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The Relationship Between Knowledge of Breastfeeding and Success in Breastfeeding

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**THE RELATIONSHIP BETWEEN KNOWLEDGE OF BREASTFEEDING
AND SUCCESS IN BREASTFEEDING**

By

Sherry M. Knoppers

A THESIS

**Submitted to
Grand Valley State University
in partial fulfillment of the requirements for the
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ABSTRACT

THE RELATIONSHIP BETWEEN KNOWLEDGE OF BREASTFEEDING AND SUCCESS IN BREASTFEEDING

By

Sherry M. Knoppers

This correlational study examined the relationship between knowledge of breastfeeding and success in breastfeeding. A convenience sample of women attending prepared childbirth classes in a Midwestern metropolitan area was used. The women were pregnant with their first child and planning to breastfeed. Gulick's (1981) Information on Breastfeeding Questionnaire was used to test knowledge of breastfeeding before delivery and Rentschler's (1991) Breastfeeding Experience Questionnaire was used to measure knowledge and experience.

Roy's Theory of Adaptive Modes (Andrews & Roy, 1991) was used as a theoretical framework. This study focused on the role function mode and role transition, looking at the secondary role of mother and the transition to the tertiary role of breastfeeding.

An Eta coefficient value of .45 showed a moderately strong relationship between knowledge of breastfeeding and success with breastfeeding. Women whose babies were eager feeders were also significantly more likely to be successful in breastfeeding.

Acknowledgments

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A special note of appreciation to my husband John and sons, Landon and Logan, for their patience and support through this long process. Above all I am thankful to God for sustaining me through every step of this project.

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CHAPTER 1

INTRODUCTION

Breastfeeding is the best choice of infant feeding in most situations as human milk is the ideal nutrient source (American Academy of Pediatrics, 1982; Council on Scientific Affairs, 1979; Koop & Brannon, 1984). However, the percentage of women breastfeeding their infants is far below National Health Promotion and Disease Prevention Objectives (United States Department of Health and Human Services). Many women seem to lack the desire to breastfeed or the knowledge necessary to breastfeed successfully. Since education about breastfeeding increases rates of breastfeeding (Kistin, Benton, Rao & Sullivan, 1990; Shoham-Yakubovich, Pliskin, & Carr, 1990), and women's tested knowledge level about breastfeeding is positively related to success in breastfeeding (Rentschler, 1991), nurses are often in an ideal position to assist women in breastfeeding successfully. In the health care system nurses are the primary providers of information on breastfeeding. In addition, the introduction of formula has a negative effect on duration of breastfeeding (Hill, 1991). Thus, hospital nurses can also positively influence successful breastfeeding, as they are in the best position to prevent newborns from receiving formula unless it is absolutely necessary.

This study replicated part of a study conducted by Rentschler (1991) measuring women's achievement motivation and level of information about breastfeeding and examining how these factors related to success in breastfeeding. In the study, success in breastfeeding was defined as breastfeeding for at least six weeks. While it is difficult to change motivation, nurses are in an excellent position to increase the level of information about breastfeeding. Therefore, this study focused solely on level of information about breastfeeding and examined how knowledge relates to success in breastfeeding.

Hill (1987) also looked at knowledge of breastfeeding and the effects of a prenatal breastfeeding education program on the success of breastfeeding among low-income pregnant women. Despite the fact that the level of knowledge was increased for subjects in the treatment group, greater knowledge about breastfeeding did not affect breastfeeding duration or perception of success.

Knowledge related to breastfeeding was not manipulated in this study. The purpose of this study was to examine the relationship between level of breastfeeding knowledge and success in breastfeeding as they occur as a natural consequence of participation in childbirth classes. Success in breastfeeding was measured at six weeks postpartum. The relationship between these factors could guide nurses in providing information and support for women choosing to breastfeed.

CHAPTER 2

LITERATURE AND CONCEPTUAL FRAMEWORK

Literature

The topic of breastfeeding has been studied extensively. Researchers have looked at various aspects of breastfeeding. The focus of this literature review is on women's knowledge about breastfeeding.

Rentschler's study (1991) used a convenience sample of 173 women who were pregnant for the first time and planning to breastfeed. All subjects had attended prepared childbirth classes. Information about breastfeeding was measured by Gulick's (1981) Information on Breastfeeding Questionnaire (IBQ). The Breastfeeding Experience Questionnaire (BEQ) was used to measure success in breastfeeding (Rentschler, 1986). Achievement motivation was measured by Mehrabian and Bank's (1978) Questionnaire Measure of Individual Differences in Achieving Tendency. This correlational study had level of information about breastfeeding and achievement motivation as independent variables and success of breastfeeding as the dependent variable. The study found a positive relationship between knowledge about breastfeeding and success in breastfeeding. The Point Biserial correlation between success in breastfeeding and pregnant women's level of information about breastfeeding was $r_{pb} = .32$, $p = .0001$. The two most common reasons unsuccessful women gave for

ceasing to breastfeed were lack of milk and sore nipples. The unsuccessful women were more likely to have missed the questions on the IBQ related to production and maintenance of milk supply and questions about breast changes, nipple care, and engorgement. The generalizability of this study is limited through use of a convenience sample.

A study by Hill (1987) used a convenience sample of 64 low-income pregnant women to examine the effect of a special program on breastfeeding. This pre-post test experimental design had as the independent variable whether or not women received the breastfeeding prenatal program and a dependent variable of duration of breastfeeding. Although the subjects in the treatment group were more knowledgeable about breastfeeding after instruction (one-tailed paired $t(30)=7.99, p<.001$), the study found no difference in duration of breastfeeding between the two groups (using a Chi-square test, $\chi^2=1.65, p>.05$). The study has limited generalizability related to the small sample size and no control for attendance at breastfeeding classes offered postpartum at the university hospital.

Hauck and Dimmock (1994) studied the affects of a breastfeeding informational booklet. They used a sample of 150 mothers of full-term infants who were breastfeeding for the first time. Upon discharge from the hospital, a random sample of 75 mothers were sent the booklet. The survival analysis for 52 weeks revealed no significant difference for the survival of breastfeeding between groups. The experimental group did show a higher breastfeeding survival at 6 weeks, but it was not statistically significant ($p<.12$). The study did find that women in the experimental

group who had planned to breastfeed for less than 6 months did not necessarily follow their intention, indicating they may have changed their plans and breastfed for longer than originally planned. The authors did not assess if the participants felt the booklet encouraged them to breastfeed longer, though they did state that 97% of the participants found the booklet useful. This study also has limited generalizability due to the under representation of single mothers, women from non-English-speaking backgrounds, women from lower socio-economic groups and women with lower levels of education.

Other studies found that education about breastfeeding increased rates of breastfeeding (Kistin, Benton, Rao & Sullivan, 1990; Shoham-Yakubovich, Pliskin & Carr, 1990). These studies focused on the decision to breastfeed over bottlefeeding, but not on testing the women's level of knowledge about breastfeeding and the correlation between that knowledge and success at breastfeeding.

A study by Lawson and Tulloch (1995) examined the role of prenatal intent and postnatal experiences in breastfeeding duration. Subjects were drawn from urban and rural areas in every state of Australia, recruited in response to magazine requests or through direct contact at an antenatal clinic of a major city hospital. Using a discriminant function analysis they found those fully breastfeeding 3 months after the birth of the baby had a higher level of education, timed their decision to breastfeed earlier, intended to breastfeed longer and had a more negative attitude to formula feeding ($\chi^2=25.9$, $df=12$, $p<.01$). An additional analysis including post-birth indicators of early timing of first breastfeeding and smaller amount of time baby spent

in the care of others during the first 72 hours of life ($\chi^2=29.4$, $df=18$, $p < .05$) also contributed to prediction of breastfeeding status. Commitment and confidence scores were not related to breastfeeding duration in first-time mothers. The most common reason for not breastfeeding or introducing artificial feeding was due to perceived milk supply in 12 (43 %) of the women.

Bear and Tigges (1993) present components of early follow-up and guidelines for assessment. Their premise is that nurses can promote a successful breastfeeding experience by providing clients with support, anticipatory guidance and information about breastfeeding. Unfortunately they do not actually test this premise.

Frank, Wirtz, Sorenson and Heeren (1987) conducted a randomized controlled trial to evaluate two interventions for prolonging the duration of breastfeeding. One component of the study compared an intervention including special bedside counseling with follow-up calls by a trained counselor to routine breastfeeding counseling provided in the hospital by staff nurses. Using survival analysis the special counseling exerted a statistically significant effect ($p=.03$, one-tailed) regarding the first introduction of solid foods to the infant's diet. The median age at the initiation of solid foods was 105 days for infants whose mothers received the research counseling, compared with 91 days for those whose mothers received routine counseling. The effect on breastfeeding, however, was not statistically significant by 4 months postpartum. The other intervention compared commercial discharge packs provided by formula companies with special discharge packs designed to be consistent with the World Health Organization Code of Marketing of Breastmilk Substitutes. Survival analysis was used

to evaluate the effects of each intervention, controlling statistically for the effects of the other. Log linear analysis showed women who received the research discharge pack were more likely to prolong exclusive breastfeeding ($p < .01$, one-tailed), to be partially breastfeeding at 4 months postpartum ($p = .04$, one-tailed) and to delay the daily use of solid foods in the infant's diet ($p = .02$, one-tailed). In contrast, a prospective study by Feinstein, Berkelhamer, Gruszka, Wong and Carey (1986) found success in breastfeeding was not effected by formula samples in discharge packs but, using Pearson's r , did find supplementing more than one bottle of formula per day by one month postpartum was associated with shorter breastfeeding duration ($p < .001$).

