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The Effects of Prenatal Breast-Feeding Class on Breast-Feeding Success and Maternal Perception of the Infant: A Replication

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The Effects of a Prenatal Breast-feeding Class on breast-
feeding Success and Maternal Perception of the Infant:
A Replication

by

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ABSTRACT

THE EFFECT OF PRENATAL BREAST-FEEDING EDUCATION ON BREAST-FEEDING SUCCESS AND MATERNAL PERCEPTION OF THE INFANT.

By

Eileen Grunstra

Susan Rowe

The purpose of this study was to determine the effectiveness of prenatal breast-feeding education on a mother's perceived success at breast-feeding. This study also looked at the relationship of prenatal breast-feeding education on a mother's perception of her infant. The conceptual framework utilized was the Roy Adaptation Model. Motherhood and breast-feeding involve a change in role, which is why this theory served as a foundation for the study. The method for study was a quasi-experimental design. Subjects in the experimental group attended a prenatal breast-feeding class, those in the control group did not. In addition to a general survey questionnaire, mothers were asked to complete Broussard's Neonatal Perception Inventory, I & II, and a questionnaire related to their breast-feeding experience.

Two relationships were analyzed from the data obtained. They were 1) The relationship between a prenatal breast-feeding class and breast-feeding success. 2) The

relationship between maternal perception of her infant at one month as a result of attending the prenatal breast-feeding class.

This study was a partial replication of one done by Wiles (1982).

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TABLE of CONTENTS

List of Tables
vi

List of Appendices
vii

CHAPTER	PAGE
1	Introduction.....1
2	Literature Review and Theoretical Framework....4
	Literature Review.....4
	Theoretical Framework.....11
	Definition of Terms.....16
	Hypotheses.....17
3	Methodology.....18
	Design.....18
	Sample and Setting.....19
	Instruments.....20
	Procedure.....21
4	Results.....23
	Characteristics of Subjects.....23
	Perceived Success of Breast-feeding.....25
	Perception of the Infant.....25
	Other Findings.....26
5	Discussion/Limitations/Implications.....32
	Discussion.....32
	Limitations.....35
	Recommendations.....37
	Application to Practice.....39

List of Tables

TABLE	PAGE
1. Comparisons of the Two Groups by Characteristics..	24
2. Comparison of the Two Groups According to Social Support.....	29

List of Appendices

APPENDIX	PAGE
A Survey.....	41
B Breast-feeding Questionnaire.....	42
C Neonatal Perception Inventory I.....	44
D Neonatal Perception Inventory II.....	46
E Verbatim.....	48
F Consent Form.....	50

CHAPTER ONE

INTRODUCTION

In recent years breast-feeding has become an increasingly popular method of infant feeding among women (Wiles, 1984). The increase in breast-feeding has been attributed to the benefits it provides (Moore, 1967), such as facilitation of involution, increased bonding, and positive maternal perception of the infant. The increase in prolactin, stimulated by nursing, also causes a relaxing effect for the mother (Ingalls, 1991).

Breast-feeding is also advantageous for the infant. Breast milk provides immunity against some viral and bacterial infections. In comparison to formula, breast milk contains higher amounts of lactose necessary for brain growth and more linoleic acid, essential for skin integrity (Pillitteri, 1985). Breast-feeding provides frequent close body contact with the mother, providing a variety of sensory stimuli. Touch stimulus is accomplished by skin-to-skin contact. The infant is also able to recognize the special smells of the mother. During suckling, the taste and texture of the nipples contribute to development of the senses, which is essential to the maternal-infant bonding process.

Unfortunately, few institutions offer pre-natal classes in breast-feeding, which leaves many women without the information they need to be successful in this endeavor (Wiles, 1984). Since most of the contact women have during their hospital stay is with nurses, nurses would be the logical providers of this information. Nurses are becoming more involved in patient education. Therefore, if prenatal breast-feeding classes were offered--and if nurses were aware of the content taught in the classes--they would be able to reinforce what is taught in the breast-feeding classes after the mother delivers.

Houston (1988) stated that many women encounter problems with breast-feeding and, therefore, discontinue nursing much earlier than planned. Prenatal breast-feeding education may provide primiparous women who desire to breast-feed with the necessary information to promote a positive nursing experience (Wiles, 1984). Kearney (1982) stated that education regarding breast-feeding can be effective in teaching breast-feeding preparation and techniques. The information received from the breast-feeding education facilitates the mother's adjustment to the breast-feeding role. A positive nursing experience may also help to enhance the transition to the role of mother.

According to Coreil (1988) maternal confidence and motivation influence success in breast-feeding. Women who are better informed about breast-feeding are more successful than women who are less informed (Houston, 1988).

A study by Kearney (1982) suggested that mothers who successfully breast-feed are more calm and flexible in responding to the baby's demands. Broussard (1970) identified that providing information regarding mothers' attitudes and common infant problems had a positive effect on breast-feeding and a positive effect on the mothers' perceptions of their infants.

It is important to evaluate the maternal outcomes of attendance at breast-feeding classes and to assess other factors that influence success in breast-feeding. Learning more about what influences breast-feeding success and maternal perception of the infant will enable nurses to help more women and promote a more positive infant perception by the mother. This study partially replicated a study by Wiles (1984) that compared mothers' perceptions of their infants and breast-feeding success in a group of primigravidas who chose to attend (or not attend) a prenatal breast-feeding class.

