coming from an unhappy marriage, and to examine whether or not marital happiness increases after participation in the support group. It is a 15-item scale that includes both multiple-choice and Likert-scale items, and rates the marriage in terms of degree of happiness (Appendix B). It is scored by adding the numbers assigned to each response and then determining whether the score fits into the "low," "middle," or "high" - happiness category.

Parental Perception Inventory. The Parental Perception Inventory (Trause & Kramer, 1983) was designed to obtain information on each parent's evaluation of their
own needs and feelings and those of their spouse (Appendix C). It is included in this study to compare any changes in needs and feelings of the couple after a support group experience. It is a 35-item inventory with a multiple-choice format.

Background information. In addition, subjects were asked to report their age, gender, marital status, income, education, job or professions, numbers of other children in the family, their ethnic origin, whether or not they had participated in childbirth preparation classes, the type of delivery they had, emotional support and general questions (about high-risk infants) (Appendix D).

Procedure

All subjects will complete the questionnaire within 24 to 48 hours after the infant's birth. Every other subject approached will be asked to participate in the support group in an effort to achieve random assignment to the two groups.

Subjects in the experimental group (n = 15) will participate in four two-hour weekly support group sessions, to be held at the same hospital in which the infant was born. Subjects in the control group will not participate in the support group. Rather, they will be placed on a waiting list and be given the opportunity to participate in the support group at the conclusion of the experiment. All subjects (N = 30) will again complete the
questionnaires at the end of the four-week period in order to evaluate the impact of the support group.

Materials comprising the curriculum for the experimental group will in part include: (1) *Your Premature Baby*, a book by Henig (1983), (2) books and articles about the characteristics and behaviors of premature infants, (3) charts, (4) coloring book for siblings, (5) plastic shoe box with doll wired to look like a baby in the hospital for the parents to take home to show the other child what the infant looks like, (6) readings, and (7) handouts.

The format for each of the weekly sessions, as well as the planned dialogue, is as follows:

**Support Group -- Week and Format**

*(All Subjects Will Have Had Pretests)*

**Week 1**

**Purpose:**

1. To introduce the couples to each other and the group leader.

2. To give the purpose of the support group.

According to Irvin Yalom (1975), the therapeutic factors involved in support groups are as follows:

a. Instillment of hope. Faith in treatment and hope are crucial if the client is to stay in therapy so that other factors can take effect.
b. Universality. We are not alone in our life stresses. To know that we are not unique in our feelings is therapeutic.

c. Imparting of information. To simply teach about the premature infant.

d. Altruism. Parents will be able to give support as well as getting support. It helps our self-esteem by helping others.

e. The corrective recapitulation of primary family group. We all bring to a group our history of how we behaved in our primary group, the family. This is an opportunity to correct any problems from the past.

f. Development of socializing techniques. Group members learn how to respond helpfully to others.

g. Imitative behavior. Group members benefit by trying other people's behavior. They may use behaviors that help them, and relinquish those behaviors that don't work for them.

h. Interpersonal learning. Group members learn how to relate to others in order
to improve their interpersonal relationships.

i. Group cohesiveness. Group members develop a relationship to the group as a whole. They value the group and will defend it against external threats.

j. Catharsis. Group members learn how to express feelings, both positive and negative.

k. Existential factors. Group members may learn to take responsibility for their lives. They may face the basic issues of life and death.

Because this support group has a more single-issue focus and is time-limited, the main factors that we will deal with are the first three, instillment of hope, universality and imparting of information. We need hope for the future in order to cope with the present. The optimism of others can help us when we see no hope. Seeing others coping with the same problems that we have gives us hope and helps us to see that we are not alone. Social isolation during stress may give us a sense of uniqueness that only increases the stress. Knowing that we are not alone can be a source of relief. Just knowing more about what is happening to you and your baby can reduce fears. Being able to verbalize those fears and
learning about their origins help people to cope better with them.

3. Overview of support group.

This is a four-week support group that will include: (first week) definition of prematurity, characteristics of premature infants, their needs (both physical and psychological), and how to stimulate the premature infant. In the second week we will share the stress that the medical problems have caused and discuss the stress that the infant's birth has had (or may have) on your marriage. During the third week we will learn the stages of your infant's development. Other family members' reactions to your infant's birth will also be discussed. And, finally, during the fourth week we will discuss attachment to your new infant. Other resources for parents of premature infants will be also given to you at that time.

First Hour:

1. Introduction and overview of support group; introduction of members.

2. A definition of prematurity.

Generally, a birth before the 37th week of a 40-week pregnancy. Infants weighing less than 2500 grams (or 5 lbs.) may also be considered premature. Neither measurement is entirely satisfactory, so one based on both gestation and birth weight may be used.

The premature infant is not just a smaller version of a full-term infant. They have a different physical appearance compared to full-term infants, because they are still fetuses. They have the basic form but some areas are yet to be developed. The areas that are less completely developed are the ears, nipples and genitals. They will continue to grow; they are not deformed. The skin of a preemie has a ruddy color and may wrinkle even more after birth. The skin of black babies often looks white because pigment is developed in the last few weeks before birth. The one feature that makes a baby look more like a baby is the fat deposits that are developed in the final weeks of gestation. There is also a downy hair that protects the fetus from the amniotic fluid. This disappears in time.

Preemies do not act like full-term babies. They may not be able to suck, and may need to be fed in other ways. They may also not be able to swallow. Swallowing takes coordination that they have not developed. This is also very tiring to the infant. A preemie may also not have the neurological reflex to "root" (i.e., search for a nipple) when the cheek is stroked. A full-term infant will open its hands, throw out its arms and bring its hands back together again when startled. Preemies are not able to do this until after 37 weeks. Crying requires a
great deal of energy, and premature infants may not have the strength to cry. Later, when the infant has gained strength, its cry may be a different pitch than full-term infants. The grasp reflex which is strong in full-terms may not be in the preemies' repertoire. They do not have the muscle tone to even curl their fingers.

During gestation, oxygen comes from the mother's bloodstream directly into the fetus's bloodstream. The lungs lay dormant. They need a substance called surfactant. This substance helps keep the lungs pliable. If there is no surfactant, the lungs collapse. This substance increases in supply at 35 weeks gestation, making premature babies more at risk for problems due to under-developed lungs (compared to full-term infants). However, stress in utero can increase the production of surfactant.

Premature infants are neurologically behind full-term infants. This makes the infant less responsive to the environment. This can be frustrating to parents who want to interact with the infant. However, the immature brain also allows the preemie to shut out noise and light that would disturb full-term infants. It also allows the infant to feel less pain than if the brain was fully developed.

