12-1979

The Effect of Post-hospital Nursing Intervention on Success in Breastfeeding

Melinda Hoskins

Abstract

THE EFFECT OF POST-HOSPITAL NURSING INTERVENTION
ON SUCCESS IN BREASTFEEDING

by Melinda Hoskins

The purpose of this study was to compare the proportion of women in the experimental group who had a successful breastfeeding experience following post-discharge nursing intervention with the proportion of women in the control group who had a successful breastfeeding experience without nursing intervention. Criteria defining success in breastfeeding were established before the study. Chi-square analysis was used to test for significance with the preset level of significance being $\alpha=0.05$. The sample comprised 25 mother-infant dyads with 12 in the experimental group and 13 in the control group. Both groups were similar in type of delivery (spontaneous or outlet forceps vaginal delivery), length of labor, gestational age of infant, 1-minute and 5-minute Apgar scores, and birth weights.

The independent variable of the study was the nursing intervention designed to augment the support system of the mother and to facilitate success in breastfeeding. Mothers in the experimental group were contacted by telephone on the day following their hospital discharge and again one week following delivery. An assessment and intervention algorithm was followed to assure a consistent approach to the follow-up. The algorithm specified progression of each conversation from initiation to termination. It included:

A series of open-ended questions;

Classification of problems into predetermined categories;

Initiation of predetermined nursing interventions;

Provision of opportunity for the mother to ask questions;

Encouragement for the mother to contact the nurse researcher if problems arose later.

Between five and seven weeks following delivery a final interview of all subjects was conducted by telephone. Data obtained at that time were used to evaluate success in breastfeeding as defined by the study criteria. In the same telephone interview, data regarding certain uncontrolled variables were also obtained. These data were analyzed to detect possible influence upon the outcome of the study.

Similar proportions of experimental and control subjects met all criteria for success in breastfeeding. The Chi-square analysis yielded $p=0.50$; therefore, the researcher accepted the null hypothesis that there would be no significant difference between the proportion of women in the experimental group and in the control group who had a successful breastfeeding experience.

Further analysis comparing successful control and experimental subjects to unsuccessful control and experimental subjects showed significant (p 0.01) dissimilarity in the proportion of successful and unsuccessful subjects who reported receiving help from an individual other than the nurse researcher during their early breastfeeding experience. Findings suggested that the impact of the husband's support versus non-support of breastfeeding was greater than presence or absence of other support figures.

LOMA LINDA UNIVERSITY
Graduate School

THE EFFECT OF POST-HOSPITAL NURSING INTERVENTION ON SUCCESS IN BREASTFEEDING

by

Melinda Hoskins

A Thesis in Partial Fulfillment
of the Requirements for the Degree
Master of Science in Nursing

December 1979

The persons whose signatures appear below certify that this thesis in their opinion is adequate, in scope and quality, as a thesis for the degree, Master of Science.

Clarice J. Woodward, Professor of Nursing, Chairman

K. Erville Allen, Assistant Professor of Nursing

Betty T. Lonnstrom, Associate Professor of Nursing

ACKNOWLEDGEMENTS

This study was supported in part by a training grant, Number 5 A11 NU00048-18 from the Division of Nursing, U. S. Public Health Service.

To Betty Lonnstrom and Erville Allen, members of my thesis committee, I owe much appreciation for their encouragement, assistance and advice in completing this study. I deeply appreciate also the liberality of Clarice Woodward, committee chairman, in the time spent working with me on the completion of this study, and in the encouragement she provided during that time.

TABLE OF CONTENTS

Page

LIST OF TABLES ix

LIST OF FIGURES x

Chapter

1. BACKGROUND AND NEED FOR STUDY 1

Breastfeeding in the United States 1

Theoretical Framework of the Study 4

Statement of the Problem 6

Purpose of the Study 6

Hypothesis 6

Definition of Terms 7

Telephone Follow-up Patient (Experimental Group) 7

No Follow-up Patient (Control Group) 7

Success in Breastfeeding 7

Limitations of the Study 8

2. REVIEW OF THE LITERATURE 9

Introduction 9

Physiology of Lactation 9

Mammary Gland Development 9

Antepartal Changes 10

Postpartal Changes 11

Psychological Components of Lactation 12

Regulation of the Let-Down Reflex 12

Chapter Page

Advantages of Breastfeeding 13
Nutritional Considerations 13
Anti-infective Properties 14
Immunologic Protection 14
Psychologic Benefits 15
Benefits to infant 16
Benefits to mother 16
Role Theory 17
Factors Affecting Role Performance 17
Strategies Reducing Role Conflict 18
Transition to Motherhood 19
Tasks of Role Transition 20
Operations of Role Transition 21
Mimicry 21
Role-play 22
Fantasy 22
Introjection-projection-rejection 22
Grief-work 23
Performance of "Mother" Role 23
Resources Utilized 24
Difficulties in the Transition to the "Mother" Role 25
Anticipatory Stage 25
Honeymoon Stage 26
Contributory Factors 26

Chapter Page

No formal preparation 26

No preparation during pregnancy 26

Sudden, total responsibility 27

Few guidelines 27

Factors Discouraging Breastfeeding 27

Lack of Role Models 27

Role Expectation Incoherence 28

Lack of Significant Support 28

Medical Practices 29

3. METHODOLOGY OF THE STUDY 30

The Research Approach 30

The Research Design 31

The Independent Variable 31

Timing of assessment and intervention 31

Use of telephone for follow-up 31

Nature of nursing follow-up 32

The Dependent Variable 33

Extraneous Variables 34

The Hypothesis 35

Selection of the Sample 36

The Setting of the Study 36

Population Characteristics 36

Sample Selection Process 37

Consent to Participate 37

Pilot Study 38

Chapter Page

Development of the Tools 38

Data Collection Techniques 39

Data Collection and Recording 39

Demographic Data 39

Independent Variable 39

Dependent Variable 40

Extraneous Variables 40

Data Processing and Analysis 40

Methodological Assumptions 41

Limitations of the Study 41

4. DATA ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS . . . 43

Demographic Data Analysis 43

Extraneous Variables 45

Success in Breastfeeding 45

Analysis of Experimental and Control Data 47

Total Sample Analysis, Successful versus Unsuccessful Subjects 47

Comparison of Unsuccessful Experimental and Control Subjects 53

Problems Encountered by Unsuccessful Subjects 53

Discussion 56

Conclusion 57

Implications for Nursing 57

Suggestions for Further Study 58

Summary 59

Page

BIBLIOGRAPHY 61

APPENDIXES

A. Letter of Approval with Recommendations from Ethics Committee 67

B. Letters Requesting and Granting Permission to Conduct Study at Facility 70

C. Letter to Physician Requesting Permission to Use His Patients in the Study 75

D. Physician Consent Form 77

E. Population and Sample Selection Criteria: Mother 79

F. Population and Sample Selection Criteria: Infant 81

G. Subject Selection 83

H. Screening Data 85

I. Oral Explanation to Prospective Subject (Study Group) 87

J. Consent Form A 90

K. Oral Explanation to Prospective Subject (Control Group) 92

L. Consent Form B 94

M. Algorithm for Nurse-Initiated Telephone Conversation 96

N. Tabulation Sheet and Possible Nursing Treatments . . 98

O. Final Interview Questions 101

P. Tables 9 and 10 107

Q. Tables 11 and 12 110

R. Tables 13 and 14 113

LIST OF TABLES

Table		Page
1.	Comparison of Experimental and Control Groups Demographic Data	44
2.	Selected Known Extraneous Variables Comparison of Experimental and Control Groups	46
3.	Comparison of Experimental and Control Groups Criteria Determining Success in Breastfeeding	48
4.	Comparison of Successful and Unsuccessful Subjects Demographic Data and Selected Extraneous Variables	49
5.	Perceived Help in Breastfeeding Experience: Comparison of Successful and Unsuccessful Subjects	51
6.	Type of Help Subjects Received	52
7.	Comparison of Unsuccessful Experimental and Control Group Subjects for Selected Extraneous Variables	54
8.	Problems Encountered by Unsuccessful Subjects	55
9.	Demographic Data: Study Group	108
10.	Demographic Data: Control Group	109
11.	Data Regarding Selected Known Extraneous Variables: Study Group	111
12.	Data Regarding Selected Known Extraneous Variables: Control Group	112
13.	Criteria Determining Success in Breastfeeding: Study Group	114
14.	Criteria Determining Success in Breastfeeding: Control Group	115

LIST OF FIGURES

Figure		Page
1.	Anatomical Structure of Human Mammary Gland	11

Chapter 1

BACKGROUND AND NEED FOR STUDY

Breastfeeding in the United States

During this century there has been a dramatic reduction in the number of U. S. infants who are breastfed. To illustrate, in 1920 at least 90 percent of all U. S. infants were breastfed at birth, and breastfeeding was continued through the first six months for 70 percent (Gerrard, 1974, p. 759). Recent estimates suggest that only 25 percent of all U. S. newborns are breastfed at one week and only 5 percent at six months (Oseid, 1975, p. 149).

In its 1976 "Commentary on Breast-Feeding and Infant Formulas . . ." the Committee on Nutrition of the American Academy of Pediatrics recognized this trend (1976, p. 278). The committee also recognized recent findings which suggest certain advantages for the breastfed infant. They lauded efforts to encourage breastfeeding with the caution that such efforts should avoid creating guilt in women choosing not to breastfeed their children (1976, p. 279).

There are numerous lay publications promoting breastfeeding (Pryor, 1976; Raphael, 1976; Kipley, 1974; Appelbaum, 1969; La Leche League, 1963). One organization which actively encourages mothers to breastfeed is the La Leche League. Many La Leche League members find themselves in conflict with health professionals regarding breastfeeding practices (Knafl, 1974, 1976). The conflict seems to arise because

professionals view La Leche League as "radical" and are concerned that psychological or emotional harm may result to the mother who chooses not to breastfeed or who has difficulty which leads her to discontinue breastfeeding (Mears, 1976, p. 26). Many health professionals do lack knowledge of successful breastfeeding practices, having misconceptions and false information about breastfeeding (Knafl, 1974, 1976; Estok, 1973).

The misconceptions and false information among professionals reflect a similar condition among the general population of the U. S., for whom changing social and cultural patterns have worked together to produce a system in which few individuals have exposure to successfully breastfeeding mothers (Olson, 1978, p. 32; Newton and Newton, 1967; Raphael, 1966). Raphael investigated the Human Relations Files on numerous cultural groups for reports of behavior supportive of breastfeeding. She found that many cultures had a definite system of support for the new mother, with explicit behavioral proscriptions intended to facilitate successful breastfeeding. She concluded that Western, industrialized cultures, particularly the U. S., lack such a supportive system (1976, pp. 19-32).

Interviews with women who had unsuccessfully attempted to breastfeed led Raphael to conclude that lack of support is an important factor in the rapid discontinuance of breastfeeding seen in the U. S. today. She outlined and demonstrated the success of a supportive role in facilitating lactation among a small sample of women who had become discouraged six to ten days following their deliveries (Raphael, 1966, pp. 382-383).

Nurses in the U. S. have traditionally viewed themselves as providers of support and information to the new mother. But most of this support and information is given during the mother's hospital stay. A number of nursing researchers have examined in-hospital interventions in an effort to identify factors facilitating breastfeeding (Nichols, 1978; Johnson, 1976; Estok, 1973; Eppink, 1969; Evans, Thigpen, and Hamrick, 1969; Iffrig, 1967). Various techniques and practices have emerged from these studies. While many nurses are attempting to utilize these techniques, a substantial number of nurses remain unaware of these findings. Disbrow (1964) found that although mothers interviewed prior to discharge thought their nurses were helpful, these same women when interviewed following discharge indicated that the help was not adequate.

Maternity nursing texts discuss sore nipples and breast engorgement (occurring three to five days following delivery) as the most common problems encountered by breastfeeding mothers (Reeder, and Others, 1976, p. 380; Clausen, and Others, 1977, pp. 612-613). With the present trend of early discharge, many mothers are leaving the hospital after a two or three-day stay, with a growing segment discharged 24 hours or less following delivery. In spite of minimal experience with their new infants, these women are sent home prior to encountering the "most common problems."

Review of recent nursing literature revealed that despite repeated reports of frequent early discontinuation of breastfeeding only two articles dealt with the post-hospital discharge interventions (Olson, 1978; Selby, 1976). Selby's article is an anecdotal report,

describing a program implemented by pediatric nurse practitioners (PNP). This program actively encourages new mothers to contact the PNP by telephone about any problems encountered following discharge. Also included in the program is a 2-week follow-up group clinic and newborn check-up which the PNP's stress is to reassure the mother that she is meeting the infant's needs. The PNP's also answer questions or discuss difficulties of concern to the mothers during this clinic (Selby, 1976, p. 48). Selby suggests that a nurse-initiated telephone follow-up might be an even "more effective support program," but no study of the effectiveness of such a program was found during the literature review.

While studies have identified information and techniques to deal with problems encountered in the hospital, further study is needed to provide effective post-discharge facilitation of breast-feeding.

Theoretical Framework of the Study

The theoretical basis underlying this study relied extensively upon key concepts from role theory. Role transition requires that the individual changing roles must "know the rights and obligations of the role to which he is moving and that he change his behavior accordingly." (Banton, 1965, p. 93) In addition it is necessary that "other people recognize his change of role and modify their behavior towards him." (p. 93) Rossi identifies beginning parenthood as a role transition into a relatively irrevocable role requiring a

great deal of adaptation (1968, p. 32). Disbrow found that some women equate success in breastfeeding with fulfillment of the role "mother," with lack of success in breastfeeding equaling failure as a mother (1963). When investigating factors related to failure of lactation, Raphael found that lack of support by a significant other person was directly related to failure (1966, pp. 192-198).

In further study Raphael found that in the absence of a supportive significant family member provision of support by another person helped to alleviate the difficulties encountered and resulted in successful breastfeeding experiences (1966, pp. 382-384). This supportive behavior included provision of information and encouragement for the mother. Such behavior lies within the definition of nursing intervention given by Campbell, who states that a nursing intervention is an action which is "within the legal scope of nursing activity" for which the "rationale and effects of the nursing action are within the scope of nursing knowledge and skills" and the action "resolves, diminishes, or prevents one or more human needs." (1975, p. 17)

From this base it was postulated that a nursing intervention which was properly designed to facilitate breastfeeding would result in a greater proportion of women who were successful in breastfeeding. Such a nursing intervention would provide information to the new mother regarding breastfeeding and the behavior changes necessary to fulfill this task of mothering, so that she might make behavioral changes accordingly. Support of the mother's efforts to bring about change in the way others relate to her in the new role would be included.