The purpose of this study was to assess the relationship of a prenatal breast-feeding class to mother's perceived breast-feeding success and perception of her infant at 1 month.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Many studies have been conducted to investigate factors that influence breast-feeding success. Also much has been written concerning parents' perceptions of their infants. Researchers have identified variables that have a positive influence on breast-feeding success and maternal perception of the infant. However, little is available relating the effect of prenatal breast-feeding classes on a mother's perception of her infant. While most prenatal education classes contain content on breast-feeding, the topic is generally given only cursory treatment. A review of the literature yielded a study conducted by Wiles (1982) which specifically examined the effect of breast-feeding classes on maternal-infant perception and breast-feeding success. Wiles indicated that those mothers who perceived themselves as successful with breast-feeding also identified their infants more positively than the average infant at 1 month of age. Study participants cited the prenatal breast-feeding class as the the main factor contributing to their success.

Various conceptual frameworks have been used to provide structure for the studies investigating factors that

influence breast-feeding success and maternal-infant perception. An assessment of the studies yielded such frameworks as attachment, maternal-infant bonding, attitude and behavior changes, and social support. The framework used in each of the reviewed studies appropriately supported the research hypothesis of each respective study. The literature review is organized into perception of the infant and factors influencing breast-feeding.

Perception of Infant

The immediate post-partum period may be crucial in the formation of the mother-infant relationship. An infant's first month of life is a sensitive adjustment period for both mother and baby. The mother's perception of her baby may be influenced by such factors as how attractive she sees her baby and the baby's response to her. The mother's attitude and treatment of her baby may also influence her baby's behavior.

Broussard (1976) used a pre-post test design to evaluate televised anticipatory guidance for primiparae. The televised guidance was offered during the immediate post-partum period. Broussard's Neonatal Perception Inventory I and II (NPI) were used to measure the impact of televised guidance on the mother's early perception of her first-born infant. A convenience sample of 318 women who delivered single healthy infants at five Pittsburgh Hospitals was used for the study. A series of three videotaped programs concerning mothers' feelings and babies'

behaviors was viewed by the experimental group. The NPI I and II measure the mother's perception of the average baby and of her own baby. All mothers were requested to complete the NPI I soon after delivery and the NPI II 1 month later. Although there was a trend among all mothers to rate their baby higher at time II than time I, a statistically significant increase was noted among mothers viewing one or more of the taped programs when the NPI II was given than the NPI I ($n = 318$, Chi square=7.34, $p < .01$, $df=6$).

Televised guidance provided to mothers during the immediate post-partum period could have an important positive impact on the child's later emotional development, according to Broussard. Using the NPI for measurement, a mother's perception of her 1 month old infant, compared to her expectations of the average infant, was found to predict the infant's later development (Broussard, 1976). One hundred and twenty children from the original study, were evaluated at age 4 and again at the age of 11 by two psychiatrists. The physicians had no knowledge of the mothers' perception ratings (Broussard, 1976). Less emotional problems were noted in the children rated higher than average at one month of age by their mothers than children who were rated worse than average.

Hall (1980) used an experimental, test-retest design to evaluate the effect of informative teaching about infant behavior on mothers' perceptions of their infants at one month. The 30 mothers were primiparas between the ages of

18-30, married, and had all experienced normal prenatal, labor, delivery, and post partum courses. Broussard's Neonatal Perception Inventory (NPI) was used to measure the mothers' perception of their newborns. Two to four days after discharge the experimental group received structured, informative teaching concerning infant behavior.

There were no significant differences between the groups on the NPI I perceptions and no significant differences between NPI I and II for the control group. Using a one-tailed t -test, a significant difference between NPI I and II scores was noted for the experimental group ($n = 30$), $t(28) = 1.788$, $p < .05$). The study revealed a significant positive change in the second NPI ratings for the experimental group, but not for the control group.

Broussard's (1976) and Hall's (1980) studies suggested that providing mothers with specific information in the form of teaching may have a positive effect on the mother's perception of her infant. Hall's (1980) study was limited by its small sample size and lack of generalizability.

Factors Influencing Breast-feeding

Many studies have been conducted to identify factors that influence the success of breast-feeding. Researchers have suggested that breast-feeding has many advantages for the baby as well as the mother. Many factors exist that can modify a mother's fulfillment and the success of breast-feeding.

In 1986 Lynch used a time series, quasi-experimental design to evaluate the effect of a breast-feeding consultant on duration of breast-feeding. A convenience sample of 270 mothers, who indicated a desire to breast-feed, were used in this study. The experimental group received a visit from a public health nurse and services from a breast-feeding consultant. Members of the control group received routine home visits from a public health nurse. Several variables including maternal age, education, age of the infant at first breast-feeding, and knowledge of lactation at birth were significant determinants of breast-feeding success. Findings failed to indicate whether the breast-feeding consultant's service had an effect on breast-feeding duration because the consultant was only available to the mothers briefly after delivery.

Using a longitudinal, descriptive correlational design, Coreil (1988) studied the relationship of prenatal intention to breast-feed and post partum events and practice on the duration of breast-feeding, as a measurement of success. A convenience sample of 44 Caucasian, pregnant women in their third trimester of pregnancy was used for the study. All participants were married, upper-to-middle social class, attending childbirth classes, and aged 19 to 34. The strongest predictor of breast-feeding duration was the prenatal decision to breast-feed. Psychosocial factors of age, intended duration, confidence in ability to breast-feed, and degree of social support were significantly

correlated with breast-feeding duration. Behavioral factors of early breast-feeding, continuity of breast-feeding, milk expression, and absence of formula supplementation at home were also significantly correlated with breast-feeding duration. Biological factors, such as parity, maternal weight gain, labor and delivery experience, and maternal illness had no significant correlation to breast-feeding duration. Forty-eight percent of the variance in breast-feeding duration was explained by intended duration and supplementation. Formula supplementation had an independent negative effect on breast-feeding duration and was inversely related to social support.