Second Hour:

1. Methods for stimulating infants.
2. Pictures on how to hold, stroke and rock infants will be given out.

In vetro your infant listened to your voice. They know their mother's and father's voice. A tape recording of your voice played to your infant while they are in the intensive care nursery may help the infant develop. Preemies given this stimulation scored higher on motor maturation test at 36 weeks than infants that didn't receive this stimulation.

Just stroking and flexing your infant's leg for seven minutes an hour over ten days has been shown to help infants develop better motor skills and be easier to console. If you are not allowed to stimulate your infant in the hospital, you can do so when the infant comes home.

The stimulation that the parents give helps the preemie make sense of his/her world. There is a lot of stimulation in the intensive care nursery but it isn't the right kind. It isn't familiar to the infant. Your voice on a tape recorder will keep the infant company when you can't be there. It can also help the infant make sense of its world by having constant, familiar sounds around it just like it would be in the womb (Appendix E).

Week 2

Purpose:

1. To lower stress on the marital relationship.
2. To reassure parents that fears, guilt and anxiety are common emotions for parents of premature infants.

First Hour:
1. The group members will share the stress that the parents are experiencing with their infants.
2. Handouts on common problems of preemies (see Glossary of Medical Terms, Appendix F).

Second Hour:
1. Couples will be given encouragement to talk about the stress on their marriage and the leader will discuss research information on this.

One of the antecedents for problems in a marriage is an environmental change. The marriage that may have survived a full-term birth may find the extra burden of a premature birth straining their relationship. The birth of a full-term infant puts stress on a marriage, but the unexpected early birth can put an even greater stress on it.

One of the reasons for the stress may be the need to find a cause. Either spoken or unspoken messages may blame someone in the relationship. The husband may blame his wife for doing something that he told her not to do. The mother may take all the blame even when there is no one to fault. Just when you need each other the most for support, you may be pulling away emotionally from each other. You should ask all the questions that you may have
about your infant's birth, so that you can put to rest
unspoken fears that you or your spouse caused the premature
birth.

Another stress that couples may experience is
grief for the loss of the expected child. When we concep-
tualize having children, we see them as full-term, healthy
babies. We carry this "idealized" picture around with us.
When an infant is born before its due date and doesn't
look like our image of a perfect baby, parents can feel
disappointed. You may need to grieve for the loss of the
expected child before you can accept the real infant
before you. This is a confusing situation for many
parents because others are telling them that they should
be happy that the infant is alive.

Week 3

Purpose:

1. To give information about the development stimu-
luation of premature infants.

2. Stages of development for full-term versus
premature. Charts of comparisons of development will be
handed out (Appendix G).

When you get your infant home, you will wonder
how they will develop. What can I expect to happen with
my baby? Will they eventually catch up to full-term
developmental charts? You will need to make adjustments
for gestational age. You may need to correct and subtract
from their chronological age for up to two years. So that you will be able to see the differences between full-term and preemie infants, I will hand out charts. These charts are for you to compare your infant's growth to "average" growth of full/terms and of preterm birth. They are presented so that you will be able to see any major lags in development. Since there is no such thing as an "average" infant, do not try to use the charts as hard facts about your infant's growth. You may want to set up your own record book about your child's development and record milestones as they occur, since memory is often fallible. Preterm infants are "at risk" for developmental delays, so if you see that they are at least three to four months behind on corrected age, you should seek professional evaluation.

Most babies who were born under 2500 grams will grow up to be healthy, normal children. However, 10% to 20% may have some "scars" from their prematurity. They may be mild, such as learning disabilities to more severe mental retardation, cerebral palsy, blindness or deafness. The smaller an infant at birth, the greater their risk for later developmental problems.

2. To give information about other family members' reactions to the premature infant.
Second Hour:

1. Parents will be encouraged to discuss family problems that have occurred as a result of the early birth.

2. Policy of the hospital regarding visitation of siblings will be discussed.

3. Plastic shoe box with real-life looking doll with wires will be loaned to parents considering bringing siblings to the hospital.

4. A coloring book about a child who has a new premature infant will be handed out to parents of older children (Henig, 1983) (Appendix H).

Lots of other people love your infant. Relatives and friends who love you will also feel concern for your newborn. They have another worry also. They are concerned about you. They can see how the stress of having a preemie is affecting you. This is a very tense time for family relations. They may say things that will hurt your feelings. They are trying to protect you and care for you. However, their advice may not be something you want to hear. If your parents have had experiences with their own premature infants, they may be dealing with their own guilt.

One problem that is showing up more and more is that related to use of the drug DES. Mothers who took the drug in the late 1940s and 1950s to stop miscarriages have
daughters who have a tendency to have premature births. These grandmothers may be feeling that it is their fault that your infant is suffering. They took the drug out of love for their unborn children. They had no ability to know what the long-term effects would be. They need reassurance that you don't blame them for your infant's premature birth. If you have other children, they too are affected by the early birth. All of your energy may be directed toward the new infant and the older child's needs may be neglected. They may feel sibling rivalry in an intense way, with no person to react with. The infant is far away and yet it is taking all of mommy and daddy's time.

Here is a coloring book that explains some of the feelings that a child named Chris had when their premature infant was born. It may help your child to talk about his/her feelings. It is important that your child be given permission to talk about their feelings.

Your other children may be allowed to visit the hospital. It depends on the policy of your hospital. If your older children are allowed to visit, it is important to prepare them for the visit. Hospitals are scary places for children. The intensive care nursery can be even more frightening. The wires and equipment that the infant is hooked up to can frighten even adults. One way to prepare children is to get a plastic shoe box and small doll. Put
the doll in the box with some used wires into the doll's nose and mouth. Put the lid on the shoe box. Explain to the child why the wires are needed. Many young children are concerned about how the infant can breathe with the lid on the box. Explain that the air is coming through in the wires. Caution them never to play in boxes with lids on them. Let them play with the doll and the box. This lets the child become adjusted to seeing an infant in a plastic box so that the sight of their sibling in a box won't be a shock. Then take them to visit the infant.

