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FACTORS INFLUENCING THE DECISION
TO INITIATE AND CONTINUE
BREASTFEEDING

A Thesis
Presented for the
Master of Science in Nursing
Degree
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ABSTRACT

The purpose of the study was to identify the factors influencing the decision to initiate and continue breastfeeding. Fifty mothers breastfeeding for the first time participated in the study. The surveys were "Factors Influencing the Decision to Breastfeed," "Mother's Assessment of the Behavior of Her Infant," and "Levenson's Locus of Control Scale." Demographic data were obtained and follow-up telephone calls completed on 50 subjects. Data analysis from the surveys were completed for 30 subjects who returned all surveys.

The factors found to be associated with initiation and continuation of breastfeeding were consistent with previous research findings. Sources of support and persons influencing the decision to breastfeed were also explored. Problems encountered by breastfeeding mothers during the first two weeks were compared for mothers continuing and discontinuing to breastfeed. Conclusions regarding the impact of maternal locus of control and infant temperament on breastfeeding were not possible due to the sample characteristics. The time of the decision to breastfeed and demographic data were consistent with previous studies.

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CHAPTER I

INTRODUCTION

The 1980 publication "Promoting health/preventing disease: Objectives for the nation" identified breastfeeding as a priority. The goal was developed after an analysis of the 1978 breastfeeding data. According to the "Report of the surgeon general's workshop on breastfeeding and human lactation" (1984), 45% of mothers were breastfeeding at discharge from the hospital in 1978 while only 21% of mothers were breastfeeding at six months. Using those statistics, the Surgeon General's task force formulated an objective for the decade, i.e. "By 1990, the proportion of women who breastfeed their babies at hospital discharge should be increased to 75 percent and 35 percent at six months of age" (Public Health Reports, 1980).

Some improvement was noted in the early 1980s. As of 1983, 61.4% of mothers were breastfeeding at hospital discharge. However, only 27% were still breastfeeding at six months (Koop, 1984). Although the percentages of breastfeeding mothers had significantly increased from 1978, the percentage of mothers breastfeeding at six months remained small. Martinez

and Krieger (1985) reported that the national breastfeeding rate for 1984 was 62.5% initially with a decline to 27.5% by six months of age, a marginal increase from 1983. The lowest incidence of breastfeeding occurred in the east south central states comprised of Kentucky, Tennessee, Mississippi, and Georgia. The 1984 rate of initial breastfeeding in the east south central states was 45.9% (Martinez & Krieger, 1985). This rate was obviously lower than the national average. Despite increases in the early 1980s in breastfeeding rates, the unpublished 1989 data obtained from Ross Laboratories indicates that the national breastfeeding rate has declined. The breastfeeding rates for 1989 were as follows: 52.2% initially, 50.6% at one week, 37.7% at two months, and 30.7% at three months (S. Greenbaum, personal communication, March 20, 1991).

Significance of Breastfeeding

Breastfeeding provides significant advantages to the infant in terms of protection against infection. According to Lawrence (1989) these advantages were suspected as early as the 1800s because of the incidence of serious infections in bottle-fed infants. In recent years, many prophylactic and protective properties in

human milk have been discovered and documented. Through an array of soluble and cellular components, the initial breast milk or colostrum provides a line of defense between the infant and bacteria and viruses (Lawrence, 1989; Satter, 1986). Both the colostrum and the mature breast milk influence the intestinal bacterial flora, predominantly through the effects of the bifidus factor, and continue to safeguard the infant (Lawrence, 1989). Immunoglobulins present in colostrum and breast milk afford anti-infective protection that extends not only to the gastrointestinal tract but also throughout the body fighting bacterial and viral infections (Lawrence, 1989). Other anti-infective properties of breast milk include macrophages, lymphocytes, resistance factor (protects against staphylococcal infection), lysozyme, and lactoferrin (Lawrence, 1989; Neville & Neifert, 1983). All of these properties, and perhaps some yet to be discovered, work together to protect the infant.

In addition to the anti-infective properities of breast milk, the nutritional constituents of human breast milk are particulary suitable for the human infant. Because of this fact, manufactures of formulas attempt to mimic the composition of breast milk. Exact replication of human milk is not possible, however, because of the differences among colostrum, transitional

milk, mature breast milk, and even between the foremilk and the hindmilk (Humenick, 1987; Lawrence, 1989). It can be stated that human breast milk was designed for and contains the optimal nutrition for the infant.

The psychological bonding that occurs during breastfeeding is considered a significant advantage. Because of the complex nature of the total personality, it is important to recognize that infant care provided by the mother is developed and affected by "her genetic endowment, the response of the infant, a long history of interpersonal relationships with others, her family constellation, this and previous pregnancies, and the community and culture" (Lawrence, 1980, p. 95). The physical and emotional bond created between the mother and infant arise from a belief in the value of providing nourishment to the baby through a natural method and the sense of mutual togetherness experienced by mothers (La Leche League International, 1987; Neville & Neifert, 1983; Ray, 1985). The infant is an active participant in the breastfeeding relationship and directs the interaction with the mother (Lawrence, 1989).

Physiologic effects on the mother have also been identified as advantages of breastfeeding. One advantage is protection against pregnancy. The extent of protection depends on the duration and frequency of breastfeeding

(Lawrence 1989; Neville & Neifert, 1983). Because the protection depends largely on round-the-clock nursing and the goal of many mothers is to eliminate night feedings as soon as possible, the protection against pregnancy is quickly diminished.

Breastfeeding produces several effects on the mother's body. Breastfeeding stimulates the release of oxytocin which in turn stimulates the uterus to contract and hastens the return of the uterus to the near pre-pregnant state (Lawrence, 1989; Niebyl, 1986; Satter, 1986). Despite consumption of a nutritionally adequate diet required to maintain the supply of breast milk, lactation also accelerates weight loss during the postpartum period (Satter, 1986). Weight loss occurs because approximately 400 to 700 calories per day are required solely for lactation (Satter, 1986).

Mothers frequently cite that breastfeeding is convenient and economical. The convenience is related to the availability of and lack of preparation necessary in breastfeeding as compared to formula (Niebyl, 1986). However, social customs have imposed limitations on the acceptability of public breastfeeding which removes an aspect of the convenience (Arango, 1984; Satter, 1986). In addition, breastfeeding is also economical. Formula costs 1/3 to 1/2 more than breastfeeding even with the

increased food consumption by the mother (Satter, 1986).

Two other commonly cited advantages to breastfeeding are the protection to the infant from allergies and the safety of breastmilk. The concern over allergies prompts many mothers to breastfeed particularly if their infants are at risk of developing allergies. It should be noted that allergens can be transmitted prenatally and thus caution needs to be exercised in the prenatal period as well as throughout the breastfeeding period to avoid potential allergens (Chandra, Puri, Suraiya, & Cheema, 1986). A final advantage of breastfeeding is safety. Although environmental contaminants and medications are present in breast milk, many women feel it is safer than risking mistakes and mishandling in formula production that are harmful to the baby (Satter, 1986).

Overview of the Problem

Some of the advantages of breastfeeding known to health professionals may be unknown to women making the decision to breastfeed or not. Moreover there may be other factors which serve to influence women more than the identified advantages. In order for nurses to be able to assist mothers in the decision to breastfeed, nurses must know what factors are important to mothers

in selecting a feeding method. The primary purpose of this thesis is to identify the factors that most strongly influence the mother's decision to initiate and continue to breastfeed. Previous research indicates the predominate reasons for selecting breastfeeding include: healthier for the baby, protection from infection for the baby, bonding, convenience, and economical considerations (Fieldhouse, 1984; Mackey & Fried, 1981; Oyco-Santos, 1983; Yeung, Pennell, Leung, & Hall, 1981; Yoos, 1985)

Social support has been established as significant to the success of breastfeeding. Although the significant person may vary, approval and participation by the person (or persons) significant to the breastfeeding mother increases the likelihood that the mother will elect to attempt and succeed at breastfeeding. Thus, it is important to be able to identify what support is available to the mother. Switzky, Vietze, and Switzky (1979) found that breastfeeding mothers reported fewer marital conflicts than did bottle feeding mothers and believed their husbands were more supportive. These findings were confirmed by Hewat and Ellis (1986) who found that mothers breastfeeding for longer than six months felt they had emotional and psychological support from their husbands (Hewat & Ellis, 1986).

Maternal characteristics may be a large determinant in the initiation and continuation of breastfeeding. A complete study of personality was not practical for this study; however, a study of locus of control was completed to determine if a specific locus of control was characteristic of the mothers who initiated and continued to breastfeed. Locus of control has not been previously studied related to initiation or continuation of breastfeeding. However, Lewallen (1989) found that pregnant women with an internal locus of control practiced more health promoting activities.

Continuation of breastfeeding may be influenced by infant temperament. The infant may be very sleepy or very fussy which may discourage the breastfeeding mother. Infant temperament has rarely been studied in relation to breastfeeding. Loughlin, Clapp-Channing, Gehlbach, Pollard, and McCutchen (1985) found that infant factors significant in the early cessation of breastfeeding were excessive crying, demanding personalities, difficulties feeding, and the expectation that feeding difficulties would continue.

Determining when the decision to breastfeed is made by the mother is important. Previous studies indicate that most women make the feeding method decision prior to pregnancy or during the first trimester. Goodine

and Fried (1985) found that 80% of the mothers had made the feeding method decision prior to pregnancy. When collecting data for the national statistics, Martinez (1984) found that 63% of the mothers choosing breastfeeding had made the decision prior to pregnancy and an additional 14% made the decision during the first trimester.

The strongest variable associated with the increased incidence of breastfeeding appears to be maternal education, i.e. the incidence of breastfeeding increases as the level of maternal education increases (Eckhardt & Hendershot, 1984; Fieldhouse, 1984; Goodine & Fried, 1984; Hawkins, Nichols, & Tanner, 1987; Kurinij, Shiono, & Rhoads, 1988; Martinez, Dodd, & Samartgedes, 1981; Wright, Holberg, Taussig, & the Group Health Medical Associates Pediatricians, 1988; Yeung et al., 1981). Other variables associated with increased incidence of breastfeeding include: increased maternal age, middle to upper-middle socioeconomic class, being married, and the mother being a primipara (Fieldhouse, 1984; Hawkins et al., 1987; Martinez, 1984; Martinez et al., 1981).

Purpose of the Study

The purpose of this study was to determine what factors influence the decision to initiate and continue breastfeeding. In addition, information regarding the time of feeding method decision, maternal locus of control, infant temperament, and whether the mother was returning to work was necessary to determine if these factors had an effect on the decision to initiate and continue breastfeeding.

Research Question

What factors influence the mother's decision to initiate and continue breastfeeding?

Subsidiary Questions

1. Are different motivations for making the decision to breastfeed cited by those women who quit within the first two weeks as opposed to those still breastfeeding at that time?

2. Do women who discontinue breastfeeding by two weeks after delivery report different problems encountered than those reported by mothers still breastfeeding at that time?

3. From whom do breastfeeding mothers receive assistance with problems?
4. What sources of support for breastfeeding do mothers identify?
5. What person or persons do mothers cite as having influenced the decision to breastfeed?
6. Does infant temperament influence continuation of breastfeeding?
7. Is there a specific type of locus of control associated with the initiation and continuation of breastfeeding?
8. When do women decide on the feeding method?
9. What effect, if any, does planning to return to work have on the decision to initiate and continue to breastfeed?
10. What demographic variables are associated with the highest incidence of breastfeeding?

Theoretical Framework

The conceptual framework for this study is derived from Wiedenbach's model. The focus of Wiedenbach's model is the individual's "need-for-help" (Wiedenbach, 1964). When identifying the individual's need-for-help, the nurse carefully observes the patient in order to recognize

inconsistencies or discomfort. Through the identification of an individual in need of help, the nurse provides assistance based on the three principles of helping. The principles serve as a guide for the nurse to achieve the desired results. Although Wiedenbach's model was published in 1964 when it was customary for the nurse to be the focus of nursing models, the researcher believes these principles apply from both the nurse's and the patient's perspectives. The principles will be used in this manner throughout the study.

The first principle of helping is the principle of inconsistency-consistency (Wiedenbach, 1963). Because life is considered to be an orderly process and consistency exists in orderliness, inconsistency becomes apparent when order is altered or disturbed (Wiedenbach, 1963). The inconsistency is presented as a contradiction between words and actions. The nurse must be alert to breastfeeding difficulties through observation of inconsistency in the mothers words and actions. In relation to the patient, the decision to breastfeed may be consistent or inconsistent with the personal value system of the mother. Even when breastfeeding is consistent with the values of the mother, breastfeeding difficulties may arise and produce disorder.

The second principle is of purposeful perseverance (Wiedenbach, 1964). The nurse recognizes that many individuals are unable to express a need-for-help (Wiedenbach, 1963). Thus, she provides genuine and sincere help as required. Purposeful perseverance involves continuous effort regardless of the difficulties encountered (Wiedenbach, 1963). In relation to breastfeeding, the nurse assists the mother as she acquires the skills required for breastfeeding and provides encouragement with each skill attempted and mastered (Wiedenbach, 1964). To succeed at breastfeeding the mother may have to persevere in the face of obstacles.

The principle of self-extension is the third and final principle of assistance (Wiedenbach, 1963). This principle involves the use of outside resources in the form of help, guidance, or advice (Wiedenbach, 1963). Self-extension may be in the form of "physical assistance, suggestion, or opportunity to give vent to feelings or to clarify thinking by expressing thoughts to someone able to listen objectively" (Wiedenbach, 1963, p. 51-52). The breastfeeding mother may require each form of assistance while learning the art of breastfeeding and throughout her breastfeeding experience. The nurse may need to consult other health care providers if unable

to provide the assistance required by the mother.

In order for breastfeeding to be successful, breastfeeding must be consistent with the mother's values and the act of breastfeeding must sustain order in her environment. The mother must be willing to persevere in periods of difficulty. In addition, the mother must be willing to accept assistance, help, and advice as indicated by her situation.

Nominal Definitions

The following nominal definitions were devised to guide the study:

1. Breastfeeding mother - A mother who provides nourishment to her newborn through lactation.
2. Infant temperament - The manner in which the infant responds to and interacts with the mother.
3. Influencing factors - Those factors or reasons the mothers cite as having an effect on the decision to breastfeed.
4. Locus of control - A personal characteristic and belief that life and events are controlled predominately by the self (internal), powerful others, or by chance.

Assumptions

1. All surveys were answered honestly and as accurately as possible by the subjects.
2. The surveys in this study were valid and reliable measures of the attributes to be studied.

Summary

Breastfeeding has been identified as the optimal nutritional food for infants. Despite this, many mothers do not breastfeed their infants and many more mothers offer only a token initiative at breastfeeding. The identification of the characteristics of breastfeeding mothers would assist in providing timely and significant information to the pregnant woman.

CHAPTER II

LITERATURE REVIEW

This chapter includes a review of the available literature related to the concepts pertinent to this study. The review of the literature includes demographic variables of the breastfeeding population, the reasons cited by mothers for breastfeeding, timing of the decision to breastfeed, social support and breastfeeding, maternal locus of control, and infant temperament.