Jenner (1988) used a pre-test, post-test, quasi-experimental design to examine the effectiveness of an information, advice, and support intervention package for breast-feeding on the rate of success of breast-feeding. A convenience sample of 38 primiparous, Caucasian women desiring to breast-feed was used for the study. All women were aged 19-32 and working class. All participants were visited prenatally regarding attitudes toward and information on breast-feeding. Mothers in the experimental group received two additional prenatal visits for discussion and teaching regarding various aspects of breast-feeding. They also received an informative booklet on early post-partum content. Mothers in the experimental group continued to breast-feed three months longer than the mothers in the control group. The intervention package had a significant

effect on the success of breast-feeding for the experimental group ($n = 38$, Chi square=6.81, $df=1$, $p<.01$).

Limitations noted in both Coreil's (1988) study and Jenner's (1988) study included small sample size, lack of generalizability., and not well established reliability and validity of measurement tools. An attrition of 10 of the original 54 study participants was identified in Coreil's (1988) study. The possibility of experimenter effects was identified by Jenner (1988) as a limitation.

The articles cited have studied various factors influencing breast-feeding. The researchers have looked at variables which have lead to breast-feeding success and a relationship between breast-feeding and maternal-infant behavior. There does not seem to be one specific factor that influences successful breast-feeding experience.

All of the cited research has identified attitudes and behaviors that influence a positive maternal-infant relationship. The literature reviewed suggested that mothers who have successful breast-feeding experiences also view their baby positively. It is through dissemination of information for promotion of maternal behaviors that a better emotional climate may be established which would promote more positive mother-child relationship. Providing helpful information to new mothers will enable primiparas to adjust to the new roles of motherhood and breast-feeding by effective, adaptive coping behaviors.

Theoretical Framework

The theoretical framework used for this research was the Roy Adaptation Model, specifically the theory of person as an adaptive system. Roy's conceptual model includes person, environment, health, and nursing. Roy views a person, the recipient of nursing care, as a biopsychosocial being in constant interaction with a changing environment (Roy, 1984).

Roy defines the environment as "all conditions, circumstances, and influences that surround and affect the development and behavior of the person" (Roy & Andrews, 1991, p. 18). The environment could be either internal or external (Roy, 1984).

"In the Roy Adaptation Model, health is defined as a state and a process of being and becoming an integrated and whole person" (Roy & Andrews, 1991, p. 19). Roy views health as a person's reflection of adaptation to the environment. When faced with a stimulus the person must react in a positive way to adapt and maintain a state of wellness.

"Roy defines the goal of nursing as the promotion of adaptation in each of the four modes, thereby contributing to the person's health, quality of life, and dying with dignity " (Roy & Andrews, 1991, p. 20). The nurse must identify the person's level of adaptation and coping abilities. The nurse must determine how to intervene to

assist the person to adapt in the modes of physiological, self-concept, role function, and interdependence.

It is the concept of person which served as a framework for this research. Person is a holistic, adaptive system with internal processors which act to promote adaptation in the four modes (Roy, 1984). A person's adaptive needs change in response to particular stimuli.

A stimulus, according to Roy and Andrews (1991), is something that provokes a response. Roy and Andrews identify three types of environmental stimuli: focal, contextual, and residual. Focal stimuli are those that immediately confront the individual (Roy & McLeod, 1981). According to Roy and Andrews (1991) "Contextual stimuli are all other stimuli present in the situation that contribute to the effect of the focal stimulus. That is contextual stimuli are all the environmental factors that present to the person from within or without but which are not the center of the person's attention and/or energy" (p. 9). Residual stimuli are unknown and/or not measurable (Roy & Roberts, 1984).

The person, as an adaptive system, has two internal processing sub-systems: the regulator and the cognator. These two systems aid in coping with environmental stimuli. The regulator "involves physiological processes such as chemical, neurological, and endocrine responses which allows the body to cope with the changing environment" (Roy and Andrews, 1991, p. 14). The cognator mechanism involves

the psychosocial pathways of perception, judgment, emotion, and learning (Roy and Roberts, 1981).

According to Roy and Roberts (1981) a person has four adaptive modes: physiological, self-concept, role mastery, and interdependence. Coping mechanisms are activated when need excesses or deficits in the adaptive modes occur. The physiological mode involves persons' basic needs such as circulation, oxygen, food and water, activity, and elimination. The self-concept mode involves the feelings one has about oneself at a given time--the psyche. The role mastery mode involves the need for social integrity and the role one plays. The mode of interdependence involves the balance between independence and dependence in a relationship (Roy & Roberts, 1981).

Roy and Roberts (1981) identify person as having three different roles: primary, secondary, and tertiary. The primary role is based on the individual's level of growth and development. The secondary role is based on the tasks an individual must accomplish at a particular time in life. The tertiary role involves a temporary role of choice in fulfilling a task associated with the current developmental level.

In the Roy Adaptation Model, Roy describes two assessment levels. Assessment of behavior in each of the adaptive modes constitutes the first level. The second level of assessment identifies the stimuli which contribute

to the behavior (Roy & Andrews, 1991). The role of the nurse is to manage the stimuli to change or stabilize adaptation.

First time mothers have many role adjustments to make in a relatively short period of time. The new role of mother, as an individual, challenges her adaptive capacities (Ruthledge, 1987). A woman who chooses to nurse her infant faces even more demands. The maternal role is a learned, complex, social, and cognitive process (Rubin, 1967). Pregnancy and breast-feeding constitute simple health adaptations, provided there are no complications related to either the mother or her infant.

The focal stimulus in this research was breast-feeding for the first time. The contextual stimulus was the information presented at the breast-feeding class.