Week 4

Purpose:

1. To explain the purpose and method of attachment to infants.

2. To consider the special limitations that the parents can overcome in order to be able to attach to their infant.

3. To give information about resources available in the vicinity of the hospital.

4. To develop group cohesiveness so that couples may continue to support one another.

First Hour:

1. Four stages of attachment to premature infants.

2. Readings from Your Premature Infant (Appendix I). The normal process of attaching to your infant has been made a little harder by its premature birth. You
may need to work a little harder to develop the special feelings that new parents have for their infants. Because the infant is so tiny, it is at risk for death. You need to go through a stage that parents of full-term infants rarely go through. It is not unusual for parents to withdraw emotionally from the infant, until they are given some assurance that the infant will survive. You are not rejecting your child; you are just protecting yourself from pain.

Next, the mother may feel like a failure for not delivering a full-term, healthy infant. Some women deal with this very quickly; others may need counseling to deal with their feelings of guilt. When these steps have been successfully worked out, then the parents can learn how to work with and around the hospital's policies and equipment so that they can build love between them. The parents need to learn how to care for their preemie. Since your child has special needs, you need to develop an understanding of their needs and yet build the closeness that will keep you committed to your infant's continuing needs.

Infants need to attach themselves to their caregivers for survival. Human infants have to depend on their parents for a long period of time. It is in the best interest of the infant to be protected by its parents. They have a need to be able to identify with their caregivers and to be able to communicate their needs.
The person or persons that the infant is attached to eventually becomes a secure leash for exploration. Human infants have lots to learn from their environment. However, there are dangers in exploring. They need supervision. A secure relationship ensures a balance of needs, to explore and learn and to be safe from harm.

Infants also need stimulation from parents. Play is the infant's work. They need a playmate to show them how to manipulate their environment. The parents' attachment deepens to infants as they play with them.

Second Hour:

1. Other resources for parents of premature infants will be discussed (Appendix J).
2. Handouts of resources.
3. Posttest on marital stress and evaluation of support group.

Discussion

The chronological order of what was done to gain access to subjects was as follows. The largest resource for potential subjects in this area (i.e., parents who have just given birth to a premature infant) is Loma Linda Hospital. My first contact was made in the spring of 1985. I talked with the head social worker. She said that there was no access to parents of premature infants at their hospital. She had conducted support groups in the past but she had none that were ongoing. Her objection
to my conducting a support group at her hospital was confidentiality. When methods were proposed to work around breaching confidentiality, she still refused to allow me to talk with anyone in her department.

I had access to a private physician who told two of his patients about my project and my interest in talking with parents of premature infants. They contacted me and I talked to them in their homes. One mother had just brought her infant home, another couple's infant was still at Loma Linda. Both of the mothers told me about their need for support during and after their infant's birth. They were both critical of lack of psychological care during their stay in the hospital.

I then contacted the High Risk nurse who visits families of premature infants during their first year of life. She was very supportive but discovered that the hospitals, Loma Linda and Kaiser, were not interested in any research. Since my research was just in the planning stages, Dr. Weiss recommended that I write the proposal and literature review before I try to get into a hospital again.

During the summer of 1986, Dr. Weiss suggested that I contact Carol Hasse. She is a M.A. student who is doing research on mothers who have just had Cesarean sections. She also works at a hospital and she knows the political organization of several of the hospitals in the area. She
said that after she was approved to do her research that she would ask if I could also do my research at their hospital. She was approved; however, she was afraid to jeopardize her research by asking about mine. She also found out that many of the interns in maternity were from Loma Linda Medical School. They also have many of their own students who want subjects.

I felt that I should look in other areas. A social worker that I worked with had done an internship at Huntington Memorial Hospital in Pasadena. She gave me the name of a social worker there who had written a grant to create a support group for the parents of infants in the intensive care unit. She had about 30 couples to work with; however, only two couples showed up. After two sessions she dropped the project. She gave me the name of the director of Valley Parents Support Group for High Risk Infants. She was very interested and supportive. She said that she believed in research and welcomed Masters-level students to their meetings. After talking with my committee, I contacted her again. Her group was having an orientation meeting for new parents on October 6, 1986. In the past about 15 new couples had showed up to the first meeting.

I put together 15 packets with a letter of introduction and the pretests. I wanted to go to the meeting and give an explanation of my project. I also wanted to have
the subjects fill out the questionnaires while I was there. The director called me back and said that a doctor had to reschedule her time to talk to the group and the October 6 meeting was when she would come. This shortened the time that she had to explain her support group to the new members. She asked that I not come to the meeting. She said that she would give the explanation of my research and ask that the couples take the packets home with them. I sent her 15 packets with self-addressed, stamped envelopes to her. On the night of October 6 only six new couples showed up and only three of them took my packets. To date none has been mailed back to me. The director said that on October 18 she would have a training session in her home. This is when she trains new volunteers on how to work with parents in the hospitals. These couples' infants were under one year old, and so she would give out more packets. To date none has been returned.

I also contacted the social worker at Queen of the Valley Hospital in Covina. They are currently doing a maternal-infant interaction study. She explained that it took Cal State L.A. three years to set up the study. She was blunt but very helpful when she said there was no way that they would let me have access to their subjects. She said that my study would "muddy their water." She saved me a lot of time with her honesty.
Dr. Staly also had a contact at Kaiser Hospital. This, too, did not work out.

In conclusion, I feel that the reason my study didn't succeed is:

1. California State University doesn't have a working relationship with a hospital in the area. Hospitals tend to be closed systems. Individuals need someone on the inside of the system to vouch for them, and to smooth the way for the research to be done.

2. Subjects of this type are hard to find. Few people volunteer for research. During high stress periods, such as the birth of a premature infant, their energies seem to be concentrated on just coping. The social worker at Huntington Memorial said that the reason she had such low involvement in her project is because the parents wanted to spend their limited time at the hospital with their infants. Some felt that she was intruding on this precious time. These couples tended to be middle-class couples who had some support systems. Other couples wanted and needed the support but they had limited resources. Lack of a working automobile, lack of a baby-sitter and sometimes lack of interest kept lower socioeconomic couples away.

My one real opportunity to test and retest couples came with the Valley Support Group for High Risk Infants. I was willing to do any reasonable adjustments to their
requirements. However, I lost control of my project because of scheduling. Research has shown that there is a low return rate when subjects are asked to mail back questionnaires. But none returned is very disappointing.

As I talked with professionals and parents of older premature infants I was encouraged. They all told me that support was needed and what I had planned to do would lower anxiety.
**State-Trait Anxiety Inventory (STAI)**  
*(Spielberger, 1983)*

**State**

**Directions:** A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel right now, that is, at this 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 best.