Using meta-analysis, Bernard-Bonnin, Stachtchenko, Girard, and Rousseau (1989) found nursing support with telephone follow-up to be statistically significant (pooled results odds ratio=2.29, $p < .05$) in increasing breastfeeding duration. Another study by Hill (1991) identified variables that predicted breast-feeding duration for the first eight weeks postpartum among a sample of mothers enrolled in the Women, Infants, and Children (WIC) program and those not enrolled. A total of 400 mothers, 200 WIC and 200 non-WIC, participated. This study used stepwise multiple regression and found that introduction of formula was significantly correlated with breastfeeding duration ($p < .01$).

Providing information about breastfeeding should increase knowledge level about breastfeeding. Although few studies tested knowledge level, knowledge about breastfeeding appears to be an important factor in success of breastfeeding. Other factors such as motivation and support also affect success of breastfeeding but are

harder for nurses to modify.

Success of breastfeeding is often measured by duration. The longer a woman breastfeeds the more successful she is. Rentschler (1991) found that over 50% of those who did not breastfeed for at least six weeks had already weaned their infants within the first three weeks postpartum.

Another way to measure success would be to monitor infant weight gain. No studies were found that used this criterion. Since human milk is the ideal nutrient source (American Academy of Pediatrics, 1982; Council of Scientific Affairs, 1979; Koop & Brannon, 1984) breastfed infants gaining weight at the same rate as bottlefed infants are still better off nutritionally than bottlefed infants.

Conceptual Framework

This study used Roy's Theory of Adaptive Modes, focusing on the role function mode and role transition (Andrews & Roy, 1991). Roy views the person, the recipient of nursing care, as an adaptive system. Individuals are holistic adaptive systems that have the capacity to adjust effectively to changes in the environment. Adaptation is a function of the degree of change taking place and the person's adaptation level. Roy sees role as a set of expectations about how a person occupying one position behaves toward a person occupying another position. The role function mode is a social mode focusing on the roles a person occupies in society. A primary role is based on age, sex and developmental stage. Most of the behaviors a person engages in during a given growth period of life are determined by the primary role. The role a person assumes to complete the tasks in a given primary role is a secondary role. A tertiary role is freely

chosen by a person. Factors influencing choice of tertiary roles include information available to the person regarding the new role, how those close to the person perceive the new role, how supportive those close to the person are about the new role and even how society views the role. A tertiary role is temporary in nature and is often associated with accomplishing a task in the person's current development. An instrumental behavior is the actual physical performance of a behavior to achieve the goal of role mastery. An expressive behavior incorporates the feelings, attitudes, likes, or dislikes that a person has about a role or the performance of a role. Role mastery is meeting social expectations associated with the assigned role. The process of assuming and developing a new role is role transition (see Figure 1).

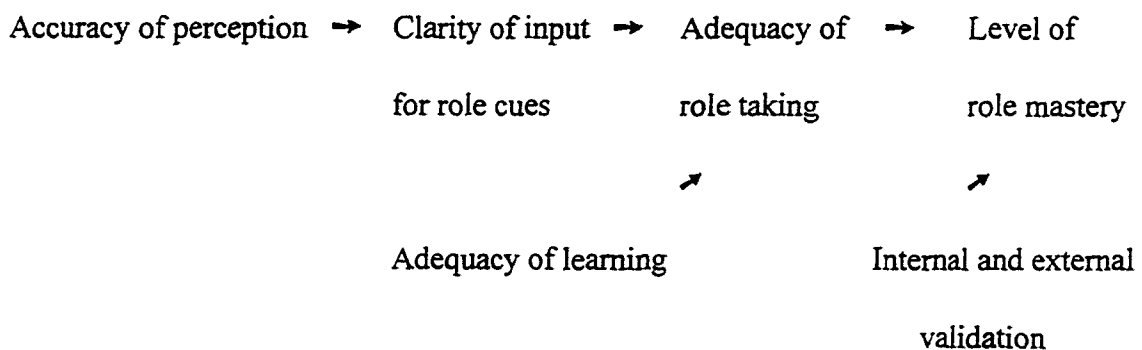


Figure 1. Components of Roy's role function mode.

Looking at the secondary role of mother and the transition to the tertiary role of breastfeeding, role transition would be dependent on the instrumental behaviors, the actual physical performance. Level of breastfeeding knowledge reflects the adequacy of learning related to the role of breastfeeding. The adequacy of role taking related to breastfeeding is described as success in breastfeeding. For this study success was defined as continuing to breastfeed at 6 weeks postpartum. Healthy People 2000

(United States Department of Health and Human Services) includes a goal to increase to at least 75% percent the proportion of mothers who breastfeed their babies in the early postpartum period. Six weeks postpartum is also when working women may be returning to work which may affect their decision to continue breastfeeding, aside from their ability to breastfeed based on their knowledge of breastfeeding. Knowledge of breastfeeding is information about breastfeeding. This is seen as an important factor to effective role transition. Inversely, ineffective role transition could result from ineffective instrumental behaviors with a likely cause being lack of knowledge (Andrews & Roy, 1991) (see Figure 2).

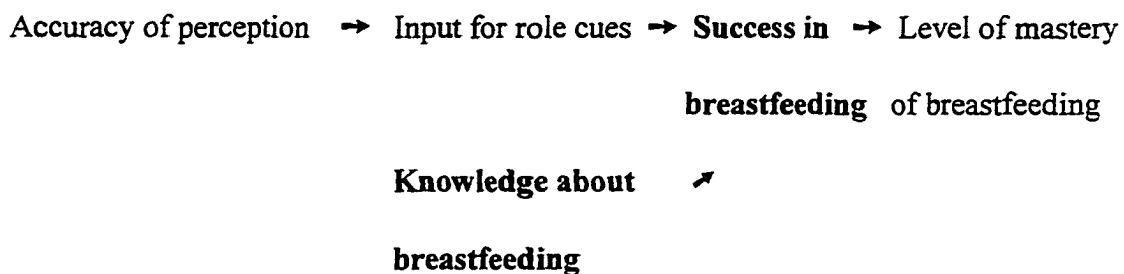


Figure 2. Study variables pertaining to adequacy of breastfeeding role. (study variables.)

Knowledge about breastfeeding includes advantages of breastmilk to baby; advantages of breastfeeding for the mother; an understanding of the physiology relating to breastfeeding starting during pregnancy and continuing into breastfeeding; understanding how to get baby started, how long to nurse, how to establish good let down, how to know if baby is getting enough and information on supplementing, how the woman should eat while breastfeeding and possible sexual feelings during nursing. This study's purpose was to answer the question, "What is the relationship between

knowledge of breastfeeding and success of breastfeeding?" The independent variable was the women's knowledge about breastfeeding. Success of breastfeeding, defined as still breastfeeding at six weeks post partum, was the dependent variable. The hypothesis of this study was that women with more knowledge of breastfeeding would be more likely to be successful at breastfeeding than those with less knowledge.

CHAPTER 3

METHODOLOGY

Design

This correlational study examined the relationship between knowledge of breastfeeding and success with breastfeeding. Other possible factors related to success of breastfeeding include the woman's support system, her desire to be successful, her job status, her week of gestation at delivery, maternal and infant health and complications, use of supplemental formulas and social pressures and acceptance. In this correlational study these factors were not manipulated. Gathering data regarding these factors made it possible to analyze them statistically.

Sample

Subjects were drawn from prepared childbirth classes offered in a Midwestern metropolitan area. These included classes offered by an area health plan, ASPO/Lamaze and Bradley Childbirth. Subjects were first-time pregnant women planning to breastfeed. Subjects were able to speak, read and write in English and were willing to participate in the study. This was a convenience sample, as not every pregnant woman who planned to breastfeed attended the classes being targeted. The study being replicated had 173 subjects initially with 150 completing the study. One hundred-two women of the 104 eligible signed up for this replication and 81 completed

both questionnaires. Five subjects were dropped from the study because they never attempted to breastfed their babies. The final sample included 76 participants.

Participants ranged in age from 18 to 38 with a mean and median range of approximately 28 years. Ninety-five percent were married. Of those married, none where married more than 9 years with a mean of 3 years ($SD=2.3$) (see Figure 3).

Ninety-three percent were living with the father of the baby. Education level ranged from high school to one who had a doctorate (see Figure 4). Eighty-two percent were employed at the time of the first questionnaire, 78% of those were working full time.

Ninety-two percent were Caucasian with a few Oriental and others.