Provision of recognition of the mother's assumption of the new role and the manner in which she was fulfilling it, by the nurse could serve as added recognition to provide the support which Raphael found essential. Assistance in assessing and resolving, diminishing or preventing problems most frequently encountered by the breastfeeding mother would serve to facilitate the adaptation to the task of breastfeeding, thus for some women facilitate the adaptation to parenthood.

Statement of the Problem

The objective of the study was to determine if post-hospital nursing intervention would increase the proportion of primiparous women who had a successful breastfeeding experience as measured by the study criteria at six weeks postpartum.

Purpose of the Study

The purpose of this study was to compare the proportion of women in the experimental group who had a successful breastfeeding experience following the proposed post-hospital nursing intervention with the proportion of women in the control group who had a successful breastfeeding experience without nursing intervention.

Hypothesis

There will be no significant difference ($p=0.05$) between the proportion of women in the experimental group and in the control group who have a successful breastfeeding experience as measured by the study criteria at six weeks postpartum.

Definition of Terms

Telephone Follow-up Patient (Experimental Group)

A patient who meets the criteria for participation in the study who receives telephone follow-up intervention by the nurse researcher on the day following hospital discharge and again one week following delivery.

No Follow-up Patient (Control Group)

A patient who meets the criteria for participation in the study and receives no follow-up intervention by the nurse researcher.

Success in Breastfeeding

A breastfeeding experience which meets the following predetermined criteria when evaluated six weeks postpartum will be termed "success in breastfeeding."

1. The infant's nutrition is supplied by breastfeeding alone. This does not exclude an occasional supplemental bottle given for the mother's convenience, but does exclude routine supplemental bottles and/or addition of solid food substances to the infant's diet.

2. The infant's weight gain at six weeks of age is within the normal range of 0.5-1.0 kilogram per month (Rudolph, 1977, p. 107).

3. The mother verbalizes satisfaction with the breastfeeding experience.

4. If breastfeeding has been terminated the decision to terminate reflected a preplanned choice to do so and does not reflect difficulties in the experience or pressure from others to do so.

5. Mother has not experienced major complications of lactation such as inflammation or infection of the breast or nipple.

Limitations of the Study

1. The small sample size.

2. The selectivity of the sample due to the setting in which the research was carried out.

3. The possibility of bias on the part of the researcher which may influece the effectiveness of the intervention.

4. The possible Hawthorne effect upon the performance of women in either the experimental and/or the control group because of their awareness that they are part of a study.

5. Possible existence of an unidentified intervening variable which influences the outcome of the study.

Chapter 2

REVIEW OF THE LITERATURE

Introduction

For the nurse to support the new mother's establishment of a successful breastfeeding relationship with her newborn, the nurse must have an understanding of several elements contributing to the breastfeeding relationship. These elements include the physiologic process of lactation, the relationship between psychological factors and the physiological process, and the role breastfeeding may have in the development of motherliness. Factors within western cultures which tend to discourage breastfeeding must also be understood, as must measures to combat these negative influences. Knowing the advantages of breastfeeding may motivate the nurse to facilitate the new mother's breastfeeding relationship.

Physiology of Lactation

Mammary Gland Development

Salazar, and Others, review the development of the mammary gland. With thelarche ductal differentation and budding occurs. Hypertrophy and proliferation of fat and connective tissues are responsible for breast enlargement at puberty. In the adult female the glandular structures are well-differentiated but quiescent. There is no histologic basis for

differentiation between the resting glandular tissue of the nulliparous or multiparous woman (Salazar, and Others, 1975, p. 125).

Antepartal Changes

During the first four weeks of pregnancy increased estrogen and progesterone production by the corpus luteum leads to an increase in mitotic activity in the glandular tissues. Later as the placenta becomes established, the mamotropic effects of human placental lactogen (HPL) accelerate cell proliferation and increase protein retention, fluid secretion, and alveolar dilatation (Salazar, 1975, p. 126).

By the middle trimester of pregnancy the secretory activity increases sufficiently to produce detectable colostrum. During the third trimester the pituitary prolactin levels are elevated but effects are inhibited by placental production of estrogen and progesterone. This prevents milk production. Throughout pregnancy ongoing modification of glandular tissue results in increased growth of lobules by formation of new alveoli and ducts, and in dilatation of the ducts by secretions (Salazar, 1975, p. 127).

To understand the mammary physiologic functions one must have a clear picture of the anatomical structure. Applebaum (1976) uses the analogy of a forest to describe this structure. He likens the lactiferous duct systems, or lobules, to the trees in a forest indicating that they are "bound together by interweaving vines and vegetation (connective tissue, blood vessels, and lymphatics)." The lactiferous sinuses are likened to the root system of the trees; and the ducts and ductules resemble branches and twigs. The myriad clusters of leaves

found on trees are representative of the alveoli or "glandular secretory epithelium." Surrounding the alveoli are the myo-epithelial cells which contract to force the milk into the ducts (Applebaum, 1970, pp. 206, 207) (see Figure 1).

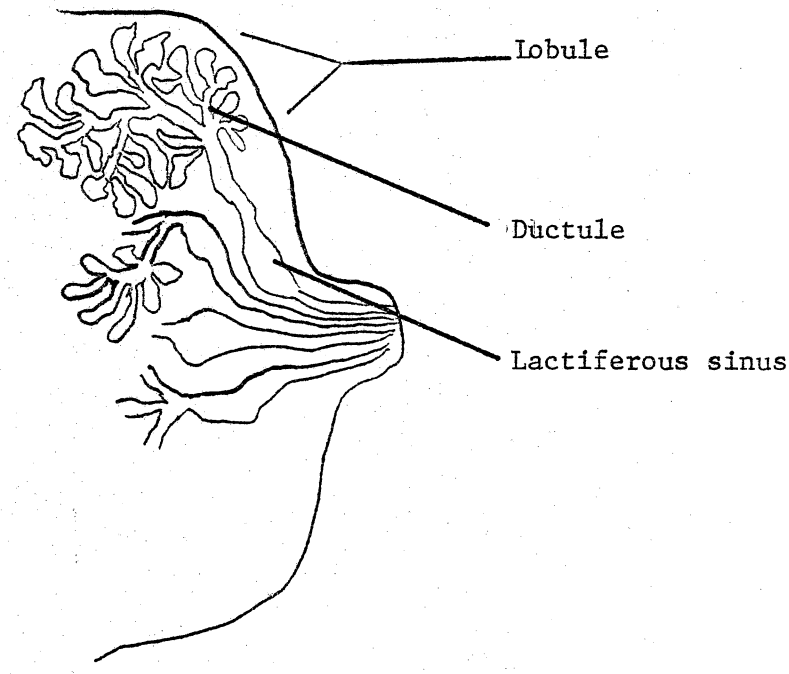

Figure 1: Anatomical Structure of Human Mammary Gland

Postpartal Changes

Immediately after delivery the estrogen and progesterone levels fall rapidly. As the levels decrease, inhibitory effects are lost, and prolactin stimulates the glandular tissues of the breast. The neural stimulus of the infant's suckling releases additional prolactin, resulting in greater stimulation of the glandular tissue. Suckling also

results in oxytocin release by the hypothalamus which facilitates drainage of colostrum. The oxytocin causes contraction of the myo-epithelial cells, forcing the contents of the alveoli into the lactiferous sinuses. From the sinuses colostrum or milk flows out the nipple. This mechanism of oxytocin release and myo-epithelial cell contraction accompanied by milk flow is known as the "let-down," "milk ejection," or "draught" relfex (Applebaum, 1970; Salazar, 1975; Newton and Newton, 1962). It is present at delivery but may take several weeks to become well-regulated in the primiparous woman (Applebaum, 1970, p. 214).

According to Salazar, at no time are all of the secretory tissues functioning at their maximum level (1975, p. 134). Increased suckling and frequent emptying of the breast result in increased milk production (Egli, and Others, 1961, p. 314), and it seems probable that this is effected through stimulation of the quiescent tissues. Conversely, reduced suckling and prolonged accumulation of secretions results in the inhibition of secretion (Salazar, 1975, p. 136).

Psychologic Components of Lactation

Regulation of the Let-Down Reflex

The "let-down" reflex described previously is a neurohormonal mechanism facilitating drainage of the lacteal ducts. Because accumulation of secretions inhibits production, Applebaum calls drainage "the sine qua non of successful breastfeeding." (1970, p. 211) The breasts must be emptied to ensure continued production of breast milk.

However, Newton and Newton (1948) demonstrated the existence of a psychologic component in regulation of the let-down reflex. These investigators observed that severe cold, emotional conflict, or painful stimuli to a mother (which did not affect the infant) significantly decreased the amount of breast milk obtained by the infant (1948, p. 702). As a result of later findings associating erratic and incomplete let-down with unsuccessful breastfeeding, the Newtons recommended that "pain, emotional conflict and embarrassment should be" minimized to prevent inhibition of the let-down reflex (1950, p. 732).

Advantages of Breastfeeding

Nutritional Considerations

In recent years several nutritional advantages of breastfeeding rather than formula-feeding have been demonstrated, including a decreased solute load for the newborn's immature kidneys, a higher percentage of unsaturated fatty acids and a more favorable calcium to phosphorous ratio (Oseid, 1975, pp. 150-154). The American Academy of Pediatrics (AAP) Committee on Nutrition (1976) indicates that although the iron content of breast milk is low, iron absorption may be favorably influenced by the low protein content of breastmilk (p. 278). Harfouche (1970) reports that though weight gains from birth to four months were equal for bottle- and breast-fed infants, the breastfed infants had higher retention of nitrogen, representing development of more lean tissues. Jelliffe and Jelliffe reported that breast milk contained hematinics (copper, ascorbic acid, and vitamin E) in greater amounts

than does cows' milk base formulas. This provides protection from nutritional anemia for the breastfed infant (1971, p. 1013).

Anti-infective Properties

Numerous authors cite the value of total breastfeeding in protecting the infant from gastrointestinal and upper respiratory tract infections (Oseid, 1975; Gerrard, 1974; Puffer and Serrano, 1973; Jelliffe and Jelliffe, 1971; Mata and Urrutin, 1971). Among the several factors contributing to this protection is the presence of a component favoring the growth of Lactobacillus bifidus. Production of lactic and acetic acids by this organism results in an acidic environment unfavorable to the growth of enteric pathogens (Oseid, 1975, p. 155). Breast milk also contains "bacteriocidal lysozymes and enzyme systems, lymphocytes, and mobile macrophages," all of which are active in combating bacterial invaders (Oseid, 1975, p. 155). Pan American Health Organization studies (Puffer and Serrano, 1973) have indicated that the anti-infective properties of breast milk are most active when the infant receives breast milk alone for the first six months. Introduction of other foods alters the gastrointestinal environment making it more hospitable to invading organisms.

Immunologic Protection

Immunologic protection is another benefit received by the breastfed infant. Depending upon the level of the mother's immunity the newborn receives antibodies against "Clostridium tetoni, Bordetella pertussis, Diplococcus pneumoniae, Corynebacterium diphtheriae,

Escherichia coli, Salmonella, Shigella, polio virus 1, 2, and 3, Coxsackie viruses B_1, B_5, and B_9, ECHO Viruses 6 and 9, and influenza viruses" (Oseid, 1975, p. 155) through colostrum and mature breast milk. This is especially beneficial during the early weeks of life when the immunologic system of the infant is immature.

Another potential immunologic benefit is protection from contact with potentially allergenic substances. Prior to six weeks the infant's gut is extremely permeable to large protein molecules which may act as antigens (Oseid, 1975, p. 157). Recent studies such as that by Halpern, and others (1973) have not found this protection, but the methodology used in these studies has failed to control for such variables as duration of total breastfeeding and timing of the addition of solids to the diet.

Gerrard (1974) presents an extensive review of animal studies which substantiate the view that the totally breastfed infant (of whatever species) has considerable immunologic advantage. This appears to include immunity to specific disease-causing organisms and protection from sensitization to potentially allergenic substances.

Psychologic Benefits

Although psychological aspects of breastfeeding may be the benefits most frequently cited by lay persons, they are the most difficult to document or measure. The professional literature dealing with psychological benefits categorizes them as benefits to the infant and benefits to the mother.

Benefits to infant. Among the psychological benefits to the infant, Oseid cites the consistent sensory experience including tactile sensations of skin-to-skin contact, auditory stimulus of the mother's heartbeat, and predictable smell and taste of breast milk (1975, p. 159). Newton analyzes the psychological experience of the breastfed newborn, differentiating between "token" and "unrestricted" breastfeeding experiences. According to her the unrestricted breastfed newborn receives the psychological advantage of immediate assuagement of hunger plus assuagement of discomfort and fear, all from the same source. She suggests that this experience may lead to "a strong individualized attachment" by the infant to the mother (Newton, 1971, p. 998).

Benefits to mother. Similar psychological benefits are postulated for the mother; early and frequent skin-to-skin contact may enhance maternal attachment to the newborn (Montagu, 1971, p. 78). Newton emphasizes the pleasurable sensory experience of the mother practicing unrestricted breastfeeding, suggesting that the cumulative effect of repeated sensually pleasurable interactions "may be appreciable." (1971, p. 995) Another psychological advantage is suppressed ovulation which frees the mother from menstrual cycle mood changes (Newton, 1971, p. 995).

Benedek postulates that "emotional experiences of lactation" are important to the development of normal motherliness (1949, p. 647). The mother has a desire to meet her infant's needs, and meeting the infant's needs facilitates the development of her capacity to "mother" the infant. Further descriptions of how breastfeeding facilitates the development of

motherliness are included in the discussion of the maternal role which follows.

Role Theory

Role theory, employing the metaphor of the theater, has been useful in nursing theory and education, particularly in clarifying the nature and challenges of a woman's transition to motherhood. According to role theory, a role is "the pattern of wants and goals, beliefs, feelings, attitudes, values, and actions which the community expects of a person holding a particular position." (Robischon and Scott, 1969, p. 52) A particular position involves symbols of identity, such as a specified name, dress and artifacts, speech, and mannerisms (Thomas and Biddle, 1966, p. 55).

Factors Affecting Role Performance

A number of factors may affect a person's performance of a role:

1. Degree of involvement with the role (Sarbin, 1966, pp. 195-198).

2. Efforts to appear exemplary (Goffman, 1966, p. 202).

3. Exaggeration of actions to convey the importance of the role (Goffman, 1966, p. 202).

4. Conscious attention to the many small details of the role performance in an effort to maintain perceived coherence between observed and expected performance (Goddman, 1966, pp. 203, 204).