<table>
<thead>
<tr>
<th></th>
<th>Not At All</th>
<th>Somewhat So</th>
<th>Moderately So</th>
<th>Very Much So</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel calm</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I feel secure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I am tense</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I am regretful</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I feel at ease</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I feel upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I am presently worrying over possible misfortunes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I feel rested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I feel anxious</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I feel comfortable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I feel self-confident</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I feel nervous</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I am jittery</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. I feel &quot;high-strung&quot;</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I am relaxed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. I feel content</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I am worried</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Not At All</td>
<td>Somewhat</td>
<td>Moderately So</td>
<td>Very Much So</td>
</tr>
<tr>
<td>---</td>
<td>------------</td>
<td>----------</td>
<td>----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>18. I feel over-excited and &quot;rattled&quot;</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. I feel joyful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. I feel pleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
**Trait**

**Directions:** A number of statements which people have used to describe themselves are given below. Read each statement and then circle in the appropriate number 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.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel pleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I tire quickly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I feel like crying</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I wish I could be as happy as others seem to be</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I am losing out on things because I can't make up my mind soon enough</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I feel rested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I am &quot;calm, cool and collected&quot;</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I feel that difficulties are piling up so that I cannot overcome them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I worry too much over something that really doesn't matter</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I am happy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I am inclined to take things hard</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I lack self-confidence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I feel secure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Almost Never</td>
<td>Sometimes</td>
<td>Often</td>
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<tr>
<td>---</td>
<td>---</td>
<td>--------------</td>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>14.</td>
<td>I try to avoid facing a crisis or difficulty</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15.</td>
<td>I feel blue</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16.</td>
<td>I am content</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17.</td>
<td>Some unimportant thought runs through my mind and bothers me</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18.</td>
<td>I take disappointments so keenly that I can't put them out of my mind</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19.</td>
<td>I am a steady person</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20.</td>
<td>I become tense and upset when I think about my present concerns</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
APPENDIX B
Locke-Wallace Marriage Inventory  
(Locke-Wallace, 1959)

Instructions: Please read each of the following items below and answer each question thoroughly.

1. Check the space on the scale below which best describes the degree of happiness, everything considered, of your present marriage. The middle point, "happy," represents the degree of happiness which most people get from marriage, and the scale gradually ranges on one side to those few who are very unhappy in marriage, and on the other side, to those few who experience extreme joy in marriage.

| Very Happy | Happy | Perfectly Happy |

State the approximate extent of agreement or disagreement between you and your mate on the following items. Please check each column.

| Always Agree | Almost Always Agree | Occasionally Agree | Frequently Agree | Almost Always Disagree | Always Disagree |

2. Handling family finances
3. Matters of recreation
4. Demonstration of affection
5. Friends
6. Sex relations
7. Conventionality (right, good or proper conduct)
<table>
<thead>
<tr>
<th></th>
<th>Always Agree</th>
<th>Almost Always Agree</th>
<th>Occasionally Agree</th>
<th>Frequently Agree</th>
<th>Almost Always Disagree</th>
<th>Always Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Philosophy of life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Ways of dealing with in-laws</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. When disagreements arise, they usually result in:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Husband giving in</td>
<td>Wife giving in</td>
<td>Agreement by mutual give and take</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Do you and your mate engage in outside interests together?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All of them</td>
<td>Very few of them</td>
<td>None of them</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. In leisure time do you generally prefer:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To be &quot;on the go&quot;</td>
<td>To stay at home</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Do you ever wish you had not married?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequently</td>
<td>Occasionally</td>
<td>Rarely</td>
<td>Never</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. If you had your life to live over, do you think you would:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marry the same person</td>
<td>Marry a different person</td>
<td>Not Marry at all</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Do you confide in your mate?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Almost never</td>
<td>Rarely</td>
<td>In most things</td>
<td>In everything</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Parental Perception Inventory
(Trause & Kramer, 1983)

Please circle the statement that best fits you without discussing your answers with anyone. Please answer all questions, but feel free to comment about any thoughts you have that have not been covered on the back of the paper.

1. Since our baby's birth, I have
   a. only thought about the baby once in a while
   b. thought about the baby quite a bit
   c. not been able to stop thinking about the baby

2. Since our baby's birth, I have
   a. cried a lot
   b. cried occasionally
   c. not cried at all

3. Since our baby's birth, I have
   a. frequently wanted to be held
   b. sometimes wanted to be held
   c. not wanted to be held

4. Since our baby's birth, I have
   a. not wanted to be alone
   b. sometimes wanted to be alone
   c. frequently wanted to be alone

5. Since our baby's birth, finances have
   a. been a major concern for me
   b. been a concern for me
   c. not been a concern for me

6. Since our baby's birth, I have
   a. not felt I needed more time alone with my spouse
   b. sometimes felt I need more time alone with my spouse
   c. often felt I needed more time alone with my spouse

7. Since our baby's birth, I feel my parents have
   a. helped get things done and understood our needs
   b. helped get things done but not understood our needs
   c. neither helped get things done nor understood our needs

8. Since our baby's birth, I have
   a. not felt worried about my ability to take care of our family
   b. felt somewhat worried about my ability to take care of our family
   c. felt extremely worried about my ability to take care of our family
9. Since our baby's birth, I have
   a. not felt neglected by my spouse
   b. sometimes felt neglected by my spouse
   c. often felt neglected by my spouse

10. Since our baby's birth, I feel my spouse's parents have
   a. helped get things done and understood our needs
   b. helped get things done but not understood our needs
   c. neither helped get things done nor understood our needs

11. Since our baby's birth, I have
   a. been optimistic about our baby's future
   b. had questions about our baby's future
   c. been pessimistic about our baby's future

12. Since our baby's birth, I have felt
   a. much closer to my spouse
   b. somewhat closer to my spouse
   c. as close to my spouse as before

13. Since our baby's birth, I have
   a. felt very guilty about our baby's condition
   b. felt somewhat guilty about our baby's condition
   c. not felt guilty about our baby's condition

14. Since our baby's birth, I have
   a. not felt helpless
   b. felt somewhat helpless
   c. felt totally helpless

15. Since our baby's birth, I have
   a. been very worried about future pregnancies
   b. been somewhat worried about future pregnancies
   c. not been worried about future pregnancies

16. Since our baby's birth, I
   a. panic when the telephone rings
   b. am afraid when the telephone rings
   c. am not afraid when the telephone rings

17. Since our baby's birth, I have
   a. often feared losing touch with reality
   b. sometimes feared losing touch with reality
   c. not feared losing touch with reality