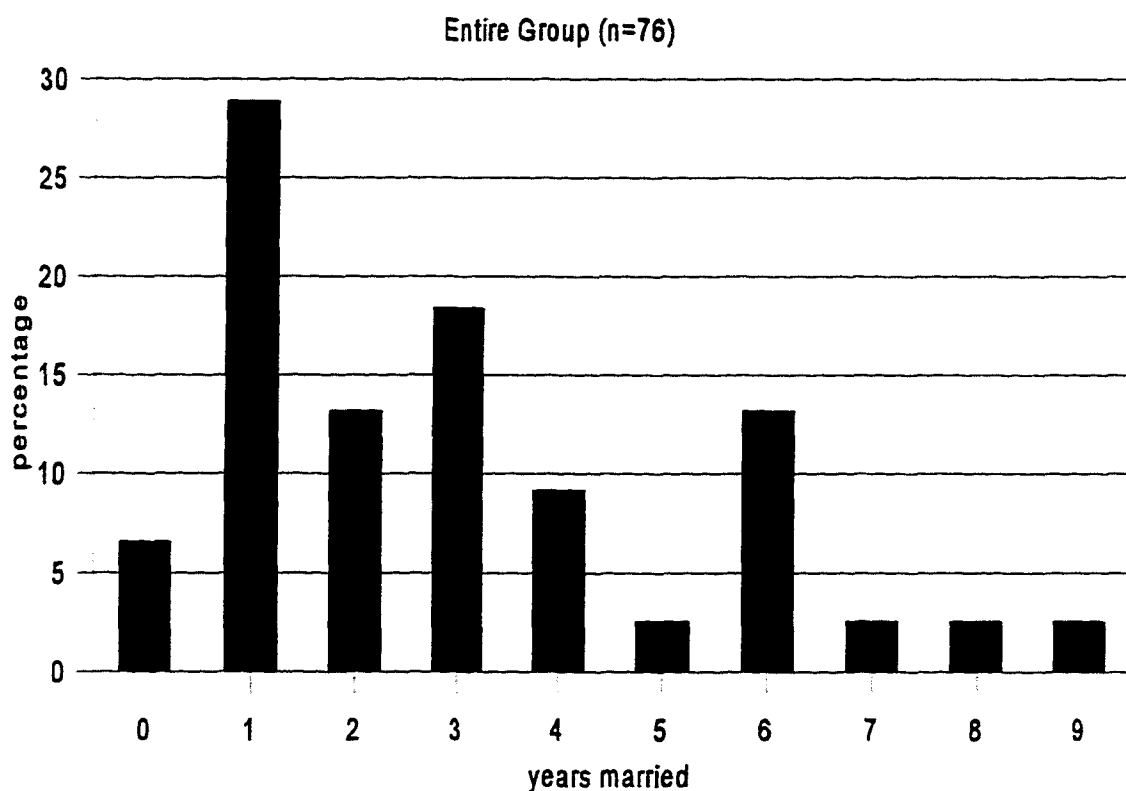


Figure 3. Years Married.

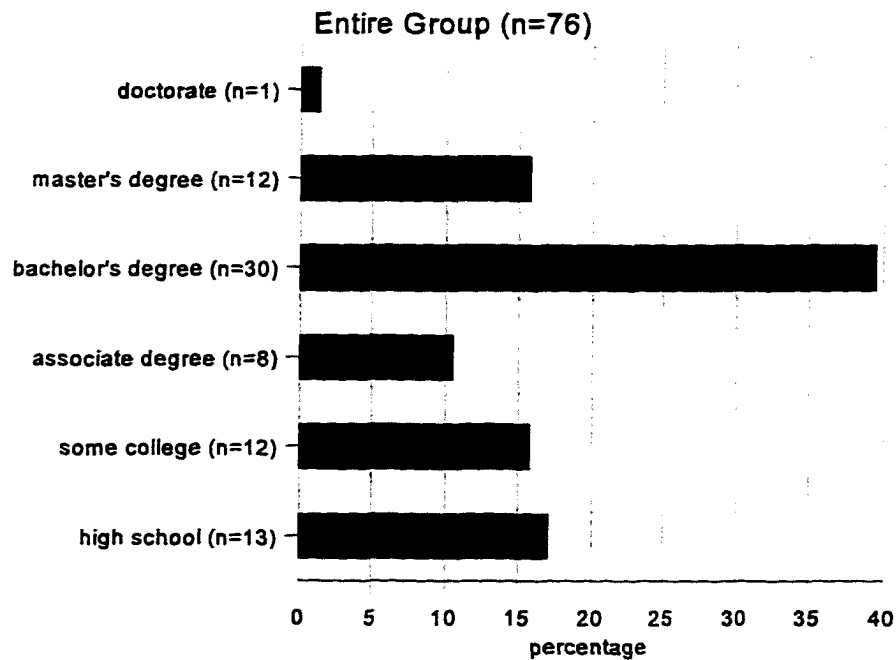


Figure 4. Education level of sample

Instruments

Rentschler's (1991) Personal Data Inventory gathered demographic information and data believed to influence the outcome of breastfeeding (Rentschler, 1991). The 21 items used from this questionnaire ranged from strictly demographic to those looking at motivation and commitment to breastfeeding and support. These questions were combined with 24 questions from Gulick's (1981) Information on Breastfeeding Questionnaire (Questionnaire 1, see Appendix A). Gulick's tool tested knowledge of breastfeeding that can be obtained by reading books or pamphlets. Each question had five possible responses. This multiple choice questionnaire used wording such as:

which of the following except, the most important, you can be confident that, or the relationship between. Questions covered such topics as the advantages of breastmilk for the baby and mother; physiological changes in the breast starting during pregnancy and continuing during breastfeeding; information on getting baby to latch on, infant sucking, when to burp baby, how long to nurse per side, how to establish and maintain a good milk supply, supplementing, the woman's diet, how to tell if baby is getting enough and relationship to sexual feelings. A test-retest reliability and Cronbach's *alpha* reliability coefficient for internal consistency were .87 and .78 respectively (Rentschler, 1991). Validity was not mentioned. In this replication, the Cronbach's *alpha* was .55, perhaps due to the smaller number of participants. Content validity was established by prepared childbirth educators, lactation consultants and nursing faculty members who have expertise in the area of breastfeeding.

Questionnaire 2 (see Appendix B), The Breastfeeding Experience Questionnaire (Rentschler, 1991) gathered information related to the birth experience, the breastfeeding experience, support, problems and reasons for weaning if no longer breastfeeding. It had 37 questions and took 5-10 minutes to complete. Most questions had response options with 2 to 5 choices. A few questions had 6 to 8 options or a line to fill in additional information. Reliability and validity were not stated for this questionnaire in the original study. Although no pretest was performed, the original study made no mention of concerns and none of the participants in this study expressed difficulty in understanding the questions or filling out the questionnaire. The mood of the woman when filling out the questionnaire could affect her responses, yet reliability

was difficult to test on a questionnaire of this nature. Since each woman filled out the questionnaire at six weeks postpartum and breastfeeding for six weeks was the criteria set for success of breastfeeding, the question which asked if the woman was still breastfeeding was used to determine success of breastfeeding.

Procedure

The researcher explained the purpose of the study and procedure for data collection to potential participants preceding or following a prepared childbirth class, as determined by the instructor of the class (see Appendix C). Confidentiality was assured. During this initial contact, interested first-time pregnant women planning to breastfeed signed a consent form and filled out Questionnaire 1 (see Appendix D).

The researcher used multiple choice and short answer questions, giving clear explanations to facilitate timely administration. Some participants were tired since prepared childbirth classes were often held in the evening and pregnant women tire easily. If a participant showed signs of fatigue while filling out Questionnaire 1, the researcher offered to let the participant take the questionnaire home. A stamped return envelope was provided. Questionnaire 2 was mailed at five and a half weeks postpartum, allowing participants to work on it at home at their leisure (see Appendix E). This questionnaire was labeled with the participant's ID number from Questionnaire 1 for data analysis.

Human Subject Rights

The researcher obtained approval from the Grand Valley State University Human Research Review Committee. Nursing administration gained approval from the

medical director for the Health Plan group. Individual Lamaze and Bradley instructors gave approval for their classes to participate in the study.

The researcher presented the explanation of the study in a neutral way to decrease any distress for those participants who might not continue breastfeeding for 6 weeks. The researcher ensured confidentiality by keeping a master list of names and addresses and assigning ID numbers to the two questionnaires. After the data was collected, the list of names was destroyed. Written consent was obtained (see Appendix F).

CHAPTER 4

DATA ANALYSIS

Knowledge of breastfeeding was measured by Gulick's (1981) Information on Breastfeeding Questionnaire. The total knowledge score was treated as interval/ratio data. Whether or not the woman was still breastfeeding at 6 weeks postpartum indicated success in breastfeeding which was measured at the nominal level. An Eta coefficient was used to evaluate the relationship between knowledge of breastfeeding and success of breastfeeding. Information obtained from Rentschler's Breastfeeding Experience Questionnaire was analyzed to assess other possible factors related to success of breastfeeding.

Correlates of Breastfeeding Success

Seventy-eight percent of study participants ($n=59$) who breast-fed their infants were still breastfeeding at six weeks postpartum. Scores on the Information on Breastfeeding Questionnaire ranged from 12 to 23 correct out of 24 questions, with a mean 17.2 correct (71% correct, $SD=2.9$). Scores for those no longer breastfeeding at 6 weeks postpartum ($n=17$), ranged from 12-22 correct, with a mean of 16.4 ($SD=3$). Those who were still breastfeeding at 6 weeks postpartum scored 12-23 with a mean of 17.6 ($SD=2.9$).

The hypothesis of this study was that women with more knowledge of breastfeeding would be more likely to be successful at breastfeeding than those with less knowledge. An Eta coefficient value of .45 suggests a moderate relationship between knowledge of breastfeeding as tested on the Information on Breastfeeding Questionnaire and success of breastfeeding as measured at six weeks postpartum. Looking only at those with scores greater than 18 a slightly stronger relationship is apparent with an Eta coefficient value of .54. A score greater than 18 would indicate 82% or more correct. Of those receiving low scores, however, many were still successful.