Demographic Characteristics

Numerous researchers have examined characteristics of breastfeeding mothers. The bulk of the information gathered relates to demographic characteristics of breastfeeding mothers. Of the demographic variables, the strongest variable appears to be maternal education, i.e. the incidence of breastfeeding increases as the level of maternal education increases (Eckhardt & Hendershot, 1984; Fieldhouse, 1984; Goodine & Fried, 1984; Hawkins et al., 1987; Janke, 1988; Kurinij et al., 1988; Martinez et al., 1981; Wright et al., 1988; Yeung et al., 1981). In a study by Fieldhouse (1984), 50% of breastfeeding mothers had post-high school education.

In the 1983 national study on breastfeeding, the dominant characteristic of breastfeeding mothers was the attainment of a college education (Martinez, 1984), with 78% of breastfeeding mothers being college graduates.

Variation in the incidence of breastfeeding according to race exists even when educational backgrounds are similar. Forman, Fetterly, Graubard, and Wooton (1985) compared the breastfeeding rates of white and black women of various education levels. The white women with sixteen years of education had a breastfeeding rate of 67.1% and the black women with the same education level had a breastfeeding rate of 46.4% (Forman et al., 1985). Of the women with 13 to 16 years of education, the white women had a breastfeeding rate of 58.4% and the black women had a breastfeeding rate of 33.2% (Forman et al., 1985). In the nine to 12 years of education group, the breastfeeding rates were 43.4% for the white women and 15.4% for the black women (Forman et al., 1985). In the group of women with less than nine years of education, 25.5% of the white women breastfed and 17.6% of the black women breastfed (Forman et al., 1985). Thus, a significant variation existed between races despite adjustments for maternal education.

Studies illustrate a substantial variation of breastfeeding rates among the races such that white women

are significantly more likely to breastfeed than either black women or Hispanic women (Eckhardt & Hendershot, 1984; Forman et al., 1985; Kurinij et al., 1988; Wright et al., 1988). According to the 1983 national statistics, 64% of white women breastfed their infants, 32% of black women breastfed their infants, and 54% of Hispanic women breastfed their infants (Martinez, 1984). No statistics on the rates of other ethnic groups breastfeeding in the United States were available.

Several researchers have examined the variable of maternal age at delivery. Increased maternal age is associated with a higher percentage of breastfeeding mothers (Fieldhouse, 1984; Forman et al., 1985; Kurinij et al., 1988). The national survey reported by Martinez (1984) provided an indication of how age is related to breastfeeding rates. Martinez (1984) stated that 67% of mothers 30 to 34 years of age were breastfeeding, 65% of mothers 25 to 29 years old were breastfeeding, 57% of mothers between 20 and 24 years of age were breastfeeding, and only 43% of those less than 20 years of age were breastfeeding (Martinez, 1984).

Socioeconomic status has been documented as affecting breastfeeding rates. The incidence of breastfeeding appeared to be strongest among the middle to upper-middle socioeconomic class and lowest among the poorer mothers

(Fieldhouse, 1984; Hawkins et al., 1987; Janke, 1988; Jones, West, & Newcombe, 1986; Martinez et al., 1981; Yeung et al., 1981). In terms of the 1983 statistics regarding socioeconomic status, Martinez (1984) reported that mothers with household salaries greater than \$25,000 had a 71% breastfeeding rate, households with an income of \$15,000-\$24,999 had a 65% breastfeeding rate, households with an income of \$10,000-\$14,999 had a 61% breastfeeding rate, and household incomes less than \$10,000 had only a 44% breastfeeding rate.

Several studies have assessed marital status in relation to the incidence of breastfeeding. The researchers consistently report that breastfeeding mothers are more likely to be married instead of divorced or single (Baranowski, Bee, Rassin, Richardson, Brown, Guenther, & Nader, 1983; Eckhardt & Hendershot 1984; Hawkins et al., 1987; Janke, 1988; Wright et al., 1988). National statistics have not been compiled for this variable.

The type of delivery may be related to the incidence of breastfeeding. However, differences exist among studies. Hewat and Ellis (1984) reported a decline in breastfeeding among mothers delivering by cesarean section which was thought to be related to delayed physical recovery. Samuels, Margen, and Schoen (1985) found that

women who had a cesarean section delivery were more likely not to breastfeed and experienced a sharper decline in breastfeeding during the first two weeks. Janke (1988) compared breastfeeding rates for mothers delivering vaginally and by cesarean section. The cesarean group had a decline of 37% and the vaginal delivery group had a decline of 32% at six weeks postpartum. Coreil and Murphy (1988) found no correlation of the type of delivery and the duration of breastfeeding. Kearney, Cronenwett, and Barrett (1990) found no difference in the decline in breastfeeding at two weeks among cesarean and vaginal deliveries. Twenty-two percent of the 128 subjects consisted of mothers experiencing a cesarean delivery. No national statistics are available on this attribute.

Several researchers have attempted to determine if a difference in breastfeeding rates exists by parity. In a study of 1525 mothers, Jones et al. (1986) found primiparas more commonly breastfed than multiparas. However, the multiparas in this study breastfed for longer periods than the primiparas. Martinez (1984) reported that nationally 65% of primipara mothers breastfed as compared to only 58% of multipara mothers. Martinez et al. (1981) also found an increased incidence of breastfeeding among primiparas. An older study by Sloper, McKean, and Baum (1975) found no difference by parity.

Kaufman and Hall (1989) found no significant difference by parity in breastfeeding incidence. However, their study involved breastfeeding and premature infants.

Other variables have been analyzed in order to define the general breastfeeding population. A greater incidence of breastfeeding has been documented in those mothers who believe in the benefits of breastfeeding, mothers who were breastfed as infants, and mothers whose husbands prefer breastfeeding (Janke, 1988; Jones et al., 1986; Hally, Bond, Crawley, Gregson, Philips, & Russell, 1984a; Sloper et al., 1975). An additional characteristic identified by Kaufman and Hall (1989) and by Yeung et al. (1981), is that breastfeeding mothers tend to be nonsmokers.

Debate continues about the effect of the mother working outside of the home. Martinez et al. (1981) found a higher incidence of breastfeeding among mothers who do not work outside of the home. Oyco-Santos (1983) found that 70% of employed mothers chose to breastfeed. McKnight (1987) found the lowest percentage of breastfeeding mothers to be housewives and that employment did not adversely effect the decision to breastfeed. In contrast, Wright et al. (1988) found that employed women were significantly less likely to breastfeed their babies. Kurinij, Shiono, Ezrine, and Rhoads (1989) found

that women returning to professional occupations breastfed for longer periods than women returning to sales, technical or clerical positions. In terms of the national statistics, Martinez (1984) found that 62% of unemployed women chose to breastfeed and 60% of employed women chose to breastfeed.

Breastfeeding incidence has varied among regions of the country, cultural, social, and personal influences. In 1983, the incidence of breastfeeding appeared to be highest among "well-educated, relatively affluent, somewhat older women living in the Western part of the country" (Martinez, 1984, p. 18). The lowest incidence in breastfeeding occurred among "mothers under 20 years of age, grade-school educated, lower income, black, and living in the East South Central part of the country" (Martinez, 1984, p. 18).

Reasons Cited for Breastfeeding

Maternal perceptions, motivations, and influences involved in the decision to breastfeed have been studied. In 1981, Yeung et al. (1981) studied the decision to breastfeed and found the explanations provided for breastfeeding included: healthier and better for the baby, easier/convenient, immunity passed to the baby,

closeness and warmth, and natural method of feeding. Mackey and Fried (1981) reported that reasons mothers cited for breastfeeding included: best for the baby, convenience, and bonding. With the addition of economy, these were the same factors cited by Oyco-Santos (1983) and Yoos (1985). Ekwo, Dusdieker, and Booth (1983) found that the factors that influenced the decision of primigravidas to breastfeed included the following: protection against infection, bonding, convenience, better nutrition, natural way, and self-fulfilling and emotionally satisfying. Fieldhouse (1984) interviewed 136 mothers and identified the following reasons for breastfeeding: better for the baby, easier/more convenient, closeness/bonding, encouraged to do so by others, and more economical. Hally, Bond, Crawley, Gregson, Philips, and Russell (1984a & 1984b) categorized reasons mothers cited for breastfeeding as follows: best for the baby, alternative method not considered, adviser's views, convenience, and other reasons. McIntosh (1985) found the most common reasons cited by mothers included: better for the baby, to regain figure, convenience, bonding, cheaper, and "other."

The media and various people who influence the mother have also been noted to impact the decision to breastfeed. Influences identified in the study by Yeung et al. (1981)

in order of significance included: self, books, family, physician, prenatal classes, friends, experience, schooling, husband, and La Leche League. In terms of specific advisers, relatives or friends were frequently cited with the most significant contact person being either the husband or the mother's mother (Hally et al., 1984a). Despite the cited influence of other individuals, 65% of mothers stated that the choosen feeding method was not altered by the advice of others (Hally et al., 1984a).

Shand and Kosawa (1984) studied 104 middle-class married women prior to delivery and at one week, one month, and three months postpartum. The researchers found that private consultation and reading materials had no impact on the initiation and success of breastfeeding (Shand & Kosawa, 1984). The researchers also found hospital classes were negatively correlated with breastfeeding success (Shand & Kosawa, 1984).

Adair (1983) studied an urban population and found the most common reasons for electing to breastfeed included: best for baby, closeness or bonding, convenience, immunities or allergy prevention, nutrition, and cost. Advice in respect to breastfeeding varied significantly between clinic and private mothers. When asked to identify the source of advice on method of infant

feeding, the clinic patients most frequently cited pamphlets and the category "none" (Adair, 1983). The private mothers most often cited books, pamphlets, childbirth classes, and family (Adair, 1983).

A study by Aberman and Kirchhoff (1985) focused on the lower socioeconomic population and the minority population. The sample consisted of 72 black mothers, 20 Hispanic mothers, and 8 white mothers. They found the factors cited for breastfeeding were: better for the baby's health (73.3%), feel closer to the baby (26.7%), cheaper (20.0%), convenience (13.2%), and other (20.0%) (Aberman & Kirchhoff, 1985). It was intriguing to note that 22% of the population could not identify anyone or any media aide as a source of influence for the choice of feeding method (Aberman & Kirchhoff, 1985). For the remainder of the population studied, the individuals or factors most frequently cited by the mothers were books (20%), self (20%), mother or sister (18%), husband or boyfriend (8%), past experiences (6%), and other (6%) (Aberman & Kirchhoff, 1985).

Lawrence (1982) completed an interesting study on health professional's views of the influence they have on the decision to breastfeed. Twelve influences that had been cited by mothers were provided for the pediatricians, obstetricians, family practitioners, and

nurses to rank. The physicians considered themselves influential in the decision to breastfeed and consistently ranked the prenatal class instructor, pediatrician, obstetrician, family physician, and husband as very important influences in the decision to breastfeed (Lawrence, 1982). The physicians ranked nurses low on the scale. However, nurses cited the husband, prenatal class instructor, obstetrician, and hospital nursing staff as the important influences in the decision to breastfeed (Lawrence, 1982).

An interesting study was completed by Jones (1986) which looked at why mothers would want to breastfeed again. The results were very similar to the reasons cited for initiating breastfeeding. The reasons given included: better for the baby (45%), satisfaction of mother (18%), convenience (12%), natural (10%), closer relationship with baby (6%), no particular reason (5%), better for mother (2%), and more contented baby (2%).

Time of Feeding Method Decision

In order for nurses to be able to present the factors cited by the mothers, they also must know when the decision to breastfeed is typically made. Mackey and Fried (1981) found the decision to breastfeed was made

in the early prenatal period. In this study, 84% of the mothers initiating breastfeeding had decided to breastfeed prior to pregnancy (Mackey & Fried, 1981). Ekwo et al. (1983) found the decision to breastfeed was often made prior to pregnancy or in the early prenatal period. Specifically, the study illustrated that 21% of the primigravidas had "always known" they would breastfeed, 67% decided prior to pregnancy, and 12% decided as soon as they found out they were pregnant or within the first two months (Ekwo et al., 1983). Thus, in this particular study all the breastfeeding mothers had decided they were going to breastfeed by the second month of pregnancy. In a study by Aberman and Kirchhoff (1985), 62% of the respondents made the decision to breastfeed before the end of the first trimester, and a total of 82% made the decision prior to the third trimester. Goodine and Fried (1985) found that 80% of mothers made the decision prior to pregnancy.

Martinez provided the national statistics related to the time of the decision to breastfeed. In 1983, 63% of mothers had decided prior to pregnancy that they would breastfeed their infants (Martinez, 1984). An additional 14% made the decision to breastfeed during the first trimester. A total of 98% of mothers had decided prior to delivery to breastfeed. Of this

percentage, 96% of the mothers did proceed to breastfeed (Martinez, 1984).

Social Support

The presence of support for the breastfeeding mother has been established as important for her success. The support person offers encouragement to the mother and protects the mother from doubts about her own abilities and doubts from nonsupportive others (Arango, 1984; Goldfarb & Tibbetts, 1980). Typically, the support person is the husband. The impact of a husband with a favorable attitude toward breastfeeding encourages continued breastfeeding (Goldfarb & Tibbetts, 1980). Unfortunately, the support person with a negative attitude toward breastfeeding makes breastfeeding almost impossible. Switzky et al. (1979) found the breastfeeding mothers felt they had fewer marital conflicts and that their husbands were more supportive than the bottle feeding mothers.

Different aspects of support were significant to the breastfeeding mothers. In the study by Hewat and Ellis (1986), the mothers who breastfed for six months or longer believed they had emotional and psychological support in addition to physical support from their

spouses. Jones et al. (1986) found that the husbands who preferred breastfeeding had infants who were breastfed for longer intervals by their wives.

Baranowski et al. (1983) found that among blacks, a close friend was the most important social support person. For Mexicans, the mother's mother was the most important support person. The white women identified the male partner as the most important source of support (Baranowski et al., 1983).

Kearney (1988) identified family dynamics that impede breastfeeding. These included partner's dislike of breastfeeding, marital instability, and lack of extended family support for breastfeeding (Kearney, 1988). Arango (1984) believes the support and encouragement from the extended family and the physical assistance with housework are significant factors related to successful breastfeeding.

Maternal Locus of Control

Locus of control is a personal characteristic that is based on the individual's perceptions of behavior, reinforcement, and causality (Arakelian, 1980). The concept definition of locus of control was developed by Rotter (1966). According to Rotter (1966), a person

who believes his/her personal action or behavior causes the reinforcement or outcome is considered to have an internal locus of control. A person who believes his/her actions or behavior have little influence on outcome is considered to have an external locus of control which includes elements of luck, fate, chance, belief in powerful others, and a belief in unpredictability (Rotter, 1966).

The individual can not be placed in one exclusive category but rather has varying degrees of orientation toward internal or external locus of control. The category of external locus of control contains several elements that are not synonymous with each other and include luck, chance, fate, and the control of powerful others. For this reason, Levenson (1974) developed a scale that measures the attributes of internal, powerful others, and chance locus of control.