5. Environment, which may permit, force, or preclude a given behavior (Thomas and Biddle, 1966, p. 55).

6. Reinforcement or lack of reinforcement (Thomas and Biddle, 1966, p. 55).

7. Reinforcement which takes the form of prescriptions or proscription for certain behaviors (Biddle and Thomas, 1966, p. 103).

8. Societal norms specifying the amount or degree of prescribed behaviors (Jackson, 1966, p. 116).

9. Conflict between subgroup norms such that the norm is ambiguous within the larger group (Jackson, 1966, p. 123).

10. Accuracy of a person's perception of the norm (Jackson, 1966, p. 123).

11. The ideas and views of "significant others" in the person's milieu, who generally are responsible for role training (Disbrow, 1977, p. 9).

An actor may have difficulty performing a role for a number of reasons. According to Thomas and Biddle (1966, pp. 57-62), the requirements of the new role may differ markedly from the requirements of the person's previous roles, or the actor may find herself exhibiting few of the behaviors possible for the role. Other difficulties may arise from conflicting subgroup norms, opposing self- and other-evaluations of role performance, and differences between self-concept and the perceptions of the actor by others. Disbrow (1977, p. 13) points out that conflict may occur between two roles which are held simultaneously and which have different role prescriptions.

Strategies Reducing Role Conflict

Various strategies can be employed to reduce role conflicts. When the norms conflict among the subgroups of which the actor is a

member, the member can choose the group with which she has the most intense involvement, the group which on a moral basis seems to have the "most legitimate claim," the group which appears able to impose the greatest negative sanctions, or the group whose norms appear most profitable at the time (Disbrow, 1977, p. 14). When the actor feels unable to meet all the demands of the role, she may consider engaging the reference group in negotiations; however, the effort is likely to end in confrontation without resolution of the conflict, according to Disbrow (1977, p. 14). Finally, the strategy of "insulation" may be employed (Goode, 1960); the actor may insulate herself from the role conflict by:

1. compartmentalizing the conflicting role behaviors into limited times or spaces;
2. transferring the conflicting role obligations to another individual;
3. constructing obstacles against meeting role requirements;
4. Setting up physical or psychological barriers to isolate oneself from the conflict-causing role;
5. Eliminating relationships that involve the problematic role.
6. Expanding certain relationships so as to "crowd out" the problematic role.

Transition to Motherhood

The transition to motherhood has elements of most role transitions but also several which are unique. As in many role transitions, factors leading to motherhood are not always under voluntary control,

but unlike many roles involving an intimate relationship, motherhood is a comparatively irrevocable role (Rossi, 1968, p. 32). Adaptation to the role of mother requires a great deal of adjustment.

Tasks of Role Transition

There are certain psychological tasks which serve to prepare a woman for motherhood. The first, acceptance of the pregnancy, is prerequisite to incorporation of the new role. Rubin characterizes the first trimester of pregnancy as a period in which the questions are constantly raised, "Who, me?" and "Why now?" (1970, pp. 503, 504) She says that the lack of obvious signs of approaching parenthood, that is, signs visible to the woman and/or those around her, support this questioning, which generally continues until she receives positive affirmation of her baby by "quickening" during the second trimester (Rubin, 1970, p. 505).

The second task is readjustment of existing relationships in order to accommodate the new role (Rubin, 1970, p. 506). In readjusting relationships many women develop fantasies regarding characteristics of the coming baby. These fantasies while serving to make the baby seem real may contribute to difficulties in achieving the third task. Following delivery the mother must accept the baby as a "new individual, separate from . . . herself, . . . and separate from the fantasy baby." (Shields, 1974, p. 25)

There are two distinct aspects of the fourth task, preparation to "mother" the infant. This preparation serves primarily to provide the emotional environment which nurtures the infant, but it also involves preparation to do the care-giving tasks of mothering (Shields,

1974, p. 25; Rubin, 1961). Rubin terms the emotional aspects "preparation for giving of onself" and describes a sequence of evaluation and assessment of the cost of giving weighed against the perceived resources available to the woman. This is followed by an "exploration of the meaning of being-given-to" and then the building up of resources in order to have something to give (Rubin, 1967 b, p. 339).

Operations of Role Transition

In her study of the process by which women prepare for the new role of mother, Rubin (1967 a, p. 240) identified five categories of "operations involved in 'becoming'": mimicry, role-play, fantasy, introjection-projection-rejection, and grief work.

Mimicry. Mimicry is the adoption of role status symbols which have been identified through an active search of both memory and environment for models (1967 a, p. 240). Rubin indicates that actions classed as mimicry are carried out by women on the basis of their faith in the model as an authority, whether the model is a lay person whose actions are determined by cultural values systems, or a professional with a "scientific basis" for actions or recommendations. Mimicry is seen to be operating in such behaviors as early wearing of maternity clothing as a sign of the status of pregnancy, or eating of particular foods "because pregnant women are supposed to do so." Rubin felt that many of these actions could be characterized as initiation rituals (1967 a, p. 241).

Role-play. Role-play is different from mimicry in that the women actually seek circumstances in which they can enact some particular role function, such as infant-feeding or infant care-taking activities (1967 a, p. 241). Role-playing is not a long-term event but rather an isolated activity from the continuum of role activities related to parenthood. It occurs even among women who already have one or more children, although not as frequently (1967 a, p. 241).

Fantasy. Fantasy is an attempt to answer the question, "How will it be for me?" by daycreams and wishes, rather than "How does one behave?" as in the above categories. Rubin saw fantasy as indicating deepening involvement on the part of the woman. Daydreams and dreams increase once fetal movements are identified (1967 a, p. 242). Similarly Rossi recognized "quickening" as being of special importance to women because of the value it has in establishing that the baby is "real." (1968, p. 30)

Introjection-projection-rejection. Introjection-projection-rejection, an operation closely resembling mimicry, is a highly discriminating process utilizing models as a mirror to determine the personal "fit" or a given behavior pattern in a given situation (Rubin, 1967 a, p. 242). If the woman feels comfortable with the "fit" of a given behavior she incorporates it; if she is uncomfortable the item is rejected. Operations in this category often carry over into Rossi's "honeymoon stage," because they are not always completed until after the birth of the baby, and other behaviors will not be subjects to this process until after the baby arrives.

Grief-work. Grief-work, Rubin's fifth category, is a "letting-go" process, or a review process in preparation to giving up a former role (1967 a, p. 244). Rubin felt that grief-work often acts as a "spring-board" to further taking-on of the new role, in that grief-work often precipitates new rounds of mimicry, fantasy, or introjection-projection-rejection (1967 a, p. 244).

Performance of "Mother" Role

"Mothering" is the performance of the behaviors prescribed for the role of "mother." "Motherliness" represents the innate or acquired abilities which focus energy and desire to accomplish the tasks of "mothering." Motherliness is the reservoir, built up during pregnancy, from which mothering is given (Benedek, 1955, p. 275). A combination of numerous biological, cultural, and psychological factors interact to produce the various stages of motherliness.

Disbrow found that women do not always differentiate between mothering as performance of a task, and mother as performance of a role. Some primiparous women were found to define successful mothering (the role) as successful breastfeeding (the task). Thus if they failed at performing the task, they perceived that they were failing in the performance of the role (Disbrow, 1963).

Rubin has described similar behavior patterns in which women concentrate their attention and energy on the performance of a care-giving task. As they succeed in performing the tasks they seem to become more and more comfortable with the role. Conversely, those who have difficulty with the first performance of a task are more tense and

anxious with the next opportunity. If there is a pattern of difficulty in performing the tasks of care-giving the mother begins to expect to fail (Rubin, 1961, p. 684).

The mother's increased dependency needs make her more vulnerable to such feelings. But the increased dependency and increased receptive tendencies make her intuitively more responsive to the baby's needs, promoting motherliness (McFarland and Reinhart, 1959, p. 51).

Throughout pregnancy Benedek sees mother and infant sharing a symbiotic relationship. At birth this relationship is disrupted for both mother and infant, and unity must be restored for motherliness to grow (1955, p. 275). An important factor, helping to achieve the restoration of this unity, is lactation. According to Benedek, the hormonal system operating to initiate and support lactation induces an emotional state supportive of the development of the qualities of motherliness (1955, p. 275). The high levels of prolactin responsible for lactation result in an increase in receptive tendencies in the mother. She appears to have regressed psychologically because she herself has a heightened dependency, a need to receive from others (1949, p. 647). Benedek indicates that the maternal dependency permits "a process of identification between mother and child," which results in a "slow, step-by-step integration of normal motherliness." (1949, p. 647) It is important at this point for the mother's needs to be met in order for her to continue to meet the needs of the dependent infant.

Resources Utilized

McFarland and Reinhart discuss the resources available to the mother in terms of the internal and external. Internal resources are

those strengths developed through her experience as the object of comforting and care-taking activities in the past (1959, p. 51). External resources arise out of the quality of her present relationship with individuals capable of meeting her present dependency needs (1959, pp. 51-52). Most cultures of the world have identifiable prescriptions, regarding the behavior of individuals caring for the new mother, which are designed to provide adequate external resources to facilitate the transition to the maternal role (Raphael, 1966, pp. 187, 188).

Difficulties in the Transition to the "Mother" Role

Alice Rossi (1968) characterized the transition to parenthood as fraught with the greatest difficulty of any adult role transition. She postulates four stages to role cycles: the anticipatory stage, the honeymoon stage, the plateau stage, and the disengagement-termination stage. Application of the first two stages to motherhood reveals the sources of difficulty in the transition to this adult role.

Anticipatory Stage

According to Rossi the anticipatory stage for the parenthood role is the period of pregnancy itself (1968, p. 29). During this time the woman and her partner should be making preparatory adjustments prior to assuming a new role. Rossi points out that this preparatory adjustment by the couple is not carried out because of the lack of "a firm reality-base." (1968, p. 33) It is difficult for the parents-to-be to anticipate what their role is to be and how they are to carry it out

except in fantasy, because they have no firm idea of who or what their coming child will be like. Anticipatory preparation for new roles is based on knowledge of, and/or direct interaction with, the partner(s) in the anticipated role relationship. The parents-to-be know very little about the unborn child and this state continues until the child is born (Rossi, 1968, p. 30).

Honeymoon Stage

The honeymoon stage of the parenthood role cycle begins with the birth of the infant in that "period during which, through intimacy and prolonged contact, an attachment between parent and child is laid down." (Rossi, 1968, p. 30) Because the parents have not had actual interaction with the infant during the anticipatory stage Rossi sees "greater interpersonal adjustment and learning" occurring during this second stage of the role cycle than occurs in other role transitions (1968, p. 30).

Contributory Factors

Rossi cites four factors which contribute to the difficulties experienced during the role transition period of parenthood.

No formal preparation. There is little formal attempt to prepare the young for the adult role of parent. The educational program seldom includes child-care experience or theory. This lack of education extends into the period of pregnancy.

No preparation during pregnancy. Women seldom have opportunity during pregnancy to participate in formal learning experiences in

preparation for motherhood. There is literature available and coupled with some discussion with friends and family this is often the only preparation during the anticipatory stage.

Sudden, total responsibility. At birth the mother receives sudden and total responsibility for the child. On occasion there may be family help for a week or two but generally new parents do not have a period of gradually increasing responsibility as they would in many other roles.

Few guidelines. Finally there are few guidelines for new parents regarding how to raise children (Rossi, 1968, pp. 35, 36).

Factors Discouraging Breastfeeding

For the mother who chooses to breastfeed there are numerous other factors which contribute to her difficulty in adapting to the maternal role. A frequently-described problem faced by women who desire to breastfeed is the lack of cultural support for breastfeeding. Factors which contribute to this lack of support include: increased mobility of the family, decreased contact with extended family members, and decreased family size. Each of these factors results in an effective decline in accessible role-models for the young mother.

Lack of Role Models

As discussed earlier, a young pregnant woman seeking role-models searches her memory and past experience for situations which will help her in making the role transition to motherhood (Rubin, 1967 a). With

family mobility, young girls frequently are not raised near their parents' families of origin, and have few memories of the behavior of family members. Brack found that of a sample of successful breast-feeding mothers, 25 percent reported "never" and 45.8 percent reported "once or twice" observing a mother breastfeeding prior to the birth of their children. Among mothers choosing not to breastfeed, 20.5 percent reported "never" and 64.1 percent reported "once or twice" (1975, p. 559). Bloomfield found that new mothers tended to follow the behavior patterns of their friends rather than those of their own mothers (1962), because they were able to utilize memories of "how it was for a friend" in the role transition operations.

Role Expectation Incoherence

Family mobility may contribute to problems in breastfeeding in another manner. Fein found that degree of coherence between the couple's expectation of their respective roles was of significant importance in their role adaptation (1967, p. 56). Family mobility often results in marriages between young people from vastly different backgrounds (Blitsten, 1963, p. 46). These differences would add to the strain of role transition, depending upon the degree to which they have or have not been resolved prior to arrival of the infant.

Lack of Significant Support

Raphael found that cultural family mobility patterns have had a significant impact upon breastfeeding success in yet another manner. Frequently there is no family member available to provide physical,

emotional, and social support during the vulnerable period while lactation is established. In a retrospective study of breastfeeding experiences Raphael found that a lack of such support or withdrawal of such support during the period of time when the women were in role transition was directly related to failure of lactation (1966, pp. 192-198). In a prospective study with women who were experiencing lactation difficulties and who had no one to fulfill the supportive role she demonstrated that provision of such support resulted in alleviation of the difficulties and successful breastfeeding experiences for the women (1966, pp. 382-384).

Medical Practices

Medical practices surrounding childbirth have a profound effect upon the success or failure of lactation. Several authors report effects upon the infant of intrapartal maternal medications which influence his functioning during breastfeeding. These effects are primarily decreased responsiveness at feeding time (Brazelton, 1961), decreased sucking rate and pressure which decreases intake (Kron, Stein, and Goddard, 1966), and decreased coping ability in response to performance demands (Brackbill, Kane, Manniello, and Abramson, 1974).

Other practices such as restriction of suckling during initial feedings; enforced prolonged period between delivery and initial feeding; rigid four-hour, "during waking hours only" feeding schedules; and, supplemental bottle feedings are frequently said to interfere with successful breastfeeding (Applebaum, 1970, 1975; Newton and Newton, 1962; Haire, 1972).

Chapter 3

METHODOLOGY OF THE STUDY

The Research Approach

Fox indicates that an experimental study design is used when data to answer the research question does not exist. A situation is created to provide opportunity to collect the necessary data. Through the manipulation and control of variables the researcher may evaluate according to specific criteria the results obtained (Fox, 1976, p. 195). When the experimental conditions are established to allow comparison between "current" or "traditional" method(s) and the experimental method, the design is known as a comparative experiment (1976, p. 200).

