

BREAST-FEEDING AS A FUNCTION OF MOTHER'S
PERCEPTION OF SUPPORT

by

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CHAPTER I

Although many mothers eagerly anticipate the purported joys of a successful breast-feeding experience, studies indicate that a high failure rate exists (deCastro, 1968; Jelliffee & Jelliffee, 1978). The mother brings to the situation a physiological ability to lactate and a myriad of attributes and experiences for the breast-feeding encounter. The infant brings a unique temperament, physical ability, and gestational age. Both mother and infant are influenced by the environment which can either facilitate or create problems for the experience. Success with breast-feeding is often equated with motherliness in many sectors of our society (Raphael, 1978) and failure may diminish one's feelings of self-confidence.

Since most mothers have the physiological ability to breast-feed, one factor which has been found to influence choice and success at breast-feeding is the impact of the environment on the breast-feeding experience and the influence of the mother's perception of support from that environment. While many factors have been found to influence breast-feeding choice and success, this study will focus on this aspect, the mother's perception of support for breast-feeding. Specifically, it will address the effect of the mother's perception of support for her breast-feeding from her husband, mother, mother-in-law, obstetrician/midwife, baby's doctor, childbirth instructor, hospital nurse, and significant others. Information from this study potentially has numerous implications for nursing in providing direction for the nurse to facilitate a supportive environment conducive to a successful breast-feeding experience.

Review of the Literature

The review of the literature will give an overview of research findings of the benefits of breast-feeding to the mother and infant; physiology and psychology of breast-feeding; and variables affecting incidence, duration, and choice of infant feeding. It will also address factors associated with success and failure at breast-feeding as well as the effect that various support people and hospital practices have on choice and continuation of breast-feeding. The conceptual framework, that of crisis theory, will provide a perspective for viewing this study. Thus, in viewing the decision making involved in infant feeding as one aspect of the maturational crisis of motherhood, the effect of support on the choice and continuation of breastfeeding will be studied.

Benefits of Breast-feeding to the Infant and Mother

Numerous authorities claim that breast milk is superior to cow's milk and commercially prepared formulas (American Academy of Pediatrics, 1979; The World Health Organization, 1974; Iowa Infant Nutrition Symposium, 1975). While commercially prepared formulas attempt to mimic breast milk in many of its nutritional and physiological properties (Lindquist, 1975), human milk remains a unique substance with specific advantages for the infant and the mother.

Numerous benefits of breast-feeding to the infant have been described. Immunological properties in breast milk have been discovered which appear to provide protection from infection to the neonate from infection which is the most common cause of death in

the first year (Gerrand & Tan, 1978). Otitis media and gastroenteritis have been found to be twice as common in bottle fed infants as in breast fed infants. Hospital admissions for pneumonia have been found to be ten times more common for artificially fed infants than for breast-fed infants (Cunningham, 1977).

On the other hand, certain negative features have been associated with bottle-feeding. The incidence of allergic symptoms is higher in bottle-fed infants than breast-fed infants (Foman, 1974; Gerrand & Tan, 1978; Jelliffree & Jelliffree, 1978; Niefert, 1978). Allergies to formulas afflict 7% of all bottle fed babies and produce symptoms of recurrent rhinorrhea, bronchitis, colic, diarrhea, and vomiting. In addition, disturbances in behavior such as that seen in hyperactive children are much more common among bottle-fed infants (Gerrand & Tan, 1978). The American Academy of Pediatrics (1978) and Christian (1979) postulate a positive relationship between bottle-feeding and adult obesity. While the bottle-feeding mother may encourage her already full and satisfied infant to finish a bottle, the breast-fed infant regulates his intake and ceases nursing when full.

Breast-feeding has also been found to be of benefit to the mother. Benefits include the facilitation of uterine involution, prevention of thromboemboli, limited birth control, and feminine fulfillment (Eiger & Olds, 1972). In addition, Klaus and Kennell (1976) suggest that breast-feeding may promote attachment and bonding and may facilitate a positive maternal-infant interaction.

Physiology and Psychology of Breast-feeding

The physiologic mechanisms involved in breast-feeding involve two distinct pathways and hormones. The first involves the neurohormonal

mechanisms of the hypothalamus and posterior pituitary and the release of oxytocin. This is necessary for the "let down" of milk in the breast. The second is in the production and release of prolactin which is triggered by the falling oxytocin levels which occur at the time of delivery. Prolactin stimulates the synthesis of milk in the breast.

The suppression of lactation was studied by Cross (1955). He postulated that two mechanisms were involved. The first was the inhibition of neurohormonal mechanisms of the hypothalamus and posterior pituitary where stimulation is necessary for "let down" of the milk in the breast. The second pathway involved constriction of the breast blood vessels which is mediated through the sympathetic nervous system's release of vasoconstricting agents. These were found to diminish blood flow to the breast which decreased the available oxytocin to stimulate the contraction of the myoepithelial cells that actively express milk from the breast. Cross (1955) also found that the dose of oxytocin required to overcome the vasoconstrictive effect suggests that oxytocin production is more important in inhibiting lactation than the vasoconstrictive effect. He further found that oxytocin production could be inhibited by emotional stress. This is very important as Raphael (1978) found that the initiation of the letdown reflex was essential in milk ejection. Similarly, Raphael (1978) claimed that the most common causes for inhibition of oxytocin were anxiety, unwillingness to breastfeed, and fatigue. He suggested that a nonsupportive environment was the central factor in the anxiety- milk loss-failure syndrome.

In addition to physiologic mechanisms, psychologic and psychosomatic aspects of lactation have been extensively studied by many authors. Waller (1950) explored the psychological aspects of the milk ejection reflex and noted that embarrassment inhibited milk ejection. He found that milk secretion could be initiated and conditioned by the mother's merely hearing the crying infant or thinking about the baby. Newton and Newton (1962) reported that the "let down" reflex of milk ejection could be strongly influenced by the mother's emotional state. Similarly, Call (1955) asserted that failure at lactation might be induced by psychological factors such as stress. In a study of maternal attitude concerning nursing and childbearing, Newton and Newton (1950) found a correlation between milk production and attitude. It was noted that mothers with a positive attitude toward success at breast-feeding secreted 59 grams per feeding of milk while those with a negative attitude secreted only 35 grams. Furthermore, of the mothers with a positive attitude, 74% were successful breast-feeders whereas only 26% of the mothers with a negative attitude were successful. Success was defined by Newton and Newton as having enough milk by the fourth day so that supplementary bottles were not necessary to satisfy the baby. Those who were unsuccessful continued to breast-feed, but had to continue to give supplementary formula after the fourth day. The use of supplements as previously mentioned has in itself been associated with decreasing milk supply and thus will add to the probability of failure at breast-feeding. Milk production was measured by infant pre and post feeding weighing which measured not how much milk was

produced, but how much milk the infant consumed. Thus, while the vast majority of women are physiologically able to breastfeed, it seems that the process of the milk production and milk release may be heavily influenced by the maternal psychological state.

Incidence and Duration of Breast-feeding

While the number of women electing to breast-feed has recently been increasing, the attrition rate remains high. Findings of various studies relating incidence and continuation are found in Table 1. While the initiation of breast-feeding appears to have increased especially during the last decade, the six-month continuation rate remains quite low. The table should be viewed as an overview of general trends and one must look at various factors in the samples which were different and might have affected the results. For example, criteria for inclusion in the samples varied among studies as did attendance at childbirth classes, hospital practices, and socioeconomic status of the populations.

Variables Related to Choice of Infant Feeding Method

The choice to breastfeed has been associated with many maternal characteristics. In the United States, typical breastfeeding mother is primipara (Cole, 1975; Bacon & Wylie, 1975; Jeffs, 1976; Brimblecomb & Cullen, 1977; Martínez and Nalezienski, 1981), between the age of 20-30 years (Cole, 1976; Jeffs, 1976), Caucasian or Hispanic (Arafat, Allen & Fox, 1980) and of higher socioeconomic status (Robertson, 1961; Prothero, 1966; Salber & Feinlib, 1966; Sloper, McKean, & Baum, 1975; Bacon & Wylie, 1975; Jeffs, 1976; Palmer, Avery, & Taylor, 1979; Martínez & Nalezienski, 1981). She has a higher than

Table 1

Summary of Incidence and Continuation of
Breast-feeding As Reported in Various Studies, 1946 to 1979

Author of Study	Year	Number of Subjects	Incidence of Breast-feeding in Hospital	Percent of Mothers Continuing to Breast-feed at Various Time Intervals										
				1 wk	2 wks	1 mo	6 wks	2 mo	3 mo	4 mo	5 mo	6 mo		
Meyer	1946	2,513 hospitals	65%											
	1966	1,733 hospitals	28%											
Salber & Feinleib	1965	2,735	22.3%	20.1%	15.9%	11.7%	10.7%	7.8%	5.6%					
Martinez & Nalezienski	1971	9,497	24.7%		13.9%		8.2%		5.5%					
	1975	10,067	35.5%		23.2%		15.5%		14.7%					
	1978	25,926	46.6%		34.9%		26.8%		20.5%					
Sloper, et al.	1972-1973	435	41%				20.5%							
Cunningham	1974	326	50%		42%		33%	25%	19%					
Bacon & Wylie	1975	200	39%	18.3%										

Table 1 (Continued)

Author of Study	Year	Number of Subjects	Incidence of Breastfeeding in Hospital	Percent of Mothers Continuing to Breastfeed at Various Time Intervals						
				1 wk	2 wks	1 mo	3 mo	4 mo	5 mo	6 mo
Cole	1975	332	44%	41.8%	37.4%	35%	28.6%	28%		
Foman	1975	Many Studies Compiled	20%		20%	15%	12%	10%	8%	5%
Jeffs	1976	130	61%							
Jones & Belsey	1977	265	62%						20%	
Griffith	1979	46	100% ^a	95.5%	93.2%	78.3%	66%	65.7%		

^aOnly breastfeeding mothers were studied.

average level of education, (Robertson, 1961; Guthrie & Guthrie, 1966; Salber & Feinleib, 1966; Meyer, 1968; Cole, 1975; Martinez and Nalezienski, 1981), lives in the Western United States (Martinez & Nalezienski, 1981), and attended prepared childbirth classes (Jeffs, 1976; Palmer, Avery & Taylor, 1979). She was herself breast-fed as an infant (Jeffs, 1976; Sloper, McKean & Baum, 1975; Brimblecome & Cullen, 1977; Krishna, 1979; Arafat, Allen and Fox, 1981) and has seen other women breast-feed (Robertson, 1976; Jeffs, 1976). She began her prenatal care early in her pregnancy (Palmer, Avery & Taylor, 1979) and has less feeling of embarrassment about her body than those choosing not to breast-feed (Bacon & Wylie, 1975; Jeffs, 1976; Eastman, Smith, Poole & Neligan, 1976; MacCraig, 1980).

In a study on choice of method of infant feeding, Adams (1959), found that mothers who chose bottle-feeding were more dependent, more rejecting of the child, and more dissatisfied with their sex role. They also reported more psychosexual disturbances. These conclusions were made from interviews and psychometric tests. The evaluating psychologists were not blind to the mother's choice, which may have biased their interpretation. Newton (1962) reported that mothers who chose breastfeeding were more likely to express a high degree of pleasure at the sight of their infants in the delivery room as determined by a subjective score by the delivery room nurses. While Adams (1959) attributed the difference in the women's choice of feeding practices and reactions to their infants to personality traits, Newton (1962) concluded that differences in supportive care at the time of labor and delivery accounted for the differences in reactions. Findings of both studies have limited generalizability.

Jeffs (1976), in a survey of 130 women in England from all socioeconomic groups, reported the following reasons for selection of bottle-feeding: 43% "just as good as breast-feeding", 28% "planned to breast-feed, but failed after 0-4 days", 10% "to go back to work", 8% "medical reasons", and 11% had other reasons. Those who chose breast-feeding mentioned maternal instinct and the feeling that breast milk was best as reasons for selecting breast-feeding.

In a study by Bacon and Wylie (1975), 220 mothers were asked what method of feeding they thought was best for their infants. The authors found that 94% of the breast-feeders were confident that their method was best. Of the bottle-feeders, 13% thought their choice was best, 30% felt that bottle-feeding was inferior, and the remainder thought that bottle-feeding was equal to breast-feeding or were unable to make a decision.

Factors Affecting Success and Failure at Breast-feeding

Numerous factors have been identified that contribute to success or failure at breast-feeding. Analysis of the psychological and physiological reasons for these factors are also numerous and varied.