The question arises as to which orientation is preferred. Typically, the internal orientation is identified as advantageous because these individuals consider themselves responsible for their destiny, are alert to information that is useful to them, act to improve their condition, emphasize achievement, and are resistive to subtle influences (Rotter, 1966). According to Zindler-Wernet & Weiss, (1987), individuals with an

internal locus of control are more likely to practice health promotion activities. However, Levenson (1974) studied individuals and their involvement in anti-pollution activities and found that a chance orientation was associated with a lack of involvement or information. Thus, powerful others and internal orientation included degrees of learning and activity regarding pollution. One could argue that individuals with a powerful others orientation may be more inclined to follow the recommendations of health care providers. The information regarding an individual's locus of control may provide information on the type of treatment indicated, the amount of encouragement and assistance required, and how the orientation affects the outcome of treatment (Arakelian, 1980).

Few studies have been completed directly related to locus of control and pregnancy. Coreil and Murphy (1988) found the maternal motivation or intended duration of breastfeeding was associated with the time of breastfeeding termination. Lewallen (1989) reported that pregnant women with internal instead of powerful others or chance locus of control practiced more health promoting activities. In a study of nonpregnant women and their breast self-exam practices, those with strong

health beliefs and an internal health locus of control practiced breast self-exams with a moderate to high frequency rate (Redeker, 1989). No studies specifically related to the initiation and continuation of breastfeeding and maternal locus of control have been completed.

Infant Temperament

It has been suggested by Loughlin et al. (1985) and Hughes, Townsend, and Branum (1988) that infant temperament might affect the duration of breastfeeding. Because most studies define infant temperament in terms of the mother's interpretation of her infant, the issue of whether it is the infant temperament or a maternal characteristic that produces the shorter duration of breastfeeding remains unclear. Hewat and Ellis (1984 & 1986) found that for mothers who breastfed less than six months, infant crying was interpreted as hunger and thus insufficient milk. Mothers breastfeeding greater than six months more frequently interpreted crying to mean the infant wanted attention. In terms of the sleepy infant, the mother breastfeeding less than six months interpreted a sleepy infant as disinterested, lazy, or not wanting to breastfeed. For those mothers

breastfeeding greater than six months, the sleepy infant was perceived as needing more sleep (Hewat & Ellis, 1984; Hewat & Ellis, 1986).

Few studies have been completed on infant temperament and breastfeeding. In 1985, Loughlin et al. studied the cessation of breastfeeding over the first eight weeks postpartum. The infants were studied in the nursery and with the mothers by the nursery staff. Infant factors significant in the cessation of breastfeeding were excessive crying, demanding personality, trouble with feeding, and the expectation that feeding difficulties would continue (Loughlin et al., 1985). Other significant factors were lack of maternal confidence in breastfeeding and anticipated duration of breastfeeding less than six months (Loughlin et al., 1985).

Two studies have attempted to relate infant temperament as measured by the Brazelton Neonatal Behavioral Assessment Scale to continued or discontinued breastfeeding. In 1988, Hughes et al. found predictors of breastfeeding difficulties included poor scores on the following characteristics: cuddliness, consolability, peak of excitement, and irritability. Also using the Brazelton scale, Kearney et al. (1990) looked at breastfeeding problems in the first week postpartum and the relationship to infant temperament. The researchers

found no differences for the problems experienced by the mothers regardless of the scores on the Brazelton Neonatal Behavioral Assessment Scale.

Duration of Breastfeeding

Studies on the duration of breastfeeding have consistently shown a significant drop in the early weeks. Yeung et al. (1981) found a drop of 30% during the first month in their study of 403 breastfeeding mothers. The participants in this study were from a variety of socioeconomic backgrounds and ethnic groups. In 1984, Fieldhouse found 34% of 104 first time mothers initiating breastfeeding had discontinued breastfeeding at one month. Hally et al. (1984a & 1984b) found 43% of mothers ceased breastfeeding by six weeks. The subjects consisted of primipara women obtaining care from an urban general hospital. In a study by Jones et al. (1986), 649 breastfeeding mothers were followed and the duration of breastfeeding identified. Thirteen percent quit breastfeeding after one week, an additional 4% after two weeks, and at one month 26% of the mothers had ceased breastfeeding (Jones et al., 1986). Loughlin et al. (1985) found a 24% decrease in breastfeeding at two weeks, an additional 13% decrease in the following two weeks

and by eight weeks 52% of the mothers discontinued breastfeeding. The 94 participants were predominately white primipara women from a private practice. McIntosh (1985) found 28% of the mothers quit at one week, a total of 52% quit by two weeks, and 66% quit by four weeks. Samuels et al. (1985), found the most rapid decline in breastfeeding occurred during the first two weeks. The sample was racially heterogeneous and consisted of 417 breastfeeding women. In a study by West (1985), 23% of the breastfeeding mothers had quit by the sixth week.

Mogan (1986) studied mothers' breastfeeding concerns and found more problems arising at two weeks postpartum and at one month postpartum. She reported only a 3.9% decline in breastfeeding at two weeks and a total of only a 9.9% decline at one month. Mogan (1986) speculated that professional support in the form of home visits may have increased the duration of breastfeeding.

The reasons cited for discontinuation of breastfeeding have been remarkably consistent and may provide useful information for intervention. Common reasons for discontinuation of breastfeeding include: insufficient milk for the baby, cracked nipples, breast abscess, inconvenience, fatigue, and resuming outside work (Downing & Howkins, 1984). Ellis and Hewat (1984) found the most common reason cited for discontinuing

breastfeeding regardless of duration of breastfeeding was that mothers thought the baby was not getting enough milk. Other reasons for discontinuing breastfeeding included: so the mother could rest, nipple problems, breast problems, inability to breastfeed, fussy baby, to introduce the bottle, and to start semi-solids (Ellis & Hewat, 1984).

Additional studies have found similar concerns cited for complications with and discontinuation of breastfeeding (Chapman, Macey, Keegan, Borum, & Bennett, 1985; Goodine & Fried, 1984; Hofvander & Petros-Barvazian, 1978; West, 1980). Goodine and Fried (1984) found the most common problem was again insufficient milk supply with other reasons including: difficulty with nursing technique, medical reasons, convenience, physical discomfort, and developmental readiness for solids. McIntosh (1985) found the most common reason stated to be insufficient milk followed by painful breasts or nipples, inconvenience, and time consuming. When McIntosh (1985) analyzed the reasons for termination of breastfeeding, 71% of the mothers discontinued for physical reasons, 11% discontinued for social reasons, 11% discontinued for a combination of physical and social reasons, and 7% discontinued for other reasons.

A recent study (Kearney et al., 1990) on problems

experienced by breastfeeding mothers one week postpartum demonstrated some variation from previous studies. The most commonly cited events included: baby falls asleep (86%), sore nipples (66%), and leaking breasts (59%). Mothers ranked the importance of problems as follows: sore nipples (21%), baby falls asleep (17%), baby fussy and refuses to nurse (17%), mother feeling blue (16%), baby fussy after feeding (15%), and mother in pain/hard to breastfeed (15%) (Kearney et al., 1990). Worrying about insufficient milk was reported by only 20% of the mothers, and only 8% of those mothers reporting it considered it a problem (Kearney et al., 1990).

Graef, McGhee, Rozycki, Fescina-Jones, Clark, Thompson, and Brooten (1988) studied postpartum concerns of 32 breastfeeding mothers throughout the first month postpartum. Infant concerns were cited most often and included: frequency of feeding, duration of nursing time, supplementation, sleep and crying behaviors, growth and development, and infant stooling (Graef et al., 1988). Maternal concerns involved sore nipples and breasts, uterine bleeding and cramps, episiotomy pain, muscular pain, hemorrhoidal discomfort, fatigue, breast sensations, and lack of help in the home (Graef et al., 1988).

Although all the concerns require attention by health professionals, frequency and duration of feeding and

infant growth should be discussed because these problems lead frequently to the mother's perception of an inadequate milk supply and termination of breastfeeding. Mothers should be informed to expect a growth spurt accompanied by increased feeding around days ten to fourteen, between four and six weeks, and between three and six months (Lauwers & Woessner, 1989). In addition, an infant may increase feeding periods related to illness, overstimulation, and physical or emotional discomfort (Lauwers & Woessner, 1989).

Hawkins et al. (1987) indicated that the reason for discontinuing breastfeeding varied with the duration of lactation. The mothers were categorized based on the duration of breastfeeding into those breastfeeding for short duration (four weeks or less), those breastfeeding for moderate duration (five to 24 weeks), and those breastfeeding for long duration (greater than 25 weeks). The researchers found that 100% of the mothers breastfeeding for short duration cited inadequate milk supply as their reason for terminating breastfeeding. This finding significantly differed from the 48.1% of the moderate duration and 0% of the long duration breastfeeders who cited insufficient milk supply.

A study of hospital practices and the termination of breastfeeding was completed by Houston and Field

(1988). The nurses reported the problems encountered by their postpartum patients that required breastfeeding to be discontinued. In rank order of occurrence the problems were infant jaundice, mother receiving antibiotics, maternal fever, mastitis or breast abscess, failure of the infant to gain weight, sore/bleeding nipples, premature or sick neonate, and cesarean section if complications were present (Houston & Field, 1988). Many of these complications are preventable through appropriate breastfeeding technique. Knowing that continued breastfeeding is therapeutic for mastitis, it is interesting to note the infants were being removed from the breasts if the mother encountered mastitis (Dilts, 1985). Likewise, except in rare cases, appropriate management in the prevention of infant jaundice includes early feedings after delivery, increased frequency of breastfeeding, and breastfeeding throughout the day and night without water or formula supplementation (Auerbach & Gartner, 1987; De Carvalho, Klaus, & Merkatz, 1982; Wilkerson, 1988).

Breast complications are frequently cited as a significant problem encountered by many mothers. Nurses must encourage practices that prevent breast problems. The mother should be encouraged and assisted in breastfeeding her infant during the first feeding attempt

following delivery (Moon & Humenick, 1989). Other assessments and interventions the nurse must perform to promote successful breastfeeding include: assuring proper infant positioning to prevent nipple trauma and encourage emptying of the breasts, abandoning the practice of using nipple shields, avoiding supplementation which reduces stimulation of the breasts necessary for milk production and leads to milk stasis, engorgement, and possibly infection, and permitting the infant to regulate the frequency and duration of the nursing period. The latter will empty the breast and aid in the production of milk and the prevention of engorgement or mastitis (Houston & Field, 1988; Moon & Humenick, 1989; Walker & Driscoll, 1989).

Optimal environments and situations for continued breastfeeding have been studied. According to Coreil and Murphy (1988), specific psychosocial and biobehavioral factors provide predictions of continued breastfeeding. The psychosocial factors are maternal and paternal age, confidence in the ability to breastfeed, degree of social support, and most significantly the intended duration of breastfeeding stated prenatally (Coreil & Murphy, 1988). The biobehavioral factors identified by these researchers include: early first feeding, continuity

of breastfeeding, milk expression, and absence of formula or water supplementation at the hospital and in the home.

Summary

In summary, the review of the literature revealed that an abundant amount of data on breastfeeding has been analyzed. In terms of demographic characteristics, mothers with a higher level of education are more likely to breastfeed, white women are more likely to breastfeed, increased maternal age is associated with a greater incidence of breastfeeding, and women in the middle to upper-middle socioeconomic class are more likely to breastfeed. The breastfeeding mother is also more likely to be married and a primigravida.

Reasons commonly cited for breastfeeding included: healthier for the baby, bonding, convenience, and immune protection for the infant. Other reasons cited included: economical, natural method of feeding, support from various individuals especially the husband, and a natural method of feeding.

The decision to breastfeed is typically made prior to pregnancy or during the early prenatal period. In general, 63% of the mothers decide to breastfeed prior

to pregnancy, and an additional 14% decide to breastfeed during the first trimester (Martinez, 1984).

Although social support is necessary for successful breastfeeding, the type of support appears significant. The mother needs physical, emotional, and psychological support from her spouse. A stable marital relationship and support from the extended family fosters continued breastfeeding.

Maternal locus of control may be related to initiation and continuation of breastfeeding. Mothers categorized as internally motivated practice more health promotion activities during pregnancy. Perhaps, this tendency extends to postnatal activities such as breastfeeding. No specific studies on locus of control and the initiation and continuation of breastfeeding have been completed.

Infant temperament may be related to continued breastfeeding. Although very little research has been conducted in this area, Loughlin et al. (1985) found a greater decline in breastfeeding among mothers with infants demonstrating the following characteristics: excessive crying, demanding personalities, trouble with feeding, and the expectation that feeding difficulties will continue. Hughes et al. (1988) found predictors of breastfeeding difficulties were poor scores on the

Brazelton scale in consolability, cuddliness, peak of excitement, and irritability. However, Kearney et al. (1990) found no difference in breastfeeding success related to scores on the Brazelton scale.

A critical period of breastfeeding appears to be the first two weeks. The first month is frequently cited as the period of rapid decline in the incidence of breastfeeding. However, studies that break this period down by weeks demonstrate a larger decline in the first two weeks than in the second two weeks.

CHAPTER III

METHODOLOGY

Chapter III includes information related to: research design, operational definitions, instruments, and procedures.

Research Design

The research design was a non-experimental descriptive model. Data were collected over a fourteen week period in east Tennessee during the winter of 1990-1991. A convenience sample of 50 mothers delivering in a community hospital was used for the research. The entire sample was caucasian. The age ranged from 18 to 36 with a mean age of 24.7. The income ranged from \$5,000 to \$68,000 with a mean income of \$27,851. This mean and range does not include five subjects without income, four of whom were students being supported by their parents and one of whom was going through a divorce and did not have an income. Forty-two (84%) of the mothers were married. This child was the first child for 36 (72%) of the mothers, and 34 (68%) of the mothers delivered vaginally. Thirty-six (72%) received private prenatal care, and 14 (28%) received care from the clinic.

Participation criteria included the following:

1. The mother could read, write, and speak English.
2. The mother was between the ages of 18 and 40.
3. Delivery could be either vaginal or cesarean section.
4. All mothers breastfeeding for the first time were elibigle, regardless of parity.
5. The mothers must have a telephone or access to a telephone.

Participation was voluntary. The follow-up telephone call to answer questions was the only benefit to the participants. The benefit identified for future women was to enable nurses to assist mothers in the decision to breastfeed by providing pertinent and helpful information. No apparent risk was present to the subjects.

The independent variables included the factors cited as influencing the decision to breastfeed, maternal locus of control, and infant temperament. The dependent variable was the decision to breastfeed.

Instruments

Factors Influencing the Mother's Decision to Breastfeed

A 16 item survey (Appendix F) was used to identify the factors influencing the decision to breastfeed. The survey was developed by the researcher and included a list of all relevant factors found in other studies that may have influenced the decision to breastfeed and an "other" category for any factor not listed which the mother felt was meaningful. The instrument was determined to have content validity by a panel of breastfeeding experts. The factors listed included: healthier or better for the baby, more convenient or easier, closeness/bonding with the baby, immune factors or antibodies present in breastmilk, economical or cheaper, natural way to feed the baby, support from husband/boyfriend, support from family, support from friends, encouraged to by doctor, encouraged to by nurse, influenced by other breastfeeding mothers, influenced by media, influenced by educational experiences, and other.

The mothers were asked to rank the top three factors that influenced the decision to breastfeed. This process allowed for identification of the factors perceived to be strongest and most significant to the mothers.