When a researcher seeks to approximate the conditions of an experimental study in an applied setting it becomes impossible to control all variables. This lack of control may result in compromise of the internal and/or external validity of the study design. According to Isaac and Michael such a study is termed a quasi-experimental study design. The potential compromise of validity requires that the researcher recognize and seek to control the major variables, and identify as limitations of the study those variables which cannot be controlled (Isaac and Michael, 1971, p. 26).

This study utilized a comparative quasi-experimental approach to determine if a relationship existed between a specific post-hospital-discharge nursing intervention and primiparous women's success in

breastfeeding their infants as measured by the study criteria at six weeks postpartum.

The Research Design

The Independent Variable

The independent variable of this study consisted of a specific plan for post-hospital nursing follow-up of primiparous women who had experienced a desire to breastfeed their newborns. Nurse-initiated telephone conversations on the day following hospital discharge and one week following delivery provided opportunity for assessment and intervention to facilitate lactation. Mothers were also encouraged to initiate telephone calls in response to problems or needs which they identified.

Timing of assessment and intervention. Timing of the first conversation was based on observation that many first-time parents encounter difficulties in adapting when they bring the newborn home from the hospital. Twenty-four hours is usually long enough for many of these problems to surface. Nursing assessment and intervention may facilitate mobilization of coping mechanisms and adjustment to "life with baby."

Use of telephone for follow-up. With rising costs of health care and increased efforts to control costs it seemed expedient to find an economically feasible form of nursing intervention to facilitate breastfeeding. Nursing assessment and intervention carried out via telephone conversation, if effective, require far less nursing time than

would a home visit program. Such a program would also require less patient time than would an early return-to-clinic program as advocated by some (Selby, 1976).

Nature of nursing follow-up. To assure a consistent approach to the follow-up conversations a specific algorithm was established for the nurse-initiated telephone calls (see Appendix M). The algorithm, specifying progression from initiation of the conversation to termination, spelled out a series of open-ended questions for assessment of adaptation; classification of problems into predetermined categories; initiation of predetermined nursing interventions; provision of opportunity for the subject to ask questions during the conversation; and encouragement for the subject to contact the nurse researcher later if problems arose.

Nursing treatments (see Appendix N) were developed with the goal to resolve, diminish or prevent the commonly-experienced problems of the early lactation process as identified by Disbrow (1964) and Evans (1969). These problems include engorgement and nipple pain (peak occurrence fourth or fifth postpartum day (Reeder, 1976, p. 380)); lack of information regarding skills of mothering, behavioral characteristics of the newborn, and physical, physiological and emotional changes usually experienced by the mother; physical discomforts; sleep disturbance; and, coping with psychosocial problems such as visitors, attitudes of family and friends (Evans, and Others, 1969, p. 31).

During each telephone conversation the nurse tabulated the information obtained and classified the nursing treatment(s) used on a form

developed for that purpose (see Appendix N). The categories used for classifying the nursing interventions (supportive, preventive, observational or educative) were derived from Campbell's (1975) definition of nursing intervention.

Prior to terminating the conversation the nurse encouraged the mother to contact her if problems were encountered. Closure was sought by asking the mother what she would be doing about the problems she had discussed with the nurse. All conversations initiated by subjects were tabulated and classified in the same manner as the nurse-initiated calls.

The Dependent Variable

The dependent variable of this study, success in breastfeeding the infant, was defined as a breastfeeding experience which met the following criteria when evaluated approximately six weeks postpartum.

1. The infant's nutrition was supplied through breastfeeding alone. This did not exclude an occasional supplemental bottle given for the mother's convenience but did exclude routine supplemental bottles and/or addition of solid food substances to the infant's diet.

2. The infant's weight gain at six weeks of age was within the normal range of 0.5-1.0 kilogram per month (Rudolph, 1977, p. 107).

3. Mother verbalized satisfaction with the breastfeeding experience.

4. If breastfeeding was terminated the decision reflected a preplanned choice to quit and did not reflect difficulties in the experience or pressure from others to terminate.

5. Mother did not experience major complications of lactation such as inflammation or infection of the breast or nipple.

Information regarding the breastfeeding experience was obtained from all subjects during a final interview conducted by telephone. A summary data sheet and interview guide was designed to assure consistency of data gathering (see Appendix O).

Extraneous Variables

There were many extraneous variables which may have influenced the outcome of this study which were not controlled. Due to the size of the sample and the limitations of time, the following extraneous variables were not controlled.

1. The educational background of the mother.
2. The quality of the subject's marital relationship.
3. The attitude of the subject's husband towards breastfeeding and his influence upon the subject's success;
4. The socioeconomic status and background.
5. The subject's perceptions of the attitude of physicians toward breastfeeding and its influence upon the subject's success.
6. The subject's previous exposure to, and experience with, women who were breastfeeding.
7. The attitude of the mother's family of origin.
8. The subject's prenatal preparation for breastfeeding.
9. The subject's level of motivation toward breastfeeding;
10. The ethnic origin of the subject;

11. Intervention and encouragement of persons other than the nurse researcher;

12. The quality of the in-hospital breastfeeding experience;

13. Unrecognized sources of anxiety in the mother which may inhibit lactation;

14. The subject's participation in an organization, such as the La Leche League, which encourages breastfeeding.

Data regarding certain of these extraneous variables were collected and analysis made to detect possible influences upon the outcome of the study. These variables were:

1. the subjects' perception of their husbands' attitude towards breastfeeding;

2. the subjects' perceptions of their physicians' attitudes towards breastfeeding;

3. the subjects' reported previous exposure to women who had breastfed successfully;

4. the subjects' reported perception of support from individuals other than the nurse researcher;

5. the subjects' participation in an organization, such as La Leche League, which encourages breastfeeding.

The Hypothesis

There will be no significant difference ($p=0.05$) between the proportion of women in the experimental group and in the control group who have a successful breastfeeding experience as measured by the study criteria at six weeks postpartum.

Selection of the Sample

The Setting of the Study

The population from which the sample was drawn was made up of primiparous women and their infants who were delivered at a private, non-profit, 509-bed university hospital in Southern California. Approximately 110 women deliver at this hospital monthly. The postpartum unit consists of 21 beds in nine semi-private rooms and one 3-bed ward with overflow on a nearby gynecology unit. Eight of the postpartum beds are designated for "rooming-in." "Rooming-in" mothers and their infants are cared for by the same nurse from 7 a.m. to 3 p.m. and 3 p.m. to 11 p.m. During these two shifts a registered nurse is usually assigned responsibility for four dyads. With this arrangement the infant generally spends 10 to 12 hours in the mother's room and the remainder of the day in the central newborn nursery. The mother and nurse share responsibility for the infant's care during the time he is in the mother's room. At night the infant remains in the central nursery unless the mother requests night feedings.

Women who obtain care at this facility are either private patients of the university teaching staff or clinic patients seen by the obstetrics residents. Socioeconomic status varies widely as does educational background. The community includes several ethnic subgroups with the Mexican-American predominating.

Population Characteristics

In an attempt to limit the impact of extraneous variables without severely limiting the population available for study sample selection

criteria were developed for both the mother and infant (see Appendixes E and F).

Sample Selection Process

Statistical analysis methods used in this study suggested a minimum sample size of 50 dyads. During the study period (January through April, 1979) newly delivered primiparous patients, assigned to the rooming-in beds of the postpartum unit and their infants were screened by means of a daily chart review to determine if they met the population criteria. Those dyads which met the criteria were randomly assigned to either the experimental or the control group using a table of random numbers (Treece and Treece, 1977, p. 101). During the study period approximately 75 charts were reviewed. Of these, 27 dyads met the criteria for inclusion in the sample with 13 assigned to the experimental group and 14 assigned to the control group. One experimental group subject was lost to follow-up and one control group subject was later dropped from the study because she and her husband separated during the early postpartum period. She attributed her failure at breastfeeding to the stress of the separation.

Consent to Participate

The mothers who met the criteria for inclusion in the study were contacted 12 to 36 hours following delivery to obtain consent to participate in the study. The nurse researcher explained what involvement in the study would mean to each subject in terms of time required, possible benefits, and risks as appropriate to their assigned study group

(see Appendixes I and K). Those mothers who consented to participate were asked to sign the appropriate consent form for their assigned group (see Appendixes J and L).

Pilot Study

Development of the Tools

Due to the nature of this study there were no pre-existing tools for use in the study. Demographic data for all subjects was recorded on tabulation sheets developed for that purpose (see Appendix H). To assure uniformity of intervention it seemed expedient to develop guidelines for the nursing intervention telephone conversations with the experimental group. These guidelines, in the form of an algorithm were developed in consultation with faculty advisors following review of the literature (see Appendix M). The algorithm was tested by the researcher in three conversations with patients not included in the study sample, and was accepted as having face validity.

A need was felt by the researcher to identify and record the type of problems reported by the subjects and the interventions used during the nursing intervention conversations, although this information was beyond the scope of the current study. To obtain this information, a tabulation sheet (see Appendix N) was designed using the most common problems identifed by Disbrow (1963) and Evans (1969, p. 31) and the nursing intervention categories identified by Campbell (1975).

Data to measure the success of the breastfeeding experience and to test for the influence of known extraneous variables was obtained

through the use of a final interview guideline (see Appendix O) which was developed following review of literature and in consultation with faculty advisors. It was tested with two of the sample subjects during the early study period and was felt to have face validity. Further testing of the validity of this tool would be appropriate.

Data Collection Techniques

Techniques of data collection were tested during the early study period with the first two subjects, who had been randomly assigned to the control group. Chart review for screening was easily accomplished with these subjects and demographic data readily obtained. The final interview was initially scheduled to be conducted when the mothers returned for their six-week postpartum examination. It was discovered that some difficulties existed in meeting the women for this appointment, so the decision was made to conduct the final interview by telephone. The telephone interview provided all needed data, so the subjects were retained in the study and the research design modified accordingly.

Data Collection and Recording

Demographic Data

Demographic data for all subjects were obtained at the time of the daily chart review and recorded upon the tabulation sheets designed for that purpose (see Appendix H).

Independent Variable

At the time that experimental group subjects were contacted, whether on the day following discharge or on the one-week postpartum

call, data regarding any problems reported by the subjects and the interventions used by the nurse researcher were recorded on the tabulation sheet for that purpose (see Appendix N). Any subject initiated telephone conversations were also recorded on that sheet.

Dependent Variable

Data regarding the independent variable, success in breastfeeding, were obtained during the final interview which was conducted by telephone between five and seven weeks postpartum. All subjects were contacted and the final interview questions were read to them over the telephone. Their responses were recorded on the form Final Interview Questions (see Appendix O).

Extraneous Variables

Data regarding certain known extraneous variables were obtained during the final interview also. This information was also recorded on the form Final Interview Questions (see Appendix O).

Data Processing and Analysis

Demographic data and data obtained during the final interview were processed by computer, giving tabulations of information and responses for the experimental and the control groups, with means and standard deviations where appropriate. Data regarding the criteria determining success in breastfeeding were reviewed for each subject and the subject was classified as successful or unsuccessful.

Chi-square analysis for the 2 by 2 table of unsuccessful and

successful experimental and control subjects was carried out following classification.

Methodological Assumptions

The following methodological assumptions were made in carrying out this study:

1. Primiparous women who indicated that they planned to breastfeed their infants were assumed to have made that decision because of a sincere desire to breastfeed and not because they had been coerced.

2. Data collection tools were assumed to have face validity.

3. Responses given during the data collection interviews were assumed to represent the true feelings and experiences of those interviewed.

4. Mothers delivering during any given time period are representative of mothers regardless of the time period in which they deliver.

Limitations of the Study

1. The small sample size.

2. The selectivity of the sample due to the setting in which the research was carried out.

3. The possibility of bias on the part of the researcher which may influence the effectiveness of the intervention.

4. The possible Hawthorne effect upon the performance of women in either the experimental and/or the control group because of their awareness that they were a part of a study.

5. Possible existence of an unidentified intervening variable which influenced the outcome of the study.

6. Unidentified differences between the subjects in the experimental and control groups.

Chapter 4

DATA ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS

Information regarding the breastfeeding experiences of primiparous women, gathered when their infants were between five and seven weeks of age, was analyzed to determine if a significant difference ($p=0.05$) existed between the proportion of experimental group (telephone follow-up) and control group (no telephone follow-up) mothers who experienced success in breastfeeding. Demographic data were recorded and tabulated for both groups, and are presented in table form.

The Chi-square test was used to test for a significant difference between the proportion of mothers in the experimental group and in the control group who experienced success in breastfeeding. A level of significance of $\alpha=0.05$ was set prior to data collection.

Demographic Data Analysis

The research study sample consisted of 25 primiparous mothers, with 12 in the experimental group and 13 in the control group. Demographic data are presented in Appendix P for both groups. Table 1 compares the experimental and control group data.

Experimental and control group subjects were similar in relation to type of delivery, length of labor, gestational age of infants, 1-minute and 5-minute Apgar scores for the infants, and infant birth weight. Maternal age for the control group subjects tended to be slightly younger than for the experimental group.

Table 1

Comparison of Experimental and Control Groups
Demographic Data

		Experimental Group N=12	Control Group N=13
Age Distribution:*	18-20	-	2
	21-23	3	7
	24-26	4	3
	27-29	3	1
Type of Delivery:			
Spontaneous Vaginal		9	9
Outlet Forceps		3	4
Length of Labor/Hours			
Median length		8	7.7
Range		13.3	14.4
Gestational Age of Infants/Weeks			
Distribution	37		1
	38	2	1
	39	-	2
	40	5	4
	41	3	3
	42	2	2
Apgar Scores 1/5 min.			
Distribution	7	3/-	1/-
	8	5/3	5/1
	9	4/9	7/10
	10	-/-	-/2
Birth Weight (in pounds)			
Median		7.8	7.3
Range		4.4	3.5

*Information not available for two subjects

Extraneous Variables

Certain known extraneous variables were not controlled during sample selection, but data regarding these variables were collected and analyzed to detect if these variables were responsible for differences between the experimental and the control groups. These data are presented in Appendix Q. Table 2 compares the data for both groups.