Scores varied on individual questions on Gulick's (1981) Information on Breastfeeding Questionnaire. There were two questions which only 30% of the participants answered correctly. One dealt with the relationship between sexual feelings and breastfeeding. Few women realized that some mothers may become sexually aroused when nursing. The other question asked the best way for a nursing mother to establish an ample supply of milk, which is by nursing the baby every 2 to 3 hours. Only 42% of the women knew that the baby should nurse approximately 5 minutes at each breast, per feeding the first day post-partum. Forty-six percent knew not to wash nipples with soap to avoid sore nipples. The question asking what the most important factor in promoting let down was answered correctly 59% of the time. These women knew remaining calm and relaxed with a positive attitude was the correct response. Sixty-nine percent of the women knew the baby was getting enough milk if the baby was feeding every 2 to 3 hours (see Figure 5).

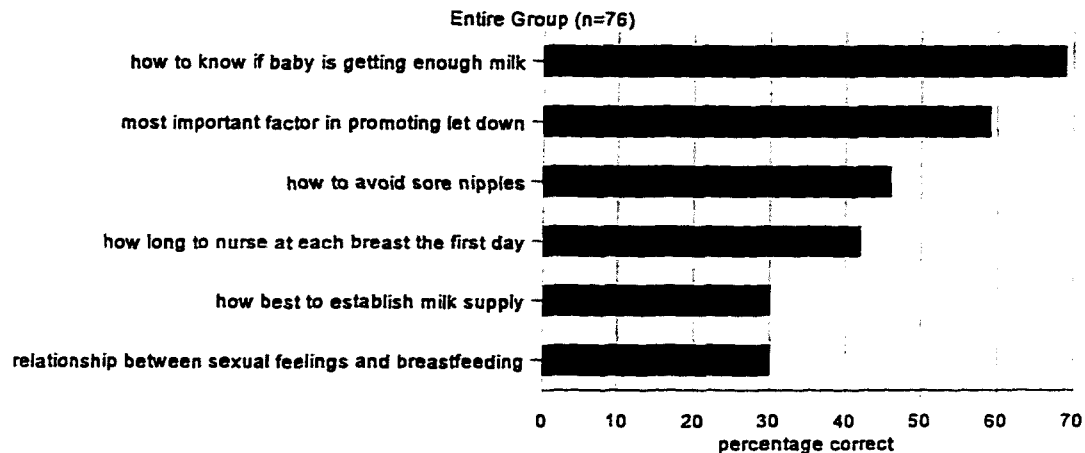


Figure 5. Questions answered correctly by less than 70% of subjects.

Mother's education and work status were not significantly correlated to success in breastfeeding. Significant others' support of breastfeeding, giving formula, health complications with the baby, and baby's birth weight were not significantly correlated to success in breastfeeding either. Although not significant, there was a weak relationship between the woman's commitment to breastfeeding and success using a Chi-square analysis ($\chi^2=1.07$, $df=1$, $p=.07$).

The baby's eagerness to breastfeed also seemed to affect success of breastfeeding. Twenty one percent of the babies were not eager feeders and 79% were eager feeders. The baby's eagerness to breastfeed was a statistically significant predictor of success of breastfeeding using Chi-square analysis with Yates Continuity Correction ($\chi^2=6.03$, $df=1$, $p=.01$) and a Phi coefficient value of .32 ($p<.01$).

Comparison of Childbirth Groups

Thirteen percent ($n=10$) of the subjects were from the Bradley Childbirth group, 48.7% ($n=37$) were from the ASPO/Lamaze group, and 38.2% ($n=29$) were

from the Health Plan group. The groups were similar in most respects except educational level and years married. The Health Plan group ranged in education from 10 with high school to one person with a master's degree (see Figure 6). The Lamaze group ranged from 3 with high school to 7 with masters degrees (see Figure 6). The Bradley group had two with some college, one with an associate degree, two with bachelor's degrees, four with master's degrees and one with a doctorate. Comparing the education level of subjects from the Health Plan group to the Lamaze group using a Chi-square resulted in an $\chi^2=25.87$ ($df=10$, $p<.01$) showing the Lamaze group had significantly more education. The Bradley group was too small to include for statistical analysis. The Health Plan group ranged from 10.3% who had been married less than one year, to 10.3% who had been married six years, with the mean of 2.2 years ($SD=1.7$). The Lamaze group ranged from 5.4% who had been married less than one year, to 5.4% who had been married 9 years with the mean of 3.2 years ($SD=2.5$). The Bradley group had 20% who had been married 1 year up to 10% married 8 years with a mean of 4.2 years ($SD=2.3$). Using a T-test for Equality of Means for the Health Plan and Lamaze group resulted in a t-value of -2.05 ($df=63$, $p=.05$), showing the Lamaze group had been married significantly longer.

Comparing the three subject groups, knowledge of breastfeeding varied. The Health Plan group had scores ranging from 12 to 22 with a mean of 15.8 ($SD=2.8$). The Lamaze group's scores ranged from 13 to 23 with a mean of 18.3 ($SD=2.5$). The Bradley group's scores ranged from 15 to 23 with a mean of 17.7 ($SD=3$). The number of women still breastfeeding varied between the groups as well. Only 62% of

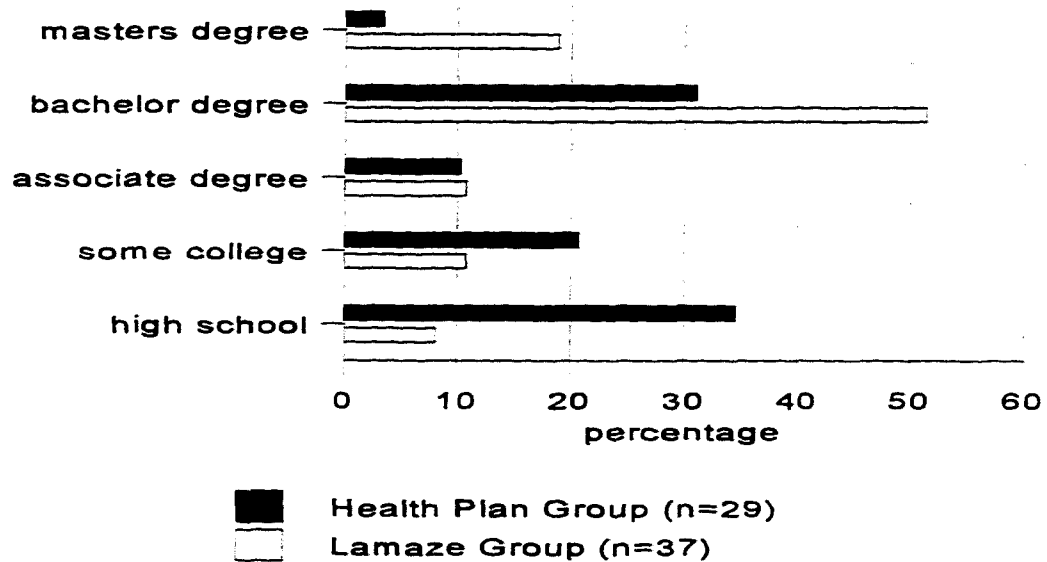


Figure 6. Comparison of education level of Health Plan and Lamaze groups.

the Health Plan group was still breastfeeding while 83.8% of the Lamaze group and 90% of the Bradley group were still breastfeeding. Comparing the knowledge of breastfeeding of the group of subjects from the Health Plan group with the group from ASPO/Lamaze there was a significant difference. A separate T-test for Equality of Means showed a $t=-3.66$ ($df=60$, $p<.01$). Then comparing the success of breastfeeding between the two groups using a Chi-square the Lamaze group was significantly more successful with $\chi^2=4$ ($df=1$, $p=.04$). Using the Continuity Correction, however, the results were not significant. Again, the Bradley group was too small for statistical analysis.

Results comparing knowledge of breastfeeding to success at breastfeeding within the three groups also varied. An Eta coefficient value of .48 comparing knowledge of breastfeeding to success for the Health Plan group showed a moderate relationship

between knowledge and success. The Lamaze group and the Bradley group had Eta coefficient values of .67 showing a stronger relationship.

Problems Experienced with Babies

Problems women listed most often for their babies included jaundice (n=11, 14.5%) and fever needing antibiotics (n=11, 14.5%). Increased respirations (n=2, 2.5%) and bruising (n=2, 2.5%) were the next most often listed baby complication. Seizures, problems related to the epidural the mother had during labor, spina bifida, and conjunctivitis were listed for only one baby each. No correlation was found between these problems and success of breastfeeding.

While only 41% of the women anticipated problems with breastfeeding, 61% reported having problems. Twenty-seven women who did not anticipate problems, reported having problems breastfeeding. Of those 27, 40.7% (n=11) were not successful at breastfeeding. The questionnaire did not ask information regarding the specific problems for the entire group but did gather data on those who had weaned. Of those who weaned, seven women listed inadequate milk supply as the main reason for weaning. Four stated time constraints as their reason. Three had babies who didn't latch on well. Other reasons for weaning, given by only one woman each, were that the baby was sleepy, was premature, or was simply not interested. Of those no longer breastfeeding, two women weaned before one week, four women weaned at 1-2 weeks, one at 2-3 weeks, two at 3-4 weeks, four at 4-5 weeks, and four weaned at 5-6 weeks. Four stated they breastfed as long as they had planned while 13 did not (see Figure 7).