Indication of Social Support

Social support has been established as significant for successful breastfeeding (Goldfarb & Tibbetts, 1980; Switzky et al., 1979). Because of the need to limit the time necessary for the mother's participation, a social support scale was omitted. However, two general questions which referred to social support were added to the end of the "Factors Influencing the Decision to Breastfeed" survey (Appendix F). The questions were: "What sources of support for breastfeeding do you have?" and "Was there one person who most influenced your decision to breastfeed and what is your relationship to this person?"

Levenson's Locus of Control

Locus of control was selected to provide an insight into a personality characteristic of the mother. Locus of control refers to the individual's beliefs that behavioral outcomes are a reflection of control exhibited by the self, powerful others, or chance (Arakelian, 1980). Because locus of control is established over time and evolves through learning experiences, it is considered a stable and consistent personality characteristic (Arakelian, 1980).

Locus of control was measured using the Levenson Scale for locus of control (see Appendix G). This tool was developed by Hanna Levenson (1974) as a revision to the Rotter I-E Scale. The Rotter I-E Scale contained two categories (Rotter, 1966). Rotter categorized external control to include events that were the result of luck, chance, fate, the control of others, or unpredictable (Rotter, 1966). The category "Internal Control" was defined by Rotter as the belief that outcomes were the result of one's own behavior.

Levenson (1974) revised this scale in order to be able to measure separately whether the event was the result of internal control, powerful others control, or chance control. Important changes included the six point Likert format, rephrased statements, and inability to modify issues during response (Levenson, 1974). These changes allowed each scale to be statistically independent, the statement to apply to the subject and not the general population, and a definite response was required. These items were considered weak points of the original scale. In addition, the changes were necessary because Levenson (1974) thought that people who believe the world operates by chance think and act differently than those who believe powerful others control the world.

Levenson's instrument consists of 24 statements evenly divided for the categories of internal, powerful others, and chance. Possible responses are -3, -2, -1, +1, +2, and +3. The score represents the degree of disagreement or agreement with the statement. After totaling the responses in each category, +24 is added separately to each scale in order to remove negative scores. Thus, the possible range of each scale is 0 to 48. The higher the score in the category, the more oriented the individual is to this category. Individuals may score high on more than one scale. A sample score sheet is in Appendix H.

The instrument was tested in a Southwestern metropolitan area. The participants consisted of 32 randomly selected members from an anti-pollution group, 32 people who had been contacted by the group and chose not to join, and 32 people who had not been contacted by the group and were not members of the anti-pollution group. This procedure was to ensure representation of various degrees of involvement and to use the joining of the group as an indication of concern related to pollution. Other scales administered to this population were the Involvement Activities Checklist, and a measure of information regarding pollution.

Kuder-Richardson reliabilities on the Levenson

Locus of Control Scale were $r = .64$ for the internal scale, $.77$ for the powerful others scale, and $.62$ for the chance oriented scale (Levenson, 1974). Scores obtained with the instrument were consistent on the second administration. Involvement in anti-pollution activities was related to the powerful others and the internal scales. Levenson hypothesized that both of these orientations provide the individual with a sense of hope and control. Hope and control are not evident in the chance orientation, and thus involvement was diminished. The Levenson scale provided an explanation of the seemingly contradictory findings of the Rotter I-E scale, i.e. explained how an externally oriented person would seek involvement. The instrument was determined to be a valid measurement of the construct of locus of control because the revisions allowed for clarifications of previously contradictory findings and explained behavior related to scores received on the scale.

Mother's Assessment of the Behavior of Her Infant

Researchers frequently use the Brazelton Neonatal Behavioral Assessment Scale as a measure of the infant's ability to interact (Brazelton, 1973). However, this scale does not measure the mother's perception of her

infant. In addition, the scale does not necessarily measure how the infant interacts on a daily basis.

The Mother's Assessment of the Behavior of Her Infant (MABI) test (Appendix I) was used to measure infant temperament from the mother's perspective (Field, Dempsey, Hallock, & Shuman, 1978). When it was developed, the MABI was tested with the Brazelton in the neonatal period to determine the similarity of testing outcomes and instrument validity (Field et al., 1978). In addition, the infants were tested at one month of age by the mother testers to determine consistency of results. Scores from the Brazelton and the MABI did not differ significantly indicating that the MABI was a valid measure of infant temperament (Field et al., 1978). Differences that occurred were typically an underestimation of the social interaction skills of the infants by the mothers (Field et al., 1978). In terms of testing the infants at birth and at one month, the social interactive category and the motoric process category contained more optimal ratings at one month for all infants. Term infants received more optimal scores than postterm infants at both testings. In the state control category, more optimal ratings were given at one month than at birth to term infants than to postterm infants, and to females than males. The response to stress category demonstrated

no differences. Although infants were retested at one month, it was not possible to establish test-retest reliability because of developmental changes in the infants. Infants were expected to score higher at one month than at birth, and term infants were expected to score higher than postterm infants.

Although the titles for the four categories were provided (social interactive, motoric interaction, organizational process/state control, and organizational process/physiologic process), the meaning or description of the scores within the category were not provided. For this reason, each category will be discussed separately to clarify what the score means. Possible scores were a one, two, or three with a one always being the optimal score. Two was the average score and a score of three was the least optimal score.

The first category was the social interactive category. The score description was as follows:

1. The infant in this category was cuddly, easy to console, alert, and oriented to stimuli.
2. The infant was generally cuddly, generally easy to console, often alert, and orientation to stimuli varied.
3. The infant was irritable, difficult to console, had infrequent alert periods, and was not

oriented to stimuli.

The second category was the motoric interaction category. The description of each score was as follows:

1. The infant had good tone, hand to mouth coordination, motor maturity and was active.
2. Tone was generally good with some attempt at hand to mouth coordination, and the infant varied in activity level.
3. The infant was on either extreme of being limp or having jerky movements, had poor hand to mouth coordination, lacked motor maturity, and demonstrated continuous activity/hyperactivity.

The third category was organizational process/state control. Possible scores in this category were a one, two, three-I, and three-II. The optimal score was a one and the least optimal score was a three-I or a three-II. The description of each score was as follows:

1. The infant was alert, awake and quiet often and the infant was able to quiet himself or herself.
2. The infant was frequently alert, awake and quiet at times, and attempted with some success to quiet himself or herself.
- 3-I. The infant was irritable, demonstrated mood changes often, was difficult to quiet, and

unable to quiet himself or herself. The infant was described as very labile.

- 3-II. The infant was very sleepy and rarely awake. The infant rarely cried. The infant was described as flat and depressed.

The final category was organizational process/physiologic process. This category assessed the infant's response to stress. The description was as follows:

1. The infant rarely trembled, would turn blue around his/her mouth if uncovered or red if crying but only for a minute.
2. The infant occasionally trembled and demonstrated skin color changes occasionally.
3. The infant trembled frequently and rarely had changes in skin color or frequently had changes in skin color.

When completing the survey, the mother reads a statement and selects from three or four responses the statement that best describes how her infant reacts to the situation or stimuli. The tool was made specific to boy and girl babies to make it easier to complete.

Follow-up Telephone Call

A follow-up telephone call two weeks after delivery was completed to determine if the mother was still breastfeeding and to learn what problems were experienced during this critical period of adjustment to breastfeeding. Although the first month was commonly cited as a period of great decline in breastfeeding, studies which divided this further into weeks illustrated a larger decline in the first two weeks than in the third and fourth week (Loughlin et al., 1985; McIntosh, 1985; Samuels et al., 1985). For this reason and in order for the mother to benefit from participation in the study, the follow-up telephone call was made two weeks postdelivery (Appendix J). The researcher answered any questions the mother had at this time.

The researcher began by asking if the mother was still breastfeeding. Any questions on breastfeeding were answered. Additional questions asked by the researcher included:

1. Have you had any problems with breastfeeding?
2. What is the situation now? Who did you talk to who helped you? What help did you receive?
3. What was your reason for stopping breastfeeding? (if applicable) How do you feel about your decision to quit breastfeeding?

Demographic Survey

The instrument was developed by the researcher to include variables associated with the incidence of breastfeeding. The instrument included information related to age, income, education level, marital status, and return to work. A copy of the demographic instrument is in Appendix E.

Operational Definitions

1. Infant temperament - Scores on the Mother's Assessment of the Behavior of Her Infant (MABI) scale (Field et al., 1978) in the interactive process, motoric process, organizational process/state control, and the organizational process/physiologic process.

2. Locus of control - Scores on Levenson's Locus of Control scale (Levenson, 1974) designating the individual's locus of control as internal, powerful others, or chance.

Procedure

Permission was granted by the hospital's Chief of Obstetrics and Director of Nursing. The hospital's Institutional Review Board approved the study (Appendix A). The Human Subjects Committee in the College of

Nursing and at the University of Tennessee, Knoxville also approved the study (Appendix C). The hospital, a 422 bed community based hospital, provides care for the indigent population as well as the private population. In 1989, 794 infants were delivered in this facility (Bristol Regional Medical Center Department of Public Relations, 1989). The population of the city was 41,800, the median age was 37, and the median household income was \$21,000 (Bristol Chamber of Commerce, 1990). The only data available on the minority population was available from Bristol, Tennessee indicating that this portion of the city had a 3.2% nonwhite population in 1980 (Bristol Chamber of Commerce, 1990). Data was not available for Bristol, Virginia.

Data collection occurred over a fourteen week period. The time period was from October 1990 thru January 1991. During the time period of this study, a total of 249 deliveries occurred. A total of 59 mother were breastfeeding during the period of the study. This reflected a breastfeeding rate of 23.7%. Included in this percentage were seven ineligible mothers and two mothers who declined participation.

The surveys were coded such that the identities of the subjects were protected. The subjects were informed that there were no right or wrong answers and

participation was voluntary. The subjects were informed that the only incentive for participation was the follow-up telephone call at two weeks post-delivery to answer any questions on breastfeeding. In addition, they were informed that this was a research project and the researcher was a student at the University of Tennessee, Knoxville, completing this thesis as a requirement for the Master of Science in Nursing degree. The mothers were informed that approval had been granted by the institution, physicians, and University of Tennessee.

The mothers were contacted in the hospital during the postpartum period. The procedure began with an explanation of the purpose of the study and what participation entailed for the prospective subjects. Informed consent was obtained (Appendix D). After the consent form had been read and signed, demographic data were collected by the researcher. The surveys were given to the mothers to complete at their convenience. These surveys included the "Factors that Influenced the Decision to Breastfeed", "MABI," and "Levenson's Locus of Control Scale." The completion of these surveys required approximately 25 minutes. The surveys were generally collected prior to discharge. However, the envelope with the surveys was stamped, and several mothers

mailed the surveys to the researcher within the ten days postpartum. A follow-up telephone call completed the data collection at two weeks after delivery. Demographic data and follow-up telephone calls were completed on all fifty mothers agreeing to participate. Thirty mothers completed and returned the surveys for a return rate of 60%.

Statistical Analysis

The data were coded for confidentiality and ease of data management. Data analysis was completed on the University of Tennessee VAX computer using the Statistical Analysis System (SAS) program. Analysis of data included descriptive statistics and frequency distributions. Demographic data were analyzed to describe the population. The total numbers for the various factors were computed and the significant factors identified. Sources of support for breastfeeding were identified. Levenson's Locus of Control Scale and the MABI were scored and utilized to describe the population. Correlations which were initially planned were not completed because of a lack of a normal distribution on the MABI survey and the small number of women returning the surveys who discontinued breastfeeding by the two week follow-up

telephone call. The mothers were informed that the researcher did want the surveys returned regardless of how long the mother breastfed.

Summary

The non-experimental descriptive study of 50 breastfeeding mothers was conducted using a convenience sample. From this total, 30 mothers completed and returned all surveys. Subjects were between the ages of 18 and 36 with a mean age of 24.7. Thirty-four (68%) delivered vaginally and sixteen (34%) had a cesarean section. All mothers were caucasian and breastfeeding for the first time. This was the first child for 36 (72%) of the mothers. All subjects could read, write, and speak English. The surveys were coded in order to protect the subject's identity. Statistical analysis included a description of the population, identification of significant factors influencing the decision to breastfeed, and a description of the scores of maternal locus of control and infant temperament.

CHAPTER IV

RESULTS

Chapter IV includes the results of the statistical analysis with each research question presented and analyzed. Because only thirty of the fifty subjects returned all surveys, a large portion of the analysis was limited to these subjects.

Factors Influencing Initiation And Continuation Of Breastfeeding

The research question was stated as follows: What factors influence the mother's decision to initiate and continue breastfeeding? Thirty subjects completed the survey. A frequency distribution and rank order were completed based on which factors were checked by the mothers. No limitations on the number of factors that could be marked were made. The factors marked by 83-90% of the mothers included: healthier/better for the baby, immune factors/antibodies, and closeness/bonding. Another group of factors marked by 47-53% of the mothers included: natural way to feed, convenient/easier, economical/cheaper, and support from husband/boyfriend. Table 1 provides the factor frequencies and percentages.

Table 1. Factors influencing the decision to initiate breastfeeding. (N=30)

Factor	Frequency	Percentage
Healthier/better for baby	27	90
Immune factors/antibodies	26	86
Closeness/bonding	25	83
Natural way to feed	16	53
More convenient/easier	15	50
Economical/cheaper	14	47
Support from husband/ boyfriend	14	47
Influenced by other breastfeeding mothers	8	27
Support from family	7	23
Support from friends	6	20
Influenced by educational experiences	6	20
Influenced by media	5	17
Encouraged to by doctor	4	13
Encouraged to by nurse	2	6
Other	0	0

The subjects were asked to rank the top three factors. The purpose was to identify which factors were most important to the subjects. The top three factors agreed with the checklist portion of the survey in that both groups identified the same three highest ranking factors. However, closeness/bonding received more top three rankings by the mothers who continued than immune factors/antibodies. Support from others was important in the top rankings. Table 2 presents this data on the factors selected by the mothers as being most important.

Table 2. Factors selected by all mothers as being most important. (N=30)

Factor	Frequency	Percentage
Healthier/better for baby	26	86
Closeness/bonding	24	80
Immune factors/antibodies	19	63
Support from husband/ boyfriend	6	20
Economical/cheaper	5	17
Support from family	3	10
Natural way to feed	2	7
Encouraged to by doctor	1	3
Encouraged to by nurse	1	3

The factors identified as important by mothers who continued to breastfeed at two weeks postpartum was the second part of the research question. Twenty-five of the 30 mothers returning the survey continued to breastfeed at two weeks postpartum. The only order change was between support from family and influenced by other breastfeeding mothers (see Table 3). When selecting the top three factors or the most important factors for choosing breastfeeding, all mothers and the mothers who continued to breastfeed at two weeks selected the same factors (see Table 4).

Factors Selected By Mothers Continuing
And Discontinuing To Breastfeed

The first subsidiary question was stated as follows: Are different motivations for making the decision to breastfeed cited by those women who quit within the first two weeks as opposed to those still breastfeeding at that time? The question was difficult to answer because only five of the 30 subjects returning the survey discontinued breastfeeding. A mean of 5.8 factors were cited by mothers who continued to breastfeed and by the mothers who discontinued breastfeeding. It appears important that all five mothers discontinuing breastfeeding prior to two weeks postpartum recognized that breastfeeding was healthier for the baby. This illustrates an inconsistency between the words and actions of these mothers. Table 3 presents the factors and the number of times each factor was cited as significant for those who continued breastfeeding and for those who discontinued breastfeeding prior to two weeks. Percentages are presented for purposes of examining groups of such unequal size.