For these selected variables, the experimental and control groups were similar in relation to proportion of physicians perceived supportive of, or neutral towards, breastfeeding and in the proportion of husbands perceived supportive of breastfeeding. Two experimental group subjects perceived their husbands as actually discouraging their breastfeeding efforts. More of the experimental group subjects (10) than control group (7) perceived their families as supportive of breastfeeding. The two groups were also similar in relation to the proportion of subjects who perceived one or more persons as providers of help in their early breastfeeding experience, who knew someone who had breastfed successfully, who had seen a mother breastfeeding, and who were breastfed as infants. Minor differences existed between the proportion of subjects who had contacted a group encouraging breastfeeding (2 experimental, 0 control) and who did not know if they had been breastfed as infants (2 experimental, 5 control).

Success in Breastfeeding

There were five criteria established for determining success in breastfeeding within the context of this study. See Chapter 3 for these

Table 2

Selected Known Extraneous Variables
Comparison of Experimental and
and Control Groups

		Experimental Group N=12	Control Group N=13
Perception of attitudes re: breastfeeding:			
Obstetrician	encouraged	9	8
	neutral	2	4
	did not know	1	1
Pediatrician	encouraged	5	7
	neutral	5	5
	did not know	2	1
Husband	encouraged	10	12
	neutral	-	1
	discouraged	2	-
Family	encouraged	10	8
	neutral	-	4
	did not know	2	1
No. of subjects perceiving help from others		10	10
No. of subjects perceiving help from multiple others		6	5
No. of subjects who were members of a group encouraging breast-feeding		2	0
No. of subjects who knew someone who has successfully breast-fed		10	9
No. of subjects who had observed a mother breastfeeding		10	11
Breastfed as infants:	Yes	7	7
	No	3	1
	Unknown	2	5

criteria. Data regarding these criteria are presented in Appendix R. Table 3 presents a comparison of the experimental and control groups.

Analysis of Experimental and Control Data

The experimental and control groups were similar in relation to the proportion of subjects who met all criteria for success in breastfeeding and in relation to the proportion of subjects who failed to meet the criteria. The Chi-square value was computed for the 2 x 2 table of experimental group subjects who were successful (10) and who were unsuccessful (2) and the control group subjects who were successful (9) and who were unsuccessful (4) to test for a significant difference between groups. This value was 0.455 which for one degree of freedom gives $p=0.50$. Therefore the null hypothesis that there would be no significant difference between the proportion of women in the experimental group and in the control group who had a successful breastfeeding experience was accepted.

Total Sample Analysis, Successful versus Unsuccessful Subjects

Further analysis of data was undertaken to determine if significant differences existed between the successful and unsuccessful subjects in the total sample. Comparison of the successful and unsuccessful subjects in relation to demographic data and the selected extraneous variables is presented in Table 4. Both successful and unsuccessful subjects were similar in relation to the demographic data and their perception of the physicians' attitudes towards breastfeeding. The subjects

Table 3

Comparison of Experimental and Control Groups
Criteria Determining Success in Breastfeeding

	Experimental Group N=12	Control Group N=13
Expressed positive feelings re: breastfeeding experience	10	11*
Expressed negative feelings re: breastfeeding experience	2	3*
Continued to breastfeed six weeks or longer	10	11
Quit breastfeeding prior to time originally planned to do so	2	2
Gave supplemental formula		
Daily	2	3
Occasionally (1-2x/week)	0	2
Rarely (1-2x/month)	2	1
Did not give supplements	8	7
Gave solid feedings rarely (1-2x/month)	0	1
Did not give solid feedings	12	12
Infant weight gain satisfactory	11**	12***
Met all criteria for success in breastfeeding	10	9
Did not meet criteria for success in breastfeeding	2	4

*One mother expressed enjoyment of breastfeeding experiences but also found it to be time-consuming and inconvenient so she is counted in both groups.

**One mother had not kept the pediatric follow-up appointment so her infant's weight gain was unknown.

***One infant's weight gain was slightly less than 0.5kg per month at six weeks of age so was classified as questionable.

Table 4

Comparison of Successful and Unsuccessful Subjects
Demographic Data and Selected Extraneous Variables

			Successful N=19	Unsuccessful N=6
Average Age (mean)			22.5	24.5
Age distribution:*	18-20		2	-
	21-23		7	3
	24-26		6	1
	27-29		2	2
Type of delivery:	Spontaneous vaginal		13	5
	Outlet forceps		6	1
Length of labor:	Range in hours		6-20	5.6-17.25
Gestational age of infants (mean) in weeks			40.2	39.1
Mean 1/5 min. Apgar scores			8.3/8.9	8.1/8.8
Birth weight range			6 lb. 7 oz. to 9 lb. 11 oz.	5 lb. 3 oz. to 9 lb.
Perception of attitudes re. breastfeeding:				
	Obstetrician:	encouraged	14	3
		neutral	4	2
		did not know	1	1
	Pediatrician:	encouraged	9	3
		neutral	7	3
		did not know	3	-
	Husband:	encouraged	19	3
		neutral	-	1
		discouraged	-	2
Number of subjects perceiving help from others with breastfeeding			18	2
Number of subjects perceiving help from multiple others			10	1
Number of subjects who knew someone who had successfully breastfed			14	5
Number of subjects who had seen a mother breastfeeding			16	5
Breastfed as an infant?		Yes	12	2
		No	2	2
		Unknown	5	2

*Information not available for two subjects.

were dissimilar in relation to the proportion of husbands perceived as encouraging breastfeeding (19 or 100 percent successful, 3 or 50 percent unsuccessful), proportion of husbands perceived as neutral or discouraging (0 successful, 3 or 50 percent unsuccessful), proportion of subjects who reported receiving help from another (18 or 94.7 percent successful, 2 or 33 percent unsuccessful) and proportion of subjects who reported receiving help from multiple others in their early breastfeeding experience (10 or 52.7 percent successful, 1 or 16.6 percent unsuccessful).

The computed Chi-square value for the difference between the proportion of successful and unsuccessful subjects who reported receiving help and who reported receiving no help was 10.74. This value with one degree of freedom gives a value for $p < 0.01$. Therefore a significant statistical difference was found between the successful and unsuccessful subjects in relation to the proportion of subjects who reported that they received help from others during their early breastfeeding experience.

Identity of the persons perceived to have provided help with the breastfeeding experience is shown in Table 5. In Table 6 is presented a breakdown of the type of help which subjects perceived as important. In the majority of instances the helping person(s) was someone with whom the subject could be expected to have close emotional ties, i.e., husband, mother, sister or sister-in-law. In all instances where help was perceived, it included encouragement, and for a large number of the successful subjects it also included household help (12 or 63 percent).

Table 5

Perceived Help in Breastfeeding Experience: Comparison of Successful and Unsuccessful Subjects

Identity of Individuals Providing Help	Successful N=19	Unsuccessful N=6
No help perceived	1	4
Husband	6	0
Husband and mother	1	0
Husband, mother and third person	2	0
Husband and sister	1	0
Husband and nurse researcher	1	0
Mother	1	0
Mother and sister	1	0
Mother and friend	1	0
Mother and friend and nurse researcher	1	0
Sister	1	0
Sister and friend	1	0
Sister and doctor	0	1
Hospital personnel only	1	1

Table 6

Type of Help Subjects Received

	Successful	Unsuccessful
None	1	4
Encouragement	2	0
Household help and encouragement	7	1
Household help and encouragement and information	3	0
Household help and encouragement and information and demonstration	2	0
Information and encouragement	3	0
Information and encouragement and demonstration	1	1

Comparison of Unsuccessful Experimental and Control Subjects

Analysis of the data for the unsuccessful subjects in the experimental and control groups was undertaken to determine if any significant differences existed between these two subgroups. Table 7 is a comparison of these groups in relation to the selected extraneous variables. The small number of subjects does not allow statistical inference, but it is of interest that within the experimental group, both unsuccessful subjects perceived their husbands to be discouraging of their breastfeeding efforts, while three of the four unsuccessful control subjects perceived their husbands to be encouraging and the fourth perceived her husband to be neutral.

Problems Encountered by Unsuccessful Subjects

Table 8 presents the data reported by the unsuccessful subjects in relation to the problems they encountered in their breastfeeding experiences. One of the control subjects did not terminate breastfeeding, but was using daily supplemental formula feedings because she did not "want the baby to be solely dependent upon breastfeeding." A second control subject was using daily supplemental formula on her pediatrician's advice because the baby had had an excessive initial weight loss.

Two subjects, one control and one experimental, felt that their pediatricians had encouraged them to discontinue breastfeeding because their infants were jaundiced. These subjects also reported feeling that their infants were not obtaining sufficient breast milk. The experimental subject also reported that her husband encouraged her to stop

Table 7

Comparison of Unsuccessful Experimental and Control Group Subjects for Selected Extraneous Variables

		Experimental Group N=2	Control Group N=4
Perception of attitudes re: breastfeeding			
Obstetrician:	encouraged	1	2
	neutral	1	1
	unknown	0	1
Pediatrician:	encouraged	0	3
	neutral	2	1
Husband	discouraged	2	0
	encouraged	0	3
	neutral	0	1
Perception of persons who provided help in breast-feeding		0	1 sister & doctor 1 hosp. nurse
Has known mother who successfully breastfed:	Yes	2	3
	No	0	1
Has seen a mother breastfeeding	Yes	2	3
	No	0	1
Was breastfed as an infant:	Yes	0	2
	No	1	1
	Unknown	1	1
Quit breastfeeding	1st week	2	1
	4th week	0	1
Using daily supplemental formula		0	2

Table 8

Problems Encountered by Unsuccessful Subjects

	1	13	16	19*	22	23*
Quit because:						
Sore nipples						x
Feeling baby not getting enough breast milk			x	x		x
Criticism from husband						x
Disrupted plans because of breastfeeding		x				
Feeling that it "took too much time"		x				
Experience unpleasant		x				
Problems re: Infant lost weight. M.D. encouraged use of daily supplement					x	
Problems re: Infant jaundiced			x	x		
Encouraged to stop by:		Husband	Pedia-trician	Pedia-trician Husband		Husband
Did not quit but felt baby not getting enough breast milk					x	
Using daily supplement	x				x	x
Infant weight gain	Satis	Satis	Satis	Unk	Question-able wt. gain	Satis

*Study group subjects

breastfeeding because they would be able to tell how much the infant was taking per feeding if he was receiving a bottle.

One control subject reported that though she breastfed for four weeks she found the experience unpleasant, and felt that it disrupted her plans and took too much time. She also indicated that her husband was initially neutral regarding her decision to breastfeed, but that when she found the experience unpleasant he encouraged her to discontinue.

One experimental subject reported that she experienced sore nipples and was afraid that the baby was not receiving enough breast milk, but that the criticism from her husband because he could not participate in the infant's feedings actually was the deciding factor in her decision to stop breastfeeding.

Discussion

This study showed that there was no statistical difference between the proportion of women in the experimental and control groups who had a successful breastfeeding experience as measured by the study criteria at six weeks postpartum. There was, however, a statistically significant difference ($p < 0.01$) between the successful and unsuccessful subjects in the total sample in relation to the proportion of women who reported receiving help from another individual during their early breastfeeding experience. The unsuccessful experimental and control subjects were also dissimilar in relation to their perception of their husbands' attitudes toward breastfeeding.

Conclusion

A group of primiparous women choosing to breastfeed their infants was randomly assigned to either the experimental group (which received post-hospital telephone follow-up intervention designed to facilitate adaptation to breastfeeding) or to the control group (which received no post-hospital intervention). Data regarding predetermined criteria defining success in breastfeeding was obtained for both groups during a telephone interview conducted approximately six weeks following delivery. Comparison of the two groups revealed no significant statistical difference ($p=0.05$) between the proportion of experimental group and control group subjects who had a successful breastfeeding experience; therefore the null hypothesis was retained.

Observation of differences between the successful and unsuccessful subjects in the total sample, and between the unsuccessful experimental group subjects and the unsuccessful control group subjects suggest several areas for future study.

Implications for Nursing

Although no statistically significant difference was found between the experimental and control group in the proportion of women having a successful breastfeeding experience, the data collected in the study tend to confirm the importance of support for the successful establishment of lactation. The findings do suggest that the impact of the husband's attitude may be of greater importance than the presence or

absence of other support figures. Further study to determine the significance of the husband's attitude is indicated. Nursing interventions might be designed to facilitate a supportive attitude on the part of husbands as a means of encouraging and supporting the lactation efforts of women. It is also possible that differences in degree of risk of failure in lactation existed for the women in the experimental and control groups. Studies to identify risk factors and appropriate screening methods for identifying women at risk of failure would make it possible to concentrate nursing efforts in encouraging breastfeeding for these women.

Telephone follow-up proved to be economical in terms of nursing time necessary to answer the questions of study subjects. Subjects did initiate calls to the nurse researcher in some instances. It seems that mothers who were familiar with the nurse, i.e., through contact with her as their primary postpartum nurse, might be more comfortable in initiating calls if given the opportunity. Further study to determine the impact of primary nurse follow-up similar to the study follow-up intervention is also indicated.

Suggestions for Further Study

The nurse researcher suggests the following areas for further study.

1. Further evaluation of the effectiveness of telephone follow-up nursing intervention with a larger sample size.

2. Study to identify factors which contribute to the risk of

failure of lactation and methods of screening women for these factors to allow focusing of nursing efforts to support lacation upon women at risk of failure.

3. Modification of the telephone follow-up nursing intervention so that the primary post-partum nurse made the telephone calls.

4. Exploration of nursing measures to promote support for breastfeeding on the part of husbands or other significant persons.

Summary

This study utilized a comparative quasi-experimental approach to determine if a relationship existed between a specific post-hospital-discharge nursing intervention and primiparous women's success in breastfeeding their infants as measured by the study criteria at six weeks postpartum. The study sample consisted of 25 primiparous women with 12 subjects randomly assigned to the experimental group and 13 subjects assigned to the control group. Subjects in the experimental group received nursing intervention designed to augment the support system of the mother and to facilitate success in breastfeeding. Mothers in the experimental group were contacted by telephone on the day following their hospital discharge and again one week following delivery. An assessment and intervention algorithm was followed to assure a consistent approach to the follow-up. Between five and seven weeks following delivery a final interview of all subjects was conducted by telephone. Data obtained at that time were used to evaluate success in breastfeeding as defined by the study criteria. Similar proportions of experimental

and control subjects met all criteria for success in breastfeeding. The Chi-square analysis yielded $p=0.50$; therefore the researcher accepted the null hypothesis that there would be no significant difference between the proportion of women in the experimental group and in the control group who had a successful breastfeeding experience.

BIBLIOGRAPHY

BIBLIOGRAPHY

American Academy of Pediatrics, Committee on Nutrition. Commentary on breastfeeding and infant formulas, including proposed standards for formulas. Pediatrics 57(2):278-285, February 1976.

