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THE RELATIONSHIP OF PRENATAL EDUCATION TO SUCCESSFUL BREASTFEEDING

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ABSTRACT

THE RELATIONSHIP OF PRENATAL EDUCATION
TO SUCCESSFUL BREASTFEEDING

by Joan M. Kramer

Breastfeeding is recognized as the preferred method of infant feeding, yet there is little emphasis placed on educating women prenatally on the benefits and management of successful breastfeeding. The purpose of this study was to determine whether the addition of prenatal breastfeeding education lengthens the time of breastfeeding. Forty-one women who attended hospital prenatal newborn care and prenatal breastfeeding classes were studied. The women who attended both of these classes were compared to those who attended the prenatal newborn class only to determine if any differences existed between the two, regarding the duration of breastfeeding.

The results of the analysis showed that 96% of the women who had prenatal breastfeeding education breastfed longer than those who did not. Based on the findings of this study, recommendations regarding prenatal breastfeeding education can be made to improve existing breastfeeding education in hospital prenatal programs.

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To my husband Jerry

for his support, encouragement and patience

during the time it took

to complete this study

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Chapter 1

INTRODUCTION

Since the health benefits of breastfeeding have been well established, a study to improve the possibilities of successful breastfeeding could impact greatly upon the wellness of this culture. Many allergies and illnesses that are carried through life develop in infancy. The evidence of an increase in healthy babies who were breastfed, growing and developing normally, may greatly change the health care emphasis for newborn and pediatric care. Awareness to health care professionals and prenatal educators of the importance of prenatal breastfeeding education and its relationship to a lengthened duration of breastfeeding could increase the emphasis on prenatal education programs.

Background

The Surgeon General's Workshop on Breastfeeding and Human Lactation (U.S. Department of Health & Human Services, 1984) recommended that the barriers that keep women from successfully breastfeeding should be reduced. The objectives of the workshop included ongoing lactation and breastfeeding education for health care professionals, as well as updating current practices to support optimal breastfeeding and lactation management. Specific guidelines for promotion of breastfeeding were recommended for primary care, prenatal, in-hospital, and postpartum settings. These

recommendations included educational opportunities for learning about lactation and its advantages, as well as continued resources to support the transition from hospital to home care. The use of lactation consultants as a support service and as facilitators was recommended for successful initiation and continuation of breastfeeding.

In his Keynote Address at the Surgeon General's Workshop, C. Everett Koop, M.D., Surgeon General and Deputy Assistant Secretary for Health, stated that education was perhaps the most important aspect of all in increasing the number of women who breastfeed (U.S. Department of Health & Human Services, 1984). He recommended that educational materials for use in counseling parents be developed by the Public Health Service. He mentioned that although the number of breastfeeding infants has grown, the increase has not been great in the highest risk groups, where the immunological benefits are important to begin a healthy life.

Statement of the Problem

Many women are terminating breastfeeding earlier than planned due to infant weight loss, sore nipples, insecurity about their ability to make sufficient milk for their babies, as well as pressure from friends and family to stop breastfeeding and switch to formula (bottle) feeding. The investigator of this study believes that confidence in one's ability to breastfeed is the key to successful

breastfeeding. It is based on education provided prenatally to explain (a) how the breasts function, (b) how to ensure an adequate milk supply, and (c) common misconceptions and misunderstandings about the process of breastfeeding.

Assumptions

Based on the review of the literature and the researcher's teaching experience, it can be assumed that preparation through classes, printed literature, and audio visual reinforcement has a positive effect upon breastfeeding the newborn. Armed with information, the breastfeeding mother can anticipate and prevent possible common problems which she would have no way of foreseeing unless she was educated in the subject. She would also be aware of resources available to her from lactation consultants, La Leche League and other breastfeeding counselors who could answer questions and assist with day to day concerns to help prevent early weaning.

Question

Does the length of time breastfeeding differ for mothers who attended both prenatal newborn care classes and prenatal breastfeeding classes and for mothers who attended prenatal newborn care classes only?