Table 3. Factors for those continuing versus those discontinuing breastfeeding at two weeks.
(N=30)

Factor	Continued n=25	Discontinued n=5
Healthier/better for baby	22 (88)	5 (100)
Immune factors/antibodies	22 (88)	4 (80)
Closeness/bonding	21 (84)	4 (80)
Natural way to feed	14 (56)	2 (40)
More convenient/easier	12 (48)	3 (60)
Economical/cheaper	12 (48)	2 (40)
Support from husband/ boyfriend	12 (48)	2 (40)
Support from family	7 (28)	0
Influenced by other breastfeeding mothers	6 (24)	2 (40)
Support from friends	5 (20)	1 (20)
Influenced by educational experiences	4 (16)	2 (40)
Encouraged to by doctor	4 (16)	0
Influenced by media	3 (12)	2 (40)
Encouraged to by nurse	2 (8)	0

The top factors as selected by those who continued and discontinued breastfeeding were analyzed and are presented in Table 4. Percentages are again displayed for comparison of groups. The selection of the three most important factors were the same for the mothers who continued and discontinued breastfeeding. However, it may be important to note the lack of weight the mothers discontinuing breastfeeding attached to support from significant others.

Table 4. Factors selected as most important by those who continued and discontinued to breastfeed at two weeks. (N=30)

Factor	Continued n=25	Discontinued n=5
Healthier/better for baby	21 (84)	5 (100)
Closeness/bonding	20 (80)	4 (80)
Immune factors/antibodies	15 (60)	4 (80)
Support from husband/ boyfriend	5 (20)	0
Economical/cheaper	3 (12)	0
Support from family	3 (12)	1 (20)
Natural way to feed	2 (8)	1 (20)
Encouraged to by doctor	1 (4)	0
Encouraged to by nurse	1 (4)	0

Problems Of Breastfeeding Mothers

The second subsidiary question was stated as follows: Do women who discontinue breastfeeding by two weeks after delivery report different problems encountered than those reported by mothers still breastfeeding at that time? The sample size for this portion of the study was fifty. Of the fifty mothers who initiated breastfeeding, 33 (66%) continued to breastfeed at two weeks, and 17 (34%) had discontinued breastfeeding.

The data were obtained from the follow-up telephone call at two weeks post-delivery. The mothers were allowed to express all concerns or problems with breastfeeding.

Many reported more than one concern. The combined concerns and problems regardless of whether the mother was continuing to breastfeed are listed in Table 5. The percentage reflects the incidence of mothers who experienced this problem.

Table 5. Concerns and problems of all breastfeeding mothers. (N=50)

Concern/problem	Frequency	Percentage
None	20	40
Infant spitting up	2	4
Infant gastrointestinal	2	4
Frequency of Feeding	1	2
Infant would not nurse	3	6
Fussy Infant	3	6
Acting Hungry	3	6
Infant not gaining weight	3	6
Insufficient Milk	3	6
Jaundice	9	18
Infant Hospitalized	1	2
Breast problems*	8	16
Pumping and Storing Milk	2	4
Maternal Diet	2	4
Began oral contraceptives	1	2
Did not like breastfeeding	1	2

*Breast problems included: sore breasts, cracked nipples, inverted nipples, engorgement, mastitis, and one woman who was pumping and providing this milk to the infant because of painful breasts.

The most common breastfeeding problems were infant jaundice and breast problems. Infant jaundice was cited most often. It should be noted that all infants requiring phototherapy were required to temporarily discontinue

breastfeeding during the treatment. The second most common problem with breastfeeding involved breast problems. The specific problems and the number of mothers experiencing each problem were as follows: sore breasts (one), cracked nipples (one), inverted nipples (two), engorgement (two), mastitis (one), and one woman who was pumping her breasts and providing this milk to the infant because of painful breasts.

The problems or concerns were divided according to whether the mother continued or discontinued breastfeeding. The total subject number was fifty. Thirty-three of the mothers were in the continued to breastfeed group, and 17 mothers were in the discontinued to breastfeed group. The concerns and problems of the mothers according to whether they continued or discontinued breastfeeding are listed in Table 6. As the mothers often cited greater than one concern, the percentages in parentheses reflect the incidence of mothers experiencing each problem.

In the group which continued to breastfeed, 61% reported no concerns or problems. All the mothers in the discontinued group encountered problems. Almost half of the infants removed from the breasts during phototherapy were unable to successfully resume breastfeeding. Of the mothers who discontinued

breastfeeding, 24% had interrupted breastfeeding while the infant was treated for jaundice. Inadequacies or perceived inadequacies in providing breastmilk resulted in 70.5% of the mothers terminating breastfeeding. These problems were as follows: infant would not nurse, fussy infant, infant acting hungry, infant not gaining weight, and mothers believing they had insufficient milk.

Table 6. Concerns and problems of mothers who continued and discontinued to breastfeed. (N=50)

Concern/problem	Continued n=33	Discontinued n=17
None	20 (61)	0
Infant spitting up	2 (6)	0
Infant gastrointestinal	2 (6)	0
Frequency of Feeding	1 (3)	0
Infant would not nurse	0	3 (18)
Fussy Infant	1 (3)	2 (12)
Acting Hungry	0	3 (18)
Infant not gaining weight	0	3 (18)
Insufficient Milk	0	3 (18)
Jaundice	5 (15)	4 (24)
Infant Hospitalized	0	1 (6)
Breast problems*	5 (15)	3 (18)*
Pumping and Storing Milk	2 (6)	0
Maternal Diet	2 (6)	0
Begin oral contraceptives	0	1 (6)
Did not like breastfeeding	0	1 (6)

*Breast problems included: sore breasts, cracked nipples, inverted nipples, engorgement, mastitis, and one woman who was pumping and providing this milk to the infant because of painful breasts.

Relating the difficulties to the conceptual framework, inconsistencies influenced the mothers decision to terminate breastfeeding. Health care providers say that breastfeeding is best for the baby and then remove the infant from the breast at three days because of infant jaundice. In addition, the mothers may lack a sense of perseverance, and perseverance may not be encouraged by health care providers.

Mothers who discontinued breastfeeding were asked how many days they breastfed to determine specific problem periods. The breakdown is presented in Table 7. A problem day was day three. This fact seems especially important, considering that most mothers are discharged from the hospital on day two. The mother discontinuing breastfeeding on day two switched to formula at discharge because she did not like breastfeeding and the infant would not nurse. Four mothers discontinuing breastfeeding on the third day cited infant jaundice and the inability to restart breastfeeding. Also on day three, one woman discontinued breastfeeding because the infant would not nurse, and one woman began pumping her breast due to pain. Three of the four jaundiced infants whose mothers permanently discontinued breastfeeding had been delivered by cesarean section. The reasons cited on day four were the infant would not nurse because of inverted nipples

and the infant was acting hungry/insufficient milk. Three mothers terminated breastfeeding on day ten for different reasons. The reasons were cracked nipple, began oral contraceptives, and the infant was hungry/infant not gaining weight.

Table 7. Number of days of breastfeeding for those discontinuing breastfeeding. (N=17)

Days of Breastfeeding	Frequency	Percentage
Two	1	6
Three	6	35
Four	2	11
Six	1	6
Seven	1	6
Eight	1	6
Nine	1	6
Ten	3	18
Twelve	1	6

Assistance For Breastfeeding Mothers

The third subsidiary question was as follows: From whom do breastfeeding mothers receive assistance with problems? Of those who continued breastfeeding, only two mothers had elicited help in reference to their concerns about breastfeeding. The nurse in the physician's office was contacted once, and the obstetrician was contacted once. Of those who

discontinued breastfeeding, seven mothers had contacted the physician for assistance on breastfeeding. The remainder of the subjects contacted no one for assistance.

The principle of self-extension is applicable to this question. The mother must be willing to solicit and accept help and guidance. In addition, the nurse must be capable of answering the mother's questions. If unable to provide the information to the mother, the nurse must offer referrals to organizations or individuals who can assist with the breastfeeding problems.

Sources Of Support For Breastfeeding

The fourth subsidiary question was as follows: What sources of support for breastfeeding do mothers identify? Data to answer this question were derived from the "Factors Influencing the Decision to Breastfeed" survey. Data were available on thirty subjects; 25 continued to breastfeed and only five discontinued breastfeeding. The mothers could cite as many sources of support as desired. Table 8 lists the sources of support the mothers identified. The categories include: all mothers, mothers who continued to breastfeed, and mothers who discontinued breastfeeding. Percentages are in parentheses for ease of interpretation.

Table 8. Sources of support for breastfeeding mothers.
(N=30)

Support	Total N=30	Continued n=25	Discontinued n=5
No Answer	8 (27)	7 (28)	1 (20)
None	1 (3)	1 (4)	0
Myself	1 (3)	1 (4)	0
Husband	11 (37)	10 (40)	1 (20)
Mother	1 (3)	1 (4)	0
Family	6 (20)	6 (24)	0
Friends/ Coworkers	5 (17)	3 (12)	2 (40)
La Leche League	2 (7)	2 (8)	0
Physician	3 (10)	2 (8)	1 (20)
Books/Teacher	2 (7)	1 (4)	1 (20)

It was surprising to the researcher the number of mothers who did not answer or specifically listed "none" for the source of breastfeeding support. Forty percent of those who continued to breastfeed cited their spouse as a significant support person. This compared to only one mother (or 20%) who had cited her spouse as significant in the group that discontinued breastfeeding.

Persons Influencing The Decision To Breastfeed

The fifth subsidiary question was as follows: What person or persons do mothers cite as having influenced the decision to breastfeed? The thirty subjects who

returned the survey were utilized for the analysis. The survey asked the mother to identify the one person who most influenced the decision to breastfeed.

It was interesting to note that health care providers were not identified as influencing the decision to breastfeed. In this study, 40% of all mothers and 60% of mothers discontinuing breastfeeding could not identify a person who influenced the decision to breastfeed. Table 9 contains this data and is presented in the same format as the previous table on sources of support.

Table 9. People who influenced the decision to breastfeed.
(N=30)

Support	Total N=30	Continued n=25	Discontinued n=5
No Answer	5 (17)	5 (20)	0
None	7 (23)	4 (16)	3 (60)
Myself	5 (17)	5 (20)	0
Husband	6 (20)	5 (20)	1 (20)
Mother	4 (13)	3 (12)	1 (20)
Family	1 (3)	1 (4)	0
Friends/ Coworkers	4 (13)	3 (12)	1 (20)

Infant Temperament And Continued Breastfeeding

The sixth subsidiary question was: Does infant temperament influence continuation of breastfeeding?

The sample consisted of thirty mothers who completed the survey. Of these mothers, 25 continued to breastfeed and five quit breastfeeding within the first two weeks. The researcher intended to use correlations of the MABI survey and whether the mother continued or discontinued breastfeeding during the data analysis. However, the data did not demonstrate a normal distribution as evidenced by the homogenous nature of the scores. The data will be discussed for all mothers and by whether the mother continued or discontinued breastfeeding. Extreme caution should be taken when making generalizations about those who discontinued breastfeeding because the sample size was only five. The MABI test contained four categories for scoring. In each category, a score of 1, 2, or 3 was received based on the infant's performance of activities. The four categories were social interactive, motoric interaction, organizational process/state control, and organizational process/physiologic process.

The first category involved the infant's ability to interact socially. Three infants received a one and 27 infants received a two in the social interactive category. All five infants whose mothers discontinued breastfeeding received an average score of two.

The second category was the motoric interaction category. Three infants scored a one, and 27 infants scored a two. All three infants who received a score of one and two infants who received a score of two had mothers who discontinued breastfeeding. All infants who continued to be breastfed had a score of two in this category.

The third category was organizational process/state control. Possible scores in this category were a one, two, three-I, and three-II. The scores of the infants were as follows: one infant scored a one, 27 infants scored a two, and 2 infants scored a three-II. All five infants in the group who were no longer being breastfed at two weeks received a score of two.

The final category was organizational process/physiologic process. In this category, two infants received a score of one and 28 infants received a score of two. All five infants in the group who were no longer being breastfed had a score of two.

Interpretation of results was not possible because only five of the 17 mothers who had discontinued breastfeeding returned the survey. However, it appears from this limited data that the infants whose mothers discontinued breastfeeding scored as high on the MABI as infants who were still being breastfed.

For mothers with fussy or sleepy infants which can make breastfeeding difficult, an attitude of perseverance by the mother is necessary to establish lactation. In addition, the mother must know when help, guidance, and advice are indicated. In terms of the nurse, recognition of the problem or disorder is essential in identifying the mother in need of help. The nurse must also persevere in developing measures for successful breastfeeding and recognize when a referral or outside resource is indicated.

Locus Of Control

The seventh subsidiary question was stated as follows: Is there a specific type of locus of control associated with the initiation and continuation of breastfeeding? The researcher had planned to perform a correlation between maternal locus of control and whether the mother continued or discontinued breastfeeding. However, despite normal distributions of the internal, chance, and powerful others divisions of locus of control, the sample was not equally distributed and contained 25 mothers who continued to breastfeed and only five mothers who discontinued breastfeeding. A description of the population is

presented. Recall that the possible score range is from 0 to 48 in each category.

The first category of locus of control was internal locus of control. For the sample returning the survey, the mean was 33.2 and the range was 21 to 45. Of the mothers who continued breastfeeding, the mean was 33.9 and the range was 21 to 45. The five mothers who discontinued breastfeeding prior to two weeks had a mean score of 29.6 and a range of 22 to 38.

The second locus of control category was powerful others. The sample mean was 15.9 with a range from 2 to 35. The mothers who continued breastfeeding had a mean of 16.7 and a range from 2 to 35. Those mothers who had discontinued breastfeeding had a mean of 12.0 and a range of 3 to 20.

The sample mean in the chance category was 17.8 with a range from 1 to 35. The mothers continuing to breastfeed had a mean of 17.5 with a range of 1 to 35. The mothers which discontinued breastfeeding had a mean of 19.6 and a range of 10 to 25.

Relating locus of control to the nine mothers who solicited help from health professionals, all five mothers returning the survey scored highest in the internal locus of control category. Scores ranged from 22 to 38. In the powerful others category scores ranged from 7 to

25. In the chance category scores ranged from 3 to 22. No conclusions can be drawn due to the small sample of mothers returning the survey who discontinued breastfeeding and the small numbers of mothers who contacting someone for assistance with breastfeeding.

Conclusions on maternal locus of control were limited because of the small sample of those discontinuing to breastfeed. The mothers who continued to breastfeed had higher mean scores in the categories of internal and powerful others locus of control. The mothers who discontinued breastfeeding had higher mean scores in the chance locus of control category. Whether this finding would hold true for a larger sample is unknown.

Decision To Breastfeed

The eighth subsidiary question was stated as follows: When do women decide on the feeding method? The mothers (N=50) were asked when they made the decision to breastfeed. Sixty-eight percent of mothers made the decision to breastfeed prior to the end of the first trimester. Nearly one-fourth (22%) of the mothers always thought that they would breastfeed. The remaining 32% of mothers made the decision between three months of pregnancy and delivery. Table 10 includes this data.