Since sucking has been shown to be an important factor in triggering the neurohormonal reflexes concerned with milk production and let down, successful lactation may get off to a slow start if sedative medications given to the mother during labor affect the infant's feeding behavior (Kennedy, 1973; Leighton, 1978; Palmer, Avery, & Taylor, 1979). The difficulty in arousing the sleepy infant may precipitate a lack of confidence by the mother in her

ability to nurse and the maternal-infant interaction may be adversely affected. Johnson (1976) found that mothers who received negative feedback from their infants were generally unsuccessful at breast-feeding and experienced feelings of inadequacy and frustration.

Nipple and breast problems have been associated with failure at breast-feeding. In a study of 104 mothers at Park Air Force Base, Call (1955) reported that the most common causes of failure in primiparas were failure of adequate milk production, excessive engorgement, caked breasts, mastitis, and nipples that were difficult for the infant to grasp. The author estimates that of the failures, 75% were induced by psychological factors. He speculated that primiparas may be more sensitive than multiparas to the psychological factors that inhibit milk ejection. These include subjective pain from initial engorgement and professional and cultural variables which discourage nursing and therefore, decrease confidence and increase anxiety.

The most frequently given reason for discontinuation of breast-feeding is the lack of milk or the fear of not having enough milk (Salber & Feinleib, 1966; Robertson, 1961; Bloomfield, 1962; deCastro, 1968; Raphael, 1970; Ladas, 1970). Helsing (1976) suggests that the mother's answer of insufficient milk is commonly mentioned as the reason for failure as it is a socially acceptable reason. As reviewed earlier, a mother who is anxious about her milk supply may be less likely to produce and release milk (Newton & Newton, 1950).

In a study of 106 primigravidas, Hytten, Yorston, and Thomson (1958) found that maternal fatigue, breast and nipple complications,

excessive infant crying, and inadequate lactation were the most commonly reported reasons for discontinuation of breast-feeding. Social and environmental pressures such as demands from other children were noted as secondary causes and reinforcers of the difficulties.

Support as a Factor in Choice of Feeding Method and Continuation of Breast-feeding

The influence of support on the decision and continuation in breast-feeding has been studied in detail. Sloper, McKean and Baum (1972) asked mothers in England to name the major source of advice that influenced their choice of feeding method. It was found that 24% named the nurse and midwife as the most influential while 23% mentioned their own convictions as being the most important factor. The remaining 53% referred to support of "others" (18%), relatives (12%), general practitioner (8%), welfare clinic (7%), husband (4%), hospital doctor (3%), and hospital nurse (2%). Mothers who were more successful at breast-feeding had physicians with positive attitudes who offered information, nurses who supported and encouraged, significant women in their own network of association who had breast-fed, husbands with positive attitudes, and personal, strong internal convictions of the superiority of breast-feeding.

The father's attitude toward breast-feeding has also been found by some investigators to influence both the choice of breast-feeding and subsequent success with breast-feeding. Cole (1975) found that 57% of the women choosing breast-feeding named their

husband as the most encouraging support for breast-feeding. Similarly, Jeffs (1976) found that 62% of women whose husbands preferred breast-feeding breast-fed, as compared to 1% who chose to breast-feed if their husbands preferred bottle-feeding. Overall, only 10% of the women chose a feeding method directly counter to their husband's choice. Brack (1975), in a survey of 87 New Jersey mothers, obtained similar results in maternal compliance with the father's choice regarding breast-feeding. Of the women who were successful breast-feeders, 75% of their husbands were found to be supportive, 20.8% neutral, and only 2.1% against breast-feeding. Of the mothers who chose bottle-feeding, 15.4% of their husbands reported favoring the bottle-feeding, 74.3% were neutral, and only 5.1% were against bottle-feeding. While Brack (1975) found support predominant in the breast-feeding population, the large majority of husbands whose wives bottle-fed were not committed to either feeding choice. Griffith (1979) found similar results among breast-feeding mothers in that 87.5% of the sample who breast-fed had the father's support. The samples studied by Jeffs, Brack, Cole and Griffith were quite different. Jeffs studied women drawn from all socioeconomic groups in England, some of whom had taken prepared childbirth classes. Brack studied well educated women of high socioeconomic status who were members of La Leche childbirth or other groups in New Jersey. Cole studied middle class women who had attended childbirth classes in Boston. Griffith studied women in Portland, Oregon who had taken prepared childbirth classes and were generally high school educated. While the samples studied by the four authors were different, mothers

of all groups generally did not choose a feeding method in direct contradiction to their partners' preference of feeding method.

Incorporation of the partner in prenatal classes and physician's counseling with the mother regarding breast-feeding were found to be of importance in fostering the father's supportive attitude (Waletzky, 1979). Some fathers feared changes in the appearance of their wives' breasts which would negatively affect them sexually. When their fears were discussed, their support for breast-feeding increased (Magmus, 1978; Leighton, 1978). Coffin (1978), Kemberling (1979), and Ewy and Ewy (1975) found that the father's negative attitude regarding breast-feeding, was the strongest factor associated with failure at breast-feeding which emphasizes the importance of fostering the father's positive attitude about lactation.

The husband's presence at birth has been found to influence subsequent success at breast-feeding. In a study of 140 women in the Boston area who attended prenatal childbirth classes, Cole (1975) found that 95.7% of the women reported that their husbands were present in the labor rooms and 81.4% in the delivery room. The majority of the women whose husbands were present in the delivery room were still breast-feeding at three months while the majority of women whose husbands were not present in the delivery room had discontinued breast-feeding by three months. The husband's supportive presence was believed to reflect a more general positive attitude toward childbearing by the couple.

The significance of the father's attitude toward breast-feeding was further documented by Masters and Johnson (1966). They found

that 64% of the mothers admitted discontinuing nursing because of the father's objections. For the father, anxieties about how the new infant would affect the marital relationship and incipient feelings of displacement and jealousy for the mother's attentions appeared to be important. Waletzky (1979) reported similar results. The fears of the fathers appeared to be ill-founded in that the women who breast-fed reported an earlier return of sexual interest than women who did not. The breast-feeding mothers were also found to have significantly higher levels of sexual tensions than they had during their prepregnant state. Thus, it appeared that breast-feeding enhanced the mother's sexuality and need for sexual relations rather than decreasing them.

Many studies address the impact that nurses may have on breast-feeding. Knafl (1976) interviewed nurses and breast-feeding mothers on issues of breast-feeding, demand feeding versus schedule feeding, and rooming-in. He found numerous sources of conflict between mothers and nurses. There seemed to be a power struggle between "the system" of nurses and the new mothers. Nurses viewed breast-feeding as disruptive to hospital routines. Mothers perceived their situations as less than ideal as they became frustrated with trying to convince an unsympathetic or even hostile hospital staff about their desire to breast-feed on demand (which required the doctor's permission at that particular hospital).

Further investigation of the effect of nurses on breast-feeding was done by Crowder (1981) who studied maternity nurses' knowledge of factors promoting successful breast-feeding. She found that

knowledge was generally limited. While the nurses' educational level increased their knowledge level, neither length of maternity experience nor experience with breast-feeding mothers increased the level of knowledge. The areas in which knowledge was found to be greatest were principles of infant feeding and maternal physiology. On the other hand, the areas of weakest knowledge were maternal emotions, drugs, neonatal physiology and breast-feeding success factors.

Whereas some studies have shown the nurse to be nonsupportive or limited in knowledge about breast-feeding, other studies have noted the positive impact that nurses can have on breast-feeding. Cole (1975) reported that whereas only a third of mothers reported that hospital nurses provided support and information, 79% of the third that reported support were still breastfeeding at three months. Similarly, Hall (1978) studied the influence of a program of nursing support for breast-feeding. Using an experimental design, the control group received routine care and the experimental group received teaching and support in the hospital as well as telephone call advice or a home visit after hospital discharge. Whereas 50% of the control group were still breast-feeding at six weeks, 80% of the experimental group were still breast-feeding. Interestingly, the experimental group had the same number of nipple problems (i.e., sore nipples) as the control group, but they did not view these as "problems" and continued to breast-feed. The greater incidence of breast-feeding and the more positive attitude of the experimental group were attributed to the nurses' support. Similar

findings were reported by Sloper, McKean and Baum (1975) in that a program of supportive nursing care resulted in an increase in breast-feeding from 14% to 37% during the program. Both studies address the impact that supportive intervention by nurses can have on breast-feeding.

Physicians' attitudes and support for breast-feeding have been studied for their impact on choice and continuation of breast-feeding. Coffin (1978) found that obstetricians tended to be either negative or neutral about breast-feeding, an attitude which he attributed to the lack of instruction in medical school to promote breast-feeding. A significant amount of time had been spent, however, on documenting the biochemical aspects of formula composition. Brack (1975) noted that several women mentioned a joking putdown from their physicians concerning breast-feeding, while others reported that their physicians suggested that they wean the infant at 3, 4, or 5 months.

In a survey of 170 physicians in Nebraska, Milton and Fox (1978) found that 74% reported that they encouraged breast-feeding, yet recommended weaning when the infant was 6 or 7 months old. While outwardly promoting breast-feeding, they seemed to be undermining its success with practices such as recommending cereal before 2 months (81.7% of the physicians), a factor which has been demonstrated to reduce milk supply.

Jones and Belsey (1977) found that although prenatal professional support is frequently limited in time, it is usually important in the outcome of breast-feeding. Whereas only 8% of mothers reported specific information and support from medical professionals, 91% of

that reporting group attempted to breast-feed. In contrast, 78% of those choosing to bottle-feed reported no encouragement to breast-feed from the medical profession.

Kimball (1951) found that the obstetrician's support for breast-feeding positively influenced the mother's breast-feeding experience. Prior to the initiation of a "supportive medical environment" which provided encouragement to breast-feed, 50% of the mothers choosing breast-feeding had stopped nursing within one month and by 8 months, only 4% continued. After supportive medical intervention, 50% of the mothers were still breast-feeding at 2-1/2 months and 10% at 8 months.

One hundred sixty primiparas were surveyed by Lawson (1976) regarding maternal perception of support for breast-feeding. It was found that only 25% perceived support from their obstetricians while 76.5% perceived support from their pediatricians. Postpartum nurses were perceived as supportive by 47.5% of the mothers, while the extended family and husband were perceived as supportive by 34.5% and 13.8% of the mothers respectively.

Lay groups have been found to influence breast-feeding outcome. Ladas (1970) in her questionnaire survey of 756 women in 74 chapters of La Leche League found that the information concerning breast-feeding, individual support, and group support related highly to the positive outcome of the breast-feeding experience. Doctors and hospital or both ranked second on the list of reasons why women stopped breast-feeding. This finding certainly confirms the need for greater support from the medical professions for successful breast-feeding.

Influence of Hospital Practices on Breast-feeding Success

Hospital practices have been implicated in affecting breast-feeding practices. Rigid feeding schedules (Niefert, 1978; Magmus, 1978; Brack, 1975), separation of the mother and infant after delivery (Sloper, McKean & Baum, 1972, Magmus, 1978; Niefert, 1978), feeding by the hospital staff at night (Niefert, 1978; Sloper, et al., 1975), pre and post feeding weighings (Magmus, 1978) supplementation with bottle-feeding (Newton & Newton, 1962; Applebaum, 1975) and delivery of formula packs on discharge (Niefert, 1978; Magmus, 1978) are a few of the factors found to be detrimental to breast-feeding success.

One environmental factor according to Call (1955) which discouraged breast-feeding was a rigid 4-hour feeding schedule which provided little opportunity for sucking stimulation. Similarly, Martin (1978) found that forceps assisted deliveries and cesarean births were frequently associated with a delay in starting breast-feeding. He concluded that the delay reduced the likelihood of a successful breast-feeding experience at two weeks.

The positive effect of early postpartum mother-infant contact on the maternal-infant relationship and breast-feeding success has been addressed by many authors. In a study of the effects of hospital practices on length of breast-feeding, deChateau, Holmberg, Jakobsson, and Winbert (1979) found that mothers who experienced early skin-to-skin contact and early suckling had a longer duration of breast-feeding. It is difficult, however, to interpret the exact effects of the early suckling and contact since there was no

control group, the number of subjects was small ($N = 21$), and the intervention itself may have increased medical personnel contact and support to the experience. Similarly, Sosa, Kennell, Klaus, and Urrutia (1976) found that mothers with early skin-to-skin contact and suckling breast-fed longer than mothers separated from their infants for 12 hours after birth. Although this study did have a control group, the extra attention and support given to the experimental group cannot be eliminated as a possible cause for the increase in breast-feeding rather than merely the contact. Johnson (1976) also demonstrated a positive relationship between early breast-feeding and duration of breast-feeding. This study can be criticized for its small numbers (6 each in control and experimental groups), lack of control of the effect of additional medical and nursing support to the intervention group, and the amount of discrepancy between the timing of the control and experimental mother-infant contact (16 or more hours postpartum for control and immediate contact for experimental). While numerous studies have demonstrated an effect of early contact on continued breast-feeding, the methods of the studies can be criticized. Furthermore, rigorous studies are needed to measure the relationship between contact and breast-feeding continuation.