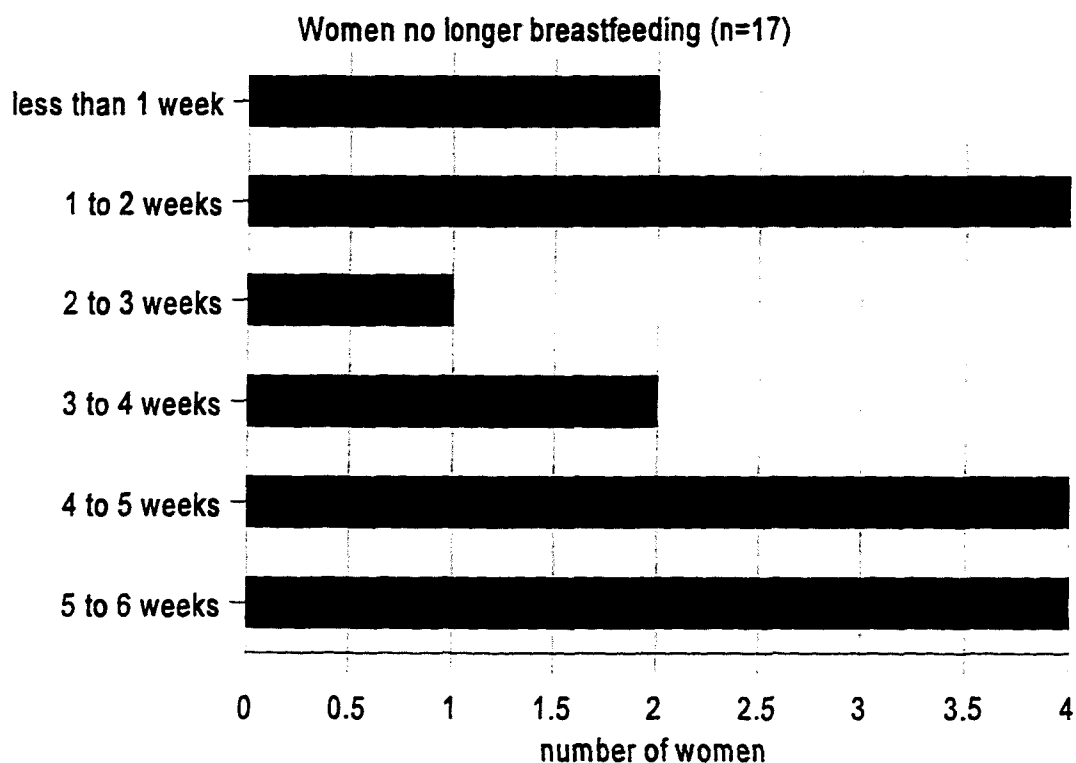


Figure 7. When women weaned.

Partner Support

Fifty-three percent of the women's partners were very supportive of the woman's choice to breastfeed, 40% were supportive with the remainder neutral. During breastfeeding, 85.5% of partners were very positive about breastfeeding, 5.3% were positive with the remainder neutral. When the women had doubts about breastfeeding, 78.9% were encouraged by their partner. Eighty-eight percent of partners helped with chores and 90.8% helped with baby care. Sixty-three percent of the partners never resented the mother breastfeeding. Seventy-six percent of women felt very close to their partners.

Feeding Decision

Seventy-six percent of the subjects would strongly recommend breastfeeding, 13.2% would mildly recommend it and the rest were neutral. Forty-three percent described their experience with breastfeeding as easy with ups and downs. There were 32.9% in the relatively easy group. Sixteen percent felt it was difficult with ups and downs with the remainder describing breastfeeding as difficult (see Figure 8). Sixty-seven percent felt things were going terrificly with their baby, 31.6% said things were good and the remainder were having ups and downs.

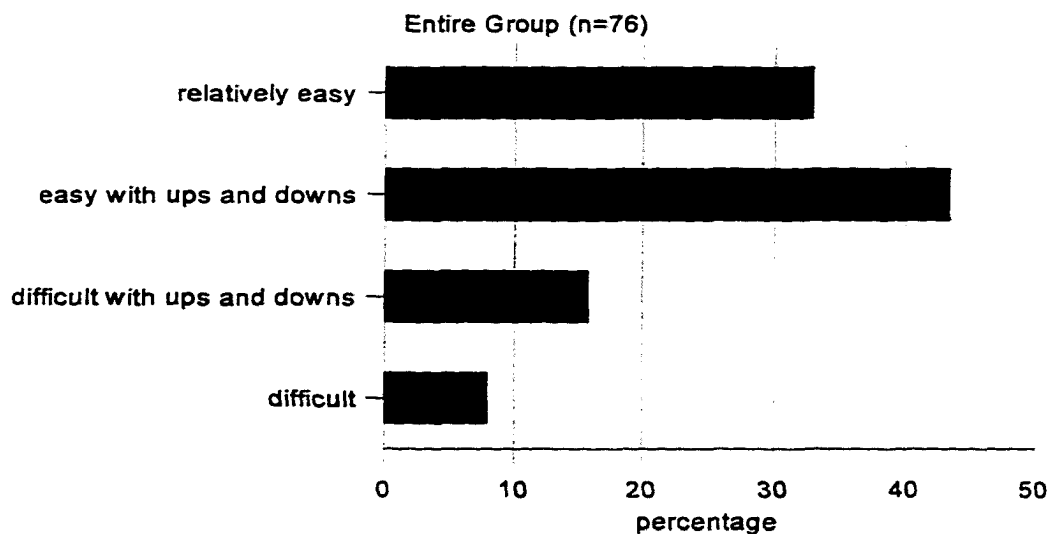


Figure 8. Perception of the difficulty of the breastfeeding experience.

Only 43% of the mothers planned to supplement with formula, yet 63.2% had given some formula to their baby by 6 weeks post-partum. By contrast, only 11.8% had supplemented with food by 6 weeks post-partum even though 22.4% planned to supplement with food.

The majority of women (63.2%) had decided to breastfeed before they found out they were pregnant, 30.3% decided the first 5 months of pregnancy and the rest after 5 months. Thirty-three percent planned to breastfeed over 6 months, 26.3% 3 to 4 months, 25% 1 to 3 months, 1.3% less than one month with the rest undecided. Fifty-seven percent were strongly committed to breastfeeding, 42.1% were moderately committed with the remainder slightly committed.

Of those who weaned their babies, 5 (29.4%) found breastfeeding to be unpleasant, 6 (35.2%) found it routine, 5 (29.4%) found it pleasurable and 1 (5.8%) highly pleasurable. Of those still breastfeeding 7 (12.2%) rated breastfeeding routine, 29 (50.9%) pleasurable, and 21 (36.8%) highly pleasurable (see Figure 9). (Two women failed to answer this question.)

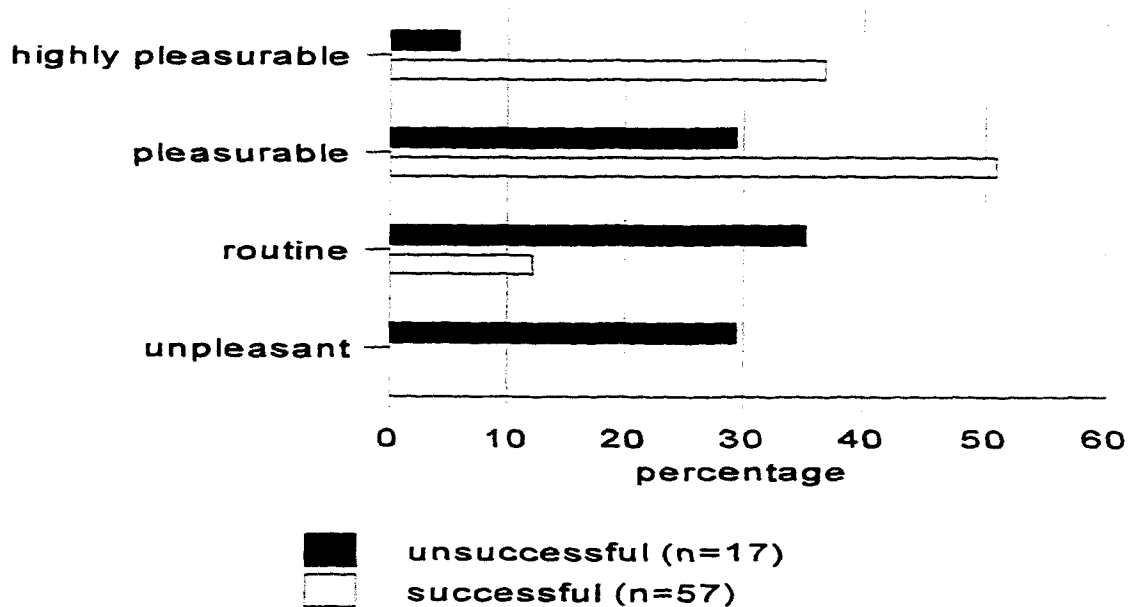


Figure 9. Comparison of successful and unsuccessful women's perception of the breastfeeding experience.

LaLeche was a source of breastfeeding information for 9.2% of women while 17.1% took a breastfeeding class. Other sources of information were doctors (30.3%), nurses (10.5%), mothers (30.3%), friends (63.2%), and books or pamphlets (53.9%).

Summary

The hypothesis of this study was that women with more knowledge of breastfeeding would be more likely to be successful at breastfeeding than those with less knowledge. A moderate relationship between knowledge of breastfeeding and success of breastfeeding was found ($\text{Eta}=.45$). A relationship between baby's eagerness to breastfeed and success was also found. No other statistically significant relationships to success of breastfeeding were found.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

Discussion of Findings and Conclusions

This replication of part of a study done by Rentschler (1991) also found a positive relationship between knowledge of breastfeeding and success in breastfeeding. Looking at the reasons given by women who were no longer breastfeeding at 6 weeks postpartum may help guide nurses in providing helpful information to other women. Of the 17 women who weaned their babies, 41.2% gave lack of adequate milk supply as the main reason why they weaned. This was the most common response and was also one of the two most common reasons given by women in Rentschler's study (1991). Sore nipples, the other most common response in Rentschler's study, was not mentioned by any of the women in this study. Problems with the baby were given by 35.3% of women. Of these, 4 said the baby had difficulty latching on while the baby being sleepy, premature or uninterested, were given by only one woman each. Time constraints was the reason the remaining 23.5% of the women gave for weaning in this study.

