Factors that effect breast-feeding in women who access Wic clinics in southern Utah

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UMI
FACTORS THAT EFFECT BREAST-FEEDING
IN WOMEN WHO ACCESS WIC CLINICS
IN SOUTHERN UTAH

by

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Bachelor of Science
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1987

A thesis submitted in partial fulfillment
of the requirements for the degree of

Master of Science

in

Nursing

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University of Nevada, Las Vegas
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ABSTRACT

Factors that effect breast-feeding in women who access WIC clinics in Southern Utah

by

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Dr. Margaret Louis, Examination Committee Chair
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Breast-feeding has many advantages: transfer of immune properties that protect against infection, decreased allergy incidence, promotion of brain development, and enhanced bonding between mother and child.

The purpose of this study was identification of factors that influence a woman’s decision to breast-feed or not to breast-feed. The population sampled was women with infants who accessed Women, Infant, and Children clinics for services. Data were collected using a tool designed by Hill (1991) to study breast-feeding in WIC versus non-WIC mothers and provided data to answer the five research questions. Demographic data revealed most of the 144 mothers were white, married, and had at least completed 12 years of school.

Recommendations from the findings and conclusions raise support for further
research and study including: further revisions and refinement of the tool, expanding the study population to include women of higher education, other ethnic backgrounds, and education on breast-feeding. In addition, since only fifty percent of the participants indicated support by nurses or physicians for breast-feeding, raises the issue of what content and how much emphasis is placed on the benefits of breast-feeding in these professionals’ education programs.
ACKNOWLEDGMENTS

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I would like to thank my mother, Wilma, and my brother, Tony, who were both inspirations to me. My mother is the one who originally introduced me to the health care profession, and because of her, I continued on in my educational endeavor to arrive where I am today. She never faltered when it came to higher education. My brother, Tony, whom I admire greatly, is the person I pattern my life after. He is my idol and I hope I will never let him down in any way. My father, who is deceased, always believed in me.
and always was the support I needed to accomplish anything I wanted in my life. I only wish he was here to see my accomplishments.

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CHAPTER 1

INTRODUCTION

Statement of problem

To promote breast-feeding, the United States public health system adopted the Healthy People 2000 goal (1990) to increase rates of breast-feeding to 70% immediately after birth and 50% at six months postpartum. The American Academy of Pediatrics recommended breast-feeding not only be initiated at birth, but continue through the first year of life (American Academy of Pediatrics, 1997). Recent literature indicates there is a resurgence of interest in breast-feeding (Baisch et al, 1989, Driscoll, 1992, Gulick, 1982, Hill, 1991). However, currently in the United States there is a small percentage of mothers using breast-feeding to feed their infants (Sciacca, Phipps, Dube, and Ratliff, 1995, Bryant, Coreil, & D'Angelo, Bailey, 1992, Lazarov, 1992). Statistics gathered from Women, Infant, and Children (WIC) programs across the United States in 1996 revealed only 44% of women enrolled in WIC initiated breast-feeding at birth and decreased to 18% by six months of age (WIC clinic statistics sheet, 1997). In 1996, WIC clinics in the state of Utah reported 72.5% of women began breast-feeding at birth, however, this number declined to 38% at six months (National and Statewide Center for Disease Control Statistics, 1989-1996). In 1996, WIC clinics in Washington County, Utah
reported 77% of women initiated breast-feeding. This percentage declined drastically, even more than for the state, to 26% by six months of age (Washington County WIC Clinics Statistics Sheet, 1997). Additionally, statistics obtained from WIC studies indicate the breast-fed infants were not exclusively breast-fed. The 1996 and 1997 reports revealed 19% of infants enrolled in WIC were given formula along with breast-feeding (WIC clinic statistics sheet, 1998).

The practice of giving formula seems counter productive to the main purpose of the WIC clinic to teach pregnant or lactating mothers how to properly breast-feed. Breast-feeding information is offered as part of the prenatal education courses offered by WIC. In addition, nutritional counseling is provided to WIC mothers by registered dieticians to assist them in making beneficial decisions about choosing foods high in protein, carbohydrates, etc. Support groups are also available for young as well as older mothers to provide assistance when emotional and physical deficits are present. Together, all of these support programs are designed to support successful breast-feeding in low income mothers who access various WIC clinics across the United States. However, the low rate of breast-feeding by WIC participants suggests the outcomes are not congruent with the WIC purposes.

Purpose of Study

The purpose of this study was to identify factors related to the decision by WIC participants to initially breast-feed and factors which influence continuation of breast-feeding. Factors that encourage breast-feeding were investigated to determine what
elements can be used to enhance education and provide more appropriate support mothers to breast-feed their infants.