Purpose

The purpose of this study is to determine whether the addition of prenatal breastfeeding education lenghtens the time of breastfeeding.

Definitions

The conceptual definitions (Olds, London & Ladewig, 1991) for this study are as follows:

1. Jaundice is the yellowing of the skin, whites of the eyes, mucous membranes, and body fluids due to deposition of bile pigment resulting from excess bilirubin in the blood, common in newborns due to immature livers. Breast milk jaundice is a rare condition in which a hormone in the mother's milk inhibits breakdown of bilirubin in the infant.

2. Lactation consultant describes a person trained to help facilitate breastfeeding, both prenatally and postnatally.

3. Morbidity is the state of being sick or diseased.

4. Prenatal refers to the period before the birth of the baby.

5. Quickening refers to the first movements of the fetus in utero which occur from the 18th to 20th week of pregnancy.

The operational definitions for this study are as follows:

1. Nipple confusion refers to sucking problems due to the use of rubber bottle nipples, causing difficulties in some babies making the transition from bottle to breast.

2. Partial breastfeeding indicates greater than one supplementary feeding per day.

3. Successful breastfeeding ideally means that an infant is nourished entirely by mother's milk at the breast, or breastfeeding with only one supplementary bottle feeding per day which continues to at least three months of age.

4. Supplementary feedings are additional feedings or complements to existing breastfeedings.

Research Procedures

A comparative descriptive study was performed using pregnant women who attended the prenatal newborn care and prenatal breastfeeding classes at a hospital in northern California. These women were compared to those who attended the prenatal newborn care class only to determine if any differences existed between the two groups regarding duration of breastfeeding.

Approval to conduct this study was obtained from the hospital facility where the educational classes were held. Approval was then obtained from the Institutional Review Board - Human Subjects at San Jose State University (Appendix A). This researcher described the nature of the proposed study to a convenience sample of 56 women attending prenatal newborn care and prenatal breastfeeding classes. A sign-up sheet was distributed so that interested women could volunteer for the study. Forty-eight of these women signed an approved consent form (Appendix B) in order to participate. Forty-one of these women participated in this study and the remainder were unreachable by telephone.

The information for this study was collected from the participants utilizing an interview schedule (Appendix C) during phone data gathering sessions up to the first 4 months after birth of the baby. The data were analyzed by use of percentages, and *t*-tests were used to evaluate differences between the two groups.

Limitations

Since there may be many reasons a woman might cease breastfeeding, it may be difficult to ascertain if prenatal breastfeeding education is the only variable. Cessation of breastfeeding could be caused solely or in combination with many other factors, such as (a) the health of the mother or baby, (b) age of the mother, (c) gestational age of the baby, (d) support systems, and (e) ongoing breastfeeding counseling after delivery. Prenatal breastfeeding education could modify any of these pre-existing conditions, but it may be difficult to separate these confounding variables from the variable of breastfeeding education.

Chapter 2

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Conceptual Framework

This study is based on the concepts derived from Hildegarde Peplau's Interpersonal Model Nursing Theory. Peplau (1952) discusses nursing as an educative instrument and a growth producing relationship which includes four phases. Peplau defines these phases as follows: (a) orientation - when an individual seeks professional assistance, (b) identification - the individual relates to those who can help her, (c) exploitation - the individual attempts to derive full value through the relationship with the professional, and (d) resolution - the individual frees herself from identification with the professional (Peplau, 1952). She also describes the nurse's role as stranger, teacher, leader, resource person, surrogate, and counselor.

When women attend the prenatal classes and encounter the instructor's style and methods for the first time, the orientation phase begins with the nurse's role as stranger and teacher. As the program continues, discussion and interaction between instructor and students evolve. At this point in the relationship, both nurse and clients begin to enter Peplau's second phase, identification. The pregnant women attending the classes begin to become more dependent on the knowledge and information provided to help them

succeed at breastfeeding. They can express their feelings and needs, and begin to put trust in the nurse's ability to become a resource person and leader.