The relationship between rooming-in and breastfeeding success has also been investigated. Cole (1975) studied 338 middle-class women who had all attended childbirth classes in the Boston area. She concluded that women with rooming-in arrangements tended to breast-feed significantly longer than women who used conventional

nursery facilities. She hypothesized that the more frequent nursing sessions in the rooming-in situation insured a slightly earlier and more reliable milk supply. This interpretation is supported by the findings of Applebaum (1970). Cole (1975) also hypothesized that rooming-in may increase confidence and lessen anxiety in mothers by virtue of their gaining more experience in caretaking. Cole provided a rival hypothesis that mothers who were more determined and enthusiastic about breastfeeding tended to choose rooming-in. The effect of childbirth classes and motivation of the participant's motivation must be understood in interpreting these data. Using rooming-in as an intervention to promote breast-feeding, McBryde (1951) found that the institution of compulsory rooming-in increased the breast-feeding rate from 35% to 58.5%.

Summary

The review of the literature suggests that the choice to breast-feed and subsequent success is influenced by a multitude of factors including the mother's socioeconomic status, her childbirth and early lactation experiences, and the attitudes, routines, and supports in her environment. Of all these variables found to influence breast-feeding, this study will focus on the support perceived from significant people in the environment. The mother's perception of support may be crucial to the understanding of why she chose to breast-feed or not, and secondly, of why she eventually succeeded or failed at the endeavor.

Conceptual Framework

The assumption of the parental role has been described as a maturational transition state (Aguilera & Messick, 1974; Erickson, 1963; Hoff, 1978). According to crisis theory, transitional states are characterized by disequilibrium which occurs as a result of anxiety and uncertainty about the new role expectations. Both the initial decision to breast-feed and the later decision to continue breast-feeding can be viewed as potentially stressful events in the transition to motherhood. For some women, the stress involved in the decision to breast-feed and/or continue breast-feeding may in itself constitute a crisis situation, and for other women may contribute to the disequilibrium that is experienced in the transition to motherhood.

Aguilera & Messick (1974), have described three balancing factors which may determine continuance of disequilibrium or return to a state of equilibrium. These factors are perception of the event, coping mechanisms, and available situational supports. According to crisis theory, the strength or weakness of these factors can influence the resolution of the crisis. As the literature indicates, the absence or presence of a supportive environment appears to influence both the choice to breast-feed and the decision to continue breast-feeding. This balancing factor was selected for examination in this study.

The environment supplies the mother with appraisals of both her intrinsic and extinsic values. She relies on this appraisal

for feelings of security and ego integrity. In the maturational crisis involving the transition into the role of motherhood, feelings of loss or inadequacy are inherent. Supportive individuals who intervene at this most sensitive time with information to aid in problem solving or with ego supporting reassurance, decrease the state of disequilibrium.

Thus, the decision to breast-feed or the subsequent failure with breast-feeding may in itself be a crisis or contribute to the crisis encountered in adapting to motherhood. Environmental supports in the crisis theory framework are a recognized balancing factor which may induce a state of equilibrium and thereby resolution of the crisis. Therefore, based on crisis theory, this study will examine the relationship between perceived support for breast-feeding, and choice and continuation of breast-feeding.

Statement of the Problem

Although the emphasis on breast-feeding by many professionals and society in general may prompt many women to initially choose breast-feeding, the failure rate remains high. As increasing numbers of women in the United States elect to breast-feed, it may be anticipated that an increasing proportion of women will experience frustration as they are unsuccessful in continuing to breast-feed. Because this failure may arouse feelings of guilt and inadequacy as a mother, and thereby may adversely affect the mother's relationship with her child, further study of the factors which affect success and failure at breast-feeding seems

appropriate. As stated in the conceptual framework, the effect of support on breast-feeding will be the factor examined in this study.

One of the major limitations of previous research regarding support and breast-feeding (Cole, 1975; Lawson, 1976) has been that the populations studied were all women who had attended prenatal childbirth classes. Mothers who have not attended childbirth classes and those who chose to bottle-feed have not been studied as extensively in terms of their perceptions of support. Therefore, this study will attempt to address this gap in the literature by asking the following research questions:

1. Does perceived support for breast-feeding result in the choice of breast-feeding or bottle-feeding?
2. Who is perceived as being especially supportive of breast-feeding when deciding the method of infant feeding?
3. Does perceived support for breast-feeding result in success at breast-feeding?
4. Who is perceived as being especially supportive in the decision to continue to breast-feed?

CHAPTER II

Methods

The purpose of this study was to examine the influence of the mother's perception of support for breast-feeding on her selection of that method of infant feeding and on her subsequent success with breast-feeding.

Setting

A sample of convenience was drawn from women meeting the criteria of the study who gave birth at the Oregon Health Sciences University (OHSU) Hospital in Portland, Oregon from May 29 to July 7, 1981. The hospital is a state-assisted institution and a high-risk referral center and teaching hospital serving both private and clinic patients. There are approximately 200 births per month. It is estimated that 5-10% of the population does not speak English as a first language. The cesarean birth rate is approximately 16%.

Subjects

To be eligible for this study, subjects must have been at least 18 years old, had at least a sixth grade education and speak English as their first language. These criteria served to limit the sample to those most likely to be able to read and understand the questionnaire. Their infants must have been full-term (38-42 weeks) as determined by the newborn gestational assessment at the time of the initial physical examination. Infants included in the study

were free from any abnormalities which could influence their ability to suck. This was determined by the notation on the birth physical examination of a "healthy" infant. Use of the criteria of full-term and healthy infant status served to control for any possible influence of prematurity/postmaturity or sickness in the infants on breast-feeding choice or success. Only single births were included to control for the effect that multiple births might have on choice or success.

Design and Procedure

The design of the study was ex post facto. The investigator contacted each mother who met the criteria for the study between 24 and 72 hours postpartum and asked her to participate in the study. A structured interview was used to assure as much uniformity as possible in the procedure used with each mother. The investigator introduced herself to the mother as a graduate nurse doing research with new mothers. The mother was told that the "purpose of the study is to find out how mothers feel about the factors that may influence how she feeds her baby". If the mother verbally agreed to participate, a statement of informed consent (Appendix A) was explained and completed. A questionnaire, the Hospital Postpartum Questionnaire (HPQ) was then given to her to complete with verbal and written instructions (Appendix B). Each mother was asked to "answer each question as well as you are able to". After the mother completed the questionnaire, the investigator picked up the forms and thanked the mother for her participation. Any questions asked

by the mother in the hospital other than those specifically related to understanding the questionnaire were referred to the nursing staff.

Arrangements were made to call all the mothers three months after delivery who indicated they were "breast-feeding" or "breast-feeding and supplementing with a bottle" to HPQ question #7. Each mother was asked to address a postcard. One week before the planned telephone call, the investigator mailed the postcard indicating the time and date that the investigator planned to make the telephone call.

Three months postpartum, the investigator contacted each mother who had chosen to breast-feed and had a telephone and conducted an interview (TI). That schedule may be found in Appendix D. The two schedules (HPQ and TI) were pretested on a pilot sample of 10 mothers to test the adequacy of instructions and comprehension of terminology. None of the mothers had any recommendations for change, so the data from the pilot sample were incorporated into the findings of the study.

Instruments

Three instruments were used to obtain data for this study. They were the mother's and infant's Chart Review (CR), a self-administered Hospital Postpartum Questionnaire (HPQ) and a Telephone Interview (TI). These instruments were developed by the investigator to gather information concerning the mother's choice of feeding method, perception of support for breast-feeding, and success at

breast-feeding. The questions were concerned with those variables reported in the literature as associated with choice of feeding method and success at breastfeeding. The study required about 20 minutes of the mother's time in the hospital. The telephone interview required approximately 10 minutes to complete.

Chart Review

The Chart Review (CR) is seen in Appendix C. Information about the mother's age, the child's birth, and telephone number were obtained from a review of the mother's chart. Cesarean births were considered "planned" if the decision for that method of delivery was made prior to admission to the hospital, and "unplanned" if the decision was made after admission to the hospital. The information about the infant's health status and gestational age was obtained from the infant's hospital chart. The infant was noted as free from anomalies if the examining physician at the time of birth noted that the child was "healthy". "Full term" was defined as a gestational period of 38-42 weeks.

Hospital Postpartum Questionnaire

The Hospital Postpartum Questionnaire (HPQ) consisted of 25 items. Items #11-24 are similar to the ones used by Cole (1975) in her survey of breast-feeding in the Boston area and were included so that data from the two studies might be compared. This instrument contained questions about support figures: mother, mother-in-law, nurse, obstetrician/midwife, support groups, baby's doctor, husband, relatives, friends and "other". Questions were also included about

other variables which according to the literature review are associated with choice and success. They were parity, mother's age, economic status, how her mother fed her as an infant, the husband's preference for feeding method, observation of other women's breast-feeding, attendance at childbirth classes, breast-feeding problems (i.e., cracked nipples, infection), and time of first breast-feeding experience. The choice of feeding method was asked in HPQ #7, "How are you feeding your child now?" A mother was considered breast-feeding if she answered "breast-feeding only" or "breast-feeding and supplementing with a bottle". Those answering "bottle-feeding only" were considered to be bottle-feeding. This question served as the criterion for dividing the mothers into the two feeding categories.

Telephone Interview

The Telephone Questionnaire (TI) reproduced in Appendix D included questions about each support figure, about personal and social background variables and about breast-feeding success. The mother was considered "successful" at breast-feeding if she answered "only breast-feeding" or "breast-feeding and bottle-feeding, but mostly breast-feeding." These two answers indicated that the infant was receiving the majority of his nutrition from breast milk. A mother was considered "unsuccessful" at breast-feeding if she answered "breast-feeding and bottle-feeding, but mostly bottle-feeding" or "bottle-feeding". These two answers indicated that the infant was receiving most of his nutrition from bottle formula.

The four instruments were read by a panel of 10 faculty members from the Family Nursing Department of the Oregon Health

Sciences University. This panel evaluated the instrument's face validity and structure. Suggestions made by the panel were incorporated in the instruments. Content validity for these instruments are supported by the review of the literature. Reliability of the "support scale" appearing in the HPQ and TI was assessed by calculating Cronbach's alpha.

CHAPTER III

Results

The findings of the study are reported in this chapter. First, the sample is described. Second, the findings relevant to the four research questions of the study are presented. A discussion of the variables found to be related to choice and continuation of breast-feeding conclude this chapter. The accepted level of statistical significance for all findings is $p < .05$.

Description of the Sample

One hundred and three postpartum women who delivered at the Oregon Health Sciences University Hospital between May 29 and July 7, 1981 met the criteria for inclusion in the study. Two declined to participate on the grounds that they were "too tired" to fill out the questionnaire. Of the 101 mothers interviewed in the hospital, 71 (70.3%) chose to breast-feed and 30 (29.7%) chose to bottle-feed. Of the 71 mothers who were breast-feeding, 29 (40.3%) were contacted by telephone at the three months postpartum. Of the breast-feeding mothers not contacted, 23 (32.4%) were not called because they did not have a telephone, and the remaining 19 (26.8%) had a disconnected telephone or had moved. The groups that were contacted and not contacted were compared to determine if the findings of the contact group could be generalized to the entire sample of breast-feeding mothers. As can be seen in Table 2, there were no significant differences between mothers who were contacted

and those not contacted except in years of education. Contacted mothers as a group were more highly educated. Obviously, other differences between the groups may exist in variables not measured.

Ages of the subjects in the sample ranged from 18 to 37 years with a mean age of 23.9 years. Parity was approximately equally divided in the sample: 47 mothers were primiparous and 54 multiparous. Years of education ranged from 8 to 18, with a mean of 11.8 years. Income ranged from less than \$5,000 to greater than \$25,000 a year. The majority of mothers had an income below \$10,000 annually.

Seventy-five or 74.3% of the mothers lived with the fathers of their babies while 26 or 25.7% did not. Thirty-eight (37.6%) of the mothers had attended childbirth classes while 63 (62.4%) of the mothers had not.