The regulator mechanism involves biochemical reactions necessary for breast-feeding, such as the release of prolactin. The release of prolactin directly effects the physiological let down response necessary for breast-feeding and causes a relaxing effect on the mother. Successful breast-feeding may be enhanced when the mother is relaxed. The cognator mechanism includes the processing of information received at the breast-feeding class. The regulator and cognator are linked through the process of perception. Thereby "inputs" to the regulator are transformed into perception. "Perception is a process of the cognator. The responses following perception are feedback into both the cognator and regulator" (Roy &

Roberts, 1981). It is the mother's perception of her situation which link the cognator and regulator mechanisms thus, facilitating the mother's adaptation to her new role.

Although all modes are interrelated the mode of role function was of primary interest in this research. The primary role in this research was woman in the child-bearing years. The secondary role was mother and the tertiary role was breast-feeding mother.

The interdependence mode of dependent-independent infant-mother relationship must be established to be successful with breast-feeding. Dependent behaviors on the part of the infant involve help-seeking, attention seeking, and affection seeking. The infant must want to nurse for the mother to fulfill her role. Independent behaviors on the part of the mother involve initiative taking and obstacle mastery in her role as a mother. The prenatal classes identify some of the expected behaviors of mother. The prenatal breast-feeding class expands on the nourishment component of the prenatal classes. The breast-feeding class potentially helps mothers cope by alerting them to potential frustrations that may occur while nursing. Being aware of potential frustrations may promote a more positive nursing experience and presumably more positive perception of their infant.

Providing breast-feeding classes prior to the birth of the infant may enable nurses to help minimize adaptation problems that may confront a new breast-feeding mother.

Attending prenatal breast-feeding classes may enable mothers to adapt more effectively in the role function of breast-feeding and improved perceptions of their infants. The classes may have alerted the mother to be more aware of her infants changing needs and common infant problems. Being knowledgeable of the information presented at the breast-feeding class, the nurse is able to manage the focal stimulus of first breast-feeding experience.

First time mothers have many role adjustments to make in a relatively short period of time. On the assumption that taking on the new role of mother requires adaptation, and that the maternal role is learned, Roy's theory of person, as an adaptive system was selected as a basis for this study.

The research questions examined were: 1) What are the differences in perceived success at breast-feeding between mothers who do and do not attend a prenatal class on breast-feeding? 2) What differences are there in the perception of infants at 1 month between breast-feeding mothers who do and do not attend the breast-feeding class?

Definition of terms:

Terms used in this study are defined as follows:

Breast-feeding: nourishment solely by breast milk, no formula supplementation.

Breast-feeding success: a mother's verbal affirmation regarding her breast-feeding experience.

Prenatal breast-feeding education: a class providing information concerning instructions on breast-feeding prior to the birth of the baby. Topics discussed are anatomy and physiology of breast-feeding, prenatal preparation for breast-feeding, technique of breast-feeding, common concerns and questions, breast-feeding equipment, advantages and disadvantages of breast-feeding, and concerns of the father.

Perception of the infant: how a mother regards her infant's basic needs.

Hypotheses:

1. Primiparous women who receive prenatal breast-feeding education will report a higher perception of success in breast-feeding than primiparous women who do not attend prenatal breast-feeding education.
2. Primiparous women who receive prenatal breast-feeding education will report more positive perceptions of their infants at one month postpartum than primiparas women who do not receive prenatal breast-feeding education.

CHAPTER THREE

METHODOLOGY

Design

The design used was a non-equivalent control group, post-test only quasi-experimental design. The independent variable was prenatal breast-feeding education. This education was provided in a single class, which was in addition to the general prenatal classes.

Because it was difficult to randomly assign subjects to attend or not attend the special class, the quasi-experimental design was used to allow for self-selection. The dependent variables of perceived breast-feeding success and perception of the infant were measured 1 month post-partum.

Participants who agreed to be included in the study were asked to complete a survey questionnaire (see Appendix A) and Broussard's Neonatal Perception Inventory I (see Appendix C) on the first or second post-partum day. Two weeks following the birth of the infant the researchers called the participants to assess the well-being of the infant. One month post-partum two questionnaires were sent to those participants who still met the criteria. One questionnaire was Broussard's Neonatal Perception Inventory II (see Appendix D), and the other a questionnaire regarding

the mothers perception of her breast-feeding (see Appendix B). The NPI I and II are exactly the same tool. The Roman Numerals refer to the time of questionnaire administration.

Verbal approval for conducting this research was granted by the Director of Maternal and Child Nursing. Written approval was granted for this research by Human Research Committee of Grand Valley State University.

Sample and Setting

The study site was the obstetrical department of a 300 bed hospital. The obstetrical department averages about 125 deliveries per month and has 30 post-partum beds. The hospital provided prenatal education including a breast-feeding class on a regular basis.

All participants attended prenatal education classes. In addition subjects in the experimental group attended a prenatal breast-feeding class. The convenience sample of 20 subjects was evenly divided between groups. The names of the women who attended the prenatal breast-feeding class were obtained by the researchers from the Women's Center of the hospital. Participants in both groups were recruited in the hospital shortly following their delivery by the researchers. All subjects met the following criteria: married, primiparas, who had singleton vaginal deliveries between 36 and 42 weeks gestation having no complications. The infants had Apgar scores of seven or greater and exhibited no evidence of congenital illness or malformation.

The survey questionnaire, the NPI I, and the informed consent were distributed and collected by the researchers on the first or second post-partum day.

Instruments

Perceived success of breast-feeding. Success in breast-feeding was measured by a question developed to evaluate mother's perceived success in breast-feeding. The question used to determine the perceived success of breast-feeding in the original study provided a single yes or no response. These researchers thought the original question was not sufficiently sensitive. A new question was developed, which asked mothers to rate their perceived success at breast-feeding on a seven point scale from not at all to extremely successful. The clarity of the revised question was tested by pretest administration method.