Considering Roy's Theory of Adaptive Modes (Andrews & Roy, 1991), it would make sense that a woman with a greater knowledge of breastfeeding would have an easier time with the transition to the tertiary role of breastfeeding. Since

breastfeeding is a tertiary role and so is freely chosen by the women, those women who felt breastfeeding was too time-consuming or that the baby was not interested might decide that the role of breastfeeding may not be worth the time or effort necessary to master it. The actual physical performance or instrumental behavior to achieve the goal of role mastery is also important. Those women who perceived that their milk supply was inadequate would have difficulty with role mastery due to difficulty with the actual physical performance of breastfeeding. The positive relationship between the baby's eagerness to nurse and success would reflect the positive affect an eager feeder would have in helping the mother master the role transition. An eager baby would aid in the role transition making the mastery of the instrumental behavior of this tertiary role easier.

The significant difference between knowledge of breastfeeding in two of the groups also makes sense. The group from the Health Plan had only six classes and did not cover much content on breastfeeding. The Lamaze group met twelve times and covered much more information on breastfeeding. The fact that the Lamaze group was more successful also then fits with Roy's Theory of Adaptive Modes (Andrews & Roy, 1991) since the increased knowledge level would aid in the transition to the tertiary role of breastfeeding. Although not compared with the other two groups due to the small sample size, the Bradley group, which also covers information on breastfeeding in great depth, had a 90% success rate, also fitting with Roy's Theory of Adaptive Modes (Andrew & Roy, 1991).

Application to Practice

Since there was a stronger relationship between success of breastfeeding among subjects scoring higher on the Information on Breastfeeding Questionnaire (Gulick, 1981), it is important for nurses to continue to provide accurate information about breastfeeding to pregnant women and new moms. This could increase their knowledge level and hopefully their chance of breastfeeding success. Since the Lamaze group showed higher knowledge of breastfeeding and greater success at breastfeeding, nurses should encourage women interested in breastfeeding to take similar classes which provide in-depth information on breastfeeding.

Looking at women who did not anticipate but experienced problems breastfeeding should encourage nurses to provide women with information regarding potential problems with breastfeeding. Eleven of the 17 women who weaned their babies had problems they did not anticipate. If nurses can warn women of potential problems and offer information related to how best to deal with these problems success rates might improve.

Considering the positive correlation between the eagerness of babies to feed and breastfeeding success, it would also be important for postpartum nurses to make sure women whose babies are not eager feeders have adequate information about breastfeeding which could then increase their chance of success. Postpartum nurses could encourage women whose babies are not eager feeders to seek help even after hospital discharge.

Limitations

The inability to control information on breastfeeding sought by the women after the first questionnaire was filled out could have negatively influenced the results. The women filled out this questionnaire at a prenatal class when many were only 7 to 8 months gestation. One woman actually wrote on the second questionnaire that the study positively affected her because she felt motivated to learn more about breastfeeding after she filled out the first questionnaire and did not know all the answers. This participant, and perhaps others, then increased her knowledge of breastfeeding from the time of the first questionnaire.

The low Cronbach's *alpha* value of .55 was a weakness of this study as was the inconsistency in methodology when collecting initial data. Women who took the first questionnaire home may have scored items differently than women who filled the questionnaire out at the time it was handed out.

Another limitation was the use of a relatively small convenience sample which resulted in subjects who were mainly Caucasian, fairly well educated, and perhaps older than the average for first time-moms. There was also a high percentage who were married. Although the three groups used did offer some variation, they were not well representative of the ethnic and socioeconomic mix of the area as a whole. In addition, the small size of the Bradley group did not allow for statistical comparisons.

Suggestions for Modification and Further Research

Replicating this study with a larger number of subjects who better represented society as a whole would be helpful. Using prenatal classes offered by an urban

hospital or using public clinics might help to obtain a more diverse study group. Replications in different geographic locations would also improve generalizability. If subjects could be recruited closer to their delivery date, the information on breastfeeding scores would be more accurate, with less chance of the subject seeking information that might influence the results.

This study did not provide any information about breastfeeding to women; it only tested existing knowledge. Studies that could provide concise information on breastfeeding to women who are planning to breastfeed might have a positive effect on success. This could be especially helpful if information were provided regarding areas women have been found to have problems with, such as establishing an ample milk supply, how to lessen nipple soreness, or expected time commitment for breastfeeding.

Since nurses have contact with pregnant women throughout their pregnancy and in the postpartum period, it is important for them to continue to find ways to help women to be more successful at breastfeeding. Further studies that would guide nurses in providing information to women to help in successful breastfeeding are encouraged.

APPENDICES

Appendix A

QUESTIONNAIRE 1

Part 1*

- ID Number _____ Expected date of delivery _____
1. Age: _____ Hospital at which you plan to deliver _____
2. Current marital status: (1) _____ single
(2) _____ married
(3) _____ separated
(4) _____ divorced
(5) _____ widowed
3. Years married (if married): _____
4. Are you presently living with your husband (or the father of your baby)?
(1) _____ yes
(0) _____ no
5. Does anyone else live with you? (1) _____ yes
(0) _____ no
- If yes, who lives with you? _____
6. Education: What is the highest level of education completed?
(1) _____ less than high school
(2) _____ high school
(3) _____ some college
(4) _____ Associate Degree
(5) _____ Baccalaureate
(6) _____ Master's
(7) _____ Doctorate
(8) _____ Post Doctorate
7. Are you presently employed? (0) _____ no
(1) _____ yes
- If no please skip to question 9.
- If yes: (1) _____ part-time
(2) _____ full-time
8. Do you plan to return to work after delivery? (0) _____ no
(1) _____ yes, part-time
(2) _____ yes, full-time
(3) _____ undecided
- If yes, what will your baby's age be when you return to work? _____
9. Race: (1) _____ American Indian
(2) _____ Hispanic
(3) _____ Oriental
(4) _____ Black
(5) _____ Caucasian
(6) _____ Other, specify

10. Is this your first pregnancy? (1) ____ yes
(0) ____ no
11. Have you had miscarriage(s) or abortion(s): (1) ____ yes
(0) ____ no
12. Have you had stillbirth(s)? (1) ____ yes
(0) ____ no
13. Do you have living naturally born children? (1) ____ yes
(0) ____ no
14. When did you decide to breastfeed?
(1) ____ prior to becoming pregnant
(2) ____ during the first five months of pregnancy
(3) ____ after the fifth month
15. How long do you plan to breastfeed? (1) ____ less than one month
(2) ____ 1-3 months
(3) ____ 4-6 months
(4) ____ more than 6 months
(5) ____ undecided
16. Do you plan to supplement with formula? (1) ____ yes
(0) ____ no
If yes, how soon? (1) ____ immediately
(2) ____ 1-2 weeks
(3) ____ 3-4 weeks
(4) ____ 4-6 weeks
(5) ____ don't know
17. Do you plan to supplement with solids? (1) ____ yes
(0) ____ no
If yes, how soon? (1) ____ immediately
(2) ____ 1-2 weeks
(3) ____ 3-4 weeks
(4) ____ 4-6 weeks
(5) ____ don't know
18. How would you describe your commitment to breastfeeding?
(4) ____ strongly committed
(3) ____ moderately committed
(2) ____ slightly committed
(1) ____ uncommitted
19. Who had the major influence in your decision to breastfeed? Please list as many as apply: _____

20. How would you describe your husband's (or partner's) attitude toward your decision to breastfeed (if applicable)?
- (3) ____ very positive (really wants you to breastfeed)
 - (2) ____ positive (is in favor but has not pushed it)
 - (1) ____ neutral (your decision, either way okay with him)
 - (4) ____ somewhat negative (prefers bottlefeeding but would not interfere)
 - (5) ____ negative (does not want you to breastfeed)
 - (6) ____ not applicable
21. What were your information sources for breastfeeding? Check as many as apply.
- (1) ____ expectant parent classes
 - (2) ____ La Leche League meetings
 - (3) ____ breastfeeding classes
 - (4) ____ physician
 - (5) ____ nurse
 - (6) ____ mother
 - (7) ____ friends
 - (8) ____ books, title _____
 - (9) ____ pamphlets, title _____
 - (10) ____ other, specify _____

*Rentschler, D. D. (1986). The relationship between pregnant women's achievement motivation, information about breast feeding and success in breast feeding (Doctoral dissertation, New York University, 1986). Dissertation Abstracts International, 41, 4114B.

PLEASE TURN TO THE NEXT PAGE TO CONTINUE

Part 2

INFORMATION ON BREASTFEEDING QUESTIONNAIRE*

ID Number _____

The following 24 questions are about breastfeeding. They include: (1) what some people think are advantages or disadvantages of breastfeeding, (2) activities that an expectant mother might do during pregnancy in order to prepare for breastfeeding and (3) actions which occur between the mother and infant related to breastfeeding.

Read the question and select and circle the letter before the one best answer.