Table 10. Timing of the mothers' decision to breastfeed.
(N=50)

Decision Time	Frequency	Percentage	Cumulative Percentage
Always thought I would	11	22	22
As soon as I learned that I was pregnant	21	42	64
During the 1st trimester	2	4	68
During the 2nd trimester	6	12	80
During the 3rd trimester	7	14	94
At time of delivery	3	6	100

Table 11 lists the decision time depending on whether the mother continued or discontinued to breastfeed. The percentage of mothers in each category is in parenthesis. The decision time differed little depending on whether the mother continued or discontinued breastfeeding. By the end of the first trimester, 66.7% of those mothers who continued to breastfeed had made the decision to breastfeed, and 70.6% of those who discontinued breastfeeding had decided to breastfeed.

Table 11. When the decision was made to breastfeed of mothers continuing and discontinuing breastfeeding at two weeks. (N=50)

Decision time	Continued n=33	Discontinued n=17
Always thought I would As soon as I learned I was pregnant	7 (21.2)	4 (23.5)
During the 1st trimester	14 (42.4)	7 (41.2)
During the 2nd trimester	1 (3.0)	1 (5.9)
During the 3rd trimester	4 (12.1)	2 (11.8)
At time of delivery	5 (15.2)	2 (11.8)
	2 (6.1)	1 (5.9)

Returning To Work And Breastfeeding

The ninth subsidiary question was stated as follows: What effect, if any, does planning to return to work have on the decision to initiate and continue to breastfeed? Of the fifty mothers, 32 (64%) worked during their pregnancy and 18 (36%) did not work during pregnancy. Twenty-three or (46%) of the mothers planned to return to work following delivery and 27 or (54%) intended to stay at home after delivery.

Data were compared for those who continued versus those who discontinued to breastfeed. For the mothers continuing to breastfeed at two weeks, 23 (69.7%) had worked during pregnancy and ten (30.3%) did not work

during pregnancy. Seventeen (51.5%) were planning to return to work and 16 (48.5%) were planning to remain home after delivery. For those mothers who discontinued breastfeeding, nine (52.9%) worked during their pregnancy and eight (47.1%) did not work during pregnancy. Six (35.3%) were planning to return to work and eleven (64.7) were planning to remain at home.

In this study, the mother who continued to breastfeed was more likely to have worked during pregnancy and to plan to return to work following delivery. However, chi-square analysis revealed that this difference was not statistically significant. The chi-square value was 1.367 with a probability of 0.242 for the analysis of whether the mother worked during pregnancy related to continued or discontinued breastfeeding. When analyzing whether the mother was planning to return to work and continued or discontinued breastfeeding, the chi-square value was 1.188 with a probability of 0.276.

Demographic Characteristics

The tenth subsidiary question was stated as follows: What demographic variables are associated with the highest incidence of breastfeeding? Whether the mother worked during pregnancy and was planning to return to work has

already been discussed. The mean age of the mothers discontinuing breastfeeding was 24.5 and the mean age for the mothers continuing to breastfeed was 24.8. The mean income of the mothers discontinuing breastfeeding was \$25,543 and the mean income for the mothers continuing to breastfeed was \$29,124.

Of the fifty mothers, 43 delivered within two weeks of their due dates, six were greater than two weeks early, and one was greater than two weeks late. All infants were healthy and without breastfeeding restrictions. Of the mothers who discontinued breastfeeding, three had infants who were greater than two weeks early while the remaining 14 were within two weeks of the due date.

In reference to education, eleven of the 27 (41%) mothers who had grade school, high school, or were still attending high school education quit breastfeeding within the first two weeks. Only five of the 23 (22%) who had post-high school education or were pursuing post-high school education quit breastfeeding.

In terms of the infant's sex, 29 (58%) of the infants were female and 21 (42%) of the infants were male. In the mothers who discontinued breastfeeding, 13 infants were female and 4 infants were male. These numbers represent 45% of the female infants and 19% of the male infants in the initial sample. In the group of mothers

continuing to breastfeed, 16 of the infants were female and 17 of the infants were male.

Variation existed between clinic and private patients. Half of the 14 clinic patients (50%) discontinued breastfeeding in the first two weeks. Of the 36 private patients, only 28% discontinued breastfeeding within the first two weeks.

Characteristically the women who initiated breastfeeding were married (86%) and primigravidas (76%). Forty percent of the mothers had some form of post-high school education. Seventy percent of the breastfeeding mothers were working. Of those mothers working, 32% were employed in professional or vocational positions. Sociodemographic data are presented in Table 12 for all mothers.

Table 12. Sociodemographic data on all mothers, mothers continuing to breastfeed, and mothers discontinuing breastfeeding at two weeks. (N=50)

Characteristic	Total N=50	Continued n=33	Discontinued n=17
Education:			
Grade School	7 (14)	4 (12)	3 (17)
High School	16 (32)	10 (31)	6 (35)
Vocational School	7 (14)	7 (21)	0
Some College	7 (14)	3 (9)	4 (24)
College Graduate	4 (8)	4 (12)	0
Post Graduate	2 (4)	1 (3)	1 (6)
Attending high school	4 (8)	2 (6)	2 (12)
Attending college	3 (6)	2 (6)	1 (6)
Mother's Type of Work:			
Professional (College)	8 (16)	6 (18)	2 (12)
Vocational training	8 (16)	6 (18)	2 (12)
Manual or service without training	13 (26)	9 (28)	4 (23)
Student	6 (12)	4 (12)	2 (12)
Not working	15 (30)	8 (24)	7 (41)
Length of Leave:			
0-4 weeks	4 (8)	3 (9)	1 (6)
5-8 weeks	11 (22)	9 (28)	2 (12)
9-12 weeks	5 (10)	3 (9)	2 (12)
13-16 weeks	1 (2)	1 (3)	0
Greater than 17 weeks	1 (2)	0	1 (6)
Not returning to work	6 (12)	3 (9)	3 (17)
Undecided	2 (4)	2 (6)	0
Did not work	20 (40)	12 (36)	8 (47)
Marital status:			
Married	42 (84)	28 (85)	14 (82)
Single	3 (6)	2 (6)	1 (6)
Divorced	2 (4)	2 (6)	0
Engaged	1 (2)	1 (3)	0
Living Together	2 (4)	0	2 (12)
Number of children:			
First Child	36 (72)	25 (76)	11 (65)
Second Child	10 (20)	6 (18)	4 (23)
Third Child	3 (6)	1 (3)	2 (12)
Fourth Child	1 (2)	1 (3)	0

Table 12 (continued). Sociodemographic data on all mothers, mothers continuing to breastfeed, and mothers discontinuing breastfeeding at two weeks. (N=50)

Characteristic	Total N=50	Continued n=33	Discontinued n=17
Type of delivery:			
Vaginal	34 (68)	23 (70)	11 (65)
Cesarean	16 (32)	10 (30)	6 (35)
Prenatal care:			
Private	36 (74)	27 (82)	10 (59)
Clinic	14 (26)	6 (18)	7 (41)
Prenatal classes:			
Hospital	27 (54)	17 (52)	10 (59)
Lamaze	2 (4)	2 (6)	0
None	17 (34)	12 (36)	5 (29)
High School	1 (2)		1 (6)
High School and Hospital/Lamaze	3 (6)	2 (6)	1 (6)
Sex of Infant:			
Female	29 (58)	16 (64)	13 (76)
Male	21 (42)	17 (36)	4 (24)

Summary

Demographic data and follow-up telephone calls were collected on 50 subjects. Thirty subjects returned the surveys. The researcher found it interesting that only five of the mothers discontinuing breastfeeding returned the surveys.

The most common factors that influenced the decision to initiate breastfeeding were healthier or better for the baby, immune factors or antibodies present in breastmilk, and closeness or bonding with the baby. It was interesting that all five mothers terminating breastfeeding believed that breastmilk was healthier for the baby. Another interesting observation was that health care professionals were rarely cited as encouraging the decision to breastfeed. Forty percent of mothers could not identify an individual that influenced the decision to breastfeed and thirty percent could not identify a source of support for breastfeeding.

The concerns and problems of breastfeeding mothers were explored (N=50). Thirty-three (66%) mothers continued to breastfeed and 17 (34%) mothers had discontinued breastfeeding. The most common problem encountered was infant jaundice. The second most common problem was breast problems.

Only nine mothers received help with their problems or concerns regarding breastfeeding. Of the mothers who continued breastfeeding, one mother talked with the office nurse and one mother talked to the obstetrician. Of the mothers discontinuing breastfeeding, seven contacted a physician for breastfeeding assistance.

Seventy percent of the breastfeeding mothers were working. Of the mothers working, 32% were employed in professional or vocational positions. The women characteristically were married (84%), a primigravida (72%) and delivered vaginally (68%).

CHAPTER V

CONCLUSIONS

Chapter V includes a summary and discussion of the findings. In addition, limitations of the study will be identified. Based on the research findings, recommendations for nursing and for future research will be presented.

Discussion

The study focused on the factors significant in the decision to breastfeed. This study found the factors cited by mothers agreed with those in previously conducted studies (Fieldhouse, 1984; Mackey & Fried, 1981; Oyco-Santos, 1983; Yeung et al., 1981; Yoos, 1985). A minimum of 83% of the mothers identified the following factors as important: healthier/better for the baby, immune factors/antibodies, closeness/bonding, natural way to feed, and more convenient/easier. The factors selected by mothers as being the most important reasons for choosing breastfeeding were healthier/better for the baby, immune factors/antibodies, and closeness/bonding. The following factors were chosen as being important by 47-53% of the mothers: natural

way to feed, convenient/easier, economical/cheaper, and support from husband/boyfriend.

When citing reasons for choosing breastfeeding, the support or encouragement from significant others appeared less important to the mothers than the other factors. The percentage of mothers marking one of these categories was comparatively small and revealed the following: husbands/boyfriend (47%), support from family (23%), support from friends (20%), influenced by other breastfeeding mothers (27%), educational experiences (20%), encouraged to by doctor (13%), and encouraged to by a nurse (6%). The persons cited as being influential were consistent with the findings by Yeung et al. (1981) and by Hally et al. (1984a). An interesting observation was that health care professionals were rarely cited as encouraging breastfeeding. Because the researcher expected breastfeeding to be presented and discussed during the prenatal period by health care providers, this observation appears to be important.

When comparing the mothers who continued versus those who discontinued breastfeeding, it is imperative to recall that the discontinued group returning the survey consisted of only five mothers. On the average, mothers from both groups marked 5.8 factors as being significant. An important finding was that all mothers discontinuing

breastfeeding identified breastfeeding as being healthier for the baby. To the researcher, this finding represents an inconsistency between the actions and words of the mother. The nurse should encourage exploration with the mother concerning her beliefs regarding breastfeeding and the problems or reasons for discontinuing breastfeeding. The rankings were generally consistent. When identifying the three most important factors, the mothers who discontinued breastfeeding did not include the husband/boyfriend at all in the top rankings, and only one person identified family. The significance of this finding is unknown because of the restricted sample size.

An important aspect of the study involved the problems encountered during the first two weeks of breastfeeding. By two weeks, 34% of those mothers initiating breastfeeding had terminated breastfeeding. This rate was higher than the rates cited in other studies. In a study of 649 breastfeeding mothers, Jones et al. (1986) reported a total of 17% who quit breastfeeding by two weeks and Loughlin et al. (1985) found a 24% decrease in breastfeeding in two weeks. One study by McIntosh (1985) demonstrated a decline of 52% by the end of two weeks.

Although twenty of the fifty mothers encountered

no problems with breastfeeding, 17 encountered problems significant enough to cause termination of breastfeeding. Regardless of whether breastfeeding continued or discontinued, infant jaundice was the most frequently encountered problem. This problem forced discontinuation of breastfeeding (intended to be temporary) at a crucial point in the establishment of lactation. Nine mothers identified infant jaundice as a problem because it involved temporary discontinuation of breastfeeding. Despite attempts to restart breastfeeding, four of these mothers were unable to resume breastfeeding. With the exception of the study by Houston and Field (1988) in which the participants were hospital nurses who identified reasons for interruption of breastfeeding of their postpartum patients, researchers have not presented infant jaundice as a cause of cessation of breastfeeding.

The second most common problem cited by all mothers included breast problems. These problems included sore breast, cracked nipples, inverted nipples, engorgement, and mastitis. One woman stated that breastfeeding was very painful and she was advised by her physician to pump her breasts and feed the milk to the infant with a bottle. Breast problems are frequently cited in the literature as frequently occurring problems encountered by breastfeeding mothers and often directly relates to

the cessation of breastfeeding (Downing & Howkins, 1984; Ellis & Hewat, 1984; Kearney et al., 1990; West, 1980).

Insufficient milk was cited as a problem by three mothers. All three mothers discontinued breastfeeding. Other factors commonly cited in conjunction with insufficient milk included: infant was not gaining weight, infant was acting hungry, and the infant was fussy. Researchers repeatedly find that the mothers belief that she has an insufficient milk supply is the most common cause of cessation of breastfeeding (Downing & Howkins, 1984; Ellis & Hewat, 1984; Goodine & Fried, 1984; McIntosh, 1985).

Of the mothers continuing to breastfeed, infant jaundice and breasts problems were cited most often. Other areas of concern included: infant spitting up, infant gastrointestinal (bowel movements and gas), maternal diet, and directions for pumping and storing milk. Pumping and storing milk were a concern related to anticipated return to work.

The mothers who discontinued breastfeeding cited infant jaundice as the cause of termination of breastfeeding in 24% of the cases. Other causes included: breast problems, infant would not nurse, infant acting hungry, infant not gaining weight, and mothers believing they had insufficient milk. One woman terminated

breastfeeding to begin oral contraceptives and another stated that she did not like breastfeeding.

The mothers received inconsistent messages regarding breastfeeding. While mothers that breastfeeding was healthier for the baby several experienced forced termination of breastfeeding at three days related to infant jaundice. In addition, during periods in which perseverance should be encouraged and supported and assistance should be provided, mothers were not provided the feedback that perseverance was in the best interest of her newborn.

Of the seventeen mothers terminating breastfeeding, seven contacted a physician for assistance with their problems or concerns regarding breastfeeding. The remainder contacted no one. A nurse was contacted for advice by one mother continuing to breastfeed and a physician was contacted once by a mother continuing to breastfeed. Using the principle of self-extension, the mother must be willing to seek help, guidance, and advice as required to promote breastfeeding. If the nurse is unable to provide the help necessary, the nurse must make referrals or seek other organizations to provide assistance to breastfeeding mothers. A surprising number of women terminated breastfeeding without consulting a health care provider.

Peak periods of mothers terminating breastfeeding were day three and day ten. Of the mothers who discontinued breastfeeding, nine (53%) discontinued within the first three days. On day three, four infants who were jaundiced were removed from breastfeeding and the mother stated they were unable to resume breastfeeding, one infant would not nurse, and one mother began pumping due to painful breasts. Three of the four jaundiced infants with mothers who discontinued breastfeeding were delivered by cesarean section. For these infants, the lack of early and frequent nursing periods may have contributed to the neonatal jaundice and to the inability to resume breastfeeding. Reasons cited on day ten included: cracked nipple, infant acting hungry and not gaining weight, and beginning oral contraceptives.