During the exploitation phase, the clients learn to make decisions on how to care for and feed their babies. These decisions are based on information gathered from the prenatal classes and recommended readings and literature provided. They set personal goals based on their newly acquired information, and become more autonomous, armed with knowledge and confidence as the shift from dependence to independence begins to realize itself. The nurse/instructor remains available for phone advice and as a resource for mothers' concerns.

The resolution phase evolves as clients take charge of their own decisions and begin to feel comfortable with their infant's well-being and feeding methods. They no longer need the leader's assistance to successfully breastfeed their babies. In some cases, however, they reject the help of the leader, and stop breastfeeding based on social pressures, misinformation, or a preference for bottle feeding. Peplau describes the resolution phase as a process in which the client frees herself from the identification phase with the nurse and is ready to move on and adopt new goals (Marriner, 1986).

There is often overlapping and regression in Peplau's four phases of orientation, identification, exploitation,

and resolution. Although they are separately discussed here, there are no clear shifts from one to the next. The nursing roles that emerged during the nurse-patient relationship began as stranger and evolved through resource person to teacher, leader, and counselor. The roles have a strong surrogate component, since there is much association with the nurse as a woman, mother, and nurturer.

Peplau believes that the nurse's clear and supportive communication can help others clarify and achieve their goals (Fitzpatrick & Whall, 1989). She believes that knowledge imparted to clients allows them to become self-regulated and reduce anxiety. Peplau talks about harnessing energy from anxiety and tension, and using that energy productively to create positive outcomes (Peplau, 1952).

The communication between nurse and participants in the prenatal class setting generally creates a positive learning environment. Since the nurse and participants in the prenatal class share mutual goals, communication in class is facilitated and a positive learning environment exists. The nurse educator wants to impart information, and the clients attend the classes in a learning mode and are generally receptive to open communication and growth. These prospective parents become increasingly confident on how to proceed with and make decisions regarding their infant's care and feeding. Anxiety is reduced due to education in the class setting, availability of ongoing advice, and

counseling from the nurse educator.

Peplau's nursing model (Peplau, 1952) demonstrates how the nurse can facilitate the growth and development of the client who progresses toward constructive and productive living. Peplau sees nursing in terms of health maintenance and not just giving care during an illness. Her principles are very useful in the health education practice today.

Literature Review

The health benefits of breastfeeding have been clearly established and reported in medical and nursing journals. Studies have demonstrated that breastfeeding infants have lower morbidity than formula fed infants (Cunningham, 1977; Fomon, Filer, Anderson, & Ziegler, 1979; Grams, 1978; Hanson, 1985; Lockhart, 1979; Reamer & Sugarman, 1987; Smith, Calvert, & Kanto, 1978; Staible, 1982; Taylor, 1982). In spite of the medical profession's recommendations to breastfeed, many women are terminating breastfeeding early.

In a prospective study (Kearney, 1988) of 166 mothers, only 37% had attended a class prenatally about breastfeeding, and 83% breastfed for only one month. In Kearney's study, the breastfeeding preparation of the mother was poor. The main form of education was simple, written materials. Only 25% of the mothers spoke minimally to health care professionals about breastfeeding. Kearney stated that although health care professionals show support and interest for breastfeeding, their knowledge about

breastfeeding is minimal. This may be due to less than optimal professional training, which in turn impacts on their ability to provide patient education (Feinstein, Berkelhamer, Gruszka, Wong, & Carey, 1986). Proper medical management of lactation alone does not ensure breastfeeding success. The support and attitudes of health care professionals are psychosocial factors which have a relationship to breastfeeding success (Kearney, 1988).

Hayes (1981) conducted a study in 27 hospitals. Two hundred and three nurses were given a pretest on their breastfeeding knowledge. Seventy-five percent knew the benefits of human milk over formula, but there were wide variations in opinion and advice about many breastfeeding management principles. The respondents' knowledge of breastfeeding was attributed to what they had learned in nursing school, through personal experience with breastfeeding, work experience in the hospital, or books or inservice films. Hayes concluded that nursing schools may not be adequately preparing nurses to offer appropriate advice about breastfeeding. Information offered to new mothers may be inconsistent between members of the same nursing staff and individual nurses may not regularly update their breastfeeding information (Hayes, 1981).