Seventy-six of the infants were born by vaginal delivery and 25 by cesarean birth. Of the cesarean births, 11 were planned to be delivered by cesarean delivery before hospitalization and 14 were unplanned. The gestational ages of the infants ranged from 38 to 42 weeks, with a mean of 39.7 weeks. There were 56 male and 45 female infants. A comparison of the demographic characteristics of the mothers who chose to breast-feed and to bottle-feed may be seen in Table 3. The two groups were significantly different in amount of education, method by which they were fed as infants, attendance at childbirth classes, and father's preference for feeding method. They were not significantly different in age, parity, type of delivery, income, sex of the infant, and previous observation of other women's breast-feeding.

TABLE 2

Comparison of Mothers Who Were Contacted and
Mothers Who Were Not Contacted On Selected Characteristics

Characteristic	Mothers Contacted (N = 29)	Mothers Not Contacted (N = 42)	Significance of Difference by t-Test t value ^a (p value)
<u>Age (Years)</u>			
Mean	25.10 years	23.29	1.59 (N.S.)*
S.D.	5.06	4.50	
<u>Education (Years)</u>			
Mean	13.07	11.48	3.19 (.003)
S.D.	2.40	1.40	
<u>Parity</u>			
Primiparous	41%	48%	.51 (N.S.)
Multiparous	59%	52%	
<u>Income^b</u>			
< \$10,000 annually	64%	68%	1.14 (N.S.)
≥ \$10,000 annually	36%	32%	
<u>Sex of Infant</u>			
Males	59%	50%	.71 (N.S.)
Females	41%	50%	
<u>Type of Birth</u>			
Vaginal	76%	71%	.41 (N.S.)
Cesarean	24%	29%	
<u>Mother Breast-Fed As a Baby^c</u>			
Yes	54%	41%	1.04 (N.S.)
No	46%	59%	
<u>Attended Childbirth Classes</u>			
Yes	55%	36%	1.63 (N.S.)
No	45%	64%	

Table 2 (continued)

Characteristic	Mothers Contacted (N = 29)	Mothers Not Contacted (N = 42)	Significance of Difference by t-Test t value (p value)
<u>Father's Preference^d</u>			
Breast-feeding	100%	97%	.86 (N.S.)
Bottle-feeding	0%	3%	
<u>Observed Others Breastfeeding</u>			
Yes	79%	81%	.17 (N.S.)
No	21%	19%	
<u>Average Number of Supports</u>			
Mean	8.86	8.52	.88 (N.S.)
S.D.	1.60	1.60	
<u>Perceived Support^e</u>			
Mean	1.46	1.46	.01 (N.S.)
S.D.	.53	.54	

*N.S. = Not Significant

^a Significance of difference between two groups of mothers is determined by the t-test comparing difference of means for age, education, average number of support and perceived support and by t-test comparing difference in percentages on the responses listed first in each characteristic for all others. Percentages of subjects giving each of the responses are listed for the reader's convenience.

^b Missing Information: 1 breast-feeding and a bottle-feeding mother did not know income and are, therefore, not included in the t-test.

^c Missing Information: 3 breast-feeding and 5 bottle-feeding mothers did not know if they were breast-fed as a baby and are, therefore, not included in the t-test.

^d Missing Information: 3 breast-feeding and 7 bottle-feeding mothers did not know the father's preference and, therefore, are not included in the t-test.

^e Mean scores derived from the following subject responses:

- 1 = very supportive
- 2 = somewhat supportive
- 3 = neutral
- 4 = somewhat unsupportive
- 5 = very unsupportive

TABLE 3

Comparison of Mothers Who Chose to Breast-Feed and
Mothers Who Chose to Bottle-Feed; On Selected Characteristics

Characteristic	Choice of Feeding Method		Significance of Difference by t-Test t value ^a (p value)
	Breast-Feeding (N = 71)	Bottle-Feeding (N = 30)	
<u>Age (Years)</u>			
Mean	24.03 years	23.73	.27 (N.S.)*
Standard Deviation	4.79	5.39	
<u>Education (Years)</u>			
Mean	12.13	10.97	2.76 (.004)
Standard Deviation	2.03	1.67	
<u>Parity</u>			
Primiparous	45%	50%	.45 (N.S.)
Multiparous	55%	50%	
<u>Income^b</u>			
< \$10,000 annually	66%	66%	1.06 (N.S.)
≥ \$10,000 annually	34%	34%	
<u>Sex of Infant</u>			
Males	54%	60%	.59 (N.S.)
Females	46%	40%	
<u>Type of Birth</u>			
Vaginal	73%	80%	.71 (N.S.)
Cesarean	27%	20%	
<u>Lives With Baby's Father</u>			
Yes	79%	63%	1.64 (N.S.)
No	21%	37%	
<u>Mother Breast-Fed As a Baby^c</u>			
Yes	46%	25%	1.80 (.038)
No	66%	77%	

Table 3 (continued)

Characteristic	Choice of Feeding Method		Significance of Difference t value (p value)
	Breast-Feeding (N = 71)	Bottle-Feeding (N = 30)	
<u>Attended Childbirth Classes</u>			
Yes	44%	23%	1.94 (.028)
No	66%	77%	
<u>Father's Preference^d</u>			
Breast-feeding	98%	28%	6.42 (.000)
Bottle-feeding	2%	72%	
<u>Observed Others Breastfeeding</u>			
Yes	80%	67%	1.47 (N.S.)
No	20%	33%	

*N.S. = Not Significant

^a Significance of difference between two groups of mothers is determined by the t-test comparing difference of means for age, education, average number of support and perceived support and by t-test comparing difference in percentages on the responses listed first in each characteristic for all others. Percentages of subjects giving each of the responses are listed for the reader's convenience.

^b Missing Information: 3 breast-feeding and 1 bottle-feeding mother did not know income and are, therefore, not included in the t-test.

^c Missing Information: 8 breast-feeding and 1 bottle-feeding mothers did not know if they were breast-fed as a baby and are, therefore, not included in the t-test.

^d Missing Information: 10 breast-feeding and 12 bottle-feeding mothers did not know the father's preference and, therefore, are not included in the t-test.

Description of Sample by Choice of Feeding Method

The typical mother who chose to breast-feed was a 24-year-old multiparous woman who had completed high school and had an annual family income of over \$10,000. She had a vaginal delivery and lived with the baby's father who preferred that she breast-feed the infant. She did not attend childbirth classes, had observed other women breastfeeding, and was breastfed herself as an infant.

The typical mother who chose to bottle-feed may have had other children, was 23.7 years old, had completed the tenth grade of high school, and had an average family income of under \$10,000 annually. She had a vaginal delivery and lived with the father of the baby who preferred that she bottle-feed the infant. She did not attend childbirth classes, had observed other women breastfeeding, and was bottle-fed as an infant.

Description of Sample by Success and Failure at Breastfeeding

In Table 4 the demographic characteristics of mothers who succeeded at breast-feeding are compared to those of mothers who did not succeed. Of the 29 mothers contacted, at 3 months postpartum, 18 (62.1%) continued to breast-feed and 11 (37.9%) switched to bottle-feeding. The two groups were significantly different in the type of delivery, infant's age at first feeding, and the use of supplementary feedings in the hospital.

There was a significant difference ($p < .009$) between the successful and unsuccessful breastfeeding women in method of infant delivery. All of the unsuccessful breastfeeders had vaginal deliveries,

TABLE 4

Comparison of Mothers Who Were Successful and Mothers Who Were
Not Successful at Breast-Feeding; On Selected Characteristics

Characteristic	Success at Breast-Feeding		Significance of Difference t value ^a (p value)
	Successful (N = 18)	Not Successful (N = 11)	
<u>Age (Years)</u>			
Mean	26.17	23.36	1.48 (N.S.)
Standard Deviation	5.49	3.88	
<u>Education (Years)</u>			
Mean	13.61	12.18	1.58 (N.S.)
Standard Deviation	2.45	2.18	
<u>Parity</u>			
Primiparous	33%	55%	1.11 (N.S.)
Multiparous	66%	45%	
<u>Income^b</u>			
< \$10,000 annually	65%	70%	.36 (N.S.)
> \$10,000 annually	35%	30%	
<u>Sex of Infant</u>			
Males	50%	73%	1.19 (N.S.)
Females	50%	27%	
<u>Type of Birth</u>			
Vaginal	61%	100%	2.55 (.009)
Cesarean	39%	0%	
<u>Lives With Baby's Father</u>			
Yes	83%	73%	.67 (N.S.)
No	17%	27%	
<u>Mother Breast-Fed As a Baby^c</u>			
Yes	50%	60%	.48 (N.S.)
No	50%	40%	
<u>Attended Childbirth Classes</u>			
Yes	67%	36%	1.61 (N.S.)
No	23%	64%	

Table 4 (continued)

Characteristic	Success at Breast-Feeding		Significance of Difference t value ^a (p value)
	Successful (N = 18)	Not Successful (N = 11)	
<u>Baby's Father's Feeding Preference^d</u>			
Breast-feeding	100%	91%	1.04 (N.S.)
Bottle-feeding	0%	9%	
<u>Observed Others Breastfeeding</u>			
Yes	83%	73%	.67 (N.S.)
No	17%	27%	
<u>Infant's Age at First Feeding</u>			
Mean	2.41 Hours	3.18 hours	1.70 (.05)
S.D.	1.12	1.25	
<u>Use of Supplementary Feedings in the Hospital</u>			
Yes	17%	64%	2.84 (.004)
No	83%	46%	

*N.S. = Not Significant

^a Significance of difference between two groups of mothers is determined by the t-test comparing difference of means for age, education, and infant's age at first feeding and by t-test comparing percentage giving the first response for each characteristic are listed for the reader's convenience.

^b One breast-feeding and one bottle-feeding mother did not know income and are, therefore, not included in this table.

^c Two breast-feeding and one bottle-feeding mother did not know if they were breast-fed as a baby and are, therefore, not included in this table.

^d Two breast-feeding mothers did not know the father's preference and, therefore, are not included in this table.

whereas 7 of the 18 (38.9%) successful breastfeeders had caeserean births. There was no difference in age, parity, income, sex of infant, education, living with the father of the baby, attendance at childbirth classes, method of feeding chosen by the infant's father, and how the mother was fed as an infant.

The typical mother who was successful at breast-feeding was a 26.2 year old multiparous woman who had 1.5 years of college and had an average income of \$10,000 annually. She was as likely to have a male as a female infant by vaginal birth whom she first fed at about 1-2 hours after birth. She lived with the infant's father who preferred that she breast-feed the infant. She attended childbirth classes and did not use supplementary feedings in the hospital. She was equally likely to have been bottle-fed as breast-fed as an infant.

The typical mother who was not successful at breast-feeding was a 23.4 year-old primiparous women who had just completed high school and had an average income of over \$10,000 annually. She was more likely to have had a male infant by vaginal birth whom she first fed approximately 2-4 hours after birth. She lived with the father of the infant who preferred that she breast-feed the infant. She did not attend childbirth classes, used supplementary feedings in the hospital, and was breast-fed as an infant.

There was a highly significant difference in the use of supplements in the hospital between the successful and the unsuccessful mothers. Unsuccessful mothers used significantly more

formula supplementation in the hospital than the successful mothers ($p < .008$) as self-reported by mothers. There was also a significant difference in the infant's age at first feeding. Those who were successful generally breast-fed their infants between 1-2 hours after birth whereas those who were not successful fed infants from 2-4 hours of age ($p < .05$). Attendance at childbirth classes did not significantly affect success at breast-feeding.

Findings Related to the First Research Question

Does perceived support for breast-feeding result in the choice to breast-feed? This question was answered affirmatively by the findings of this study. As can be seen in Table 5, most breast-feeding and bottle-feeding mothers perceived support for breast-feeding from people in their environment as most answered in the "very supportive" to "somewhat supportive" area. Those who chose breast-feeding perceived significantly more support for breast-feeding from the following figures: mother, mother-in-law, baby's father, close friend, close relative, La Leche League or Nursing Mother's Council, Certified Nurse Midwife or doctor during pregnancy and delivery, hospital nurses, and the baby's doctor. Childbirth instructors and "others" were not found to be significant support figure. Internal consistency reliability for the HPQ support scale was computed using Cronbach's Alpha and equaled .941. This score indicates highly intercorrelated items which measure the same construct, in this case perceived support.