Applebaum, R. M. The modern management of successful breastfeeding. Pediatric Clinics of North America 17:203-225, February 1970.

_____. The obstetrician's approach to the breasts and breastfeeding. Journal of Reproductive Medicine 14:98-116, March 1975.

Banton, Michael. Roles: An Introduction to the Study of Social Relations. New York, Basic Books, Inc., Publishers, 1965.

Benedek, Therese. The psychosomatic implications of the primary unit: Mother-child. American Journal of Orthopsychiatry 19:642-645, 1949.

_____. Psychobiological aspects of mothering. American Journal of Orthopsychiatry 26:272-278, April 1956.

Biddle, Bruce J., and Thomas, Edwin J. Prescriptions. In Role Theory: Concepts and Research, ed.by Bruce J. Biddle and Edwin J. Thomas. New York, John Wiley and Sons, Inc., 1966. Pp. 51-62.

Blitsten, Dorothy R. The World of the Family. New York, Random House, 1963.

Bloomfield, A. E. How many mothers breastfeed? Survey in general practice. Practitioner 188:393-396, 1962.

Brack, Datha Clapper. Social forces, feminism, and breastfeeding. Nursing Outlook 23:556-561, September 1975.

Brackbill, Y., Kane, J., Maniello, R. L., and Abramson, D. Obstetric premedication and infant outcome. American Journal of Obstetrics and Gynecology 118:377-384, February 1, 1974.

Brazelton, T. Berry. Psychophysiologic reactions in the neonate II. Effects of maternal premedication on the neonate and his behavior. The Journal of Pediatrics 58:513-518, April 1961.

Campbell, Claire. Nursing Diagnosis and Intervention in Nursing Practice. New York, John Wiley and Sons, Inc., 1978.

Clausen, Joy Princeton, Flask, Margaret Hemp, and Ford, Boonie. Maternity Nursing Today. 2nd ed. New York, McGraw-Hill Book Co., 1977.

Disbrow, Mildred A. Any woman who really wants to nurse her baby can do so??? Nursing Forum 2(3):39-48, 1963.

_____. Nursing interventions as a factor in successful breast-feeding. Evaluation of Nursing Intervention. Convention Clinical Sessions, American Nurses' Association. Monograph 4:5-12, 1964.

_____. Changing roles and self-concepts of people. In Maternity Nursing Today, ed. by Joy Princeton Clausen, and Others. New York, McGraw-Hill Book Company, 1977.

Egli, G. E., Egli, N. S., and Newton, M. Influence of number of breast feedings on milk production. Pediatrics 27:314-317, 1956.

Eppink, Henrietta. An experiment to determine a basis for nursing decisions in regard to time of initiation of breastfeeding. Nursing Research 18:292-299, July-August 1969.

Estok, Patricia Jenaway. What do nurses know about breastfeeding problems? JOGN Nursing 2:36-39, November/December 1973.

Evans, Ramona T., Thigpen, Lorna W., and Hamrick, Mabel. Exploration of factors involved in maternal physiological adaptation to breast-feeding. Nursing Research 18:28-33, January-February 1969.

Fein, Robert A. The first weeks of fathering: The importance of choices and supports for new parents. Birth and the Family Journal 3:53-58, Summer 1976.

Fox, David J. Fundamentals of Research in Nursing. 3rd ed. New York, Appleton-Century-Crofts, 1976.

Gerrard, John W. Breast-feeding: Second thoughts. Pediatrics 54:757-764, December 1974.

Goffman, Erving. Presentation biases. In Role Theory: Concepts and Research, ed. by Bruce J. Biddle and Edwin J. Thomas. New York, John Wiley and Sons, Inc., 1966. Pp. 201-206.

Halpern, S. R., Sellars, W. A., Johnson, B. B., Anderson, D. W., Saperstein, S., and Reisch, J. S. Development of childhood allergy in infants fed breast, soy or cow milk, Journal of Allergy and Clinical Immunology 51:139, 1973.

Haire, Doris. The Cultural Warping of Childbirth. A special report for International Childbirth Education Association in ICEA News. Spring 1972.

Harfouche, J. K. The importance of breastfeeding. Journal of Tropical Pediatrics 16:134-175, September 1970.

Iffrig, Sister Mary Charitas. Early breast feeding with alternate massage. International Journal of Nursing Studies 4:193+, August 1967.

Isaac, Stephen, and Michael, William B. Handbook in Research and Evaluation. San Diego, EdITS Publishers, 1971.

Jackson, Jay M. Structural characteristics of norms. In Role Theory: Concepts and Research, ed. by Bruce J. Biddle and Edwin J. Thomas. New York, John Wiley and Sons, Inc., 1966. Pp. 113-125.

Jelliffe, Derrick B., and Jelliffe, E. F. Patrice. An overview. The American Journal of Clinical Nutrition 24:1013-1024, August 1971.

Johnson, Nancy Winters. Breast-feeding at one hour of age. MCN The American Journal of Maternal Child Nursing 1:12-16, January/February 1976.

Kippley, Sheila. Breast-Feeding and Natural Child Spacing. New York, Harper and Row, 1974.

Knafl, Kathleen. Conflicting perspectives on breast feeding. American Journal of Nursing 74:1848-1851, October 1974.

_____. Negotiating hospital care: La Leche League members and hospital personnel. JOGN Nursing 5:47-51, July/August 1976.

Kron, Reuben E., Stein, Marvin, and Goddard, Katherine E. Newborn sucking behavior affected by obstetric sedation. Pediatrics 37:1012-1016, 1966.

La Leche League International. The Womanly Art of Breast Feeding. Franklin Park, IL, 1963.

Mata, L. J., and Urrutia, J. J. Intestinal colonization of breast-fed children in a rural area of low socio-economic level. Annuals of the New York Academy of Science 176:93, 1971.

McFarland, Margaret B., and Reinhart, John B. The development of motherliness. Children 6:48-52, March-April 1959.

Meara, Hannah. A key to successful breast-feeding in a nonsupportive culture. Journal of Nurse-Midwifery 21:20-26, Spring 1976.

Montague, Ashley. Touching: The Human Significance of the Skin. New York, Harper and Row, 1971.

Newton, Michael, and Newton, Niles Rumely. The let-down reflex in human lactation. The Journal of Pediatrics 33:698-704, 1948.

_____. Relation of the let-down reflex to the ability to breast feed. Pediatrics 6:726-733, 1950.

_____. The normal course and management of lactation. Clinical Obstetrics and Gynecology 5:44-63, March 1962.

_____. Psychologic aspects of lactation. The New England Journal of Medicine 22:1179-1188, November 30, 1967.

Newton, Niles. Psychologic differences between breast and bottle feeding. The American Journal of Clinical Nutrition 24:993-1004, August 1971.

Nichols, Margaret G. Effective help for the nursing mother. JOGN Nursing 7:22-30, March/April 1978.

Olson, JoAline. Breastfeeding: Common problems and practical answers. Pediatric Nursing 32-35, January/February 1978.

Oseid, Betty J. Breast-feeding and infant health. Clinical Obstetrics and Gynecology 18:149-173, June 1975.

Pryor, Karen. Nursing Your Baby. New York, Harper and Row, 1976.

Puffer, R. R., and Serrano, C. V. Patterns of Mortality in Childhood. Scientific publication No. 262. Pan American Health Organization, World Health Organization, 1973.

Raphael, Dana Louise. The Lactation-Suckling Process Within a Matrix of Supportive Behavior. Columbia University, 1966. (Unpublished doctoral dissertation) Dissertation Abstracts International, microfilm order no. 69-15, 580.

_____. The Tender Gift: Breastfeeding. New York, Schocken Books, 1976.

Reeder, Sharon R., Mastroianni, Luigi, Martin, Leonide L., and Fitzpatrick, Elise. Maternity Nursing. 13th ed. New York, J. B. Lippincott Company, 1976.

Robischon, Paulette and Scott, Diane. Role theory and its application in family nursing. Nursing Outlook 17:52-57, July 1969.

Rossi, Alice S. Transition to parenthood. Journal of Marriage and the Family 30:26-39, February 1968.

Rubin, Reva. Basic maternal behavior. Nursing Outlook 9:683-686, November 1961.

_____. Puerperal change. Nursing Outlook 9:753-755, December 1961.

_____. Attainment of the maternal role, part I. Processes. Nursing Research 16:237-245, Summer 1967 a.

_____. Attainment of the maternal role, part II. Models and referrants. Nursing Research 16:342-346, Fall 1967 b.

_____. Cognitive style in pregnancy. American Journal of Nursing 70:502-508, March 1970.

_____. Maternal tasks in pregnancy. Maternal-Child Nursing Journal 4:143-153, Fall 1975.

_____. Maternity nursing stops too soon. American Journal of Nursing 75:1680-1684, October 1975.

Rudolph, Abraham M., Barnett, Henry L., and Einhorn, Arnold H., Eds. Pediatrics. 16th ed. New York, Appleton-Century-Crofts, 1977.

Salazar, Hernando, Tobon, Hector, and Josimovich, John B. Developmental, gestational and postgestational modification of the human breast. Clinical Obstetrics and Gynecology 18:113-137, June 1975.

Sarbin, T. R. Role theory. In Handbook of Social Psychology, ed. by Gardner Lindzey. Reading, MA, Addison-Wesley Publishing Co., 1954. Pp. 223-258.

Selby, Maija L. Pediatrics before 6 weeks. Pediatric Nursing 47, 48, November/December 1976.

Shields, Donna. Psychology of pregnancy. The Canadian Nurse 9:24-26, November 1974.

Thomas, Edwin J., and Biddle, Bruce J. Basic concepts for the variables of role phenomena. In Role Theory: Concepts and Research, ed. by Bruce J. Biddle and Edwin J. Thomas. New York, John Wiley and Sons, Inc., 1966. Pp. 51-62.

Treece, Eleanor Walters, and Treece, James William, Jr. Elements of Research in Nursing. 2nd ed. St. Louis, The C. V. Mosby Company, 1977.

Turner, Ralph H. Role-taking, role-standpoint, and reference-group behavior. In Role Theory: Concepts and Research, ed. by Bruce J. Biddle and Edwin J. Thomas. New York, John Wiley and Sons, Inc., 1966. Pp. 151-158.

APPENDIX A

Letter of Approval with Recommendations
from Ethics Committee

LOMA LINDA UNIVERSITY

Loma Linda Campus
LOMA LINDA, CALIFORNIA 92350
La Sierra Campus
RIVERSIDE, CALIFORNIA 92515

SCHOOL OF NURSING

Approval Date January 3, 1979

Melinda Hoskins
P.O. Box 28
Loma Linda, CA 92354

Dear Graduate Student:

The Ethics in Student Research Committee has reviewed the proposal you submitted for a research study to partially fulfill the School of Nursing requirements for a Master of Science degree from Loma Linda University.

The Committee has voted that your study is:

____ Approved as submitted in the specified setting for one year.

__X__ Approved in the specified setting for one year after the recommended changes have been made and a memo from your research chairman to this effect has been received by the committee chairman.

____ Not approved as submitted to the committee. See the attached comments for recommended changes. Must be resubmitted prior to any data collection.

____ Deferred to: ___UCOHS ___Research Chairman ___Other

__x__ Please see attached recommendations and/or comments regarding this action.

Please remember to give all signed consent forms to the Research Coordinator. Please contact the Chairman of the Ethics in Student Research Committee if you have questions related to the decision of the Committee. If any changes are made in the hypothesis, tool, consent form, or the procedure for data collection, this proposal must be resubmitted to this Committee. If data collection extends beyond one year the proposal must be resubmitted to the Committee.

We pray that the Lord will continue to bless your endeavors.

Sincerely,

Evelyn L Elwell

Evelyn L. Elwell, Chairman
Ethics in Student Research Committee

xc: Research Committee Chairman

RECOMMENDATIONS AND/OR COMMENTS

1. Consent forms should be in first person.
2. Need facility approval.
3. Need physician consent (form).
4. Under criteria add to Apgar Score: 7, "or above" and 8,"or above."
5. Clarify the words "minimal risk" or state there is no risk to emotional or physical well being as a result of participation in study.

APPENDIX B

Letters Requesting and Granting Permission to Conduct Study at Facility

January 15, 1979

Miss Gertrude Haussler, R.N.
Director of Nursing Service
Loma Linda University Medical Center

Dear Miss Haussler:

As a graduate student in nursing and in partial fulfillment of the requirements for a master's degree in nursing, I am investigating the effectiveness of a post-hospital-discharge plan for nursing intervention with breastfeeding primiparous women. I am requaesting permission to involve patients and their records from Loma Linda University Medical Center in the study. My thesis committee chairman, Clarice Woodward, has approved this thesis and I have obtained approval from the School of Nursing Ethics in Student Research Committee. I am also seeking approval from Dr. Ziprick at this time.

The proposed research will utilize a comparative quasi-experimental approach. This will involve nurse-researcher initiated telephone conversations with the study group of primiparous women who have indicated a desire to breastfeed their infants. These conversations are scheduled for the day following discharge from the hospital and one week following delivery. The purpose of the calls is to provide supportive, preventive, observational and / or educative nursing interventions believed to facilitate lactation. The study group subjects may also contact the nurse-researcher if they encounter problems with lactation during the study period. Both the study group and the control group subjects will be interviewed (at the time they return for their "six-weeks" post-partum examination) regarding their breastfeeding experience. The interview will take approximately fifteen minutes of the patient's time. Risk to the patients is considered minimal. Confidentiality of the patient's responses and the right to withdraw from the study without prejudice will be assured for each patient.

I am enclosing a copy of my research proposal which further clarifies my study.

With your permission I would like to begin data collection during the fourth week in January. I expect to collect data with fifty patients over a period of three to four months. I will be happy to make an

appointment with you to discuss this research further if you desire and to share the findings of the study after its completion. Because this study involves patients from 3200 I am sending a copy of this letter and my research proposal to Bonnie Wesslen and to Veronica Bender for their information.

Space has been provided on the attached letter from the Graduate Program for your reply. Thank you for your assistance.

Sincerely,

Melinda K. Hoskins, R.N., B.S.
Graduate Student in Nursing
Loma Linda University
School of Nursing

enclosure

xc: C. Woodward, Research Chairman
B. Wesslen
V. Bender

LOMA LINDA UNIVERSITY MEDICAL CENTER

Date: 1-17-79

Dear: Melinda Hoskins

Your request for permission to collect data for your research project at Loma Linda University Medical Center has been received and reviewed. The following action has been taken:

✓ You have my permission to conduct your study in our facility.