In another investigation (Hewat, 1985) of health care providers' knowledge about breastfeeding, it was found that much of the information provided was neither comprehensive

nor consistent. The author discusses the need to strengthen and update the education of health care providers if they are to effectively teach breastfeeding to pregnant and breastfeeding women (Hewat, 1985). Support from health care professionals who are well-informed about the physiology of lactation as well as management of breastfeeding can have a positive effect on the breastfeeding outcome (Committee on Nutrition, 1980).

Even the mention of breastfeeding by a supportive physician can have a positive effect on the breastfeeding duration (Mansbach, 1984). In a study of 276 women in Jerusalem, 54% mentioned receiving guidance from a hospital nurse, while only 2.6% mentioned physicians' support prenatally. The author found that many obstetricians may lack the skills to educate and promote breastfeeding (Mansbach, 1984).

A study of UCLA newborn nursery nurses and new mothers investigated attitudes and teaching practices of infant feeding methods. The mothers reported that the physicians were not consistently supportive of breastfeeding, and the study demonstrated that counseling from physicians had little impact on feeding outcome. The mothers in this study generally considered that the nurses were supportive of breastfeeding, and the authors concluded that the nurses' non-verbal behaviors exerted a stronger influence on the mothers' feeding decisions than did the physicians'

counseling (Reiff & Essock-Vitale, 1985).

The services of a lactation consultant were studied by Auerbach (1985) for a 6 month period. Clients were instructed by the lactation consultants prenatally and following the baby's birth. The findings suggest that contact with a lactation consultant was a powerful variable in increasing breastfeeding duration. There was a statistically significant decrease in weaning earlier than 1 month (50% to 11%), and an increase in the percentage of mothers breastfeeding at 4 months postpartum (32% to 68%) (Auerbach, 1985).

Maternal commitment to breastfeed was measured by Coreil and Murphy (1988) in 44 mothers by use of a questionnaire administered in the third trimester of pregnancy. The mothers were interviewed at 6 weeks after birth, and completed another questionnaire at 12 months postpartum. "Intended duration" to breastfeed was the strongest predictor of actual duration of breastfeeding. Intended duration correlated strongly with confidence and knowledge about breastfeeding (Coreil & Murphy, 1988). In another study by Loughlin (1985), lack of confidence was also cited as a variable associated with cessation of breastfeeding. This study was conducted in a private pediatric practice. While in the hospital, 94 mothers completed a questionnaire and were followed for the first 2 postpartum months. At 8 weeks, 30% had stopped

breastfeeding, and related that they had intended to breastfeed longer but lacked confidence to continue (Loughlin, 1985). "If the mother thinks she will succeed, she most likely will" (p.60). Instilling confidence was found to be the single most important determinant of successful breastfeeding (Ellis & Hewat, 1984; Kemberling, 1979).

Health care professionals should incorporate positive attitudes about breastfeeding and accurate, practical information into their prenatal education programs. The confidence to breastfeed combined with encouragement and support from one's health care professional can significantly increase the chance of successful breastfeeding. This combination should be incorporated as an integral part of prenatal education programs early in pregnancy, and should include books, pamphlets, and audio visual presentations (Edwo, 1983; Gulick, 1982). Many physicians say they support breastfeeding but will send formula to the bedside of a breastfeeding mother. If pediatricians are to be strong advocates of breastfeeding, they must be convinced of the advantages of breast milk (Kemberling, 1979).

The effects of prenatal breastfeeding education were reported in a study in a large municipal hospital (Winikoff, 1987). Chart review and patient interviews revealed that the incidence of breastfeeding increased from 15% to 56% in

those women educated during the prenatal period. In another setting, Wiles (1984) studied 40 pregnant women who were enrolled in childbirth education classes. All of these women intended to breastfeed their infants. Twenty subjects attended a prenatal breastfeeding education class, and 20 served as controls. At 1 month postpartum, 3 times as many subjects who attended the breastfeeding class, as compared to controls, were totally breastfeeding. These results suggest that breastfeeding education should begin prenatally, and that in-hospital teaching should reinforce previous learning rather than be initial learning (Wiles, 1984).