Table 6 provides an overall view of support. There were significant differences between those choosing breast-feeding

TABLE 5

Comparison of Mothers Choosing To Breast-Feed Their Infants And
Mothers Choosing To Bottle-Feed; With Regard To Perceived Support

Support Figure	Perceived Support Scores				Significance of Difference by t-test t value (p value)	
	Breast-feeding Mothers Mean ^a (S.D.)		Bottle-feeding Mothers Mean (S.D.)			
Mother	1.62	(0.94)	2.78	(1.22)	4.92	(<.001)
Mother-in-law	1.80	(0.98)	2.79	(0.86)	3.92	(<.001)
Baby's Father	1.29	(0.74)	2.8	(1.00)	7.12	(<.001)
Close Friend	1.32	(0.66)	2.46	(1.04)	5.40	(<.001)
Close Relative	1.45	(0.76)	2.35	(1.06)	3.95	(<.001)
La Leche League or Nursing Mother's Council	1.27	(0.60)	2.33	(1.23)	2.84	(<.013)
Childbirth Instructor	1.32	(0.71)	1.91	(1.3)	1.45	(N.S.)*
CNM/MD During Pregnancy	1.48	(0.79)	2.30	(1.26)	2.76	(.006)
CNM/MD During Delivery	1.57	(0.85)	2.20	(1.28)	2.06	(<.025)
Hospital Nurses	1.35	(0.63)	2.10	(1.13)	2.84	(<.005)
Baby's Doctor	1.45	(0.74)	2.00	(1.16)	1.96	(<.031)
Others	1.75	(1.49)	3.00	(2.00)	0.99	(N.S.)*

^a Mean scores derived from following subject responses:

- 1 = Very Supportive
- 2 = Somewhat Supportive
- 3 = Neutral
- 4 = Somewhat Unsupportive
- 5 = Very Unsupportive

*N.S. = Not Significant

TABLE 6

Comparison of Mothers Choosing to Breast-Feed
Their Infants and Mothers Choosing to Bottle-Feed
By Overall Perception of Support for Breast-Feeding.

Perceived Support for Breast-feeding	Perceived Support Scores		Significance of Difference ^a value (p value)
	Breast-feeding Mothers (N = 71)	Bottle-feeding Mothers (N-30)	
<u>Someone Reported as Especially Supportive</u>			
Yes	61	18	$\chi^2 = 5.14 (< .05)$
No	10	12	
<u>Someone Reported as Especially Not Supportive</u>			
Yes	11	13	$\chi^2 = 9.14 (< .01)$
No	60	17	
<u>Number of Support Persons Reported</u>			
Mean	8.66	7.37	$t = 2.69 (< .01)$
Standard Deviation	1.59	2.43	
<u>Average Support Score^b</u>			
Mean	1.46	2.42	$t = 5.72 (< .001)$
Standard Deviation	.53	.85	

^a Significance of difference between two groups of mothers is determined by Chi Square for reported especially supportive and especially not supportive; by t-test for all others.

^b Based on reported perceived support of:

- 1 = especially supportive
- 2 = somewhat supportive
- 3 = neutral
- 4 = somewhat not supportive
- 5 = strongly not supportive

and those choosing bottle-feeding. Those who chose to breast-feed were more likely to report someone as especially supportive of breast-feeding, not to report someone as especially not supportive of breast-feeding, to report a greater number of support persons, and to have a higher mean total support score.

Findings Related to the Second Research Question

The second research question was: "Who is perceived as being especially supportive of breast-feeding in making the decision for infant feeding?" This question was answered by tabulating the number of mothers who named each support figure as especially supportive. Table 7 summarizes the results. The father of the baby was named by 39 mothers, or 38.6% of all mothers, as the person who was most supportive of breast-feeding. It is interesting to note that "no one" achieved the second highest number with 22 responses or 21.8% of the total. That is, these women, who were predominantly bottle-feeders, did not evaluate anyone as being "most supportive" of breast-feeding.

Findings Related to the Third Research Question

Does perceived support for breast-feeding result in success at breast-feeding? Results of this study indicate that perceived support is not associated with success at breast-feeding. Table 8 presents data comparing the perception of support of those mothers who were successful and those mothers who were not successful at breast-feeding. The differences were not significant for any of the support figures. Table 9 provides an overall view of support for

TABLE 7

Number of Percentage of Mothers Who Perceived Designated
Persons as Being Especially Supportive of Breast-Feeding
in Making the Decision to Breast-Feed

Support Person	Number of Mothers Naming Person As Especially Supportive (N = 101)
Husband	39
"No One"	22
Mother	10
Close Relative	7
Hospital Nurses	7
Close Friends	4
Myself	3
Doctor or Midwife	3
Nurse	2
Mother-In-Law	1
Childbirth Instructor	1
Baby's Doctor	1
Other	<u>1</u>
TOTALS:	101

TABLE 8

Comparison of Mothers Who Were Successful and Not Successful At Breast-Feeding; With Relation to Perceived Support from Specific Persons

Support Person	Success at Breast-Feeding		Significance of Difference by t-Test	
	Successful Mean ^a (S.D.)	Not Successful Mean (S.D.)	t value	(p value)
Mother	1.65 (1.0)	1.50 (.71)	.41	(N.S.)*
Mother-In-Law	1.79 (0.89)	2.00 (1.29)	.45	(N.S.)
Baby's Father	1.29 (0.77)	1.78 (.97)	1.39	(N.S.)
Close Friend	1.50 (0.79)	1.64 (.81)	.45	(N.S.)
Baby's Doctor	1.35 (0.79)	1.55 (1.04)	.56	(N.S.)
Hospital Nurses	1.33 (0.69)	1.64 (1.12)	.91	(N.S.)
Relatives	1.67 (1.63)	1.75 (1.50)	.08	(N.S.)

^a Mean scores derived from perceived support based on following scale:

- 1 = very supportive
- 2 = somewhat supportive
- 3 = neutral
- 4 = somewhat unsupportive
- 5 = very unsupportive

*N.S. = Not Significant

TABLE 9

Comparison of Mothers Who Were Successful and Not Successful
at Breast-Feeding by Overall Perception of Support for
Breast-Feeding at the Hospital Interview

Perceived Support for Breast-feeding	Scores of Perceived Support		Significance of Difference value (p value)
	Successful (N = 18)	Not Successful (N = 11)	
<u>Someone Reported as Especially Supportive</u>			
Yes	18 (100%)	8 (73%)	$x^2 = 2.51$ (.019)
No	0 (0%)	3 (27%)	
<u>Someone Reported as Especially Not Supportive</u>			
Yes	2 (11%)	2	$x^2 = .52$ (N.S.)*
No	16 (89%)	9	
<u>Number of Support Persons Reported</u>			
Mean	9.28	8.18	$t = 1.87$ (N.S.)
Standard Deviation	1.36	1.78	
<u>Average Support Score^b</u>			
Mean	1.55	1.31	$t = 1.20$ (N.S.)
Standard Deviation	.50	.40	

^a Significance of difference between 2 groups of mothers as determined by Chi Square for reported "especially supportive" and "especially not supportive"; by t-test for all others.

^b Based on reported perceived support with values of:

- 1 = especially supportive
- 2 = somewhat supportive
- 3 = neutral
- 4 = somewhat not supportive
- 5 = strongly not supportive

*N.S. = Not Significant

the successful and unsuccessful mothers at the time of hospitalization. Table 10 provides similar data at 3 months postpartum. The only significant finding was that successful mothers were more likely to have reported someone as being "especially supportive" during the hospitalization period. None of the other measures of support were significant. Internal consistency reliability for the Telephone Interview support scale was computed by using Cronbach's Alpha and equaled .73. This score indicated intercorrelated items which measure the same construct, in this case, perceived support.

Findings Related to the Fourth Research Question

The fourth research and last question was: "Who is perceived as being especially supportive in the decision to continue to breast-feeding?" The reader is referred to Table 11 for details. The father was reported by 14 mothers or 48.3% as being especially supportive. Other significant support figures were mother with 5 responses (17.2%) and a sister with 3 responses (10.3%).

Other Findings

Duration of Breast-feeding

Table 12 summarizes the findings related to duration of breast-feeding. Of the 29 who initiated breast-feeding in the hospital, 18 were still breast-feeding at the 3-month interview. Eleven babies were electively weaned from 1 to 14 weeks of age. The mean age of weaning was 6.9 weeks. When asked if they were glad that they weaned the infant, 6 reported "yes" and 5 reported "no".

TABLE 10

Comparison of Mothers
Who Were Successful and Not Successful At Breast-Feeding By Overall
Perception Of Support For Breast-Feeding At the Three-Month Followup.

Perceived Support for Breast-feeding	Scores of Perceived Support		Significance of Difference ^a value (p value)
	Successful (N = 18)	Not Successful (N = 11)	
<u>Someone Reported as Especially Supportive</u>			
Yes	17	11	$x^2 = .78$ (N.S.)*
No	1	0	
<u>Someone Reported as Especially Not Supportive</u>			
Yes	9	5	$x^2 = .23$ (N.S.)
No	9	6	
<u>Number of Support Persons Reported</u>			
Mean	6.22	5.82	$t = 1.02$ (N.S.)
Standard Deviation	1.06	1.00	
<u>Average Support Score^b</u>			
Mean	1.48	1.68	$t = .93$ (N.S.)
Standard Deviation	.49	.67	

^a Significance of difference between 2 groups of mothers as determined by Chi Square for reported especially supportive and especially not supportive; by t-test for all others.

^b Based on reported perceived support with values of:

- 1 = especially supportive
- 2 = somewhat supportive
- 3 = neutral
- 4 = somewhat not supportive
- 5 = strongly not supportive

*N.S. = Not Significant

TABLE 11

Number and Percentage of Mothers Who Perceived Designated Person as
Being Especially Supportive in the Decision to Continue to Breast-Feed

Support Person	Number of Mothers Who Named Person as Especially Supportive	Percent of Total Mothers
Baby's Father	14	48.28%
Mother	5	17.24
Sister	3	10.35
Sister-In-Law	1	3.45
Aunt	1	3.45
Mother-In-Law	1	3.45
Baby's Doctor	1	3.45
Nurses	1	3.45
Myself	1	3.45
No One	<u>1</u>	<u>3.45</u>
TOTALS	29	100%

TABLE 12
Length of Breast-Feeding for Sample

Baby's Age When Breast-Feeding Discontinued	Number of Mothers	Percent of Total Mothers	Cumulative %
1 Week	2	6.9%	6.9%
3 Weeks	1	3.4	10.3
4 Weeks	3	10.3	20.6
10 Weeks	1	3.4	24.0
11 Weeks	1	3.4	27.4
12 Weeks	2	6.9	34.3
14 Weeks	1	3.4	37.7
Still Breast-feeding	<u>18</u>	<u>62.1</u>	<u>100.0</u>
TOTAL	29	100%	100%

The reasons varied from "never really got going" (1 mother), "cracked, bleeding or painful nipples" (4 mothers), "not enough milk or milk too thin" (4 mothers), to "returned to work and couldn't keep my milk supply up" (2 mothers).

Factors Related to Choice of Infant Feeding Method

A Chi Square Value of 27.9 ($p < .0001$) was found when choice of infant feeding method and the method thought best for infants were compared. The reader is referred to Table 13 for a detailed description of the findings. It is interesting to note that only 2 mothers (6.7%) who chose bottle-feeding thought that their method was best for their babies. Breast-feeding mothers in general (63 or 88.7%) were convinced that their method was best. Fifty percent of the 15 who were bottle-feeding were ambivalent over which feeding method was better, while only 4 (5.6%) of the breast-feeding mothers were ambivalent.

Table 14 compares the mother's and father's choice of feeding method of the infant. There are 22 missing values, that is 22 women who did not know the preference of the father of the baby. Of the mothers who chose to breast-feed (60), only one mother (1.6%) chose a method contradictory to her partner's choice of feeding method. Of those who chose to bottle-feed, 72.2% chose the same method as the father of the baby, while 27.8% chose a method contradictory to the father's choice. The Chi Square Value of 47.3 with one degree of freedom was $p < .001$ which is highly significant.

Mothers reported the person they felt was especially unsupportive of breast-feeding with reference to their choice of infant feeding

TABLE 13
 Relationship of Choice of Infant Feeding Method and
 Method Thought Best for Babies

Method Thought Best for Baby	Method of Infant Feeding Chosen	
	Breast-Feeding	Bottle-Feeding
Bottle-Feeding	4 (5.6%)	2 (6.7%)
Breast-Feeding	63 (88.7%)	13 (43.3%)
Neither is Better	<u>4 (5.6%)</u>	<u>15 (50.0%)</u>
TOTAL	71 (100%)	30 (100%)

Chi Square = 27.9, df = 2, $p < .0001$

Number of missing values = 0

TABLE 14

Cross-Tabulation of Father's and Mother's Choice of Infant Feeding

Father's Choice of Feeding Method	Mother's Choice of Feeding Method		Total
	Breast-feeding (N = 61)	Bottle-feeding (N = 18)	
Breast-feeding	60	5	65
Bottle-feeding	<u>1</u>	<u>13</u>	<u>14</u>
TOTAL	61	18	79 ^a

Chi Square = 47.3, df = 1, $p < .001$ ^a Data were missing for 22 mothers

method. The results are seen on Table 15. The baby's father and the mother's mother were each mentioned by seven women as being the most unsupportive people. A total of seven people were mentioned as especially unsupportive. However, the majority of the sample women (76.2%) did not name anyone as being especially unsupportive.