18. Since our baby's birth, seeing the other babies in the nursery
    has
   a. been upsetting to me
   b. not particularly affected me
   c. been encouraging to me
19. Seeing the equipment in the nursery since our baby's birth has
   a. been reassuring to me
   b. not affected me
   c. been frightening to me

20. Since our baby's birth, I have wanted to talk to
   a. friends
   b. hospital staff
   c. someone who has "been there"

21. Since our baby's birth, I feel the ICN nurses and staff have
   a. been evasive
   b. answered our questions
   c. been informative and given us insight into our baby's problems

22. Since our baby's birth, I have
   a. been very worried about my spouse's ability to cope with
      the situation
   b. been somewhat worried about my spouse's ability to cope
      with the situation
   c. not been worried about my spouse's ability to cope with
      the situation

23. Since our baby's birth, I have
   a. been very worried about my ability to cope with the situation
   b. been somewhat worried about my ability to cope with the situation
   c. not been worried about my ability to cope with the situation

24. Since our baby's birth, I feel I
   a. can share all my thoughts with my spouse
   b. must keep some thoughts to myself so as not to worry my spouse
   c. must keep most thoughts to myself so as not to worry my spouse

25. In your mind, how is your baby doing today?____________________

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
26. Do you have any major problems or responsibilities now other than caring for your spouse and baby?

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

27. What has been the most difficult part of the last week for you?

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

28. Have you had any particular problems dealing with the hospital?

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________
Background Information

1. Your age________________________

2. Your gender (check one) Male______ Female______

3. Are you currently (circle one):
   a. Married and living with partner
   b. Married but not living with partner
   c. Unmarried but living with partner
   d. Unmarried and not living with partner

4. If currently married, how long have you been married?_______

5. How many people are currently living in your household?______
   List (i.e., brother, husband, etc.):______________________________
   ____________________________________________________________
   ____________________________________________________________

6. Your household's approximate annual income (circle one):
   a. Below $10,000 a year
   b. $10,000 - $25,000 a year
   c. $25,000 - $35,000 a year
   d. $35,000 - $50,000 a year
   e. Over $50,000 a year

7. What is the highest educational level you have attained
   (circle one):
   a. Have not completed high school
   b. High school graduate
   c. Some college (i.e., have not graduated)
   d. College graduate (Bachelor's Degree)
   e. Graduate degree

8. If you work(ed) outside the home, what do (did) you do (i.e.,
   your job, profession or career)?________________________________

9. Sex of your new child who is considered to be a high-risk
   infant (check one):
   Male______  Female______

10. How many other children (besides your new infant) do you
    currently have living with you:
    a. Your own biological offspring_______
    b. Stepchildren_______________________
11. What is your ethnic background (circle one):
   a. Hispanic
   b. Black
   c. Asian
   d. Caucasian
   e. Other (please specify)______________________________

12. Did you participate in any childbirth education or childbirth preparation classes? If so, what was it (Lamaze, etc.)?

   a. How long (in weeks) was this class?
   b. Did this class include any information on high-risk births?
      If yes, how much______________________________

13. Did you know before your child was born that he/she was considered to be high-risk? Yes______ No_______

14. Type of delivery: Vaginal______ Caesarean_______

15. Weight of child at birth______________________________

16. How much preparation would you say you have received overall on high-risk infants (i.e., through the childbirth preparation course, through your doctor, through your own reading)? (Circle one):
   a. A lot of preparation
   b. Some preparation
   c. A little preparation
   d. No preparation at all

17. Why is your infant considered to be high-risk?

   ________________________________
   ________________________________
   ________________________________

18. How much emotional support do you feel that you receive from your spouse? (Circle one):
   a. A great deal
   b. Some
   c. Little
   d. None
19. How much of the responsibility of caring for your other child(ren) and of household chores do you share with your spouse? (Circle one):
   a. We share chores equally
   b. I do more
   c. Spouse does more
   d. Other________________________

20. What has been the most stressful part of having a high-risk infant on your marriage, in your opinion?

________________________________________________________________________

________________________________________________________________________

21. Have you received support (emotional and/or physical help) in caring for your high-risk infant from other family members or friends?
   Yes_______ No_______ Please explain________________________

________________________________________________________________________

________________________________________________________________________

22. Please complete the following sentences:
   a. The best thing about having this high-risk child has been
      _______________________________________________________________________

   b. The hardest thing about having this high-risk child has been
      _______________________________________________________________________

   c. The scariest thing about having this high-risk child has been
      _______________________________________________________________________
d. The most stressful part of caring for this high-risk child has been ____________________________

____________________________________

____________________________________

e. The biggest influence of having this child on our marriage relationship has been ____________________________

____________________________________

____________________________________

Thank you very much for completing this questionnaire — your assistance is very much appreciated!
STIMULATING YOUR INFANT

holding and singing

waterbed

Touching, stroking, flexing legs and arms

“Heartbeat” bear

Tapes:
“This is Mommy and Daddy.”
music and lullabies

swaying in a hammock

ALL OF THIS IMPROVES YOUR INFANT’S DEVELOPMENT
GLOSSARY OF MEDICAL TERMS

**Apnea**: A short period of no breathing, seen commonly in small premature infants. An abnormal period of no breathing is usually defined as greater than ten to fifteen seconds. It frequently occurs with bradycardia. Apnea can be treated with drugs and with the use of a monitor to record when breathing has stopped. An episode of apnea is called an apneic episode.

**Bradycardia**: A slowing of the heart rate below 100 beats/minute. Unless prolonged, it may be normal in a premature infant. Bradycardia often occurs a few seconds after the onset of an episode of apnea.

**Cerebral Palsy**: A disorder of muscular control caused by damage to the brain, most often due to asphyxia sometime immediately before or after birth. Cerebral palsy occurs in four forms—spastic (stiff and difficult movements), flaccid (decreased movements), athetotic (excessive involuntary movements), and ataxic (improper balance and depth perception)—and can affect one limb, two limbs, or four limbs.

**Hyaline Membrane Disease**: A breathing disorder commonly seen in premature infants characterized by a collapse of the air spaces in the lungs. Common symptoms include rapid respirations, heaving of the chest, and grunting. "Hyaline" refers to the pink,
glassy membrane in the air sac that can be seen under a microscope. The disorder is also called respiratory distress syndrome.

**Hydrocephalus:** A condition characterized by an abnormal collection of cerebrospinal fluid in the spaces (ventricles) of the brain. It is commonly referred to as "water on the brain." Hydrocephalus can be caused by many things, including a severe brain bleed.