Providing prenatal breast examinations and preparation prenatally can minimize early problems such as nipple confusion, jaundice, and positioning difficulties. The need for qualified practitioners to educate pregnant women prenatally and aid in early breastfeeding is evident (Hill, 1987; Neifert & Seacat, 1985).

It appears that integrating breastfeeding education into early prenatal care and teaching breastfeeding preparation during the last trimester of pregnancy are important factors in breastfeeding success (Beske & Garvis, 1982). Guidelines for prenatal educational literature that will inform and assist the mother in preparing for breastfeeding should be established (International Federation of Gynecology & Obstetrics, 1982).

Management prenatally should include a three step approach correlating with the three trimesters of pregnancy. During the first trimester, the initial breast examination should be made by the obstetrician or nurse practitioner. Discussion of how the infant is to be fed can be initiated at this time. Once the mother has experienced quickening in the second trimester, definite plans should be made about feeding. During the third trimester, preparation for nursing, such as breast and nipple care, should be initiated. Discussion of the mother's concerns about breastfeeding should be encouraged, including her feelings about exposing her breasts, changes in her figure, and her freedom. A support person or group should be made available to the woman for further questions and concerns as needed (Lawrence, 1985).

Summary

From the review of the literature, the recommendation for more and better prenatal breastfeeding education emerges as a strong factor to improve chances for successful breastfeeding. It is clear that prenatal education is generally lacking or ineffectively provided to adequately prepare and support the woman who chooses to breastfeed her baby. The health care professional has an important influence on the mother's decision to breastfeed as well as to instill confidence to increase the duration of breastfeeding. Lactation consultants can also have positive

effects on increasing breastfeeding duration. The literature, as well as this researcher's 20 years of breastfeeding teaching experience, concur that prenatal breastfeeding education strongly influences not only the decision to breastfeed but the ability to continue breastfeeding.

Peplau's Interpersonal Model Nursing Theory allows the nurse educator to define her roles as the relationship with her client changes over time. It also helps in the organization of the educative process as growth takes place in each woman's development.

After determining that an education process is needed to achieve the goal of successful breastfeeding, it is imperative that the nurse/educator use a suitable plan to achieve that goal. Peplau's nursing model is a comprehensive, well developed theory. When it is implemented, it provides a framework to satisfy such a need.

Chapter 3

RESEARCH DESIGN AND METHODOLOGY

This study was a comparative descriptive design. It compared women who attended both prenatal breastfeeding and prenatal newborn care classes with women who attended only the prenatal newborn care class to see if there were differences in the length of time breastfeeding.

Procedure

Approval to conduct this study was obtained from the hospital facility where the educational classes were held. Approval was then obtained from the Institutional Review Board - Human Subjects at San Jose State University (Appendix A). All of the participants signed an approved consent form in order to participate in the study (Appendix B). The consent form advised that confidentiality would be maintained, only the investigator would know their identities, and that they might withdraw from the study at any time. In addition, they were advised that there were no risks and no discernible benefits expected at the time, although results of the study may be beneficial to future nurses and students. Participants were advised on how to contact the instructor or the university with questions about the study.

After the approval process was completed, this researcher described the nature of the proposed study to the

participants of the prenatal newborn care and prenatal breastfeeding classes. A sign-up sheet was distributed so that interested women could volunteer for the study. In addition, the volunteers signed the approved consent form. The information for the study was collected from the participants utilizing an interview schedule (Appendix C) during phone data gathering sessions up to the first 4 months after birth of the baby. Percentages and independent *t*-tests were used to evaluate the data.

Sample

The potential population in this study was a convenience sample consisting of 56 women in the last trimester of pregnancy who were attending prenatal newborn care and prenatal breastfeeding classes. Forty-eight of these women agreed to participate and signed the approved consent form (Appendix B). Forty-one of these women participated in this study, as the remainder were unreachable by telephone during the 3 to 4 month postpartum period when data collection was being done.