Findings Related to Success and Failure at Breast-feeding

Breast-feeding mothers were asked about problems encountered while breast-feeding. Table 16 summarizes the findings. One significant finding was engorgement. Interestingly, the successful mothers were more likely to experience engorgement than the unsuccessful mothers ($p < .04$). The other problems: breast infection, inverted nipple, cracked nipple, caked milk, painful nipple, and total number of problems did not differentiate successful mothers from unsuccessful mothers and therefore were not significant.

There was a significant ($p < .02$) difference between the successful and unsuccessful mothers in their perception of adequate milk supply. Those who did not succeed more frequently reported that they did not have enough milk, whereas those who were successful felt that their milk supply was adequate to satisfy their babies.

When interviewed 3 months after delivery, the 29 mothers who chose to breast-feed described a total of 10 persons as especially unsupportive of breast-feeding. The most frequently mentioned unsupportive persons were "close friends" (3 mothers) followed by mother-in-law and baby's father. Detailed results can be found in Table 17.

TABLE 15
 Person Perceived as Especially Unsupportive of
 Breast-Feeding in Making Choice of Feeding Method

Unsupportive Person	Number of Mothers Who Mentioned Person (N = 101)
Mother	7
Mother-In-Law	4
Baby's Father	7
Close Friend	1
Childbirth Instructor	1
MD/CNM Preg	1
Myself	2
No One	<u>77</u>
TOTAL	101

TABLE 16

Comparison of Breast Problems Reported by Successful and Not Successful
Breast-Feeding Mothers at 3-Month Telephone Interview

Breast Problem	Success at Breastfeeding		Significance of Difference by t-test	
	Successful (N = 18)	Not Successful (N = 11)	t value	(p value)
<u>Cracked Nipple</u>				
Yes	11%	36%	1.65	(N.S.)
No	89%	64%		
<u>Breast Infection</u>				
Yes	11%	0%	1.13	(N.S.)
No	89%	100%		
<u>Engorgement</u>				
Yes	67%	27%	2.15	(.041)
No	33%	73%		
<u>Inverted Nipple</u>				
Yes	0%	9%	1.29	(N.S.)
No	100%	91%		
<u>Caked Milk</u>				
Yes	0%	0%	0	(N.S.)
No	100%	100%		
<u>Painful Nipples</u>				
Yes	50%	73%	1.19	(N.S.)
No	50%	27%		
<u>Total Number of Problems</u>				
Mean	1.39	1.46	1.16	(N.S.)
S.D.	1.15	.93		
<u>Adequate Milk Supply</u>				
Yes	94%	55%	2.39	(.02)
No	6%	45%		

*N.S. = Not Significant

^a Significance of difference between 2 groups of mothers determined by t-test comparing means for total number of problem and by t-hot comparing percentage giving the first response listed in each characteristic. Percent of subjects giving each of the responses are listed for the reader's convenience.

TABLE 17
 Persons Perceived as Especially Unsupportive of
 Breast-Feeding at the 3-Month Telephone Interview

Unsupportive Person	Number of Mothers Who Mentioned (N = 29)	Percent of Total Mothers
Close Friends	3	10.3
Baby's Father	2	6.9
Mother-In-Law	2	6.9
Obstetrician	1	3.4%
Her Father	1	3.4
Grandmother	1	3.4
Brother-In-Law	1	3.4
Myself	1	3.4
Mother	1	3.4
Hospital Nurses	1	3.4
"No One"	<u>15</u>	<u>51.7</u>
TOTAL	29	100%

Four of the eleven mothers who had stopped breast-feeding asked the telephone interviewer if she thought that it was "bad to bottle-feed" babies. This comment appeared spontaneously when mothers were asked if they were glad that they switched feeding methods.

CHAPTER IV

Discussion

The purpose of this study was to examine the relationship between perception of support for breast-feeding and the choice to breast-feed and subsequent breast-feeding success. The study used a questionnaire survey of 101 postpartum women at the Oregon Health Sciences University. Crisis theory was used as the conceptual framework for this study to examine the decision-making process for breast-feeding. This chapter will focus on a discussion of the findings related to the four research questions as well as other significant findings related to choice and success of breast-feeding. Implications for nursing practice will be addressed.

Major Research Questions

The first research question which asked if perceived support for breast-feeding resulted in the choice to breast-feed was strongly answered positively by the findings of the study. The reader is referred to in Table 5. The nine support figures found to be associated with the choice to breast-feed were: the mother, mother-in-law, father, close friend, close relative, La Leche League or Nursing Council, certified nurse midwife/physician, hospital nurses, and the baby's doctor. These nine were identified in the literature review (Kimball, 1951; Ladas, 1970; Sloper, McKean & Baum, 1972; Brack, 1975; Cole, 1975; Jeffs, 1976; Lawson, 1976; Jones & Belsey, 1977; Griffith, 1979). Most mothers perceived

support from more than one source. As can be seen in Table 6, breast-feeding mothers perceived support from an average of 9 persons whereas bottle-feeding mothers perceived support from an average of 7 persons. These findings accord with the conceptual framework of the study that having supportive people in the environment have a positive effect on decision-making in this potential crisis situation. There are numerous implications for nursing. The nurse can facilitate the development of a supportive environment both directly by providing information and encouragement to the mother, or indirectly by influencing and supporting those significant others in the environment such as the baby's father who are perceived by the mother as supportive. Including the baby's father as an active participant in the learning and decision-making in prenatal care, childbirth classes, and the birth and delivery might be ways of increasing his support for breast-feeding. It seems likely that a supportive, encouraging environment could potentially contribute to an increase in the incidence of breast-feeding.

The second research question asked: Who is perceived as being especially supportive of breast-feeding in making the decision for infant feeding? While the mother reported numerous supportive people in the environment as being influential in her choice to breast-feed, the person named most frequently was the father of the baby. This finding agrees with previous findings by Jeffs (1976), Brack (1975), Cole (1975), Griffith (1979), but contradicts findings by Sloper, McKean, and Baum (1972) that the nurse or midwife was most influential. Perhaps this difference in findings

cultural difference between the United States and England or difference in the medical care system of the two countries. Jeffs, Brack, Cole, and Griffith all studied samples in the United States.

The finding that mothers were significantly more likely to choose the infant feeding method preferred by the baby's father illustrates the impact of the father's choice on infant feeding method. This is important in delineating which support person may be most important in crisis resolution. Of the women who chose to breast-feed, only one of the partners preferred bottle-feeding. Furthermore, the mothers who chose to bottle-feed were more likely to choose a method that was consistent with their partner's choice. While the majority (72.2%) had partners who agreed with their choice, of the mothers who chose bottle-feeding, 27.8% of the partners preferred breast-feeding. Brack (1975) obtained similar results. The mothers that made the choice for breast-feeding, therefore, were almost unanimously supported by the infant's father in choice of feeding method, while those who chose bottle-feeding were not so strongly supported. This is a curious finding and it might be speculated that the breast-feeders were more compliant to the partner's choice or that the bottle-feeders did not place as high a value on the partner's opinion. For the woman who chose a method contradictory to the partner's choice, the conflict of choice between partners may have been a crisis in itself and may have increased the transitional crisis into motherhood. Again, implications for nursing practice would include measures previously described which include and support the father in prenatal programs

and care. Prenatal discussions about feeding method with both partners present seem quite appropriate and would serve to confirm agreement in choice of method or confirm disparity requiring further discussion and resolution.

The third research question asked if perceived support for breast-feeding resulted in success at breast-feeding. Although there was a tendency for perceived support to be related to success, the relationship was not statistically significant for the following persons: the mother, mother-in-law, baby's father, close friend, baby's doctor, hospital nurses, and relatives. Other authors (Ladas, 1970; Cole, 1975; Coffin, 1979; Kimberling, 1979) have claimed to find a relationship between continuation and support. However, the studies were descriptive and did not report statistical significance. The one study which did apply statistical tests (Griffith, 1979) found no significant relationship between success and support from the father.

In the present research, there was, however, a significant difference found between successful mothers and not successful mothers in the reporting of someone as "especially supportive" at the time of the hospital interview. The successful mothers reported having someone who was "especially supportive" significantly more often than the unsuccessful mothers. When these findings are viewed from crisis theory, it might be speculated that perhaps the prenatal period and the decision-making involved in choice method of infant feeding constitute crisis states in themselves. Pregnancy can be viewed as a state of vulnerability in which decisions about infant

feeding must be made and the mother is sensitive to environmental support. The state of maturational crisis is affected by environmental support as crisis theory framework suggests. Once the mother has taken on her role as mother and has resolved the transitional crisis, she may be more free to make decisions about her infant, including a feeding method which may or may not be consistent with the choice of her supports. Thus, in the postpartum period while the mother reported support, it may not have been enough support or the right kind of support. For example, it may have been emotional support and perhaps more informational support might have been needed.

How can the hospital nurse predict success or failure and thus intervene to promote the continuation of breast-feeding? She might ask postpartum nursing mothers if there was someone who was especially supportive of her breast-feeding. If in fact there were, and that person visited the mother, she could encourage that person to continue the support. If the mother did not report an especially supportive source, the nurse could possibly become that encouraging support during hospitalization and continue postpartum with telephone calls. Perhaps the La Leche League or Nursing Mother's Council could also fill this need for continued support.

The fourth research question asked who is perceived as being especially supportive in continuation of breast-feeding? The baby's father was the most important support person. This agrees with those of Masters and Johnson (1966), Brack (1975), Jeffs (1975), Cole (1975), and Waletzky (1979). Almost half of the mothers

mentioned the father as being the most supportive. Furthermore, the vast majority of people (86%) mentioned by the mother, were people in her immediate family. The close family, therefore, was perceived as a more important source of environmental support than those in the health profession. Implications for nursing, again include supporting those persons mentioned by the mother as significant. As described previously, this can be done either directly through including them in the care and decision-making or indirectly by sending brochures or information home with the mother to discuss with the significant other.

Other Findings

The incidence of breast-feeding in the hospital for this sample was 70.3% which exceeds the 46.6% reported by Martinez and Naliziński (1981) who report the most recent national statistics. Although the incidence of breast-feeding has been reported to be higher in the Western United States than the remainder of the country (Martinez and Naleziński, 1981), it would not fully explain such a high incidence. Martinez and Naleziński's data was collected almost four years ago which may contribute partly to the difference. Another possible explanation is that the samples studied by Martinez and Naliziński generally did not exclude infants with problems, adolescent mothers, or premature babies who may have chosen bottle-feeding. Since only healthy mother-infant dyads were considered for inclusion in this study, the incidence rate may not be comparable to other studies. The reader is referred to Table 1 for comparison of

data from previous studies. The continuation rates of this study at 1, 2, and 3 months were 56.4%, 54% and 46.6% respectively, which were similar to those found by Cole (1975), and Griffith (1979). While the trend toward initial breast-feeding appears to continue, this and other studies have found a high attrition rate at three months. Perhaps the trend is due to the increased information about breast-feeding in the popular press, to social pressure and the "back-to-nature" movement, and the increase in lay support groups for breast-feeding. While mothers are being influenced by this general increase in social awareness of breast-feeding, these significant others in the environment who could support the mother are also influenced by the same milieu.

The typical mother who chose to breast-feed in this sample was very similar to that reported in the literature. She was 24 years of age (Cole, 1976; Jeffs, 1976) and of higher educational attainment (Robertson, 1976; Gutherie & Gutherie, 1966; Salber & Foenlib, 1966; Meyer, 1968; Cole, 1975; Martinez & Nalezienski, 1981). She was of higher socioeconomic status (Robertson, 1961; Prothero, 1966; Salber & Foenlib, 1966; Sloper, 1972; Bacon & Wylie, 1975; Jeffs, 1976; Palmer, Avery, & Taylor, 1979; Martinez & Nalezienski, 1981) and had observed other women breast-feeding prior to birth (Robertson, 1961; Jeffs, 1976).