Perception of infant. Perceptions by mothers of the infants was measured by Broussard's Neonatal Perception Inventory (NPI). The NPI, a commonly used instrument, was originally developed to predict future mental health. The NPI compares a mother's perception of the average baby with her perceptions of her own infant. It was designed to be administered and evaluated at one to two days post-partum and again at one month post-partum. The NPI questionnaire uses a five point scale ranging from none to a great deal, to evaluate a mother's perception of the following five items: the amount of crying a newborn does, trouble with feeding, sleeping, elimination, and vomiting/spitting up.

The instrument was administered as it was originally designed at one day post-partum and at one month to maximize reliability. For this study, however, only the one month assessment was used to measure the mother's perception of her infant. In the original study the one month assessment was more predictable of the mother's views of her infant. The predictive "validity of this tool was determined based on the results of a longitudinal study which indicated that the proportion of children judged to be at risk at one month were nearly identical to the proportion of children judged to be high risk in follow-up studies years later" (Broussard & Hartner, 1971).

Survey

Survey information such as age, race, employment, education, and decision to become pregnant was measured by a questionnaire. Each question on the survey allowed for a variety of response categories (see Appendix A). Stimuli not addressed in the study, included use of the breast-feeding hot-line, husbands support for breast-feeding, assistance given by the obstetric staff nurses, and support of friends and family.

Procedure

The researchers obtained a list of potential experimental group participants from the Women's Center of the hospital. These were women who attended the prenatal breast-feeding class offered by a baccalaureate prepared obstetrical nurse educator.

One of the researchers contacted the staff nurses several times a week to determine if any of the women who attended the prenatal breast-feeding class had delivered. While on the unit, the researcher checked the kardex to see if there were any women who had not attended the prenatal breast-feeding class and who fit the criteria for potential participation in the control group. After names were obtained, the researcher visited the women and explained the study and the subject's responsibilities. Once a subject agreed to participate in the study, she completed the NPI I and survey questionnaire. It took 9 months to obtain a sufficient number of participants. At 1 month post-partum the NPI II and the breast-feeding questionnaire were mailed to subjects who still met the study criteria. A self-addressed, stamped return envelope was included with the questionnaires.

Participation in the study was voluntary. Participants were protected by being able to terminate their participation in the study at any time. Subjects were not identified in the study. The researchers saw no hazards for the participants, due to the fact there were no invasive procedures, no medications utilized, and no anticipated psychological implications (see Appendix F).

CHAPTER FOUR

RESULTS

Data were collected during an 8 month period from January 1992 to August 1992. During this period 20 women met the criteria and agreed to participate in the study. The purpose of the study was to determine if mothers who attended the prenatal breast-feeding class perceived themselves as more successful at breast-feeding than those who did not. The second purpose was to determine how positively those mothers perceived their infants as a result of having or not having attended the prenatal breast-feeding class. All data analysis was computed using the Statistical Package for the Social Sciences (SSPS/PC+) software.

Characteristics of the Subjects

A total of 20 participants were recruited for the study. Ten participants attended the prenatal breast-feeding class and 10 did not. All subjects were primiparous women ranging in age from 18 to 35, with 70% (n = 14) between 25 and 35 years. The frequency distribution revealed that all had completed high school, 45% (n = 9) of the mothers had some college, and 15% (n = 3) had more than 4 years of college. Seventy percent (n = 14) of the women in the study were employed (see Table 1).

Table 1

Comparison of the Two Groups by Characteristics

Characteristic	Group			
	EXPERIMENTAL (N = 10)		CONTROL (N = 10)	
	n	%	n	%
Age				
under 18	0	0	0	0
18-24	2	20	3	30
25-35	8	80	6	60
over 35	0	0	1	10
Race				
Caucasian	10	100	10	100
Education				
completed HS	2	20	1	10
some college	3	30	6	60
4 years college	3	30	2	20
> 4 years college	2	20	1	10
Employed				
yes	8	80	6	60
no	2	20	4	40
Spouse Employed				
yes	9	90	10	100
no	1	10	0	0
Actively decided to become pregnant				
yes	9	90	8	80
no	1	10	2	20

Perceived Success of breast-feeding

Hypothesis 1, primiparous women who receive prenatal breast-feeding education will report a higher perception of success in breast-feeding than primiparous women who do not receive prenatal breast-feeding education, was evaluated using the Mann-Whitney U test. The independent variable was the group--those who did or did not attend the prenatal breast-feeding class. The dependent variable of perceived success in breast-feeding was measured on a seven point ordinal scale. Eighty percent ($n = 16$) of the women considered themselves to be very to extremely successful at breast-feeding. Fifteen percent ($n = 3$) considered themselves not at all or only slightly successful. The mean rank for the experimental group was 9.50; 11.50 for the control group ($U = 40$, $p = .42$). The data failed to support this hypothesis.

Perception of the Infant

Hypothesis 2, primiparous women who receive prenatal breast-feeding education will report more positive perceptions of their infants at 1 month postpartum than primiparas women who do not receive prenatal breast-feeding education. Perceptions of the infants were evaluated by responses to the NPI. This variable was at an interval level of measurement since it is composed of the total NPI scores derived from the mother's rating of her baby on 5 items. The one-tailed t test was used to compare the mean

ratings of the education and no education groups ($t=.43$ $df=18$ $p=.67$). Again the hypothesis was not supported.

Other Findings

The Broussard NPI was used with both groups to assess mothers' perceptions of their babies as compared to the "average baby". Both groups perceived their baby more positively than the average baby. Findings from this study do not indicate that the prenatal breast-feeding class promotes a more positive perception of the infant.

A hot-line for questions about breast-feeding is available to all mothers who deliver at the hospital. Shortly after the delivery all mothers are given an informational packet which includes information regarding post-partum care, child care and the phone number of the breast-feeding hot line. In addition, those in the experimental group were informed of the hot-line in the breast-feeding class. Findings indicate that none of the mothers in the control group called the hot-line for information. Forty percent ($n = 4$) of the experimental group did call the hot-line for breast-feeding assistance. Of this group 30% ($n = 3$) rated the hot-line moderately to very helpful.