Interview Schedule

The information was collected utilizing the data gathering questions (Appendix C) during telephone interview sessions. The participants were grouped according to the following criteria: (a) women who attended both the prenatal newborn care and prenatal breastfeeding classes (n = 23), and (b) those who attended only the prenatal

newborn care class (n = 18). Other data collected included those who received prenatal breastfeeding instruction from sources outside the hospital facility, those who had ongoing breastfeeding counseling, health and age of the mother, gestational age and health of baby, and support systems. The clients were then assessed as to whether the mother was successfully breastfeeding for three months after birth of the baby.

Chapter 4

DATA ANALYSIS AND INTERPRETATION

The information for analysis was obtained from each participant during phone data gathering sessions according to the interview schedule (Appendix C). Questions 1, 2, and 5 addressed the attendance at the educational classes and whether the women were successfully breastfeeding at 3 months after birth. Question 3 addressed other prenatal breastfeeding instruction from sources outside the hospital facility. Question 4 addressed ongoing breastfeeding counseling after birth of the baby. Questions 6, 7, 8, and 9 addressed the age and health of the mother and gestational age and health of the baby. Question 10 addressed support systems for breastfeeding.

Analysis of Data for Questions 1, 2, and 5

An initial evaluation was undertaken by use of percentages. The 41 women in the sample were divided into 2 groups: those who attended both the prenatal breastfeeding and prenatal newborn care classes (n = 23), and those who attended the prenatal newborn care class only as to duration of breastfeeding (n = 18). Of the 23 women who attended the prenatal breastfeeding and prenatal newborn care classes, 22 were still breastfeeding at 3 months (90 days), or 96% (.956). Only 7 out of the 18 women who attended just the prenatal newborn care class were still breastfeeding at 3

months after birth, or 39% (.388).

An independent *t*-test was done to examine the difference between the two groups studied: those who attended prenatal breastfeeding and prenatal newborn care classes, and those who attended the prenatal newborn care class only as to duration of successful breastfeeding. There was a significant difference (*t* [39] = 6.786, *p* <.001). A *t*-test value of 2.021 was necessary for significance at the .05 level (Table 1).

This finding indicates that women who had attended both the prenatal breastfeeding and prenatal newborn care classes breastfed longer than those women who attended the prenatal newborn care class only. This indicates that the possibility that this finding is due to chance is less than 1 in 1000.

Analysis for Question 3

There were 9 women who were still breastfeeding at 3 months who had received other prenatal breastfeeding education from outside sources. This finding is a confounding variable since all of those women who had other prenatal breastfeeding education from outside sources also attended both the prenatal breastfeeding and prenatal newborn classes, and it was impossible to separate them from the entire group.

No significant relationship was found between the women who received other prenatal breastfeeding education in

Table 1

Influence of Prenatal Classes Upon Breastfeeding Duration

Classes taken	Attendees	Breastfeeding at 90 days	Percentage at 90 days	t
Prenatal newborn	18	7	39	6.786*
Prenatal newborn and breastfeeding	23	22	96	

*p <.001

addition to attending both the prenatal breastfeeding and prenatal newborn care classes. This does, however, support the finding that those women with more prenatal breastfeeding education continued to breastfeed longer than those with less education prenatally.

Analysis for Question 4

Of the 41 women in the study, 37 women, or 90% (.902), had ongoing breastfeeding counseling after delivery. Of these 37 women, 29, or 78% (.783), were still breastfeeding at 3 months. Of the 4 women in this study who had no ongoing breastfeeding counseling, fewer than 10% (.097), none of these women was breastfeeding at 3 months (Table 2).

Analysis for Question 7

The age range of the women in the study was from 20 - 34 years. They were divided into two age groups: younger women 20 - 25 years of age, and older women 26 - 34 years of age. Purely by chance, the sample of 41 women was divided almost exactly in half, 20 younger women and 21 older women.