**Jaundice:** A symptom of liver problems or immaturity of the liver, characterized by a yellow color in the skin and blood because of the accumulation of bilirubin. It is usually treated with fluorescent lights, or, in more severe cases, with exchange transfusions.

**Lanugo:** Fine, furlike hair seen on the body surfaces of the premature infant, especially on the back and shoulders, which disappears with age.

**Retrolental Fibroplasia (RLF):** A disorder of the eyes, characterized by abnormal blood vessels on the retina, seen most commonly in very low birthweight infants. RLF, also known as retinopathy of prematurity, may improve with time or may worsen and lead to blindness. There are many proposed causes of RLF, including immaturity of the eye and prolonged use of supplemental oxygen.
Sudden Infant Death Syndrome (SIDS): A condition, also crib death, in which an apparently healthy infant, or one with only a cold, dies unexpectedly while sleeping. The cause of SIDS is unknown, but it has been shown to occur more frequently in males between the ages of one and seven months, in low birthweight infants, in infants with colds, and in infants who experience apnea. Premature infants who have sleep apnea wear monitors to prevent the occurrence of SIDS.
APPENDIX G
A GROWTH CHART FOR THE NEXT
TWELVE MONTHS

This is corrected for time missed in vetro. This needs to be adjusted to how much time your infant missed. Use this as a general guide. To avoid the awkwardness of "he" or "she," the author of Your Premature Infant, Robin Henig, chose to use only "she" in this chart. This chart was excerpted from Caplan, Frank, ed. The First Twelve Months of Life. New York: Grosset & Dunlap, 1973.

By one month corrected age:
Vision:

*The baby is sensitive to bright light or sunlight; it causes her to flinch and close her eyes tightly.

*She can see objects six to twelve inches from her nose.

*She shows signs of the "doll's eye effect"—her eyes open when she's lifted and held upright.

*She prefers to look at patterns, especially those that evoke the human face, and at bright colors and sharp contrast.

*She'll gaze for long periods at a face or a picture of a face—especially the region between the eyes and hairline.
Touch:

*She grasps objects placed in her open hand—a reflex over which she has no control.

*For most of the time, especially when she's awake, the baby's hands are curled into fists.

Movement:

*On her back, the baby most often lies in the "tonic neck position," with her head turned to one side (usually the right), the arm extended on that side, and the opposite arm flexed so that it comes close to the shoulder.

*On her belly, she lies with her face down, but she's able to lift her head for very brief periods.

Sounds:

*The baby begins to make small "throaty" sounds.

Socializing:

*The baby spends most of her time sleeping. She's in her "quiet alert state"—when she's awake, comfortable, not hungry, and ready for some social play—for only about five minutes out of every hour during the day.

*She stares at adults' faces, especially their eyes, for long periods.

By two months corrected age:

Vision:

*She will look at objects and follow a moving object or face within her eight- to twelve-inch visual range.
*She can differentiate between a real face and a picture of a face, and although each will get a smile, the real face will get a bigger smile.

**Touch:**

*The baby can hold a rattle that is placed in her hand and can wave it around. The sound it makes will attract her attention, as she looks for the rattle, she takes a step toward the "discovery" of her own hands.

**Movement:**

*She is gaining control of her head. When she is held upright, her head will jerk and bob, but it will not sag forward as it used to.

**Sounds**

*The baby babbles to herself, playing with the sounds she can make and endlessly repeating the same odd-sounding trills and coos. At this age, the babbles are universal. Chinese babies, French babies, and American babies all utter identical sounds. Soon, though, the babbling will begin to shift toward the sounds made only in the baby's native language.

**Socializing:**

*The baby begins making spontaneous smiles, and, as they are encouraged by returned smiles from her loved ones, she learns to smile some more.
By three months corrected age:

Vision:
* The baby is better able to keep a slowly moving object within sight, a process known as "tracking." When a large, bright object is held about a foot away and moved slowly from one side to the other, the baby can follow it smoothly and reliably.
* The baby will have found her hand and spends long periods looking at it, waving it in front of her face and exploring it with her other hand.
* She shows signs of recognizing familiar things.

Touch:
* Reflex grasping has been replaced by voluntary grasping.
* The baby experiences "touch hunger"--she so loves holding and touching objects that she will fuss and reach for things until she can hold still more.
* She swipes at objects within reach.

Movement:
* The baby's control of her head is just about complete.
* She has uncurled totally from her earlier postures and can now lie flat either on her back or her belly. This allows her to move her limbs more freely, and she begins pumping her legs happily in a "bicycling" motion when she gets excited.
*When lying on her belly, she places some weight on her forearms, so that not only her head but soon her shoulders and even chest rise above the mattress.

*She can bring her fist to her mouth intentionally and keep it there.

**Sounds:**

*The baby has a large repertoire of sounds: squeals, chuckles, coos, clicks, bubbles, gurgles. When an adult imitates the sound, the baby becomes excited and tries to repeat the sound in turn, creating a sort of dialogue.

*She will make long "speeches" when looking at something interesting.

**Socializing:**

*She begins to flash her first "social smile"—a smile meant simply to tell her parents or other loved ones that she's happy. In the months to come, that smile will appear more and more often.

*She's awake and alert for longer periods of time—about fifteen or twenty minutes out of each daytime hour.

By four months corrected age:

**Vision:**

*She can focus easily on brightly colored objects.

*She looks at toys as she holds them in her hand—a first step in the development of hand-eye coordination.
*The sight of food is a cue to her that she soon will be fed.

*She brings her hands to the middle of her body and plays at intertwining them.

**Touch:**

*The baby might begin to use her fingers separately.

*She generally uses both hands together to reach for an object.

*A great deal of her attention is devoted to watching and playing with her hands.

**Movement:**

*When the baby is held upright, her legs will support some of her weight.

*When she is propped into a smiling position, she can remain upright for ten to fifteen minutes.

*She is working hard at learning to roll over.

**Sounds and Socializing:**

*The baby has developed a belly laugh.

*She turns her head at the sound of voices.

*She knows a loved one's voice from the voice of a stranger and prefers it.

By five months corrected age:

**Vision:**

*She uses her vision in a new way—coordinating it with all her other senses. If she sees a nearby object, a
predictable, smooth sequence of events follows: she reaches, grasps, and pulls the object to her mouth, completing her exploration by gumming and chewing it.

*Her ability to see is equal to that of an adult. She can see objects across a room.

*The baby is interested only in the things she can see. She loses interest in a toy if it is covered up or hidden.

**Touch:**

*Much of her time is spent playing with her hands, squeezing one with the other as she learns to distinguish her own body from all other objects she can see and touch.