___ Your request has been temporarily denied pending provision of additional information.

___ Your request cannot be granted at this time.

Also, it will be necessary for you to:

✓ Obtain permission from the attending physician since your study involves patients and/or their records.

✓ Obtain additional permission from Bonnie Hessler.

___ Notify and/or advise the following persons of your study.

___ Make an appointment with _____ for additional discussion and information provision.

___ Other

If I can be of further help, please let me know.

Sincerely,

Gertrude L. Haussler

Gertrude L. Haussler, M.S.
Assistant Administrator
Nursing

LOMA LINDA UNIVERSITY

Medical Center

Loma Linda Campus
LOMA LINDA, CALIFORNIA 92354
La Sierra Campus
RIVERSIDE, CALIFORNIA 92505

22 January 1979

Melinda Hoskins, RN, BS
Graduate Student in Nursing
Loma Linda University School of Nursing
Loma Linda, CA 92354

Dear Melinda:

I have read with approval your research proposal. With the early discharge of post-partum patients, I will follow with interest your study. Please share with Veronica and me the findings of the study after completion.

If there is any way I can be of assistance, please let me know.

Sincerely,

Bonnie Wesslen

Bonnie Wesslen, RN
Director - Module I
Nursing Administration

BW:fcl

APPENDIX C

Letter to Physician Requesting Permission
to Use His Patients In Study

January 15, 1979

Dr. Harold F. Ziprick
Chairman, Department of Gynecology and Obstetrics
Loma Linda University Medical Center
Loma Linda, CA 92350

Dear Dr. Ziprick:

As a graduate student in nursing and in partial fulfillment of the requirements for a master's degree in nursing, I am investigating the effectiveness of a post-hospital-discharge plan for nursing intervention with breastfeeding primiparous women. Permission to conduct this study has been obtained from the School of Nursing Ethics in Student Research Committee, and from the members of my thesis committee, Clarice Woodward, Erville Allen and Betty Lonnstrom. I am hereby requesting permission to include patients from the Loma Linda University Medical Center Obstetrical practice during the postpartum period in this study, which is explained in more detail in the research proposal enclosed with my letter. I am currently seeking approval from Miss Haussler also.

For your convenience I ahave enclosed a form for your consent and a self-addressed envelope. With your permission I would like to begin data collection during the fourth week in January. I expect to collect data with approximately fifty patients during the following three to four months. I will be happy to make an appointment with you to discuss this research further is you desire and to share the findings of the study after its completion.

Thank you for your assistance.

Sincerely,

Melinda K. Hoskins, R.N., B.S.
Graduate Student in Nursing
Loma Linda University
School of Nursing

Enclosure

xc: C. Woodward, Research Chairman

APPENDIX D

Physician Consent Form

PHYSICIAN CONSENT FORM

Selected primiparous women who have indicated a desire to breastfeed their infants will be asked to participate in the study and to sign a consent form twelve to thirty-six hours following delivery.

Half of these patients (selected randomly) will be contacted by telephone the day following hospital discharge and one week following delivery. The purpose of these telephone calls is to provide supportive, preventive, observational and / or educative nursing interventions believed to facilitate lactation. The study group subjects may also contact the nurse-researcher if they encounter problems with lactation during he study period.

At the time they return for their "six-weeks" post-partum examination both the study and the control group subjects will be interviewed regarding their breastfeeding experience. The interview will require approximately fifteen minutes of the patient's time. Risk to the patient is considered minimal. Confidentiality of the patient's responses and the right to withdraw from the study without prejudice will be assured for each patient.

* * * * *

"I hereby consent to permit Melinda K. Hoskins, R.N., under the supervision of Clarice Woodward, R.N., M.S., of the Loma Linda University School of Nursing, to include my patients in the research study as described in the paragraphs above, and in witness thereof I have signed this consent. I understand that I am free to withdraw my permission at any time, and that patient consent will also be obtained."

Harold F Zipnick MD
Signed

Jan 16 1979
Date

Linda M. Moore
Witness

APPENDIX E

Population and Sample Selection Criteria: Mother

POPULATION AND SAMPLE SELECTION
CRITERIA: MOTHER

1. Married at least one year prior to delivery
2. Primiparous
3. Delivered at study hospital
4. Indicated voluntary choice to breastfeed
5. Age 18-32
6. Able to comprehend, read and speak English
7. No medical complications of pregnancy such as diabetes, heart disease, pre-eclampsia/eclampsia
8. No medical or obstetrical complications of labor, i.e., no hypertension, infection, abnormal presentation
9. Spontaneous, or elective outlet-forceps, vaginal delivery of single infant
10. Labor lasting over 20 hours or under 6 hours
11. Intrapartal medication: >50 mg meperidine (Demerol) HCl
    or >20 mg alphaprodine (Nisentil)
    use of regional or local anesthesia acceptable
12. Assigned to postpartum "rooming-in" bed
13. First breastfeeding within two hours following delivery
14. No postpartum contraindications for breastfeeding: i.e.,
    temperature >100.4x2 in 24 hours
    confirmed postpartum infection
    medical condition requiring medication which passes through breast milk in significant quantity to contraindicate breastfeeding
15. Discharged between 48 and 96 hours following delivery
16. No illness during puerpereum requiring hospitalization or contraindicating breastfeeding, i.e., active untreated TB
17. Infant meets criteria for infant selection

APPENDIX F

Population and Sample Selection Criteria: Infant

POPULATION AND SAMPLE SELECTION
CRITERIA: INFANT

1. 37-42 weeks gestation

2. Birth weight 6 to 9.5 pounds

3. No apparent major or minor abnormalities

4. Apgar score 1 minute >7
   5 minutes >8

5. No abnormally elevated bilirubin levels requiring medical intervention

6. No periods of observation in NICU for evaluation of possible or potential problems.

7. Neurologic exam by physician within normal limits

8. Discharged when mother is

9. No illness during first six weeks of life requiring hospitalization or contraindicating breastfeeding

APPENDIX G

Subject Selection

#_____

SUBJECT SELECTION

Chart Review/Screening Data

Mother's Name_____ Room #_____

Telephone Number_____

___ met criteria ___ study group

___ did not meet criteria ___ control group

Date

_____ Day following discharge phone call

_____ One week following delivery phone call

_____ Six week interview

_____ Withdrew from study re:_____

APPENDIX H

Screening Data

___ (1 | 2 | 3)

SCREENING DATA

MOTHER

1. Date of Screening_____
2. Delivery Date_____ 3. EDC_____
4. Primiparous ___yes ___no (g____/p____)
5. Breastfeed ___yes ___no 6. Age ___ (4 | 5)
7. Length of time married_____
8. Years of school completed ___ (6 | 7)
9. Comprehends, reads, speaks English ___yes ___no
10. Medical complications of pregnancy? ___no ___yes
11. Medical complications of labor? ___no ___yes
    Obstetrical complications of labor? ___no ___yes
12. Type of delivery 8
    1 ___spontaneous vag.
    2 ___elective outlet forceps
    3 ___vacuum extractor
    4 ___other_____
13. Length of labor ___ (9 | 10) hrs. ___ (11 | 12) min.
14. Intrapartal medications:
    13
    0 Received >20 mg. Nisentil or >50 mg. Demerol
    1 Demerol _____ mg. (≤ 50 mg.)
    2 Demerol _____ mg. (≤ 50 mg.) plus anti-anxiety agent_____
    3 Nisentil _____ mg. (≤ 20 mg.)
    4 Nisentil _____ mg. (≤ 20 mg.) plus anti-anxiety agent_____
    5 Epidural anesthesia
    6 Epidural plus_____
    7 No medications received
15. Breastfed in recovery 14 1 ___yes 2 ___no
16. Postpartum contraindications ___no ___yes_____

INFANT

1. Gestational age ___ (15 | 16) weeks 2. Birth Weight # ___ (17 | 18 | 19) oz.
3. Apgar: 1 min. ___ (20 | 21) 5 min. ___ (22 | 23)
4. Physical Exam: ___WNL ___Other_____
5. Neuro Exam by Physician___ WNL___ Other_____

___Met criteria, subject #_____ ___Did not meet criteria

24 Assigned to 1 ___study group 2 ___control group

APPENDIX I

Oral Explanation to Prospective Subject (Study Group)

ORAL EXPLANATION TO PROSPECTIVE SUBJECT
(Study Group)

I am Melinda Hoskins, a graduate student in Parent/Child Nursing. I am currently doing a study to learn more about the breastfeeding experiences of first-time mothers. I would like to have you participate in this study. I feel that this study will help nurses to know how to give more help to first-time mothers who are breast-feeding. In that way your participation may be of benefit to other women and perhaps I will be able to answer some of the questions you may have in the next few weeks. Participation involves about fifteen minutes of your time on two different occasions when I will contact you by telephone to ask you several questions to gain the information for my study. At the times when I call I will be asking you some questions but I will also be glad to answer questions you have. One goal of this study is to learn more about the kinds of questions new mothers have when they are breastfeeding. The first telephone call will be the day after you and the baby are discharged from the hospital. The second telephone call will be when the baby is one week old. I will also be available if you want to call me. I will explain how to contact me the first time I call you at home. I will also arrange to meet with you when you return to the doctor for your six-week check-up to ask you a few questions.

This study will involve no risk to you or your baby. Any information you give will be held in strict confidence and your name will not be used in my report or in any articles I may publish as a result of this study.

Your agreement to participate in this study may be withdrawn at any time without resulting in any prejudice towards you.

If you are willing to participate in this study, please sign this consent form. (Give Consent Form A.)

APPENDIX J

Consent Form A

CONSENT FORM "A"

This is a study to obtain information about the breastfeeding experiences of first-time mothers and problems which they may encounter, in order to provide information regarding possible ways nurses may be of help to them. Participation in this study may be of benefit to other women in that information obtained may enable nurses to be more effective in helping breastfeeding mothers. Perhaps I will also obtain benefit by having some of my questions answered in the next few weeks. Participation in this study will involve two telephone conversations of approximately fifteen minutes each and a short interview when I return to the doctor for my six-week postpartum checkup. If problems arise during the next six weeks which I wish to talk over with a nurse, I may also contact Melinda Hoskins, R.N.

There is no risk to the emotional or physical well-being of myself or my baby as a result of participation in this study.

* * * * * * *

"It has been explained to me and I am aware that participation in this research project is voluntary and that I have the right to withdraw from it at any time without incurring any disadvantages. Any and all information obtained through this study will be treated in a confidential manner. I further am aware that any report or publication resulting from this study will not contain any information which might lead to the identification of the participants in this study.

"I have considered the above statements and hereby give my free and voluntary consent to participate in the Comparative Study to Determine the Effectiveness of Post-Hospital Discharge Nursing Intervention in Facilitating Breastfeeding Among Primiparous Women under the supervision of Melinda Hoskins, R.N., graduate student in nursing, Loma Linda University, and in witness thereof I have signed this consent. I am aware that I am free to withdraw from participation in the study at any time without resulting in any prejudice toward me."

_____ _____

Date Signed

_____

Witness

APPENDIX K

Oral Explanation to Prospective Subject (Control Group)

ORAL EXPLANATION TO PROSPECTIVE SUBJECT
(Control Group)

I am Melinda Hoskins, a graduate student in Parent/Child Nursing. I am currently doing a study to learn more about the breastfeeding experiences of first-time mothers. I would like to have you participate in this study. I feel that this study will help nurses to know how to be of more help to first-time mothers who are breastfeeing. In that way your participation may be of benefit to other women. Participation involves about fifteen minutes of your time when you return to the doctor's office for your six-week checkup. At that time I will ask you several questions about breastfeeding for my study. I will contact you by telephone approximately four weeks from now to learn when your doctor's appointment is going to be.

This study will involve no risk to you or your baby. Any information you give will be held in strict confidence and your name will not be used in my report or in any articles I may publish as a result of this study.

Your agreement to participate in this study may be withdrawn at any time without resulting in any prejudice towards you.

If you are willing to participate in this study, please sign this consent form.

APPENDIX L

Consent Form B

CONSENT FORM "B"

This is a study to obtain information about the breastfeeding experiences of first-time mothers in order to provide information regarding possible ways nurses may be of help to them. Participation in this study may be of benefit to other women in that information obtained may enable nurses to be more effective in helping breastfeeding mothers. Participation in this study will involve a short interview when I return to the doctor for my six-week postpartum checkup.

There is no risk to the emotional or physical well-being of myself or my baby as a result of participation in this study.

* * * * * * *

"It has been explained to me and I am aware that participation in this research project is voluntary and that I have the right to withdraw from it at any time without incurring any disadvantages. Any and all information obtained through this study will be treated in a confidential manner. I further am aware that any report or publication resulting from this study will not contain any information which might lead to the identification of the participants in this study.

"I have considered the above statements and hereby give my free and voluntary consent to participate in the Comparative Study to Determine the Effectiveness of Post-Hospital Discharge Nursing Intervention in Facilitating Breastfeeding Among Primiparous Women under the supervision of Melinda Hoskins, R.N., graduate student in nursing, Loma Linda University, and in witness thereof I have signed this consent. I am aware that I am free to withdraw from participation in the study at any time without resulting in any prejudice toward me."

_____ _____

Date Signed

_____

Witness

APPENDIX M

Algorithm for Nurse-Initiated Telephone Conversations

ALGORITHM FOR NURSE INITIATED TELEPHONE CONVERSATIONS

1. Introduce self to subject.

2. "Tell me how things seem to be going since you brought the baby home."

   2.1 If response is negative or indicates problem(s):

      2.1.1 Validate or clarify extent of problem.
      2.1.2 Categorize on tabulation sheet.
      2.1.3 Provide needed support/explore possible solutions.
      2.1.4 Categorize nursing treatments utilized.
      2.1.5 If problems not related to breastfeeding proceed to step 3.
      2.1.6 If problem related to breastfeeding determine if this is only such problem; if so, proceed to step 4. If not only problem, proceed through above again.

   2.2 If no problems are indicated in response:

      2.2.1 Ask, "Have you had any problems since arriving home?"
      2.2.2 If problems indicated, follow 2.1.1 through 2.1.6.
      2.2.3 If no problems are indicated, proceed to step 3.

3. "How is the breastfeeding working out?"

   3.1 If response indicates problems, follow 2.1.1 through 2.1.6.

   3.2 If response does not indicate problems

      3.2.1 Ask, "Have you had any problems with breastfeeding?"
      3.2.2 If problems indicated, follow 2.1.1 through 2.1.6.
      3.2.3 If no problems, proceed to step 4.

4. "Many new mothers find they have questions about caring for a newborn or in adjusting to life with baby. Do you have any questions I could answer?"