Significance of the Study

Some mothers make decisions to breast-feed either before pregnancy or early in pregnancy (Purtell, 1994). Introducing education about breast-feeding before conception occurs may be the ideal period for education of the potential mother.

For the information to have the greatest impact on making the decision to breast-feed the baby, specific factors that hinder or encourage breast-feeding in women who participate in WIC services need to be identified.

Nursing can benefit from this study by using the results to develop educational programs to meet special needs of mothers who are very young or for mothers who may have difficulty understanding some material presented. If WIC personnel or health care providers can be given more precise information of barriers and benefits WIC clients have with breast-feeding, they can intervene appropriately. Mothers and infants both can benefit from support given by health care providers. If the mother has been misinformed about breast-feeding, health care providers can diffuse misconceptions and provide correct information.

The information obtained from this study may facilitate successful breast-feeding initiation and reinforce the continuation of this form of infant feeding during those vital first months of the baby’s development.
CHAPTER II

REVIEW OF THE LITERATURE AND CONCEPTUAL FRAMEWORK

Introduction

This literature review covers topics on the background of breast-feeding versus formula feeding, including breast-feeding physiology. In addition, the review addresses factors related to duration and successful breast-feeding, and information on Women, Infant, and Children (WIC) clinics, where the study took place. This chapter also includes the conceptual framework and research questions.

Why breast-feed versus formula feed

There are many reasons why breast-feeding is superior to bottle or formula feeding. There are many organizations such as the World Health Organization (1997), La Leche League (1997), and the American Academy of Pediatrics (1997) that support breast-feeding. The literature also is in great support of breast-feeding. However, there are some who disagree with the position breast-feeding is superior to formula feeding.

Some mothers will choose bottle or formula feeding over breast-feeding and will do so for various reasons. One reason may be that they are just uncomfortable with
breast-feeding or that they do not want to breast-feed in public. Some mothers may believe that bottle feeding is just as good for the child as breast-feeding and there is no convincing them otherwise. The following section offers studies that provide support of breast-feeding over formula feeding.

Nutritional factors

Breast milk

Breast milk is natural and easy for the baby to digest in the first year of life. Sciacca et al’s (1995) study included four interviews from discharge to three months postpartum of 68 primiparous pregnant women enrolled in the WIC clinic in Flagstaff, Arizona. The mothers identified the major benefits of breast-feeding as being immunologic protection, better nutritional benefits, bonding between the mother and infant, and suitability of breast milk for the infant. Based on the mother’s responses, the authors concluded continued or long term breast-feeding assistance from the health care provider was necessary to overcome breast-feeding problems the mother encountered.

Ladewig, London, and Olds (1986) compared the nutritional needs of the newborn by comparing breast milk, unmodified cow’s milk, and formula. Since the infant is growing at a rapid rate, the baby’s diet needs to be high in protein, carbohydrates, fat, water, vitamins, and minerals. Adequate calories are also important. The calorie requirement of the newborn is between 110-120 cal/kg/day. This is divided among carbohydrates, fat, and protein. Protein is important for rapid cell growth. Fat provides calories, stabilizes fluid/electrolyte balances, and aids in developing the neurological
system of the neonatal brain (Ladewig et al, 1986, Reeder et al, 1997). Breast milk provides all in appropriate amounts.

The nutritional aspects of breast milk are optimal for the first four to six months of life (American Academy of Pediatrics, 1980). Some researchers feel the balance of amino acids contained in breast milk is the best for neurological development in the newborn.

**Formula**

Yellis (1994) supports the American Academy of Pediatrics recommendation that breast-feeding is the method of choice instead of formula or cow’s milk. When the baby’s digestive tract is not fully mature, which is true until about one year of age, conditions such as diarrhea, allergies to food, mal-absorption problems, and intestinal infections frequently occur from the type of feeding the baby receives. Before birth, a baby’s intestine is sterile. Within a few days after birth, the gut is exposed to pathogens from many sources. The gastrointestinal (GI) tract has colonies of a variety of species that make up the flora. The infants GI flora is directly related to the type of feeding the infant receives. Gram negative enterococci is generally found in the intestine of infants who receive formula due to the alkaline environment that is predominate with formula feedings. On the other hand, lactobacillus bifidus is generally found in the intestine of the infant who is fed breast milk. The lactobacillus bifidus bacteria thrives in the acidic environment provided by breast milk (Yellis, 1994). There is support that colonization of the intestine with lactobacillus bifidus prevents the overgrowth of opportunistic or harmful
microorganisms, a common side effect seen with early introduction of cow’s milk or formula (Stashwick, 1994).

There are many types of formula available on the market today. All of them try to emulate breast milk in every way. All formulas contain adequate amounts of protein, carbohydrates, and fat to meet the nutritional needs of the infant. No matter which form of infant feeding is chosen, it should be given to the newborn until nine months to one year of age (Ladewig et al, 1986).