*She begins voluntary reaching.

*She reaches in different ways for different objects, anticipating their size, shape, and distance.

*She can hold onto only one object at a time.

**Movement:**

*The baby learns to roll deliberately from her belly to her back.

*She can reach for things within range of her hands. Sometimes she manages to grab them; more often, though, she "swipes" at them in an unsuccessful effort to catch hold.

*The baby has outgrown her "tonic neck reflex." When she lies on her back now, her head usually is centered, and she is able to move it freely from side to side.
*She uses her hand to grasp objects much as though she were wearing a mitten, with her thumb used in opposition to her other four fingers.

*Her back is much stronger, and she can sit erect with support for up to one-half hour.

*She can often grasp a toy she wants, but she cannot yet transfer it from one hand to the other.

*Hand-eye coordination is vastly improved and allows the baby to move her hand wherever she wants it to go. She most frequently brings it to her mouth, preferably with an object or toy, so she can "mouth" her fist or rattle in a feast of sensory exploration.

**Sounds:**

*The baby talks to herself when she's left alone.

*She experiments with certain favorite sounds, such as growling, blowing bubbles, or gurgling.

*She likes to make sounds when something is in her mouth.

**Socializing:**

*She recognizes people and smiles at the approach of Mother, Father, or others who are familiar. The smile may disappear at the approach of a stranger.
By six months corrected age:

**Vision:**

*She spends less time looking at objects that are far away, concentrating instead on things within her reach.

*She shifts her attention from large objects to small.

*She begins to prefer pictures with more realistic detail, rather than the cartoons and patterns she liked a few months earlier.

**Touch:**

*She works to reach a toy that is out of easy reach.

*She can hold an object between her extended fingers.

*She uses her hands to explore all parts of her body, including her toes, feet, face, and genitals.

**Movement:**

*The baby will move towards objects.

*She can roll deliberately from her back to her belly.

*She likes to wave her arms, with or without an object in her hand, up and down and from side to side.

*She will try to transfer objects from one hand to the other.

*She will lift her chest completely and might be able to support herself on hands and knees.
Sounds:
* The baby's sounds are beginning more closely to resemble speech.
* Her vocalizations are different depending on whether they're directed at toys or people.
* She babbles the most when playing with a familiar toy; if the toy is new, she is too immersed in it to be able to babble at the same time.

Socializing:
* She has an increased interest in the outside world.
* She does not like to be left alone.
* She looks up from what she's doing when people enter the room.

By seven months corrected age:

Vision and Touch:
* She reaches purposefully for a toy when she sees it and can grasp it not only from a flat surface or from your hand but also as it dangles above her.
* She is much more dexterous. She can grasp small objects or pieces of food in a pincerlike grasp, using her thumb in opposition to two fingers.
* She may be able to retrieve small objects using a raking movement of her hand and arm.
* Small objects, such as keys and beads, especially fascinate her.
Movement:

* The baby can sit without support, although she cannot yet get herself to a sitting position alone.
* She can bear weight on her legs when placed standing in a walker or against a piece of furniture.
* She may rotate her wrist to see the bottom of a toy she is holding.
* She can hold an object in one hand instead of two and can bang it against another object.
* She can transfer objects from one hand to the other.
* She can feed herself crackers.

Sounds:

* The baby imitates her own sounds when you say them back to her, engaging you in a kind of dialogue.
* The sounds the baby makes begin to sound more and more like speech, including occasional use of such words as "mama" and "dada," although not meant specifically to mean Mother and Father.

Socializing:

* She enjoys playing peek-a-boo.
* She likes to be included in social interactions.
* She begins developing a sense of humor, and she likes to tease and be teased.
* She resists doing things she doesn't want to do.
By eight months corrected age:

Vision and Touch:

*The baby's ability to discern detail has improved dramatically, leading to a fascination with tiny objects, including crumbs, blades of grass, and insects.

*She begins to develop a perception of depth.

Movement:

*She puts her toes in her mouth.

*She can bang a bell.

*She reaches with one hand.

*She may begin crawling, both forward and backward.

*When held upright, she frequently makes bouncing movements.

Sounds:

*She talks to her toys, using a different tone than the one she uses to talk to herself or to people.

*She enjoys noisemaking toys, such as bells and chimes.

*When she recognizes a familiar person, her vocalizations change.

*She imitates adult speech patterns, varying her intonations and pitch in the same way her parents do.

Socializing:

*She stretches her arms to be picked up.

*She loves looking into mirrors. She will smile at her reflection and try to pat it.
*She vocalizes to state her demands, get attention, express pleasure or displeasure, or simply to socialize.

By nine months corrected age:

**Vision:**

*She retains interest in an object even after it is covered up, and she tries to find it to get it back.

*She allows herself to be interrupted during crawling when a new object appears; she'll stop for a while and stare at it.

**Touch:**

*The baby uses her hands to explore her environment. She has great control of her hands and can grasp and manipulate two or three objects at a time.

*Her forefinger is the device through which she explores objects. She uses it to poke, prod, and manipulate anything new, especially if it has holes in it.

*She can pick up small objects using two fingers (thumb and forefinger).

*She will try to build a tower of blocks, probably without success, though she might manager a "tower" of two.

**Movement:**

*The baby is able to crawl, usually distributing her weight evenly among her two hands and two knees.
*She can get herself from a sitting position to a crawling position and might even be able to get herself from a crawl to a sit.
*She can stand while holding onto a stable object.

**Sounds:**
*She enjoys hearing and moving to music.
*She recognizes the differences among speech sounds; she can recognize the voice melodies of her parents, for instance, and knows which tones of voice are happy and which are mad.

**Socializing:**
*The baby can use her voice to get what she wants. She is learning that a particular call can elicit a helpful parent more effectively than can a cry.
*She is initially shy with strangers.
*She might insist on feeding herself, grabbing the spoon and trying messily to get it to her mouth.
*She can feed herself many finger foods.
*When certain behaviors are positively reinforced, she "performs" to have adults laugh with her and applaud her.

*She might begin answering herself and protecting her possessions, such as by fighting to keep her toys from another child.
By ten months corrected age:

**Vision:**

* The baby likes watching scenes as much as she likes watching people or objects.

**Touch:**

* She will be able to place small objects inside a large container.
* She may be able to build a tower of two blocks.