Fifty percent ($n = 5$) of the mothers in the control group did not ask the obstetrical staff nurses for assistance in breast-feeding their infant. Thirty percent ($n = 3$) of those who did ask for help rated the staff nurses

very to extremely helpful. Twenty percent ($n = 2$) rated them slightly helpful.

All mothers in the experimental group asked the nurses for assistance. Only 20% ($n = 2$) indicated that the nurses extremely helpful. Eighty percent ($n = 8$) indicated the nurses were slightly to moderately helpful.

Support by families, friends, and husbands are rated higher by participants in the experimental group than in the control group. Seventy percent ($n = 7$) of the experimental group rated their husbands as being very to extremely supportive of breast-feeding. Only 40% ($n = 4$) of the mothers in the control group rated their husbands very to extremely supportive of breast-feeding. Sixty percent ($n = 6$) of the experimental group rated the support of family and friends as very to extremely helpful. Thirty percent ($n = 3$) of the control group rated family and friend support as very helpful.

All participants were asked at what time during their pregnancy they made the decision to breast-feed their babies. All participants in the experimental group and 80% ($n = 8$) of the participants in the control group indicated the that decision to breast-feed occurred in the first trimester. Twenty percent ($n = 2$) of the control group made the decision in the third trimester.

All participants were asked if they were still breast-feeding 1 month after delivery. Eighty percent ($n = 8$) of the experimental group and 70% ($n = 7$) of the

control group were still breast-feeding at one month (see Table 2).

All mothers who were breast-feeding at one month after delivery also stated that their babies were content after feeding. The one participant who indicated her baby was not content after breast-feeding, was no longer breast-feeding at one month.

Participants were asked how much weight the baby had gained in his or her first month of life. All participants indicated their infant had gained weight. The range of weight gain was 1 pound, 6 ounces to 3 pounds, 7 ounces.

The researchers looked specifically at participants who rated themselves low on breast-feeding success. Only one of this group had attended the prenatal breast-feeding class. She rated herself in the middle of the scale on success. She was in the 25-35 age group, had no college experience, was employed full-time and had actively decided to become pregnant. At one month she was not breast-feeding and gave no reason for stopping or her perceived lack of success. This mother rated her infant the same as she rated the average infant on the NPI II.

Two of the participants in the control group perceived themselves as below average in breast-feeding success. Both of these participants were in the 25-35 age range, had at least some college, one more than 4 years, were employed full-time and had actively decided to become pregnant. One of these mothers was not breast-feeding at one month.

Table 2

Comparison of the Two Groups According to Social Support

Characteristic	Group			
	EXPERIMENTAL (N = 10)		CONTROL (N = 10)	
	n	%	n	%
Husbands Support				
Not at all to slightly	1	10	2	20
moderately	2	20	4	40
very to extremely	7	70	4	40
Family & Friends Support				
Not at all to slightly	1	10	3	30
moderately	3	30	4	40
very to extremely	6	60	3	30
Nurses Support				
Not at all to slightly	0	0	0	0
moderately	8	80	2	20
very to extremely	2	20	3	30
did not ask for help	0	0	5	50

Table 2 continued

Comparison of the Two Groups According to Social Support

Group				
EXPERIMENTAL (N = 10)			CONTROL (N = 10)	
Characteristic	n	%	n	%
Decided to Breast-feed				
First Trimester	10	100	8	80
Third Trimester	0	0	2	20
Breast-feeding at one month	8	80	7	70

Neither of these mothers gave any indication as to why they perceived themselves as unsuccessful. Both of these mothers rated their infant the same as the average infant on the NPI II.

As a result of this study, there is no indication that attending a prenatal breast-feeding class leads to maternal reports of success in breast-feeding or more positive perception of her infant. There is no significant difference between control and experimental groups in regards to mother's perception of breast-feeding success and the perception of their infant.

CHAPTER FIVE

DISCUSSION/LIMITATIONS/IMPLICATIONS

Discussion

The discussion focuses on the relationship between mothers' perception of breast-feeding success and perceptions of their infants being more positive than their perception of the average infant at 1 month. Because this study partially replicated a study by Wiles (1982) comparisons will be made to that study as well as others. This discussion will occur within the context of Roy's Adaptation Model.

Breast-feeding success. Study participants rated their perceived breast-feeding success on a scale of 1-7. The experimental group attended a specific prenatal breast-feeding class. Jenner (1988) attributed breast-feeding success to teaching regarding breast-feeding. Wiles (1982) found that study participants reported the prenatal breast-feeding class as the main factor contributing to their success. The present study did not identify a significant difference in perceived breast-feeding success between mothers who did or did not take the prenatal breast-feeding class, when statistically analyzed using the Mann-Whitney U test. Both groups were relatively homogenous with

respect to perceived success at breast-feeding. With such little variance it was difficult to detect any significant differences between groups.

Two participants in the control group made the decision to breast-feed in the third trimester. These same two participants perceived themselves as below average in breast-feeding success, and gave no indication as to why. One of these mothers was not breast-feeding at 1 month. All other mothers indicated the decision to breast-feed was made in the first trimester. These findings may indicate that the earlier the decision to breast-feed is made the more successful the mother will be at breast-feeding.

Perception of the infant. Broussard's Neonatal Perception Inventory was used to measure mother's perception of her infant at 1 month as compared to the average infant. Broussard's (1976) and Hall's (1980) studies indicated that provision of specific teaching did have a positive effect on the mother's perception of her infant. Wiles (1982) indicated that the mothers who perceived themselves as successful at breast-feeding also perceived their infants more positively at 1 month than the average baby, using a t test. Wiles' study did not identify a significant difference in perceptions of their infants at 1 month between mothers who did and did not receive the prenatal breast-feeding class.