Stashwick (1994) takes the position cow’s milk should never be introduced before twelve months of age due to the problems stated above. Sears (1996) agrees cow’s milk is a detriment for an infant before the age of one year as the infant’s system is not developed sufficiently to process that type of food. If cow’s milk is introduced before one year of age, it can trigger allergic reactions in the child. In addition, cow’s milk is difficult for an infant to digest because of the immaturity of its digestive track.

Unmodified cow’s milk is not acceptable to meet the needs of the newborn infant. Cow’s milk contains 50-75% more protein than breast milk. It is also difficult for the infant to digest cow’s milk and may cause gastrointestinal bleeding. Vitamins are lacking in cow’s milk compared to breast milk and the carbohydrate level is low, even compared to formula (Reeder et al, 1997).

Benefits and side effects of feeding type

Immune, gastrointestinal, and developmental (mental) will be discussed in the following paragraphs. Colostrum, the first stage of breast milk, is rich in immunologic
factors such as IgA/IgG, a class of antibodies defensive against viral antigens, protein, lactose, lymphocytes, white blood cells, and macrophages that assist in phagocytosis. These give a natural boost to immunity for the newborn protecting it from infections during its first few weeks of life (Stashwick, 1994).

Mother's mature milk is high in fat and protein, which are vital for proper brain growth and development. Lucas et al (1992) found the content of breast milk may influence brain growth and intellectual function. They studied 300 pre-term infants whose birth weights were less than 1850 grams. Some were given breast milk and some not. The children were retested at 18 months and again at 7.5 to 8.0 years of age. Those who had received breast milk had significantly higher intelligence quotients, even when social class and mother's educational levels were controlled. Lawrence (1992) hypothesized that cholesterol that is present in breast milk, but not in formula, is responsible for the differences. Other studies (Kallio et al, 1992; and Temboury et al, 1994) found serum cholesterol levels rose significantly in exclusively breast-fed infants during the first 12 months of life compared to those who were weaned early. A study of full term infants between 18-29 months of age showed the breast-fed children scored higher on the Bayley Index of Mental Development Scale than those who were bottle fed respectively. These findings offer strong support for the importance of breast-feeding their child.

Support for breast-feeding

La Leche League

Breast-feeding is greatly supported by the La Leche League International. The
La Leche League was formed in 1956 by seven women who were determined to breastfeed, yet came up against barriers that may have discouraged some people into discontinuing this practice. By pulling together, they had support from each other and found the secret to successful breast-feeding was having the right information and having someone to turn to for help, advice, and reassurance (La Leche League, 1997).

By forming the La Leche League, these seven women set out to help other mothers successfully breast-feed by supporting them and supplying them with the basic information needed to carry out the task of naturally feeding their child. Their main purpose was to pave the way for other women and make it easier for them to breast-feed. They felt they could share the information they learned and therefore, promote breast-feeding.

From 1958 to 1997, six editions of books about breast-feeding have been published by the La Leche League for mothers who have questions. The first two editions were mainly excerpts of the original seven members personal experiences with breast-feeding. The third edition included other breast-feeding mothers experiences, but the fourth edition reflected new medical research findings as well as suggestions from women throughout the world. The fifth edition reflected the thirty-fifth anniversary of the La Leche League and had only minor revisions. However, the sixth edition had major revisions to show how far the concept of breast-feeding had come and was designed to reach the women of the twenty-first century. Because of the work done by these extraordinary women, their ideas have been accepted by the World Health Organization and the week of August 1-7 is celebrated as World Breast-feeding Week to promote
breast-feeding as the most effective and natural way to feed a baby in its first year of life.

American academy of pediatrics

The American Academy of Pediatrics (1997) supports the position babies should be fed breast milk the first year of life. Originally, it was suggested that breast-feeding be initiated at birth and continue through six months, but in 1997, the Academy expanded this position to include the first year of life.

Healthy people 2000

To promote breast-feeding, Healthy People 2000 adopted the goal to increase breast-feeding to 70% immediately after birth and 50% at six months postpartum. The State of Utah WIC program also adopted this goal to increase the new mother and infant’s health and help decrease their cost of giving formula to mothers. Cost was a great motivator, but the health of the baby was a greater reward.

Breast-feeding physiology: Milk production

Colostrum

The literature supports breast-feeding as the best way to feed a baby through the first year of life. In the first days after birth, colostrum, a pre-breast milk or first infant food, is secreted.

Prolactin

After three to five days, prolactin, a hormone secreted by the pituitary, is
responsible for the colostrum being replaced by breast milk. Prolactin promotes breast-milk production by stimulating the breasts’ alveolar cells (Ladewig, London, & Olds, 1986). However, the mothers’ production of milk may decrease if the breast is not emptied completely or if the mother does not breast-feed. When either of these situations occur, the anterior pituitary releases decreased amounts of prolactin and milk production decreases and finally milk ceases to be produced after a few weeks if the condition continues.