Thirty percent of the mothers returning the surveys could not identify a source of support for breastfeeding. Thirty-seven percent cited their husband as a source of support. Other citings in order of frequency included: family (20%), friends/coworkers (17%), physician (10%), La Leche League (7%), books/teacher (7%), mother (3%), and myself (3%). Of the mothers discontinuing breastfeeding, friends/coworkers were named twice, and husband, physician, and books/teacher were each named once. The mean number of citings for the mothers

continuing to breastfeed was 1.4 and the mean number of citations for the mothers discontinuing breastfeeding was 1.2. Nurses were not cited as a source of support.

Identifying who influenced the decision to breastfeed was also difficult for the mothers. Forty percent of the mothers did not answer or stated that no one influenced their decision. Of the remaining 13 mothers, five identified themselves as influencing the decision to breastfeed, six identified their husband, four identified their mother, four identified friends or coworkers, and one identified family as influencing the decision to breastfeed. In the study by Hally et al. (1984a), 65% of the mothers stated "no one" influenced the decision to breastfeed. Aberman and Kirchhoff (1985) found 22% of the population studied could not identify a source of influence for the choice of feeding method. Health care workers were not included by the mothers in the current study nor in the study completed by Aberman and Kirchhoff (1985). Because health care providers generally provide the information on feeding methods and are aware of the benefits of breastfeeding, it was expected by this researcher that health care providers would influence the decision to breastfeed. In reality, only 23.7% of the patients on the postpartum unit during the time frame of this study chose to initiate

breastfeeding, and 34% of the mothers initiating breastfeeding had terminated breastfeeding by two weeks.

For those women discontinuing breastfeeding, three women stated "none" as the person influencing the decision to breastfeed. Husband, mother, or friends/coworker were cited by the other two mothers which terminated breastfeeding. Excluding the categories of no answer, none and myself, 48% of the mothers continuing to breastfeed identified a person influencing the decision to breastfeed and 60% of the mothers discontinuing to breastfeed identified a person influencing the decision to breastfeed.

Infant temperament was studied using the MABI test. Interpretation of results was not possible because only five of the 17 mothers who had discontinued breastfeeding returned the survey. However, it appears from this limited data that the infants whose mothers discontinued breastfeeding scored as high on the MABI as infants who were still being breastfed. Because infant temperament has rarely been studied in relation to continued breastfeeding, consistent results regarding the significance of infant temperament are not available.

When a mother has a fussy or sleepy baby, all principles of assistance are required. Inconsistency and disorder are present in the environment and the

mother questions whether she is doing what is best for her baby. Perseverance is required to continue to breastfeed and believe in what she is doing for the baby. In addition, self-extension is necessary to confirm that she is providing appropriate care for her baby and to encourage her perseverance. The nurse must be aware of the potential for disorder with a difficult baby and discuss this with the mother, offer encouragement and assistance to the mother, and provide referrals to other health care providers or support organizations.

Maternal locus of control was studied related to continued breastfeeding. Because only five mothers who discontinued breastfeeding returned the study, no statistical tests for significance could be performed. Conclusions are limited and results should be viewed with caution. Mothers who continued to breastfeed had higher mean scores in the categories of internal orientation and powerful others orientation of locus of control. Mothers discontinuing breastfeeding had higher mean scores in the chance orientation of locus of control. In regard to the mothers seeking assistance with breastfeeding, three of the seven mothers discontinuing breastfeeding returned the surveys and two mothers continuing breastfeeding returned the surveys. All mothers scored highest on the internal locus of

control category. Score ranges were as follows: internal 27 to 35, powerful others 7 to 25, and chance 3 to 25.

No studies are available specifically related to the initiation and continuation of breastfeeding and maternal locus of control.

The results regarding the time of the decision to breastfeed were consistent with other studies. Twenty-two percent of the women decided to breastfeed their infant prior to pregnancy and an additional 42% decided to breastfeed as soon as they discovered they were pregnant. A total of 80% had made the decision to breastfeed by the end of the second trimester, and 94% had made the decision to breastfeed prior to the onset of labor. Variation in timing of the decision was not present between those who continued and discontinued breastfeeding. Aberman and Kirchhoff (1985) reported a total of 62% of the respondents made the decision to breastfeed before the end of the first trimester. According to Martinez (1984), 63% of mothers had decided they would breastfeed their infants prior to pregnancy, and an additional 14% made the decision to breastfeed during the first trimester.

Information was obtained regarding whether the mother worked during her pregnancy and whether the mother was planning to return to work following delivery. Of the

mothers initiating breastfeeding, 64% worked outside of the home and 46% were planning to return to work. Of the mothers who continued to breastfeed, 70% of the mothers had worked and 48% of the mothers were planning to return to work. Of the mothers who discontinued breastfeeding, 53% of the mothers had worked and 35% of the mothers were planning to return to work.

Chi-square analysis revealed that the mothers continuing to breastfeed and the mothers discontinuing to breastfeed did not significantly differ in whether they worked during pregnancy and were planning to return to work. Martinez (1984) found that 62% of unemployed women chose to breastfeed and 60% of employed women chose to breastfeed.

Demographic characteristics were found to be consistent with other studies. Fifty-four percent of the mothers had an educational background of grade school, high school, or attending high school. The remaining 46% of the mothers had received vocational training, college education, graduate education, or were currently in college. Eleven of the 27 (41%) mothers with an educational background of grade school, high school, or attending high school discontinued breastfeeding within the first two weeks. Only five of the 23 (22%) of the mothers with post-high school education ceased breastfeeding. Researchers have documented that the

breastfeeding mother is more likely to have post-high school education (Fieldhouse, 1984; Kurinij et al., 1988; Martinez, 1984; Wright et al., 1988).

Additional sociodemographic characteristics were studied. The mean age and income did not differ between those mothers who discontinued and continued to breastfeed. The breastfeeding mother in this study was more likely to have private prenatal care (72%), a vaginal delivery (68%), to be married (86%), and to be a primigravida (72%). The findings are consistent with other studies (Baranowski et al., 1983; Janke, 1988; Jones et al., 1986; Martinez, 1984; Martinez et al., 1981; Samuels et al., 1985; Wright et al., 1988).

Limitations

Generalization to other populations was not possible because of the study size and the fact that this was a convenience sample. The sample was not a random representation of the population. The entire sample was white. Of the seven mothers ineligible due to having previously breastfed children, two were black and one was Indian. In addition, the sample size consisted of only fifty mothers. Thirty of the mothers returned all surveys which translates into a return rate of 60%.

A major limitation to the study was the small number of mothers returning the survey who had discontinued breastfeeding. Five of the 17 mothers discontinuing breastfeeding returned the surveys. The mothers were aware that the researcher requested the return of the surveys regardless of whether or not they discontinued breastfeeding. Any statements concerning the results from the surveys merely describe only this portion of the total sample.

Another limiting factor in this study was the low breastfeeding rate at the institution where the data were gathered. The reason for this low rate is unknown. However, this fact did limit the access to subjects.

Reliability of the "Factors Influencing the Decision to Breastfeed" was not established. The instrument was developed by the researcher and consisted of factors identified in previously completed studies. Content validity was established by a panel of breastfeeding experts.

Pilot studies were not conducted. As evidenced by the lack of variance in infant scores, the MABI scale may not be the best instrument to study infant temperament related to continued breastfeeding. The tool measures infant temperament based on the mother's perception of

her infant's interactions. The instrument does not measure specifically feeding behaviors or interactions

Implications For Nursing Practice

Information on breastfeeding should be provided during preconceptual counseling, the prenatal period, and as general education to the public and especially to women. Nurses may be able to influence the decision to breastfeed by providing the information on infant feeding early in pregnancy. However, because so many women have made the feeding method decision prior to pregnancy, education must be disseminated to the general population and especially to women on the benefits of breastfeeding. A positive image of the breastfeeding mother must be portrayed. The information presented should encourage breastfeeding and highlight the benefits of breastfeeding.

During the early postpartum period, home visits to assist the new mother would be helpful. Mogan (1986) reported only a decline of 3.9% at two weeks and 9.9% at one month in the incidence of breastfeeding when the mother received home visits. Twenty of the mothers experienced no problems and did not have questions on breastfeeding. However, 44 problems (or 1.5 problems

per mother) were reported by the remaining thirty mothers, and for 17 of the mothers the problems were significant enough to cause termination of breastfeeding.

Health care providers are often hurried, and patients do not always feel comfortable calling the office for what may be considered a trivial question. Follow-up telephone calls can provide emotional assistance, identify problem areas before the mother terminates breastfeeding, and determine if the mother needs to come to the office for assistance or if a home visit is indicated. Ideally, it would be best if the nurse could go to the mother's home to assist her with breastfeeding.

Critical days related to discontinuance of breastfeeding identified in this study were day three and day ten. Day three appeared to be related to the development of infant jaundice and feeding difficulties. Because mothers typically go home on day two, the third day (or the day after discharge) is a period of vulnerability for breastfeeding. Reasons cited by mothers for discontinuing breastfeeding on day ten were cracked nipple, began oral contraceptives, and the infant was hungry/infant not gaining weight. The researcher anticipated the growth spurt experienced by infants at approximately the tenth day would be a vulnerable period because mothers might not understand the need to feed

the infant more frequently. However, the concerns cited by mothers did not always implicate growth spurts as the perceived problem. Because day three and day ten are associated with discontinuing breastfeeding, this period seems an ideal time for home visits or follow-up telephone calls.

Providing information on common breastfeeding problems and solutions to mothers may prove helpful. The information should cover common maternal and infant problems including infant jaundice. This should not replace the contact between the nurse and the mother but only provide her reassurance and alternative actions during difficult periods.

Implications For Future Research

It appeared significant that health care providers were rarely identified as influential in the decision to breastfeed and rarely contacted for breastfeeding assistance. For this reason, a study comparing breastfeeding rates and success between health care providers who are in favor of breastfeeding and promoting breastfeeding and those health care providers who merely offer the two feeding options would provide useful information.

It would be useful to have a comparative study of mothers receiving follow-up assistance with breastfeeding compared to those mothers not receiving this extra care. A study of this type may be required to justify the cost of having a nurse available to provide this service. It would be interesting to study whether the third day and the tenth day repeatedly are common distress periods for the breastfeeding mother.

Infant temperament should be researched. A tool specific for feeding problems may be needed to ascertain this information. A study of this nature may explain the number of problems consisting of fussy infant and the infant acting hungry.

Maternal locus of control should be studied among non-breastfeeding mothers, mothers initiating breastfeeding, and mothers discontinuing/continuing to breastfeed. If differences are identified between groups, this information may be useful in anticipating the amount of assistance and encouragement the mother will require.

Summary

In conclusion, the study identified common reasons for initiating and continuing to breastfeed. Support

persons and influential persons were studied. Problems the breastfeeding mother encountered were analyzed and differences among mothers who continued and discontinued breastfeeding were presented. Infant temperament was measured but provided no conclusive results. Maternal locus of control was studied, but higher internal scores for the breastfeeding group must be viewed with extreme caution due to the small sample size and disparity between groups in terms of size. Demographic data were presented and agree with previous studies which have found that the breastfeeding mother is more likely to be married, a primigravida, experience a vaginal delivery, and receive private prenatal care.

Suggestions for nursing practice focus on providing the breastfeeding mother with information and assistance. The prenatal and postpartum information should be consistent, accurate, and presented in a positive and encouraging manor. Home visits and/or follow-up telephone conversations with the mothers may be necessary to conquer the problems mothers encounter after discharge. Written information on common problems and solutions to may also be helpful to breastfeeding mothers.

Additional research related to breastfeeding mothers is necessary. Studies should be completed related to the impact that positive attitudes in health professionals

can have on the success of breastfeeding. Comparative studies of the breastfeeding success of mothers receiving follow-up assistance and mothers not receiving follow-up assistance should produce results justifying the cost of having a nurse available to provide this care. Infant temperament should be researched and a tool developed specific for identifying infants at risk for breastfeeding difficulties. Future study of maternal locus of control may produce results that indicate the amount of breastfeeding assistance and encouragement the mother will require.

Maternity nurses must be committed to the goal of providing optimal care for pregnant women, mothers, and infants. As additional research becomes available, the nurse must ensure that the mother is informed of the benefits of breastfeeding, common problems associated with breastfeeding, possible solutions for common problems, and where the mother may obtain assistance with breastfeeding.

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APPENDICES

APPENDIX A



September 13, 1990

Natalie Romines, RN
3004 Shelby Street
Apt. 407
Bristol, TN 37620

Dear Ms. Romines:

The Institutional Review Board met on August 29, 1990. Your study regarding Factors Influencing the Mother's Decision to Initiate and Continue Breast feeding was reviewed and approved with the following restrictions:

- 1) No physicians patients will be included in this study without that physicians specific approval.
- 2) Approval from the Obstetrics/Pediatrics Department Section of the Medical Staff.
- 3) Individual physicians may exclude a particular patient from the study if they so desire.
- 4) The Institutional Review Board receives a copy of the results of the survey.

The committee suggests that you talk to the obstetricians prior to the next OB/Peds meeting to let them know the facts regarding your study. You should also contact Dr. Wesley Harris, Chairman of the OB/Peds Section, concerning attending the meeting on Wednesday, September 12, 1990 at 12:00 Noon in Memorial Hall Auditorium.

If you have any questions, or if I can be of further assistance, please let me know.

Sincerely,

David Morin, M.D.
David Morin, M.D.
Chairman, IRB

DM:kf

NEW BUSINESS:

Dr. Harris introduced Natalie Romines, RN who reported to the group that she has requested to do a study as part of her thesis for a Masters Degree regarding the factors influencing the mother's decision to initiate and continue breastfeeding. Ms. Romines stated that she would be conducted a series of three surveys, one a checklist type survey from the mother and two additional surveys including an infant assessment by the mother.

OB/PEDS DEPARTMENT
September 12, 1990
Page Two

RECOMMENDATION/ACTION: This study was approved by the Committee and it will be noted on the patient's chart by the physician if he does not wish his patient to participate in this study.

David Mouin, M.D.

APPENDIX B

FORM A

(PLEASE TYPE ON THIS FORM)

(Instructions on reverse side of this form.)

Certification of Exemption from Review by Full Committee
for Research Involving Human SubjectsDate Received in ORA SEP 27 1990CRF # 3345A

- A. PROJECT DIRECTOR(s) and/or CO-DIRECTOR(s): (For student projects, list both the student and the advisor.)
Natalie S. Romines - graduate student
Dr. Johnie Mazingo - advisor
- B. COMPLETE MAILING ADDRESS AND PHONE NUMBER OF PD(s) and CO-PD(s):
3004 Shelby St. #407 University of Tennessee, College of Nursing
Bristol, TN 37620 1200 Volunteer Blvd.
(615) 968-5700 Knoxville, TN 37916
(615) 974-7592
- C. TITLE OF PROJECT:
Factors Influencing the Mother's Decision to Breastfeed
- D. DEPARTMENT:
College of Nursing
- E. FEDERAL FUNDING AGENCY AND ID NUMBER (If applicable):
- F. GRANT SUBMISSION DEADLINE (If applicable):
- G. STARTING DATE: Upon certification by Coordinator of Compliance. (NO RESEARCH MAY BE INITIATED UNTIL CERTIFICATION IS GRANTED.)
- H. ESTIMATED COMPLETION DATE (Include all aspects of research and final write-up.): May 1991

I. Objective(s) of Project (see Section 8.4 of Manual): The primary objective is to identify the factors that most strongly influence the mother's decision to breastfeed. Secondary objectives are to determine if a particular type of locus of control or infant temperament is associated with continuation of breastfeeding at two weeks.