In the younger women group, 12 out of 20 women (60%) were breastfeeding their babies at 3 months of age, and 13 out of 21 women (62%) were breastfeeding at 3 months in the older age group. No significant difference was found between these groups (t [39] = 1.205). A finding of 2.571 was necessary to be significant at .05 level. Therefore, the age of the breastfeeding mother did not influence the duration of breastfeeding in this study (Table 3).

Table 2

Effects of Ongoing Postpartum Breastfeeding Counseling

Received counseling	Number	Breastfeeding at 90 days	Percentage at 90 days
Yes	37	29	78
No	4	0	0

Table 3

Impact of Age of Mother Upon Breastfeeding Duration

Age group of participant	Number	Breastfeeding at 90 days	Percentage at 90 days	t
20-25 yrs.	20	12	60	
26-34 yrs.	21	13	62	1.205*

*t_{CRIT} = 2.571

Analysis for Question 6

All 41 women (100%) considered themselves to be in good health. Six of the 41 women, however, responded as having the following medical problems:

1. One had gestational diabetes (diet- controlled).
2. One had mild colitis.
3. One had mild asthma.
4. One was hearing impaired.
5. Two had environmental allergies.

None of them believed that her medical problem interfered in any way with breastfeeding her infant. Therefore, there was no measurement to undertake regarding health of the mother.

Analysis for Questions 8 and 9

No measurement was necessary regarding gestational age and health of baby. All of the babies were considered healthy by their mothers and all were full term infants born within 2 weeks of the mother's due date.

Analysis of Question 10

No examination of the womens' support systems was necessary because all of the women (100%) maintained that they were supported by their husbands or mothers. Therefore, there was no variation to measure on support systems.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study was performed to determine if the women who attended both prenatal breastfeeding and prenatal newborn care classes would be breastfeeding at 3 months after delivery in comparison to those women who attended the prenatal newborn care class only. After studying 41 women who attended these classes, the findings showed that there is a positive relationship between prenatal breastfeeding education and duration of breastfeeding.

The data gathered in the study were evaluated through the use of percentages and independent *t*-tests. Clearly, the women (96%) still breastfeeding at 3 months had more prenatal breastfeeding education than those who did not. In addition, it was found that with ongoing breastfeeding counseling after delivery, 78% of the mothers were breastfeeding at 3 months. Those with no ongoing breastfeeding counseling were fewer than 10%.

The results of the analysis of successful breastfeeding grouped by age of mother showed no significant difference. This researcher assumed that there would be a difference in length of breastfeeding due to the age of the mother. The assumption was based on the greater maturity level of the mother and less need to give up breastfeeding early.

However, women are having babies later in life and may also have established careers. They may think that breastfeeding after the end of the maternity leave would be inconvenient. This difference was not demonstrated in this study since both the younger and older age groups were nearly identical in duration of breastfeeding.

Recommendations

Based on the findings of this study, recommendations regarding prenatal breastfeeding education can be made to prenatal educators in pediatric departments. Since it has been well established that breastfeeding is the preferred method of feeding infants (Cunningham, 1977; Fomon et al., 1979; Grams, 1978; Hanson, 1985; Lockhart, 1979; Reamer & Sugarman, 1987; Smith et al., 1978; Staible, 1982; Taylor, 1982), it is important for the professional community to seek methods of increasing the number of women who breastfeed, as well as increasing the duration of breastfeeding. Providing prenatal breastfeeding education to all pregnant women is an important goal toward this end.

There may be many reasons a woman might cease breastfeeding. It may be difficult to ascertain if prenatal education is one of those variables. Cessation of breastfeeding could be caused solely or in combination with many other factors, including health of the mother or baby, age of the mother, gestational age of the baby, support systems, and ongoing breastfeeding counseling after

delivery. Prenatal education could modify any of these pre-existing conditions, but may be difficult to separate from all of these variables. Therefore, the investigator of this study strongly believes that more research should be conducted to reinforce the conclusion of this thesis that prenatal breastfeeding education does have an impact on successful breastfeeding.