   4.1 If mother has questions proceed as in 2.1.1.

   4.2 If mother has no questions, proceed to step 5.

5. Encourage mother to contact nurse researcher if problems or questions arise. Explain how to do so.

6. Terminate conversation.

   6.1 If this is first followup conversation remind subject that researcher will contact her again when baby is one week ole.

   6.2 If this is second followup conversation, remind subject that researcher will contact her again when baby is 5-1/2-6 weeks old.

APPENDIX N

Tabulation Sheet and Possible Nursing Treatments

TABULATION SHEET

1. Need or Problem Category (√ applicable categories; circle related numbers).

___informational related to	1	2	3	4	5	6	7	8	9
___physical related to	1	2	3	4	5	6	7	8	9
___psychosocial realted to	1	2	3	4	5	6	7	8	9

1. Mother's physical recovery
2. Mother's emotions
3. Positions for breastfeeding
4. Physiology of breastfeeding
5. Mother's milk supply
6. Infant care
7. Need for emotional support
8. Lack of help with routine household tasks.

2. Nursing Intervention Category (√ category; indicate related need; briefly summarize nursing treatments utilized).

___Support regarding

___Prevention related to

___Observational designed to

___Educative

Possible nursing treatments of this study related to breastfeeding included:

1. validation/affirmation of subject's current course of action/desired course of action.

2. provision of information regarding usual course of puerperium (both physical and emotional).

3. provision of information regarding positions for breastfeeding.

4. provision of information regarding physiology of lactation.

5. provision of information regarding stabilization of milk supply, dealing with fluctuations, increasing the supply, etc.

6. provide opportunity for subject "to express her feelings about her ability to breastfeed."

7. providing information regarding infant care, including specific tips on bathing, establishing feeding schedule, and sleep pattern.

8. exploring alternative modes of coping with routine household tasks, including values clarification regarding priorities in accomplishing these tasks, resources, available to subject.

9. anticipatory guidance regarding engorgement and its prevention or reduction.

10. anticipatory guidance regarding feelings of fatigue during early postpartum and need for rest periods.

11. providing information regarding infant behavior such as crying, stooling, sleep, satiety, etc.

APPENDIX O

Final Interview Questions

FINAL INTERVIEW QUESTIONS

ID # _____
Column 1 2 3

Assigned to 1 ___ study group Column 4
2 ___ control group

Given below are statements which express feelings some women have regarding breastfeeding. Please indicate which of the following statements describe or closely describe your feelings regarding breastfeeding.

Column

5 I enjoy the experience, find it personally satisfying and physically pleasant.

6 I experience a feeling of emotional closeness to my baby when breastfeeding which is very satisfying.

7 I find the physical sensations of breastfeeding neutral, neither pleasant nor unpleasant.

8 I do not enjoy the physical sensations of breastfeeding.

9 I feel breastfeeding provides protection for my baby not provided by formula and so is best for him/her.

10 I feel that breastfeeding is an important aspect of being a good mother.

11 I have found breastfeeding inconvenient and time consuming.

12 I found breastfeeding unpleasant and messy.

13 I [1 never 2 occasionally 3 usually] feel embarrassed while breastfeeding.

14 I [1 would 2 would not] recommend breastfeeding to other.

15 I [1 would 2 would not] plan to breastfeed any future children.

Are you currently breastfeeding?

16 1 yes 2 no

IF NOW BREASTFEEDING, HAVE YOU EXPERIENCED:

17 1 infection of the breast
2 sore nipples
3 both

Column

If now breastfeeding, have you experienced (cont'd)

18
1 disrupted plans or activities
2 feelings that breastfeeding "takes too much time"
3 both

19 feelings that baby might not be getting enough milk?

20 being very tired?

21 too great a flow of breastmilk when feeding your baby?

criticism and/or lack of support from:

22 your husband?

23 other family members?

24 friends?

25 other problems _____

_____?

26 no problems.

Were you surprised to experience these problems?

27 [1] yes [2] no

IF NOT NOW BREASTFEEDING:

When did you quit breastfeeding?

28
1 1st week following delivery
2 2nd
3 3rd
4 4th
5 5th
6 6th

Had you planned to quit at this time?

29 [1] yes [2] no

Did any of the following lead you to discontinue breastfeeding?

30
1 breast infection
2 sore nipples
3 both

31 feeling that baby was not getting enough breast milk?

Did any of the following lead you to discontinue breastfeeding? (cont'd)

32 feeling "too tired."

criticism from:

33 your husband?

34 family?

35 friends?

36 1 disrupted plans or activities because of breastfeeding?

2 feelings that breastfeeding "takes too much time"?

3 both?

37 experience unpleasant.

38 other _____

_____

39 none of these.

Were you encouraged to stop breastfeeding by any of the following individuals?

40 husband

41 obstetrician

42 pediatrician

43 mother

44 mother-in-law

45 sister/sister-in-law

46 friend

47 other

48 no

While breastfeeding, how often did you give the baby formula?

49
1 did not
2 daily
3 occasionally (1-2 times per week)
4 rarely (1-2 times per month)

While breastfeeding, how often did you give the baby cereal or other solid foods?

50
1 did not
2 daily
3 occasionally (1-2 times per week)
4 rarely (1-2 times per month)

How do you think the following people feel towards breastfeeding? (Circle number under appropriate column.)

		Encourage	Neutral	Discourage	Unknown
51	obstetrician	1	2	3	4
52	pediatrician	1	2	3	4
53	husband	1	2	3	4
54	family	1	2	3	4
55	friends	1	2	3	4

Do you feel there was one (or more) person(s) who really helped you in your breastfeeding?

56 [1] yes [2] no

Who helped you?

57 husband

58 mother

59 mother-in-law

60 sister/sister-in-law

61 other family member

62 friend

63 other_____

What type of help did you receive?

64 information

65 demonstration

66 household help

67 encouragement

Did you join a group which encourages breastfeeding?

68 no

69 LaLeche League

70 nursing mothers' group

71 other _____

Has someone you know successfully breastfed a baby in the last three years?

72 no

73 sister

74 sister-in-law

75 cousin

76 close friend

77 neighbor

78 other

Have you ever seen a mother breastfeeding her baby?

79 [1] yes [2] no [3] unknown

As an infant were you breastfed?

80 [1] yes [2] no [3] unknown

Infant's weight _____ at _____
age

Date _____

APPENDIX P

Tables 9 and 10

Table 9

Demographic Data: Study Group

	Subject Number											
	3	4	5	6	10	11	17	18	19*	20	23*	24
Age	25	23	-	26	21	24	-	26	27	28	22	27
Type of Delivery	SV	SV	OF	SV	SV	OF	SV	OF	SV	SV	SV	SV
Length of Labor (hours)	6.9	11.25	8.9	12.85	10.17	6.75	7.95	19	7.1	-**	17.25	7.25
Gestational age of Infant (weeks)	41	40	38	40	40	42	40	42	38	41	40	41
Apgar Score 1 minute	8	8	9	8	7	9	9	7	7	9	8	8
5 minutes	9	9	9	9	9	9	9	8	8	9	9	8
Birthweight: lb/oz	7/5	9/5	7/8	7/13	8/12	6/10	8/0	7/0	6/7	9/11	8/0	8/4

Key: OV = Elective outlet forceps delivery
SV = Spontaneous vaginal delivery

*Subject was unreliable in reporting onset of labor; length of labor unknown.

Table 10

Demographic Data: Control Group

	Subject Number												
	1*	2	7	9	12	13*	14	15	16*	22*	25	26	27
Age	25	21	20	24	26	23	23	22	22	28	25	23	18
Type of Delivery	OF	OF	SV	SV	SV	SV	SV	SV	SV	SV	OF	SV	OF
Length of Labor (hrs)	10.75	-*	6	11.75	20	10.7	7.85	7.5	6.47	5.6	-*	-*	7.75
Gestational age of infant in weeks	39	41	39	38	40	42	41	40	39	37	41	42	40
Apgar Score 1 min.	8	9	9	8	9	8	7	9	8	9	8	9	9
5 min.	9	9	9	9	9	8	9	10	0	10	9	9	9
Birthweight (lb/oz)	8/1	6/12	7/14	6/12	7/0	8/20	7/9	6/8	9/0	5/3	8/15	8/0	7/4

Key: OF = elective outlet forceps
SV = spontaneous vaginal

*Subject unreliable in reporting onset of labor; length of labor unknown.

APPENDIX Q

Tables 11 and 12

Table 11

Data Regarding Selected Known Extraneous Variables: Study Group

	Subject Number											
	3	4	5	6	10	11	17	18	19*	20	23*	24
Perception of attitudes re: breastfeeding												
Obstetrician	Unk	Enc	Enc	Enc	Enc	Neu	Enc	Enc	Enc	Enc	Neu	Enc
Pediatrician	Unk	Enc	Enc	Enc	Enc	Unk	Enc	Neu	Neu	Neu	Neu	Neu
Husband	Enc	Enc	Enc	Enc	Enc	Enc	Enc	Enc	Dis	Enc	Dis	Enc
Family	Unk	Enc	Enc	Enc	Enc	Enc	Enc	Enc	Enc	Enc	Unk	Enc
Friends	Neu	Enc	Enc	Enc	Mixed	Unk	Enc	Neu	Enc	Neu	Enc	Enc
Perception of persons who provided help in breastfeeding	Hus	Hus Nurse Res.	Mo	Friend N.R. LaLeche Mo	Hus Mo M/Law Friend	Hus	Nurse & Med Pers at Hosp.	Sis Friend	None	Hus	None	Hus Sis
Type of help perceived	HH Enc	Info Enc	Info HH Enc	Info Demo HH Enc	Info Enc	Enc	Info Demo Enc	Enc	None	HH Enc	None	Info Demo HH Enc
Member of group supporting breastfeeding	No	Yes	No	No	No	No	No	Yes	No	No	No	No
Has known mother who has successfully breastfed	Sis	No	Close Friend	Close Friend	Close Friend	Close Friend	Sis/ Law CF	Sis CF	CF	No	CF	Sis Sis/ Law
Observed a mother breastfeeding	Yes	Yes	No	Yes	Yes	Yes	Yes	Unk	Yes	Yes	Yes	Yes
Was breastfed as an infant	Yes	Yes	Yes	No	Yes	Unk	Yes	No	Unk/ Yes	Yes	No	Yes

*Unsuccessful subject

Table 12

Data Regarding Selected Known Extraneous Variables: Control Group

	Subject Number												
	1*	3	7	9	12	13*	14	15	16*	22*	25	26	27
Perception of attitudes re. breastfeeding													
Obstetrician	Enc	Enc	Enc	Enc	Enc	Enc	Enc	Neu	Unk	Neu	Neu	Neu	Enc
Pediatrician	Enc	Enc	Neu	Enc	Enc	Neu	Unk	Neu	Enc	Enc	Neu	Enc	Neu
Husband	Enc	Enc	Enc	Enc	Enc	Neu	Enc	Enc	Enc	Enc	Enc	Enc	Enc
Family	Neu	Enc	Enc	Enc	Enc	Neu	Neu	Neu	Neu	Enc	Enc	Unk	Enc
Friends	Neu	Enc	Neu	Neu	Enc	Unk	Unk	-	Enc	Unk	Unk	Unk	-
Perception of persons who provided help in breastfeeding	Dr. Sis	Hus Mo Sis	Mo Hus	Hus	Mo Friend	No	No	Sis	No	Nurse at Hosp.	Mo Sis	Hus	Hus
Type of help perceived	HH Enc	HH Enc	Info HH Enc	HH Enc	Info HH Enc	None	None	Info Enc	None	Info Demo Inc	HH Enc	HH Enc	HH Enc
Member of group encouraging breastfeeding	No	No	No	No	No	No	No	No	No	No	No	No	No
Has known mother who successfully breastfed	Sis	Sis/ Law Close Friend	No	No	Sis C.F.	No	C.F.	Sis/ Law C.F.	C.F.	C.F.	Sis Cous	Neigh	None
Observed a mother breastfeeding	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Was breastfed as an infant	Yes	Yes	Yes	Yes	Unk	Unk	Unk	Unk/ No	No	Yes	Yes	Unk	Yes

*Unsuccessful subject

APPENDIX R

Tables 13 and 14

Table 13

Criteria Determining Success in Breastfeeding: Study Group

	Subject Number											
	3	4	5	6	10	11	17	18	19*	20	23*	24
Feelings re. breastfeeding experience	Pos	Pos	Pos	Pos	Pos	Pos	Pos	Pos	Neg	Pos	Neg	Pos
Continued to breastfeed to six weeks	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes
Quit breastfeeding at ____ weeks	-	-	-	-	-	-	-	-	1st wk	-	1st wk	-
Planned to quit then?	-	-	-	-	-	-	-	-	No	-	No	-
Gave supplemental formula	No	No	No	1st wk only	1-2x /mo	No	No	No	Daily	No	Daily	No
Gave solid feedings	No	No	No	No	No	No	No	No	No	No	No	No
Infant weight gain (lb/oz)	3/3 in 6 wk	1/5 in 4 wk	3/8 in 6 wk	3/6 in 7 wk	2/3 in 5 wk	1/12 in 6 wk	2/0 in 6 wk	2/9 in 5 wk	Unk	1/8 in 6 wk	1/13.5 in 5.5 wk	2/2 in 6 wk

*Unsuccessful subject

Table 14

Criteria Determining Success in Breastfeeding: Control Group

	Subject Number												
	1*	2	7	9	12	13*	14	15	16*	22*	25	26	27
Feelings re. breast-feeding experience	Pos	Pos	Pos	Pos	Pos	Neg	Pos	Pos	Neg	Pos & Neg	Pos	Pos	Pos
Continued to breast-feed to six weeks	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Quit breastfeeding at ___ weeks	-	-	-	-	-	4th wk	-	-	1st wk	-	-	-	-
Planned to quit then	-	-	-	-	-	No	-	-	No	-	-	-	-
Gave supplemental formula	Alt. w/br /8x	No	1-2x /wk	1-2x /mo	No	1-2x /wk	No	No	Daily	Daily	No	No	No
Gave solid feedings	No	No	1-2x /mo	No	No	No	No	No	No	No	No	No	No
Weight gain of infant (lb/oz)	2/10 in 6 wk	2/10 in 5 wk	3/2 in 7 wk	2/11 in 5 wk	1/13.5 in 6 wk	2/5 in 6 wk	2/6 in 5.5 wk	3/10 in 6 wk	2/9 in 7 wk	1/5 in 6 wk	1/10 in 5.5 wk	2/2 in 6/wk	1/14 in 6.5 wk

*Unsuccessful subject