The typical breast-feeding mother in this study differed from the literature in that she was multiparous rather than primiparous (Cole, 1975; Bacon & Wylie, 1975; Jeffs, 1976; Pringlecomb & Cullen, 1977; Martinez & Nalezienski, 1981), did not attend childbirth

classes (Jeffs, 1976; Palmer, Avery, & Taylor, 1979) and was equally likely to have been bottle-fed as breast-fed by her mother (Jeffs, 1976; Sloper, McKean, and Baum, 1976; Brimblecomb & Cullen, 1977; Krishna, 1979; Arafat, Allen & Fox, 1981).

The finding that mothers who discontinued breast-feeding were significantly more likely to believe that they did not have enough milk to satisfy the baby is well supported by the literature (Salber, et al., 1959; Robertson, 1961; Bloomfield, 1962; deCastro, 1968; Raphael, 1970; Ladas, 1970). Problems with nipples were not found in this study to significantly relate to success although this has been cited in the literature as an important reason for quitting breast-feeding (Call, 1955; Hytten, Yorsten, Thomson, 1958). It is interesting that while Call cites engorgement as a significant detriment to success, successful mothers in this study were more likely to report engorgement than unsuccessful mothers. Perhaps this is partially explained by Hall (1978) who found successful breast-feeders had as many nipple difficulties as the unsuccessful group, but did not view the difficulty as a "problem" and, therefore, did not discontinue breast-feeding. It might also be speculated that the engorgement provided the mothers with a reassurance that they had an adequate milk supply. Perhaps viewing breast problems as a deterrent relates to the person's frustration tolerance and the sample in this study was significantly different in their ability to cope with these problems. The finding that a significant number of unsuccessful mothers perceived that they had an inadequate milk supply indicates a need for appropriate education and support by the

nurse. Education may focus on the frequency of feedings, digestibility of breast milk, infant behavior, or signs of adequate milk supply.

The finding that 88.7% of the breast-feeders thought that their method was best while only 6.7% of the bottle-feeders thought their method was best is similar to the results found by Bacon and Wylie (1975). In that study, 94% of the breast-feeders, but only 13% of the bottle-feeders thought that their method was best. In both studies, bottle-feeders were generally ambivalent about which method was best. What is even more interesting is the finding that 43.3% of those choosing bottle-feeding thought that breast-feeding was superior. Bacon & Wylie also found 30% of their bottle-feeders believed breast-feeding was superior. One wonders about the adequacy of our educational programs in promoting breast-feeding as we appear to convince many mothers that breast-feeding is superior yet as educators, we do not help these mothers translate this knowledge into action.

The choice of an infant feeding method is affected by numerous factors, only one of which is support. The finding that some mothers chose a feeding method contrary to their feeling of what is best for baby may illustrate the importance of measures other than support in influencing choice. When examined from crisis theory, the transitional crisis into motherhood may be more difficult for the mother who is ambivalent about her choice and especially if she did not believe her choice was best. An implication for nursing practice is to explore of the mother's feelings about her

choice of infant feeding to see if this contributes to her naurational crisis.

A very interesting finding was the fact that all mothers who had cesarean births and chose to breast-feed were successful. This is contradictory to the findings of Martin (1978) who reported a higher failure rate among mothers who had cesarean births. While the Oregon Health Sciences University does not have a specific program of breast-feeding support for cesarean birth mothers, possible factors which might have influenced the success rate of cesarean birth mothers include the longer hospital stay, the possibility of more help at home, or perhaps a difference in socioeconomic status. It is not known if these mothers were more likely to be multiparous, older, or more highly educated which might have affected their success. Thus, this finding remains unexplained.

Of particular importance was the finding that the use of supplemental feedings in the hospital was statistically related to subsequent failure at breast-feeding. This detrimental effect of supplements has been found by Newton & Newton (1962) and Applebaum (1975). The successful group also had a significantly earlier initial breast-feeding experience which was also noted by deChateau, Holmberg, Jakobsson, and Winberg (1979); Sosa, Kennell, Klaus, and Urruhia (1976); and Johnson (1976), to influence breast-feeding success. It might be speculated that early maternal-infant separation and the use of supplements increases the crisis of role transition into motherhood at the moment when the crisis is at its highest peak, which may be at birth. Separation and suppliments may

give the mother a subtle message about her early inabilities to care for her infant and the inadequacy of her milk supply. Perhaps those who were more determined to be successful requested not to give supplementary bottles to their infants. The nurse can have an important impact in decreasing the transitional crisis of motherhood, by increasing maternal confidence by not using supplemental feedings and by increasing the early contact between mother and infant in the hospital setting. Another implication is to educate mothers during prenatal visits and/or in childbirth classes about the detrimental effect of supplements and the advantages of early contact with the infant. In this way, mothers will feel more comfortable with requesting these options in the hospital.

In summary, the results of this study have numerous implications for nursing. Nurses have the potential for increasing the incidence and continuation of breast-feeding. They may do this directly by supporting the mother and indirectly by supporting significant individuals in the environment. The nurse can also be instrumental in supporting breast-feeding by controlling those hospital practices found to be important in establishing a successful breast-feeding experience.

CHAPTER V

Summary, Conclusions, Limitations, and Recommendations

This chapter will include summary of the findings of the study and conclusions which may be derived from the findings. The limitations of the study and recommendations for further study will be discussed.

While the national trend in choice of infant feeding method over the past decade indicates an increase in the incidence of breast-feeding, further study continues to indicate a high failure rate. The factors associated with choice and continuation of breast-feeding have been studied from various psychological and sociological perspectives. While no singular factor appears to be pivotal in understanding why mothers chose breast-feeding and why they may or may not be successful, one factor, that of support for breast-feeding has been addressed by many as being integral to choice and success.

Summary

The purpose of this study was to explore the relationship between the mother's perception of support for breast-feeding and her choice of feeding method, and if she chose to breast-feed, her subsequent success in breast-feeding. Much of the previous research on choice and continuation of breast-feeding included only mothers who had attended childbirth classes. Also, those who chose to

bottle-feed generally have not been studied regarding their perceptions of support for breast-feeding. This study included both mothers who did and did not attend childbirth classes and those who chose to bottle-feed as well as breast-feed.

The following questions were asked:

1. Does perceived support for breast-feeding result in a choice of breast-feeding or bottle-feeding?
2. Who is perceived as being especially supportive of breast-feeding when making the decision of infant feeding?
3. Does perceived support for breast-feeding result in success of breast-feeding?
4. Who is perceived as being especially supportive in the decision to continue to breast-feed?

The first research question was answered affirmatively, that is, that support for breast-feeding does result in a choice of breast-feeding. While all mothers perceived support from their environment to breast-feed, those who chose to breast-feed perceived significantly more support for breast-feeding from the following people: mother, mother-in-law, baby's father, close friend, close relative, La Leche League or Nursing Mother's Council, certified nurse midwife or doctor during pregnancy and delivery, hospital nurses, and the baby's doctor. Childbirth instructors and "others" were not found to be significant support figures.

In answering the second research question, it was found that the father of the baby was named by 38.6% of the mothers as the

person who was most supportive of breast-feeding. It is interesting to note that 21.8% of the mothers, most of whom predominantly chose bottle-feeding responded "no one" as being most supportive.

In evaluating results of this study related to the third research question, it was found that perceived support for breast-feeding did not result in success at breast-feeding. The only significant finding was that successful mothers were more likely to have reported someone as being "especially supportive" of breast-feeding in the hospital questionnaire.

The results related to the fourth research question indicated that the father was perceived as especially supportive in the decision to continue to breast-feed. This was reported by 48.3% of the mothers, while the mother's mother was reported by 17.2% and the sister by 10.3%.

There were many other significant findings of the study. Of the mothers who chose to breast-feed, only one (1.6% of the sample) chose a method contradictory to the father's choice. Of those who chose to bottle-feed, 72.2% chose the same method as the father of the baby, while 27.8% chose a method contradictory to the father's choice. When breast-feeding mothers were asked about problems encountered breast-feeding, the only significant problem was engorgement. Interestingly, the successful mothers were more likely to experience engorgement than the unsuccessful mothers. There was a significant difference ($p < .02$) between the successful and unsuccessful mothers in their perception of adequate milk supply. Those who did not succeed more frequently reported that they did not

have enough milk, whereas those who were successful felt that their milk supply was adequate to satisfy their babies. Another interesting and unexplained finding was that mothers having a cesarean birth were more successful at breast-feeding than mothers having a vaginal birth. A final finding was that two hospital practices were found to be associated with successful continued breast-feeding experiences: early infant feeding and the absence of supplementary feeding in the hospital.

Conclusions

The following conclusions may be drawn from the findings of this study. Support for breast-feeding is associated with choice of breast-feeding, but not for continuation of breast-feeding. Another conclusion is that the father of the baby is seen as the most supportive person for the choice and continuation of breast-feeding. Other conclusions can be derived from findings of the study. Breast problems (except engorgement) are unrelated to success or failure at breast-feeding. Engorgement was related to success at breast-feeding. Early maternal-infant breast-feeding after delivery and the absence of supplemental bottles are significantly associated with success at breast-feeding. Mothers having a cesarean birth were more successful at breast-feeding than mothers having a vaginal birth. Mothers who chose breast-feeding generally had their partner's support for their choice whereas mother who chose to bottle-feed sometimes chose the method contrary to their partner's choice.

Limitations

There were several limitations to this study. The findings of this study are limited by the size of the sample and homogeneity, and the type of population served by the institution where the study was conducted. While the sample is probably similar to many large metropolitan teaching hospitals, it may not be generalized to other hospitals, especially private ones or those with large ethnic, non-English speaking populations. Caution should therefore be used in generalizing the findings of this study.

The reliability and validity of the instrument has not been documented except for validity of construct of social support by Cronbach's alpha. Unfortunately, reliable and valid instruments for investigation of the research question do not currently exist.

An additional limitation was the inability to contact all breast-feeding mothers. Perhaps a home visit could have been made to all breast-feeding mothers, postcards for change of address could have been given to the mothers or mailback questionnaires might have increased the response rate.

Recommendations for Future Research

The following are suggestions offered for future research:

1. Further investigation of the impact of cesarean birth on breast-feeding success would be interesting in light of the findings of this study.

2. Further development and refinement of the questionnaire to establish reliability and validity.

3. Further study is needed in exploring other variables affecting breast-feeding success since many of the measures in this study were not significant in the postpartum period.

4. Further study into why certain people were perceived as supportive. With references to crisis theory, was it because the support person provided information or reassurance at a critical time or was it the quality or type of support provided? Further definition of what exactly constitutes "support" and what type of support is most important in affecting decision-making and continuation of breast-feeding appear to need further investigation.

5. The self-esteem of self-concept image of mothering after failure at breast-feeding would appear to be an appropriate topic in view of the comments of some mother who switched to bottle-feeding which reflected a need for reassurance of their mothering abilities.

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APPENDIX A
Informed Consent

OREGON HEALTH SCIENCES UNIVERSITY

INFORMED CONSENT FORM

I _____ agree to participate in
first name middle name last name

a study which explores the influence of the mother's feelings of support on her choice of the method of feeding her infant and the outcome of the feeding experience. I understand that this study will be conducted by Susan Cooksey, R.N., under the supervision of Mary Ann Curry, R.N., D.N.Sc.

If I agree to participate, I understand that I will be asked to complete a questionnaire that will ask about my background, my decisions about infant feeding, and about the persons important in my decisions about infant feeding. The questionnaire is written and will be completed during my hospital stay. It will take about twenty minutes to complete. I understand that mothers choosing to breastfeed will receive a telephone call at 3 months after discharge from the hospital. A second questionnaire will be read to those called over the telephone and will take about 10 minutes to complete. I agree to permit Susan Cooksey to review my baby's and my hospital chart.

I understand that I will not benefit directly and my participation in this study will provide nurses with information that will help them to understand the factors that play a part in the mother's decisions concerning the choice of feeding method for her baby and the outcome of her choice.

It is my understanding that the information obtained will be kept confidential. My name will not appear in any reports and anonymity will be insured by the use of code numbers. I agree that the information that I give in participating in this study will be used in reporting the study results and for other research and educational purposes.

Susan Cooksey has offered to answer any questions that I might have concerning my participation in this study. I understand that I am free to refuse to participate in this study and am free to withdraw at any time from the study without affecting my relationship or my infant's relationship with or treatment at the University of Oregon Health Sciences Center.

I understand that it is not the policy of the Department of Health and Human Services or any other agency funding the research project in which I am participating to compensate or provide medical treatment for human subjects in the event the research results in physical injury. The University of Oregon Health Sciences Center, as an agency of the state, is covered by the State Liability Fund. If you suffer any injury from the research project, compensation would be available only if you establish that the injury occurred through the fault of the center, its officers, or employees. If you have further questions, please call Dr. Michael Baird, M.D. at 255-8014.