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APPENDIX A

Letter of Approval

SJSU SAN JOSE STATE UNIVERSITY

A campus of The California State University

Office of the Academic Vice President • Associate Academic Vice President • Graduate Studies and Research
One Washington Square • San José, California 95192-0025 • 408/924-2480

To: Joan Kramer, Nursing

From: Charles R. Bolz
Office of Graduate Studies and Research

Date: April 11, 1991

Charles R. Bolz

The Human Subjects Institutional Review Board has approved your request to use human subjects in the study entitled:

"The Relationship of Prenatal Education to Successful Breastfeeding"

This approval is contingent upon the subjects participating in your research project being appropriately protected from risk. This includes the protection of the anonymity of the subjects' identity when they participate in your research project, and with regard to any and all data that may be collected from the subjects. The Board's approval includes continued monitoring of your research by the Board to assure that the subjects are being adequately and properly protected from such risks. If at any time a subject becomes injured or complains of injury, you must notify _____ immediately. Injury includes but is not limited to bodily harm, psychological trauma and release of potentially damaging personal information.

Please also be advised that each subject needs to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate or withdrawal will not affect any services the subject is receiving or will receive at the institution in which the research is being conducted.

If you have any questions, please contact _____ or me at _____

cc: _____

APPENDIX B

Consent Form

SJSU SAN JOSE STATE UNIVERSITY

A campus of The California State University

School of the Applied Arts and Sciences • Department of Nursing
One Washington Square • San José California 95192-0057 • 408 924-3130

AGREEMENT TO PARTICIPATE IN RESEARCH
SAN JOSE STATE UNIVERSITY

RESPONSIBLE INVESTIGATOR: Joan Kramer, RN

TITLE OF PROTOCOL: The Relationship of Prenatal Education to Successful Breastfeeding

I understand that

1) I will be part of a thesis study through my baby's four month birthday. Information obtained during phone counseling sessions will be used. The information collected is done on all women who call for advice regardless of participation in the study.

2) There are no risks in this study and there are no discernible benefits expected at this time. Results of the study may be beneficial to future students.

3) There is no pressure placed on me to participate in the study. No services will be lost whatsoever if I do not participate. The same curriculum will be taught, and the same counseling and advice is available.

4) The results derived from this study may be published, and confidentiality will be maintained. That is, no statistics will be presented with participants' names, and the facility name will not be used. Only the instructor will know who the participants are.

5) Any questions about my participation in this study will be answered by Joan Kramer at _____. Complaints about the procedures may be presented to _____ at _____. For questions or complaints about research subject's rights, or in the event of research-related injury, contact _____, Ph.D. (Associate Academic Vice President for Graduate Studies & Research) at _____.

6) My consent is given voluntarily without being coerced. I may refuse to participate in this study and I may withdraw at any time, without prejudice to my relations with San Jose State University.

I HAVE MADE A DECISION WHETHER OR NOT TO PARTICIPATE. MY SIGNATURE INDICATES THAT I HAVE READ THE INFORMATION PROVIDED ABOVE AND THAT I HAVE DECIDED TO PARTICIPATE.

_____ _____ _____

Date Subject's Signature Investigator's Signature

APPENDIX C

Data Gathering Questions

Data Gathering Questions

1. Did you attend the prenatal breastfeeding class?

   yes no

2. Did you attend the prenatal newborn care class?

   yes no

3. Did you receive prenatal breastfeeding instruction from sources outside the hospital facility?

   yes no if yes, _____

4. Have you had ongoing breastfeeding counseling after the birth of your baby?

   yes no if yes, _____

5. Were you completely breastfeeding your baby at three months of age, or breastfeeding with only one supplementary bottle per day?

   yes no

6. What do you consider to be the state of your health?

   good poor fair

   any medical problems? _____

7. How old are you? _____

8. Was your baby born within two weeks of your due date?

   yes no

9. Is your baby healthy?

   yes no if no, _____

10. Did you have a support system for breastfeeding?

    yes no if yes, who _____