**Movement:**

* The baby will grasp a bell by its handle, pull on a string, and roll or throw a ball.
* She can maintain her balance easily from a sitting position, turning from side to side and even leaning far over to retrieve a toy before returning to an upright posture.
* Her crawling improves, and she may be able to climb up and down stairs.
* She practices using both sides of her body to do the same thing, and practices using each hand for a separate activity.
* She begins to release objects voluntarily.

**Sounds:**

* The baby will imitate sounds such as coughing and laughing.
* She may try to hum or sing when she hears music.
Socializing:
* The baby likes to play pat-a-cake.
* She can wave "bye-bye."
* She will relinquish a toy on request.
* She responds to her name.
* She seems to understand the concept of "no."

By eleven months corrected age:

Vision:
* She can sit and stare for long periods, especially if she's watching a lot of action, such as other children playing.
* She likes to look at picture books.
* She remembers objects that have fallen out of sight (this is an intellectual concept called "object permanence") and tries to retrieve them.

Touch:
* The baby enjoys games of throwing objects and having them returned to her to be thrown again.
* She likes to try turning the pages of books.

Movement:
* The baby can pull herself to a standing position, using a crib rail, coffee table, or other stable object for support.
* She likes to climb up stairs.
*She is able to "cruise," moving around the room sideways while edging from one piece of furniture to the next.

*She might take a few steps while holding onto an adult's hand or pushing a stroller or sturdy "toddling" toy.

**Sounds:**

*She can imitate new sounds.

*She makes sounds that for the first time sound like words.

**Socializing:**

*She can amuse herself for as long as one hour but is happier playing alone when other people are in the room with her.

*She seeks the approval of her loved ones and may follow simple commands.

By twelve months corrected age:

**Vision:**

*The baby still smiles at herself in the mirror and also may reach for objects reflected there.

*She likes observing details.

*She will imitate the facial expressions and gestures of others, especially adults.
Touch:

*She can pick up and hold small objects in a "prehensile" grip, between the tip of the thumb and the tip of the index finger.

Movement:

*The baby can walk unassisted. (Note: the average for this much-awaited accomplishment is about 12.5 months corrected age. But some perfectly normal babies do not walk alone until as late as sixteen to eighteen months. Your baby's slow walking should not be a matter of concern until it's delayed beyond eighteen to twenty months corrected age and then only if the baby is not showing signs of moving in the direction of walking, such as pulling to a stand and cruising.)

*She can stoop when standing and then stand up again.

Sounds:

*She babbles with more complicated sounds, and the melody of her "speeches" sounds more like conversation.

*She might have a few simple words that she uses appropriately, including "mama," "dada," "dog," "cat," and "book."

Socializing:

*She recognizes her own name and the names of familiar people.

*She tries to follow instructions.
The baby can drink well from a cup, and she tries to feed herself with a spoon.
"My Baby Sister's Too Small to Come Home":
A Story for Siblings
Illustrations by Deborah Addison

LAST WEDNESDAY MORNING when I woke up, Mom and Dad were gone. Next to my pillow I found a green envelope with a piece of paper inside. And then Grandma came into my room! She said she would be staying at our house for a few days. I gave Grandma my green envelope, and she read from the piece of paper inside. It said, "Dear Chris, We went to the hospital to have our baby. We love you—see you soon! Love, Mom and Dad."
When Dad came home that night, he looked worried, too. "Your sister's name is Megan," he told me. "She's beautiful, with lots of pretty brown hair and big blue eyes. But she's very, very small—much smaller than new babies usually are."

"Why is she so small?" I said.

"Because she was in such a rush to be born. She wasn't supposed to be born for another two months, and her body really still belongs in Mom's belly where it can grow best. But Megan was in a hurry. She wanted to see you and me and Mom as soon as she could. The doctors at the hospital have put her in a special kind of crib to keep her warm and protected. She has to stay there for a while until she is big enough and strong enough to come home."
Yesterday was Saturday, so Dad was home all day. He took me with him to the hospital, and the nurses let me go upstairs to see Mom in her room. She looked so pretty sitting in her hospital bed wearing her robe with the yellow flowers all over it. I was happy to see her. When I hugged her, she cried and cried.

Mom took me down the hall to see Megan in the special hospital room for tiny babies. “She’ll look a little funny to you,” Mom said, “because she’s so tiny. And she has a lot of wires attached to her so the doctors can help her get well.” Mom said there would also be a hose in Megan’s mouth to blow air into her. She said Megan needed that extra air to help her breathe better.
Megan was lying without any clothes on inside a little plastic box. No wonder she had trouble breathing—the box had a cover on it!

Megan was smaller than any of my dolls. Her arms and legs were real skinny, and I couldn’t see her face at all because of that hose. She looked very sick to me. I also thought she looked sad, lying there all by herself without anyone to play with.

Last night I had a dream about Megan. I dreamed she was trying to swim in a big lake, but she couldn’t hold her breath under water. So I had to lift her up and carry her on my back to a boat. Mom and Dad were in the boat, and they laughed and said, “Chris! Chris! You saved our baby! Now we can all be together!”
I wanted to ask Dad why she couldn't grow bigger in her own house, in her own room, in her own crib that used to be mine. But I didn't because Daddy looked so sad.

Every day since then, Daddy has gone to the hospital on his way home from work to visit Mom and Megan. When he comes home, it's late at night and he's very tired. He hardly has any time to play with me before I have to go to bed.
That baby! She made everything different by coming so early. She made Daddy tired, she made Grandma sad, and, worst of all, she made Mom go to the hospital and stay there for a long time. If it weren't for that baby, Mom would be home with me and Dad would be able to fly me in the air like an acrobat after dinner.

When I came home from school on Friday, I started to cry because Mommy still wasn't home from the hospital. "Don't worry, Chris," Grandma said. "Mommy will be home soon. And when Megan comes home things will be even better. Mom and Dad will be happy, because it will mean Megan's not sick anymore. And you will be happy, too. You'll like having a little sister around to look at and play with and tickle and hug."
Today Dad told me Megan doesn't need that hose to breathe with anymore. I'm glad. I think it would hurt to have a hose stuck in your mouth all the time.

When Mom comes home on Tuesday, I'm staying home from nursery school. I'll help Grandma make lunch for Mom and put it on a tray so she can eat it in bed, if she wants to. But I hope she'll want to eat her lunch with me, in the kitchen.

Grandma says Mom might be sad when she comes home, because she really wanted to be able to come home with a baby instead of all alone. But Dad says Megan will be coming home, too, just a few weeks after Mom. And besides, Mom won't be all alone at home. She'll still have me.
Reading List for Parents

Field, T. J. *Infants Born at Risk*.


APPENDIX J
References