The goal of nursing is to promote adaptation in each of the four modes (Roy & Andrews, 1991). Findings of this

research indicated that mothers who attended the prenatal breast-feeding class sought help from the nursing staff and the breast-feeding hot line more than the mothers who did not attend the prenatal breast-feeding class. Mothers who attended the prenatal breast-feeding class were instructed to ask the staff nurses for assistance and were informed about the breast-feeding hot line. The nurse promotes adaptation for a more positive breast-feeding experience by providing information about the breast-feeding hot line and staff nurse assistance.

Roy and McLeod (Roy & Roberts, 1981) identified the individual as having two internal processing sub-systems: the regulator and the cognator. These two systems aid in coping with environmental stimuli. The regulator mechanism involves biochemical reactions necessary for breast-feeding. The cognator mechanism involves the processing of information received at the prenatal breast-feeding class. The mother's perception of her breast-feeding success and perception of her infant are controlled by both mechanisms.

The role mastery mode serves as a guide for conducting this research. The primary role is women in their child-bearing years. The secondary role is mother and the tertiary role is breast-feeding mother. Attending a prenatal breast-feeding class may enable these mothers to adapt more effectively in the role mastery mode by improving their knowledge of breast-feeding and their perception of their infant. The mothers who received the prenatal

breast-feeding class were more aware of resources available to them, such as staff nurse assistance and the breast-feeding hot line.

The mothers adapted positively by perceiving themselves as successful at breast-feeding. However, the intervention of the breast-feeding class did not have a more positive effect on perception of breast-feeding success nor on mothers' perception of their infants.

Limitations

The limitations of this study include factors related to potential threats to validity as well as generalizability. Threat to internal validity may be due to selection of the two groups. "When individuals are not assigned randomly to groups, we must always be aware of the possibility that the groups are not equivalent" (Polit & Hungler, 1987, p.135). The participants in the control group may have sought information on breast-feeding from sources other than the prenatal breast-feeding class, such as Le Leche League, books, or pamphlets. The groups were homogeneous in relation to age, race, education, and support from husbands, family and friends.

Another threat to internal validity is mortality. Mortality was controlled through the criteria for inclusion in the study. All participants had to be free of any complications and have delivered healthy, full term infants.

The major limitation of this study is the small sample size. Originally the researchers intended to obtain a total

sample of 50 participants. Prenatal breast-feeding class attendance varied between 2 and 4 participants per month. There were no prenatal breast-feeding classes offered during 2 of the 9 months during data collection. Not all of the women who attended the prenatal breast-feeding class were eligible for participation, as they did not meet study criteria. Due to the homogenous small sample size in this study it is difficult to make any generalizations. All subjects were Caucasian and had at least a high school education. Most were employed outside the home.

The measuring scale used in the study was the NPI developed by Broussard (1976). This tool was used to compare mothers perceptions of their infants in both this study and Wiles' (1982) study. However, scale scores that represent individuals' attitudes are seldom totally reliable and measures obtained contain a degree of variability (Polit & Hungler, 1991).

The NPI II and the breast-feeding question were completed by the participants in their home. This was done for participant convenience. However, situational influences such as visitors, the baby, television, and fatigue may have been a part of the environment. Another influence may have been the behavior of the infant just prior to or at the time the questions were answered. Scores can be affected by the conditions under which they are produced which may contribute to errors in measurement. Another limitation is acquiescence response set bias, which

is a potential problem whenever self-report measures are used (Polit & Hungler, 1991). Eighty-five percent (n = 17) of the subjects rated themselves very high on breast-feeding success and perception of their infant.

Threats to external validity in this study were experimenter effect and Hawthorne effect. Control for experimenter effect was attempted by sending the NPI II and the breast-feeding question to each participant at 1 month postpartum. It was difficult to attempt to control for the Hawthorne effect as participants may respond in a manner because they are participating in the study.

Recommendations

The findings of this study raise questions that suggest the need for further research. Although the researchers controlled physiological factors that contribute to positive perceptions, there are many factors other than the breast-feeding class that contribute to a mother's success at breast-feeding and affect her perception of her infant. Future studies should consider increasing the sample size, how much of an effect the support by the nursing staff, husband, family and friends as well as employment of the mother and spouse, and use of other sources of help had on the mother. It would be of interest to know which factor contributed most to the mother's decision to breast-feed and the effect it may have on breast-feeding success.

Most of the participants in this study were between the ages of 25 and 35 and had some college education. It would

be interesting to know if age and education level of the mothers contributed to positive perceptions. A heterogenous group may reveal age and educational level do influence mothers perceptions. Considering the age and educational level of the mothers it would be possible that those who did not receive the education may have had their learning needs met by other sources. Cultural influences were not assessed and may influence breast-feeding success and perception of the infant.

This study did not assess the reasons mothers perceived themselves to be successful or unsuccessful at breast-feeding. No specific information presented during the prenatal breast-feeding class was determined to specifically contribute to mothers perceiving their infants positively. Future studies may want to investigate these factors.

Nurses do not always consider what the client is interested in knowing. Nurses do not usually consider a client's learning style when providing education. Nurses should be more aware of differences in learning styles. Since all participants were educated women, a formal class may not have been necessary for some to obtain knowledge or information related to breast-feeding. Some of the participants in the control group may have sought information on breast-feeding from other sources. There are many factors that motivate people to learn. Factors related to learning styles should be considered in future studies.

Application to Practice

It is evident there are implications for nursing practice and patient education. Many nurses make the assumption that providing education will improve the client's health status. However, many nurses initiate teaching without first assessing patient needs.