22. Advantages for the infant of breast milk over formula include all of the following except
 1. is more easily digested
 2. causes less chance of gastro-intestinal infection
 3. causes less chance of developing allergies
 4. causes more rapid weight gain
 5. contains right amount of needed nutrients
23. Which of the following is not a benefit of breastfeeding?
 1. Prevents further pregnancy
 2. Good for the figure
 3. Convenience
 4. Economical
 5. Enjoyment
24. The best breast size for a mother to be successful in nursing her baby is
 1. even size
 2. small breasts
 3. average size breasts
 4. large breasts
 5. no particular size
25. The expectant mother who wants to breastfeed her baby finds that she has a tendency for inverted nipples. Which one of the following is not true?
 1. She should forget about wanting to breastfeed
 2. The nipples may work themselves out without any special attention
 3. She should start nipple-rolling exercises
 4. She should start nipple-pulling exercises
 5. She can try wearing special breast shields for inverted nipples
26. Breast changes occurring during pregnancy include all of the following except
 1. growth of milk duct system
 2. development of milk sacs
 3. development of mature milk
 4. development of colostrum
 5. increase in breast size

27. The best way to get the baby to latch on properly is
1. hold the baby's head and guide baby's face toward the nipple
 2. touch the corner of baby's mouth with the nipple
 3. open the baby's mouth by pressing in on both of baby's cheeks
 4. press down on baby's chin to open baby's mouth
 5. when the baby cries quickly pop in the nipple
28. Which of the following statements does not describe a correct infant sucking action?
1. The baby's lips fall on the dark area (areola) around the nipple
 2. The nipple rests between the upper tongue surface and roof of his mouth
 3. Rapid, short chewing motions occur at the beginning of the feeding
 4. Slow, rhythmical up and down jaw motions occur during active nursing
 5. A satisfied sound accompanies infant nursing
29. The length of time the baby should be permitted to nurse at each breast during each feeding the first day postpartum is
1. no more than 2 minutes
 2. approximately 5 minutes
 3. approximately 10 minutes
 4. approximately 15 minutes
 5. as long as the baby wishes
30. The best way to remove the baby from the nipple and breast is to
1. grasp baby's head and gently push away from the breast
 2. gently pull your breast away from the baby
 3. tickle baby's feet
 4. tickle baby's chin and cheek
 5. insert your finger inside baby's mouth to break suction
31. The best time to burp the baby to remove any air that the baby may have swallowed is
1. midway through each breastfeeding session
 2. after baby finishes nursing from one breast
 3. after every two minutes of sucking
 4. after every five minutes of sucking
 5. breastfed babies don't need burping
32. Which of the following actions should the mother avoid in dealing with a sleepy baby who isn't interested in nursing?
1. let baby sleep as long as baby wishes
 2. loosen baby's blankets and clothes
 3. change baby's diaper
 4. rub baby's tummy and pat baby's feet
 5. talk and play with baby

33. The most important factor in producing breast milk is
1. drinking at least 1 quart of milk every day
 2. getting extra sleep
 3. infant sucking at the breast
 4. restricting the number of visitors
 5. receiving help from others with routine housework
34. The nursing mother can avoid sore nipples by doing any of the following actions except
1. keeping nipples clean by daily bathing with soap and water
 2. applying pure lanolin after each feeding
 3. exposing nipples to sun light or sun lamp several times a day.
 4. using manual expression at the start of feeding to stimulate milk letdown
 5. limiting initial sucking during each feeding to five minutes for each breast
35. Which of the following statements will best help the mother establish an ample milk supply?
1. Begin expressing milk from the breasts one week before the expected delivery date
 2. Begin breastfeeding immediately or as soon as possible after delivery of the baby
 3. Nurse the baby every 1-2 hours
 4. Nurse the baby every 2-3 hours
 5. Nurse the baby whenever he/she cries
36. The most important action a mother can do to prevent or control the development of breast engorgement is
1. wear a tight bra
 2. restrict the amount of fluid that she drinks
 3. have the baby nurse more frequently or manually express some of the milk
 4. ask for medicine to control milk production
 5. do nothing because it is only temporary
37. The most important contributing factor in promoting milk let down so the baby can obtain milk that is present within the breast is
1. eating nutritious meals
 2. drinking a glass of milk before or during the nursing
 3. nursing the baby frequently
 4. continuous sucking of the baby
 5. remaining calm and relaxed with a positive attitude
38. When initiating subsequent breastfeeding the mother should
1. begin feeding with the same breast that she started with at the last feeding
 2. begin feeding with the breast she ended with at the last feeding
 3. it doesn't matter which breast you begin feeding with
 4. begin feeding with the breast which baby likes best
 5. begin feeding with the breast which is most convenient for the mother

39. The most important factor that determines the amount of milk the mother produces is
1. the amount of milk that the baby demands
 2. the amount of fluid the mother drinks
 3. the amount of rest and sleep the mother gets
 4. the amount of exercise the mother gets
 5. how adequate the mother's diet is
40. Bowel movements of a breastfed baby are
1. the same as the formula fed baby
 2. usually more constipated than the formula fed baby
 3. usually looser and more frequent than the formula fed baby
 4. brown in color
 5. foul smelling
41. Supplementing breastfeeding with artificial formula
1. is a good idea the first few days following delivery or until mother's milk is well established
 2. is a good way to involve the baby's father in infant care
 3. should be encouraged during the first month
 4. should be discouraged during the first month
 5. has no effect on the baby or mother
42. The mother can be confident that baby gets enough milk if she feeds
1. every two hours
 2. every two to three hours
 3. every four hours
 4. every four to five hours
 5. every five to six hours
43. The mother can be confident that baby consumes enough milk if
1. she weighs baby each morning and finds a daily weight gain
 2. baby gains the same weight as her friend's baby who is bottlefed
 3. baby gains the same weight as her friend's baby who is breastfed
 4. baby cries for feedings, appears contented after feedings and has several wet diapers
 5. baby sleeps for long periods and rarely cries
44. Which of the following foods should not be increased in order to meet the additional 500 calorie intake needed by the nursing mother?
1. milk and /or milk products
 2. meat, fish or poultry
 3. fruits and vegetables
 4. whole grain or enriched cereals, breads, macaroni
 5. fats, oils and sugars

45. The relationship between sexual feelings and breastfeeding is
1. all mothers become sexually aroused
 2. no mothers becomes sexually aroused
 3. some mothers may become sexually aroused
 4. a mother doesn't become sexually aroused if she engages in sexual intercourse
 5. nursing a baby is not related to sex

*Gulick, Elsie E., The Relationship Among Expectant Mothers' Sex Role Orientation Nurturance, Maternal Attitudes, Information On Breastfeeding And Success In Breastfeeding, Ph.D. dissertation, New York University, Ann Arbor, Michigan. University Microfilms, Inc., (1981)

Appendix B

QUESTIONNAIRE 2
Breastfeeding Experience Inventory*

ID Number _____

Instructions: Please complete all questions that pertain to you.

46. Date of delivery: _____

47. Type of delivery: (1) _____ vaginal
(2) _____ cesarean birth

48. Sex of baby: (1) _____ female
(2) _____ male

49. Baby's birth weight: _____

50. Baby's weight upon discharge: _____

51. Baby's age today: _____

52. Baby's weight today: _____

53. Did you breastfeed? (1) _____ yes
(0) _____ no

If no, please explain why not _____

If no, you do not need to finish remaining questions. Thank you for your participation.

If yes, please continue to answer the questions.

54. Did you experience any serious illness or complication prior to delivery, during labor/delivery or after delivery?

(1) _____ yes
(0) _____ no

If yes, explain _____

55. Did your baby experience any illness and/or complication following delivery or after discharge from hospital?

(1) _____ yes
(0) _____ no

If yes, explain _____

56. How would you describe your baby's reaction to breastfeeding at the time of discharge?

(4) _____ very eager
(3) _____ eager
(2) _____ slightly interested
(1) _____ uninterested

57. Are you still breastfeeding? (1) _____ yes
(0) _____ no

If yes, skip to question 63. If no, continue with question 58.

58. If you have weaned your baby, for how long did you breastfeed?
- (1) ____ only while in the hospital
 - (2) ____ less than one week
 - (3) ____ 8-14 days (2 weeks)
 - (4) ____ 15-21 days (3 weeks)
 - (5) ____ 22-28 days (4 weeks)
 - (6) ____ 29-35 days (5 weeks)
 - (7) ____ 36-42 days (6 weeks)
59. Did you breastfeed for as long as you planned? (1) ____ yes
(0) ____ no
60. If you have weaned your baby, would you describe the breastfeeding experience as:
- (5) ____ highly pleasurable
 - (4) ____ pleasurable
 - (3) ____ routine (tolerable)
 - (2) ____ unpleasant
 - (1) ____ highly unpleasant
61. If you have weaned, how would you describe your feelings about weaning?
- (5) ____ very disappointed (didn't want to)
 - (4) ____ disappointed (but felt it was best considering circumstances)
 - (3) ____ somewhat disappointed (wanted to breastfeed longer)
 - (2) ____ wanted to wean (still some conflict with decision)
 - (1) ____ wanted to wean (felt relieved)
62. List your reasons why you weaned your baby:
Now skip to question 64.
63. If you are still breastfeeding, how would you describe the breastfeeding experience, so far?
- (5) ____ highly pleasurable
 - (4) ____ pleasurable
 - (3) ____ routine (tolerable)
 - (2) ____ unpleasant
 - (1) ____ highly unpleasant
64. Considering your own experience, if a friend asked you about breastfeeding, would you
- (5) ____ strongly recommend breastfeeding
 - (4) ____ mildly recommend breastfeeding
 - (3) ____ remain neutral
 - (2) ____ mildly recommend bottle feeding
 - (1) ____ strongly recommend bottlefeeding