II. Subjects (see Section 8.5 of Manual) (Use additional page, if needed.): The sample will be a convenience sample of 100 breastfeeding mothers from the postpartum unit of an urban hospital. The women must be able to read, write, and speak English. They must have a telephone at home. Maternal age range is 18 to 40. Delivery can be either vaginal or cesarean section. All first-time breastfeeding mothers are eligible regardless of previous births.

III. Methods or Procedures (see Section 8.6 of Manual) (Use additional page, if needed.): Each subject will receive a consent form. Participation is voluntary. After obtaining consent, demographic data will be collected. The subject will be asked to complete three surveys taking approximately 25 minutes. The surveys are: factors influencing the decision to breastfeed, mother's assessment of the behavior of her infant (MAMI), and Levenson's locus of control scale (attached). A follow-up telephone call two weeks after delivery will be made to determine if the mother is still breastfeeding. No potential risks are expected from participation in the study. Consent and data forms will remain in a locked cabinet at the researcher's home and will remain confidential. Completed surveys may be reviewed by the thesis committee.

IV. CATEGORY(s) FOR EXEMPT RESEARCH PER 45 CFR 46 (see reverse side for categories): 1

CERTIFICATION: The research described herein is in compliance with 45 CFR 46 101(b) and presents subjects with no more than minimal risk as defined by applicable regulations.

Investigator Natalie S. Romines RNAdvisor Johnie N. Mazingo, PhD, RNDept. Review Comm. Chair Sandra P. ThomasDept. Head Julius E. HairAPPROVED: Edith M. Stachursky
Coordinator of Compliance

Natalie S. Romines RN

Johnie N. Mazingo, PhD, RN

Sandra P. Thomas

Julius E. Hair

Edith M. Stachursky

Date 7/1/90Date 9-12-90Date 9/25/90Date 27 Sept. 90Date 10-9-90

Rev. 9/89

APPENDIX C

THE UNIVERSITY OF TENNESSEE
KNOXVILLE

CRP #: 3345 A

DATE: 10/09/90

Title: Factors Influencing the Mother's Decision to Breastfeed

Research
Administration

Compliances

Grants &
ContractsProposal
Development
ServicesRomines, Natalie S.
Nursing
3004 Shelby St., #407
Bristol, TN 37620Mozingo, Dr. Johnie
Nursing
1200 Volunteer Blvd.
Campus

The project listed above has been certified exempt from review by the Committee on Research Participation and is approved.

This certification is for a period ending one year from the date of this letter. Please make timely submission of renewal or prompt notification of project termination (see item #2 below).

The responsibilities of the project director include the following:

1. Prior approval from the Coordinator of Compliances must be obtained before any changes in the project are instituted.
2. Submission of a Form D to request renewal, report changes during the approval period, or report termination of the project.

We wish you success in your research endeavors.

Sincerely,

A handwritten signature in cursive script that reads "Edith M. Szathmary".

Edith M. Szathmary
Coordinator of Compliances

cc: Dr. Sylvia E. Hart
1200 Volunteer Blvd.

Attachment: Copy of Form A

APPENDIX D

Factors Influencing the Mother's
Decision to Breastfeed
Informed Consent Statement

I understand that the following study is being completed by a graduate nursing student at the University of Tennessee, Knoxville. The study and thesis is being completed by Natalie S. Romines, RN and the thesis chair is Dr. Johnnie Mozingo.

I understand that the purpose of this study is to identify factors that influence the mother's decision to initiate and continue to breastfeed.

My participation involves answering some questions and completing three surveys that will take approximately 25 minutes to complete. I understand that I will be contacted by telephone two weeks after delivery.

I understand that all information is confidential. Each survey will be coded with an identification number known only by the researcher.

I understand that no negative effects are expected to result from participation in the project. Participation is voluntary and I may withdraw from participation without penalty if I choose.

I understand that I may contact the researcher if I have any questions about the study.

I have read and understand the above statement and freely consent to participate in this study.

Signature_____

Date_____

Researcher:
Natalie S. Romines, RN
3004 Shelby St #407
Bristol, TN 37620
(615) 968-5700

Thesis Chairperson:
Dr. Johnnie Mozingo
University of TN
College of Nursing
Knoxville, TN 37996
(615) 974-7592

APPENDIX E

Factors Influencing the Mother's
Decision to Breastfeed
Demographic Data Sheet

Age_____

Marital status_____

Race_____

Household income in thousands per year_____

Mother's years of education_____

Number of children in the family including the new baby_____

EDC or due date_____

Type of delivery_____

Prenatal care_____

Prenatal classes_____

When was the decision made to breastfeed?_____

Did you work during the pregnancy?_____

What type of work did you do?_____

Do you plan to return to work?_____

When do you plan to return to work?_____

Phone number_____

Convenient time to be reached by phone?_____

APPENDIX F

Survey: Factors Influencing the
Decision to Breastfeed

Listed below are several reasons or factors that have been cited as reasons for breastfeeding. Check any factor that was important when you made the decision to breastfeed. Space is provided below for any other reasons that were important in your decision to breastfeed. Please rank the top three factors in order of importance. Thank you for your assistance in this study.

Check all factors that apply; Rank (number 1,2,3) the top three:

- _____ Healthier or better for the baby
- _____ More convenient or easier
- _____ Closeness or bonding with the baby
- _____ Immune factors or antibodies present in breastmilk
- _____ Economical or cheaper
- _____ Natural way to feed the baby
- _____ Support from husband or boyfriend
- _____ Support from family
(not including husband or boyfriend)
- _____ Support from friends
- _____ Encouraged to by doctor
- _____ Encouraged to by nurse
- _____ Influenced by other breastfeeding mothers
- _____ Influenced by media (articles, TV, movies)
- _____ Influenced by educational experiences
- _____ Other _____

What sources of support for breastfeeding do you have?

Was there one person who most influenced your decision to breastfeed and what is your relationship to this person? _____

APPENDIX G

LEVENSON'S SCALE

Using the scale -3, -2, -1, +1, +2, +3, indicate the extent to which you agree or disagree with each of the following items. Put the number representing the degree of your agreement or disagreement by each item.

-3	-2	-1	+1	+2	+3
complete	usually	partially	partially	usually	complete
disagreement	disagree	disagree	agree	agree	agreement

- _____ 1. Whether or not I get to be a leader depends mostly on my ability.
- _____ 2. To a great extent my life is controlled by accidental happenings.
- _____ 3. I feel like what happens in my life is mostly determined by powerful people.
- _____ 4. Whether or not I get into a car accident depends mostly on how good a driver I am.
- _____ 5. When I make plans, I am almost certain to make them work.
- _____ 6. Often there is no chance of protecting my personal interest from bad-luck happenings.
- _____ 7. When I get what I want, it's usually because I'm lucky.
- _____ 8. Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power.
- _____ 9. How many friends I have depends on how nice a person I am.
- _____ 10. I have often found that what is going to happen will happen.
- _____ 11. My life is chiefly controlled by powerful others.
- _____ 12. Whether or not I get into a car accident is mostly a matter of luck.

- ___13. People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.
- ___14. It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.
- ___15. Getting what I want requires pleasing those people above me.
- ___16. Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.
- ___17. If important people were to decide they didn't like me, I probably wouldn't make many friends.
- ___18. I can pretty much determine what will happen in my life.
- ___19. I am usually able to protect my personal interests.
- ___20. Whether or not I get into a car accident depends mostly on the other driver.
- ___21. When I get what I want, it's usually because I worked hard for it.
- ___22. In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.
- ___23. My life is determined by my own actions.
- ___24. It's chiefly a matter of fate whether or not I have a few friends or many friends.

APPENDIX H

Levenson Scoring Form

There are three separate scales used to measure one's locus of control: Internal Scale, Powerful Others Scale, and Chance Scale. There are eight items on each of the three scales. To score each scale add up your answers to the items appropriate for the scale. (These items are listed below.) Add to this sum +24 (to remove the possibility of negative scores.) The possible range on each scale is from 0 to 48. Theoretically, a person could score high or low on all three dimensions. The higher the score on a scale, the more inclined the individual is to believe in that particular form of control.

Internal Scale	Powerful Others Scale	Chance Scale
1 _____	3 _____	2 _____
4 _____	8 _____	6 _____
5 _____	11 _____	7 _____
9 _____	13 _____	10 _____
18 _____	15 _____	12 _____
19 _____	17 _____	14 _____
21 _____	20 _____	16 _____
23 _____	22 _____	24 _____
Total _____	Total _____	Total _____
<u>+24</u>	<u>+24</u>	<u>+24</u>
Score _____	Score _____	Score _____

Average scores: Internal (35.48)
 Powerful Others (16.65)
 Chance (13.94)

APPENDIX I

MOTHER'S ASSESSMENT OF THE BEHAVIOR
OF HER INFANT-BY TIFFANY FIELD (♀)

The following questions are similar to the questions we ask when we observe your baby. Because a mother knows her baby better than anyone else, we would like you to give us your impressions of your baby by circling your answer to these questions. They will help us understand newborn babies and how they behave in different situations. In order to answer these questions you might want to watch your baby for a while and try playing some of the games with your baby. We have discovered that newborn babies can do lots of interesting things which you will probably discover in your baby too.

1. When you play with your baby she is often
 1. sleepy
 2. alert
 3. upset
2. How would you describe your baby?
 1. fairly attractive
 2. quite attractive
 3. very attractive
3. How much do you have to stimulate your baby to get her to look at you?
 1. not very much
 2. a fair amount
 3. a lot
4. When your baby is upset what does she do to quiet herself?
 1. brings her hand to her mouth
 2. sucks with nothing in her mouth
 3. looks at you
5. Try talking to your baby holding your face about one foot away from her face and then slowly move your face to one side and then to the other as you continue talking. When you do this your baby
 1. doesn't look at you
 2. becomes quiet and looks at you
 3. follows your face to each side with her head and eyes
 4. follows your face with her head and eyes, up and down and to each side

6. Now try the same thing, only move your face without talking. When you do this your baby
 1. doesn't look at you
 2. becomes quiet
 3. follows your face with her head and eyes
 4. follows your face with her head and eyes, up and down and to each side
7. Try talking to your baby from one side of her head and then from the other. When you do this she
 1. has no reaction or blinks
 2. becomes quiet
 3. turns her eyes and head to your voice once or twice
 4. turns her eyes and head to your voice more than two times
8. Now try holding a colorful toy or some shiny object in front of your baby's face and then move it slowly to each side of her head and then up and down in front of her face. When you do this she
 1. doesn't look at the toy
 2. becomes quiet and looks at the toy
 3. follows the toy you are moving with her head and eyes
 4. follows the toy you are moving with her head and eyes, up and down and to each side
9. Try shaking a rattle on one side of your baby's head and then on the other side. When you do this she
 1. has no reaction or blinks
 2. becomes quiet
 3. turns her eyes and head to the rattle once or twice
 4. turns her eyes and head to the rattle more than two times
10. When you did the above things with your baby she usually
 1. paid little attention to you or the toy
 2. had short periods of watching you or the toy
 3. watched you or the toy for a fairly long time
 4. paid attention most of the time
11. How does your baby feel when you handle or hold her?
 1. limp like a rag doll
 2. limp some of the time
 3. relaxed but firm
 4. very tense
12. When your baby moves her arms the movements are
 1. jerky most of the time
 2. jerky some of the time
 3. smooth some of the time
 4. smooth most of the time

13. When you pick up your baby and hold her in a rocking position
 1. she often swings her arms and kicks her legs and squirms a lot
 2. she is like a sack of meal in your arms
 3. she relaxes and nestles her head in the crook of your arms
 4. she moves her face toward you and reaches her hands out to grab your clothing
14. When your baby is crying very hard
 1. nothing seems to quiet her
 2. only a pacifier will quiet her
 3. holding and rocking her will quiet her
 4. talking to her and holding your hand on her stomach quiets her
15. How would you describe your baby most of the time?
 1. very sleepy
 2. awake a lot of the time and quiet
 3. cries occasionally but is easily quieted
 4. cries a lot and is difficult to quiet
16. Please circle those activites which upset your baby
 1. changing her diaper
 2. dressing and undressing her
 3. putting her back in her bassinet
 4. lying her on her stomach
17. How active is your baby?
 1. not very active
 2. somewhat active
 3. quite active
 4. very active
18. How often does your baby tremble when she is warmly dressed?
 1. not very often
 2. occasionally
 3. fairly often
 4. very often
19. How would you describe your baby's color changes?
 1. she rarely changes color
 2. she changes to blue around her mouth when uncovered and to red when crying but only for a minute
 3. she changes color when she is uncovered or crying but changes back to her natural color when she is covered up or comfortable
 4. she seems to get blue or red very often but will get her natural color back after you've been holding her for a while

20. How are your baby's mood swings or how often do they occur and how quickly do they change?
1. she sleeps most of the time and hardly ever cries
 2. she is quiet much of the time
 3. she goes back and forth from being quiet to crying fairly often
 4. she often changes from being sleepy or quiet to crying and then back again- she changes mood often and very quickly
21. When your baby is crying how successful is she at quieting herself?
1. she cannot quiet herself
 2. she makes several attempts to quiet herself but is usually unsuccessful
 3. she has many brief successes at quieting herself
 4. she often quiets herself for long periods of time
22. How would you describe your baby's hand-to-mouth activity?
1. she makes no attempt to bring her hands to her mouth
 2. she often brings her hand next to her mouth
 3. she sometimes puts her fist or fingers in her mouth
 4. she sometimes sucks on her fist or fingers for as long as 15 seconds at a time
23. How many times has your baby looked like she was smiling at you?
-

APPENDIX I

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23. How many times has your baby looked like he was smiling at you?
-

APPENDIX J

Factors Influencing the Mother's
Decision to Breastfeed
Telephone Survey

Are you still breastfeeding?

Have you had any problems with breastfeeding?

What is the situation now? Who did you talk to that helped you? What help did you receive?

What was your reason for stopping breastfeeding?
How do you feel about your decision to quit
breastfeeding? (Possible problems to assess for: lack
of support, difficulty breastfeeding, infant
temperament)

VITA

Natalie Sipf Romines was born in Indianapolis, Indiana, on July 20, 1964. Following a move to Knoxville, Tennessee, she graduated from Farragut High School in 1982. In 1986, she graduated with a Bachelor of Science in Nursing degree from the University of Tennessee, Knoxville. While at the University of Tennessee she was a member of Gamma Beta Phi honor society.

Following graduation, Natalie worked in labor and delivery, newborn nursery, and the level II nursery at St. Mary's Medical Center, Knoxville. After moving to Bristol, TN, she accepted a position as an operating room nurse at Bristol Surgery Center. She began graduate studies in 1989 with a clinical focus as an OB/GYN nurse practitioner within the parent-child nursing concentration. She will graduate on May 10, 1991, with a Master of Science in Nursing degree. She is a member of Sigma Theta Tau, International Nursing Honor Society, and the National Association of Neonatal Nurses.