Nurses are quick to assess physiological needs of patients but not always learning needs. Prior to distributing written information to a patient, it might be appropriate for nurses to assess the patient's learning style and readiness to learn. Rather than simply providing written information, the nurse should ensure patient awareness regarding given information and encourage the patient to verbalize understanding. Many nurses do not follow up on the written information by asking clients whether they have questions about the material.

Many patients are reluctant to ask for help with breast-feeding. Nurses should encourage mothers comfort in identifying their needs for breast-feeding assistance. Nurses should observe all patients while they breast-feed their infants. Making rounds allows the nurse to assess breast-feeding effectiveness. If a nurse is in the room the patient may be more willing to ask questions.

Findings indicated that none of the control group and 40% (n = 4) of the experimental group called the hot-line for assistance. Whether this was because mothers were not aware of the hot line's existence or had no need for it is

unknown. Discharge instructions should include information on how to obtain assistance and have questions answered while at home.

APPENDICES

Appendix A

Survey

Please place a check in the space that best reflects your answer to each question.

1. What is your age to the nearest year?
1. ____below 18 2. ____18-24 3. ____25-35.
4. ____ over 35
2. What is your Race?
1. Caucasian/White ____ 2. Black ____
3. Asian ____ 4. Hispanic ____
5. Other ____
3. What is your educational Level?
1. no high school ____
2. some high school ____
3. completed high school ____
4. some college ____
5. completed 4 years of college ____
6. more than 4 years of college ____
4. Were you employed prior to delivery?
1. full-time ____ (32 hours or more per week)
2. part-time ____ (8-31 hours per week)
3. not employed ____
5. Is your spouse employed?
1. yes ____
2. no ____
6. Did you plan to become pregnant at this time?
1. yes ____
2. no ____

Appendix B

Breast-feeding Questionnaire

Women who are breast-feeding differ in where they turn for help with breast-feeding. Help may be giving information or advice and/or support and encouragement. Circle the response which most closely indicates how helpful you felt each was in contributing to your ability to breast-feed your infant. Circle not applicable (NA) if you did not seek help from this source.

1=not at all helpful

2=slightly helpful

3=moderately helpful

4=very helpful

5=extremely helpful

NA=not applicable

1. Hackley Hospital's Prenatal Breast-feeding Classes
(Omit if you did not attend.)

1	2	3	4	5	NA
---	---	---	---	---	----

2. Hackley Hospitals Breast-feeding Hot-Line

1	2	3	4	5	NA
---	---	---	---	---	----

3. Husband's support for breast-feeding

1	2	3	4	5	NA
---	---	---	---	---	----

4. Obstetric Staff nurses, through support and/ or teaching.

1	2	3	4	5	NA
---	---	---	---	---	----

5. Support of friends/family

1	2	3	4	5	NA
---	---	---	---	---	----

Please rate the following question on a 7 point scale with 1 being not at all successful and 7 being extremely successful.

6. In the month since your baby was born, how successful do you feel you have been with breast-feeding?

1	2	3	4	5	6	7
---	---	---	---	---	---	---

7. At what time during your pregnancy did you decide to breast-feed?

1. ____ first three months
2. ____ second three months
3. ____ last three months

8. Were any of the following important to you in deciding to breast-feed your baby? Check all which apply.

1. ____ friends
2. ____ family
3. ____ brochures
4. ____ doctor
5. ____ nurses
6. ____ mother breast-fed
7. ____ other (specify)

9. Are you still breast-feeding?

1. ____ yes
2. ____ no

10. At the present time, how many minutes does the average feeding last? ____

11. At the present time, how often do you nurse your baby in 24 hours? ____

12. How much weight has your baby gained in the past month? _____ lbs. _____ ozs.

13. Does your baby seem content to you after being fed? yes____, no____ (please check one).

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44-47

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Appendix E

Verbatim

I am Sue Rowe/Eileen Grunstra. Eileen Grunstra/Sue Rowe, and I are graduate nursing students at Grand Valley State University. We are currently conducting research on breast-feeding to enable Hackley Hospital to better meet the needs of breast-feeding mothers. Since you are nursing your baby, we would like to invite you to participate in our study.

Participation in the study would involve completing four very brief questionnaires, two now and two when your baby is one month old. The first two would be completed in the hospital and the last two would be mailed to you along with a stamped self-addressed envelope. Each questionnaire will require about five to ten minutes of your time.

Your participation in this study is on a voluntary basis and you may choose to discontinue your participation at any time. All information is strictly confidential and no one at the hospital will have access to it. There is no risk involved in this study; all we are asking is questions related to breast-feeding and how you feel about your baby.

At the conclusion of the study if you have any concerns about infant care we will be happy to advise you of agencies in the Muskegon area who will be able to offer you assistance. If you have any questions this card

contains our name and phone number. Thank you for taking the time to participate in this study and good luck with your baby.

Appendix F

Consent Form

I _____ understand this study is being conducted to help design a course to help meet the needs of the breast-feeding community before, during and after the hospital stay. I have been informed that two questionnaires will be given to me one or two days after I deliver and two questionnaires sent to me one month later. Each questionnaire will take about five-to-ten minutes to complete.

I have been informed that my participation is entirely voluntary, and that even after receiving the questionnaire I can refuse to answer any specific questions or decide to end participation in the study at any time. I have been told that my answers to these questions will be strictly confidential and reports of this study will not identify me in anyway.

I understand I can receive a summary of the results if I ask for them. The persons to contact if I have any questions are Eiléen Grunstra (777-0281) or Susan Rowe (724-1284) Monday through Friday, between 8:00 A.M. and 3:00 P.M.. In signing this document, I am giving my consent to be a participant in the study, and for the information to be used in the study.

Participant_____

Witness_____

Date_____

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