65. Are you experiencing breastfeeding or did you experience breastfeeding as:

- (4) ___ relatively easy
(3) ___ easy with ups and downs
(2) ___ rather difficult with ups and downs
(1) ___ difficult

66. How are things going with your baby?

- (5) ___ terrific
(4) ___ good
(3) ___ okay, with ups and downs
(2) ___ we are managing
(1) ___ difficult

67. Did you give your baby formula in addition to breastfeeding?

- (1) ___ yes
(0) ___ no

If yes, check frequency (as close as you can recall).

| | 1st | 2nd | 3rd | 4th | 5th | 6th |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <u>Number of times</u> | <u>week</u> | <u>week</u> | <u>week</u> | <u>week</u> | <u>week</u> | <u>week</u> |
| 1-3 feedings per week | ___ | ___ | ___ | ___ | ___ | ___ |
| 4-6 feedings per week | ___ | ___ | ___ | ___ | ___ | ___ |
| 1 feeding per day | ___ | ___ | ___ | ___ | ___ | ___ |
| 2 or more feedings per day | ___ | ___ | ___ | ___ | ___ | ___ |
| formula at each feeding | ___ | ___ | ___ | ___ | ___ | ___ |

68. Have you given your baby solid food?

- (1) ___ yes
(0) ___ no

If so, check any of the following which may apply.

| | 1st | 2nd | 3rd | 4th | 5th | 6th |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <u>Solid food</u> | <u>week</u> | <u>week</u> | <u>week</u> | <u>week</u> | <u>week</u> | <u>week</u> |
| cereal once a day | ___ | ___ | ___ | ___ | ___ | ___ |
| cereal twice a day | ___ | ___ | ___ | ___ | ___ | ___ |
| fruit once a day | ___ | ___ | ___ | ___ | ___ | ___ |
| fruit twice a day | ___ | ___ | ___ | ___ | ___ | ___ |
| vegetable once a day | ___ | ___ | ___ | ___ | ___ | ___ |
| vegetable twice a day | ___ | ___ | ___ | ___ | ___ | ___ |
| other _____ | ___ | ___ | ___ | ___ | ___ | ___ |

69. How would you describe the information you had about breastfeeding?

- (5) ___ quite adequate
(4) ___ adequate (but knowing and doing are different)
(3) ___ needed more information
(2) ___ felt confused with the information at hand
(1) ___ did not have the needed information

70. Did you anticipate problems with breastfeeding?

- (1) ___ yes
(0) ___ no

71. Did you experience any problems?
 (1) ____ yes
 (0) ____ no
72. Have you attended any support group that has enhanced your breastfeeding experience?
 (1) ____ yes
 (0) ____ no
 If yes, describe the group _____
73. Whose support have you sought for assistance during your breastfeeding experience?
 Check all which pertain.
 (1) ____ obstetrician
 (2) ____ pediatrician
 (3) ____ nurse
 (4) ____ parent educator
 (5) ____ mother/sister/aunt/mother-in-law
 (6) ____ husband
 (7) ____ friend
 (8) ____ no one
74. How would you describe your husband's (or partner's) support toward your breastfeeding?
 (5) ____ very positive (encouraged and supported)
 (4) ____ positive (interested but did not encourage)
 (3) ____ neutral (indifferent but did not discourage)
 (2) ____ somewhat negative (opposed but did not actively discourage)
 (1) ____ very negative (discouraged you)
75. Did your husband (or partner) encourage you when you seemed to have doubts about your ability to breastfeed?
 (1) ____ yes
 (0) ____ no
 If yes, explain _____
76. Did your husband (or partner) participate in household chores?
 (1) ____ yes
 (0) ____ no
 If yes, how did he participate (check as many as pertain)
 ____ grocery shopping
 ____ prepared meals
 ____ laundry
 ____ house cleaning
 ____ other (please explain) _____

77. Did your husband (or partner) participate in baby care?
 (1) ____ yes
 (0) ____ no
 If yes, how did he participate (check as many as pertain)
 ____ changed diapers
 ____ bathe
 ____ soothe
 ____ fed baby supplements
 ____ got up for night feedings
 ____ other (please explain) _____
78. Did your husband (or partner) resent not having opportunity to feed infant?
 (1) ____ very much
 (2) ____ somewhat
 (3) ____ never
79. Do you consider your relationship with your husband (or partner) as:
 (5) ____ very close
 (4) ____ close
 (3) ____ neutral
 (2) ____ distant
 (1) ____ very distant
80. Have you resumed sexual intercourse? (2) ____ yes
 (1) ____ no
 If yes, when did you resume? (5) ____ within 2 weeks of delivery
 (4) ____ 2 weeks after delivery
 (3) ____ 3-4 weeks after delivery
 (2) ____ 5-6 weeks after delivery
81. If you are still breastfeeding, when do you expect to wean your baby?
 (1) ____ now
 (2) ____ at two months
 (3) ____ at three months
 (4) ____ four-six months
 (5) ____ seven-nine months
 (6) ____ ten-twelve months
 (7) ____ after twelve months
 (8) ____ not sure
82. How did participation in this research study affect your breastfeeding experience?
 (1) ____ positively
 (2) ____ negatively
 (3) ____ didn't make a difference
 Please explain:

*Rentschler, D. D. (1986). The relationship between pregnant women's achievement motivation, information about breast feeding and success in breast feeding (Doctoral dissertation, New York University, 1986). Dissertation Abstracts International, 41, 41114B.

Thank you for taking the time to finish this questionnaire!

Appendix C

Recruitment Script

My name is Sherry Knoppers. I am a nurse working on my Masters of Science in Nursing degree at Grand Valley State University. I have been working with expectant mothers for many years and would like to learn more about women's experiences with breastfeeding. I am interested in finding out how breastfeeding goes and in what areas women may need more help. I hope this information will allow nurses to be more helpful to women who breastfeed. I am inviting women who are expecting their first child and who are planning to breastfeed to participate in this study. If you are interested you will be asked to fill out two short questionnaires. The first questionnaire asks questions about breastfeeding and should take 10-20 minutes to fill out. The second questionnaire asks questions about how breastfeeding is going and will be mailed to you about six weeks after you deliver. This questionnaire takes about 5 -10 minutes to complete.

All information will be confidential and ID numbers will be used in place of names. Those participating in the study will be given a postcard to mail to me after they have delivered their baby. About six weeks after delivery, the final questionnaire will be sent out with a stamped return envelope. Feel free to call me at any time with questions or if you decide you no longer wish to participate in the study.

Appendix D

Questionnaire 1 Script

First of all I want to thank each of you again for your help with this project. You will now be completing a questionnaire that has some general questions about yourself and 24 multiple choice questions about breastfeeding. Please note the wording carefully. If you're not sure of an answer just pick the one you think is best. Your name does not need to go on the questionnaire, only our ID number. If you have forgotten your ID number I have a list.

Appendix E

Questionnaire 2 Letter

Dear Participant,

Congratulations on the birth of your baby. I hope the last few weeks have gone well for your family. Enclosed is the Breastfeeding Experience Inventory. If you could please take a few minutes to answer the questions and return it to me in the enclosed envelope. Please feel free to call me with any questions you may have. I can be reached at home at 887-0875. Please leave a message if I am out and I will try to return your call as soon as I am able.

Thank you again for your help with this project.

Sincerely,

Sherry Knoppers RN BSN

Appendix F

Consent Form

In signing this document, I am consenting to fill out two brief questionnaires (one now and one after my baby is born) about my breastfeeding experience. I understand that this study is looking at the breastfeeding experience in hope of providing health care professionals with information to better meet the needs of women planning to breastfeed.

I understand that one questionnaire includes general questions about breastfeeding and the other asks about my experiences feeding my baby.

I understand that I was asked to participate in this study because I am attending prepared childbirth classes during this, my first pregnancy, and because I am planning to breastfeed. I understand there are no direct benefits to me.

I have freely chosen to participate in this study. I have been informed that my completion of the questionnaires is entirely voluntary and that I may terminate participation at anytime. I have been told that my answers to questions will not be given to anyone else and no reports from this study will identify me in any way.

I understand that if I have questions about the research or am interested in the results of this study I may contact the researcher, Sherry Knoppers, a Master's student and Nursing Instructor, at 887-0875.

Participants's Signature _____ Date _____

Researchers's Signature _____ Date _____

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May 5, 1997

**Sherry Knoppers
3450 Nine Mile Road
Sparta, Michigan 49345**

Dear Sherry:

In regards to your request to publish my Personal Data Inventory and my Breastfeeding Experience Inventory in an appendix in your master's thesis: you have my permission to do so. I am aware that University Microfilms, Incorporated may supply single copies on demand. I would just ask you to cite the instrument accordingly. I would also like it if you would send me a copy of your study results.

You may contact me at 603-862-0463 or E-mail me at DDR@Hopper.unh.edu with any questions.

Sincerely yours,


**Dorothy Rentschler, PhD, RN
Associate Professor**

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RUTGERS

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University Heights • Newark • New Jersey 07102 • 201/648-5293

May 2, 1997

Sherry Knoppers
3450 Nine Mile NW
Sparta, Michigan 45345

Dear Ms. Knoppers:

This letter pertains to your request to include the "Information on Breastfeeding Questionnaire" in the Appendix of your thesis. You have my permission to do so provided that the source of the questionnaire is identified.

Best wishes to you.

Sincerely,



Elsie E. Gulick, PhD, FAAN
Professor