I have read the above statements.

Date

Signature

Witness's Signature

APPENDIX B

Confidential Hospital Postpartum Questionnaire

CONFIDENTIAL HOSPITAL POSTPARTUM QUESTIONNAIRE (HPQ)

CODE # _____

Date _____

Please indicate your telephone number _____

Mothers have different reasons for choosing to breast-feed or bottle-feed their babies. This questionnaire will ask you about the feeding method that you have chosen, ask some information about you, and ask about your family and other people who may have influenced how you made your decision. This questionnaire should take about 20 minutes to complete. Please answer each question as best you can. If you have any questions in understanding any of the questions, please ask me. Thank you in advance for your valuable contribution to this study.

- 18 1. How did your mother feed you? (check one)
- ____ Breastfeed
 ____ Bottlefeed
 ____ Don't know
- 19 20 2. Please indicate how many years of school you have completed: _____ Number of years.
- 21 3. Do you live with the baby's father?
 ____ Yes ____ No
- 22 4. Please indicate your family's average income. (check one)
- ____ Less than \$4,999 yearly
 ____ \$5,000 to \$9,999 yearly
 ____ \$10,000 to \$14,999 yearly
 ____ \$15,000 to \$19,999 yearly
 ____ \$20,000 to \$25,000 yearly
 ____ don't know
- 23 5. Have you observed other women breastfeeding before you came to the hospital? (check one)
 ____ Yes ____ No
- 24 6. Did you attend childbirth classes before this delivery? (check one)
 ____ Yes ____ No
- 25 7. How are you feeding your baby now? (check one)
- ____ Breastfeeding only
 ____ Breastfeeding and supplementing with a bottle
 ____ Bottlefeeding only

		Strongly Supportive	Somewhat Supportive	Neutral	Somewhat Not Supportive	Strongly Not Supportive	Does Not Apply
<u>35</u>	17. Childbirth Instructor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>36</u>	18. Doctor or Midwife I saw for my Pregnancy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>37</u>	19. If different from above, doctor or midwife who delivered me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>38</u>	20. Hospital Nurses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>39</u>	21. My Baby's Doctor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>40</u>	22. OTHER, Please Specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>41</u>	23. Is there <u>one</u> person or group listed in the previous page that is ESPECIALLY SUPPORTIVE? Please write only <u>ONE</u> .	_____					
<u>42</u>	24. Is there <u>one</u> person or group listed on the previous page that is ESPECIALLY NOT SUPPORTIVE? Please write only <u>ONE</u> .	_____					
<u>43</u>	25. Any question, comments or suggestions?	_____ _____ _____					

Thank you very much for your time and assistance in supplying information for my study.

Susan Cooksey

APPENDIX C
Schedule for Chart Review

Information to be obtained form the Chart Review (CR):

5 6 1. Code # _____

Mother's Chart (MC):

7 8 2. Mother's Age: _____

9 3. Type of Birth: (1) Vaginal (2) Cesarean Birth (CB)

10 4. If CB, (1) Planned (2) Unplanned (3) N/A

11 12 5. Parity: _____

13 6. Number of Children at this Birth: (1) Single (2) Multiple

Infant's Chart (IC):

14 1. Is infant "healthy"? (1) Yes (2) No

15 16 2. Infant's Gestational Age: _____ Weeks

3. Date of Birth: _____

17 4. Sex: (1) Male (2) Female

APPENDIX D
Telephone Interview

TELEPHONE INTERVIEW (TI) at 3 Month Postpartum Interval

Code# _____

46 1. Phone status: 1 = No Phone 2 = Moved/Discon. 3 = Contact

47 48 2. Weeks since delivery: _____

"Hello. This is Susan Cooksey. I'm the nurse in the Master's Degree program for the University of Oregon Health Sciences Center who talked to you in the hospital about your choice of infant feeding. How have you been doing since you left the hospital? ...I'd like to ask you a few more questions about how things have been going since your baby was born. This should take about ten minutes. Do you have time now?..."

49 3. The first question has four possible answers. Please listed to all answers and then tell me which applies best to you. How are you feeding your baby now?

- (1) Only breast-feeding.
- (2) Breast-feeding and bottle-feeding, but mostly breast-feeding
- (3) Breast-feeding and bottle-feeding, but mostly bottle-feeding
- (4) Only bottle-feeding

50 51 4. For those who answered (3) and (4).
How old was your baby when you switched to bottle or mostly bottle-feeding? _____ Weeks of age.

52 5. Are you glad that you switched from breast to bottle?
(1) Yes (2) No

Why? _____

How do you feel about your decision to switch? _____

53 6. Do you think that you had or have enough milk to satisfy your baby? (1) Yes (2) No

Some women who breast-feed experience problems with their breasts. I'm going to read some of the problems and you tell me if you've had any of these in the last six weeks. Please answer yes or no to each one.

54 7. Cracked Nipples: (1) Yes (2) No

- 55 8. Breast Infection: (1) Yes (2) No
- 56 9. Engorgement: (1) Yes (2) No
- 57 10. Inverted Nipples: (1) Yes (2) No
- 58 11. Caked Milk: (1) Yes (2) No
- 59 12. Painful Nipples: (1) Yes (2) No

Next, I'd like to ask you about how you feel about people who have supported or not supported your breast-feeding. For each person that I ask about, please tell me how much this person supported you. Please listen to all of the answers before making a choice.

- 60 13. Your mother, was she (a) supportive
(b) neither support or unsupportive
(c) unsupportive

If "a" is answered, was she:

- (1) very supportive
(2) somewhat supportive

If "b" score as:

- (3) (no further question needed)

If "c" is answered, was she:

- (4) somewhat unsupportive
(5) very unsupportive

- 61 14. The next question is about your mother-in-law, was she:
(a) supportive
(b) neither supportive or unsupportive
(c) unsupportive

If "a" is answered, was she:

- (1) very supportive
(2) somewhat supportive

If "b" score as:

(3) (no further question needed)

If "c" is answered, was she:

(4) somewhat unsupportive

(5) very unsupportive

62 15. The next question is about the baby's father, was he:

(a) supportive

(b) neither supportive or unsupportive

(c) unsupportive

If "a" is answered, was he:

(1) very supportive

(2) somewhat supportive

If "b" score as:

(3) (no further question needed)

If "c" is answered, was he:

(4) somewhat unsupportive

(5) very unsupportive

63 16. Your close friends, were they:

(a) supportive

(b) neither supportive or unsupportive

(c) unsupportive

If "a" is answered, were they:

(1) very supportive

(2) somewhat supportive

If "b" score as:

(3) (no further question needed)

If "c" is answered, was they:

(4) somewhat unsupportive

(5) very unsupportive

- 64 17. Your baby's doctor, was he or she:
- (a) supportive
 - (b) neither supportive or unsupportive
 - (c) unsupportive

If "a" is answered, was he or she:

- (1) very supportive
- (2) somewhat supportive

If "b" score as:

- (3) (no further question needed)

If "c" is answered, was he or she:

- (4) somewhat unsupportive
- (5) very unsupportive

- 65 18. The next question is about the nurses who took care of you in the hospital, were they:
- (a) supportive
 - (b) neither supportive or unsupportive
 - (c) unsupportive

If "a" is answered, were they:

- (1) very supportive
- (2) somewhat supportive

If "b" score as:

- (3) (no further question needed)

If "c" is answered, were they:

- (4) somewhat unsupportive
- (5) very unsupportive

- 66 19. Did you attend any La Leche League or Nursing Mother's Council meetings or contact either organization for help? (1) Yes (2) No

If "yes" in #19,

- 67 20. Do you feel that they were:
- (a) supportive
 - (b) neither supportive or unsupportive
 - (c) unsupportive

If "a" is answered, were they:

- (1) very supportive
- (2) somewhat supportive

If "b" score as:

- (3) (no further question needed)

If "c" is answered, were they:

- (4) somewhat unsupportive
- (5) very unsupportive

68 21. Do you have any relative that I have not asked you about that you feel was especially supportive or unsupportive? (1) Yes (2) No

69 22. If "yes" on #21, who was this relative? _____

70 23. Did you find this relative:

- (a) supportive
- (b) neither supportive or unsupportive
- (c) unsupportive

If "a" is answered, was he or she:

- (1) very supportive
- (2) somewhat supportive

If "b" score as:

- (3) (no further question needed)

If "c" is answered, was she:

- (4) somewhat unsupportive
- (5) very unsupportive

71 24. Was there any other person that I have not mentioned that you found especially supportive or unsupportive? (1) Yes (2) No

If Yes,

72 25. Who was that person? _____

- 73 26. Did you find him or her to be:
- (a) supportive
 - (b) neither supportive or unsupportive
 - (c) unsupportive

If "a" is answered, was he or she:

- (1) very supportive
- (2) somewhat supportive

If "b" score as:

- (3) (no further question needed)

If "c" is answered, was he or she:

- (4) somewhat unsupportive
- (5) very unsupportive

- 74 75 27. Is there one person or group that you found was especially supportive? Please name just one _____

- 76 77 28. Is there any one person or group that you found was especially unsupportive. Please name just one. _____
-

29. If you stopped breast-feeding or mostly breast-feeding, can you tell me why?

30. What was the one thing that you can think of that would have helped your breast-feeding experience?

31. Do you have any questions or comments.

Thank you again for your time. I really appreciate all the assistance that you have given me with this study.

ABSTRACT

The purpose of this study was to explore the relationship between the mother's perception of support for breast-feeding and her choice of feeding method, and if she chose to breast-feed, her subsequent success with breast-feeding. Previous research regarding support and breast-feeding has generally used samples of breast-feeding mothers who had attended prenatal classes and mothers who did not attend childbirth classes. Those who chose to bottle-feed have not been studied regarding their perceptions of support. Therefore, this study addressed those gaps by asking the following questions:

(1) Does perceived support for breast-feeding result in a choice of breast-feeding or bottle-feeding?

(2) Who is perceived as being especially supportive of breast-feeding when making the decision of infant feeding?

(3) Does perceived support for breast-feeding result in success at breast-feeding?

(4) Who is perceived as being especially supportive in the decision to continue to breast-feed?

A sample of convenience was drawn of 101 women who met the criteria of the study and who gave birth at the Oregon Health Sciences University Hospital from May 29, to July 7, 1981.

To be eligible for the study, mothers must have been at least 18 years old, had at least sixth grade education, spoke English as their first language, and had a healthy full-term single infant.

Subjects were contacted between 24 and 72 hours postpartum and administered a questionnaire that asked about perception of support for breast-feeding and also examined other variables found to influence breast-feeding choice and success. Three months postpartum mothers who had chosen to breast-feed were interviewed by telephone concerning continuation of breast-feeding and perception of support.

It was found that perceived support for breast-feeding resulted in a significantly greater choice ($< .05$) to breast-feed. The significant support persons included her: mother, mother-in-law, father, close friend, close relative, La Leche League or Nursing Mother's Council, certified nurse, midwife/physician, hospital nurses, and baby's doctor. The person found to be most often perceived as especially supportive in making the decision regarding infant feeding was the baby's father. It was also found that mothers were significantly more likely to choose the infant feeding method preferred by the baby's father.

While there was a tendency for perceived support for breast-feeding to be related to success, the relationship was not significant. The father was perceived as the most important support for breast-feeding continuation.

The incidence of breast-feeding in this sample was 70.3% with a continuation rate of 46.6% at 3 months. Mothers who discontinued breast-feeding were significantly more likely to perceive that they did not have an adequate milk supply ($p < .02$) to first feed their infants after birth at a later time ($p .05$), and to use supplementary feedings in the hospital ($p = .004$) than the successful mothers.

It was also found that 88.7% of the breast-feeders thought that their method was best while only 6.7% of the bottle-feeders thought that their method was superior. Interestingly, 43.3% of those choosing bottle-feeding thought that breast-feeding was superior. It was also found that mothers who perceived engorgement and who had cesarean births were more likely to succeed in breast-feeding. While the first finding could not be explained, the engorgement might be viewed as a reassurance of adequate milk supply instead of as a problem.

When viewed from a maturational crisis framework, the findings of this study indicate the environmental support for breast-feeding has a significant impact on choice of breast-feeding. It may also influence continuation of breast-feeding. Possible nursing intervention to lessen the strain or problems accompanying the transition into motherhood, included prenatal information and support concerning infant feeding selection for the mother and other significant persons in her environment, most importantly, the father of the baby. In the postpartum period, the nurse can have a significant impact in influencing those hospital practices found to promote breast-feeding success by withholding bottle supplementation and by encouraging early breast-feeding experiences.