Each nipple has 15 to 25 openings that drain the lactiferous sinus in order for the baby to breast-feed. The position of the baby can facilitate the sucking and emptying of the breast (lactiferous sinuses). (Ladewig, London, & Olds, 1986 and Reeder et al, 1997). This indicates infant positioning is a critical factor to successful breast-feeding. After the baby takes the nipple into his/her mouth, it takes a few moments for the nipple to become erect and rigid. The milk begins to flow after the let-down reflex, an accelerated movement of the milk into the mammary glands upon stimulation by massage or sucking, becomes activated and the flow peaks in six to ten minutes (Stashwick, 1994).

**Oxytocin’s effect**

Another hormone involved in breast-feeding is oxytocin which is released from the anterior pituitary in response to the sucking reflex. Oxytocin is responsible for contraction of myoepithelial cells, causing globules of fat, proteins, and other nutrients to be dumped into the ducts of the breast. Milk then flows toward the sinuses under the areola in preparation for breast-feeding. Oxytocin helps the nipple become erect and
elongated for better attachment by the baby's mouth. During breast-feeding, the mother may experience a "pins and needles" sensation in the breasts and experience uterine contractions. These sensations are normal and the contractions help return the uterus to the pre-pregnant state or size. Post delivery and during breast-feeding, this latter action helps to control bleeding, thus enhancing the mother's health status and decreasing the hemorrhagic side effects of delivery (Stashwick, 1994). Release of oxytocin is affected by factors such as the mother's well-being and her confidence in her ability to breast-feed, as well as, little things like hearing the cry of her infant, the infant sucking, or just the mere thought of the infant (Ladewig, London, & Olds, 1986).

Emotional support plays an important part in the let-down reflex and successful breast-feeding. Fathers can take an active role and help promote successful breast-feeding by soothing the mother and relieving anxiety she may be experiencing. Nurses should always have a working understanding of the physiology of lactation to give the proper teaching and support to new breast-feeding mothers (Reeder et al, 1997).

**Ovulation and menstruation**

Ovulation is generally suppressed when breast-feeding. However, there is no guarantee ovulation is completely inhibited and some women continue to have menses while they are breast-feeding and may or may not be ovulating (Stashwick, 1994). Mothers should be informed of this so they do not rely on breast feeding as a birth control method.
Factors related to duration and success of breast-feeding

**Duration**

The literature showed the duration of successful breast-feeding may be attributed to different factors. The Hawkins, Nichols, and Tanner (1987) study of circumstances that effected breast-feeding duration surveyed 47 women from a WIC clinic who had breast-fed a baby. The study found women who breast-feed longer had a higher education level, higher family income, and were married. The women who were in the low income bracket, had little or no education, and were single, discontinued breast-feeding the earliest. However, the answer given by 100% of the women as to why breast-feeding was discontinued early, was an inadequate milk supply for the baby and/or the baby was not gaining weight.

Lawson and Tulloch (1995) studied 78 primiparous mothers 18-35 years of age to identify factors that promoted breast-feeding duration. Data were collected by administering pre-birth and post-natal questionnaires with 66 of the 78 questionnaires returned. Results indicated mothers who were still breast-feeding after three months had a higher level of education, made their decision to breast-feed earlier, and intended to breast-feed longer.

Hill (1991) conducted a study to evaluate factors affecting the duration of breast-feeding in WIC and non-WIC mothers to assess the relationship of social economic status to duration of breast-feeding. The sample consisted of 200 WIC and 200 non-WIC mothers. The 15 page questionnaire developed by Hill was composed of five point Likert scales. Multiple regression results revealed that breast-feeding continued longer when the
mothers initiated breast-feeding within the first four hours of delivery rather than eight hours or longer after delivery.

Hewett & Ellis (1985) found feeding of the infant immediately after delivery and frequently during the day and night, contributed to longer duration of breast-feeding with early discontinuation of breast-feeding resulting from rigidity of the mothers schedule or not enough flexibility for the enjoyment of breast-feeding.

Beske and Garvis (1982) also conducted a study to identify factors that influenced the length and success of the breast-feeding experience. Data were collected with a questionnaire from a convenience sample of 94 mothers at three different times: in the hospital; after one month; and after the infant was six months old or when the infant was completely weaned from the breast. The most influential factors for the decision to breast-feed for an extended length of time were the books and/or pamphlets the mother read throughout her pregnancy and the support she received from the baby’s father. The former finding was supported by Rentschler’s (1991) study of 173 first time breast-feeding married women. Her results showed a positive relationship between information the mother obtained and the length of breast-feeding. It was identified that the key was the ability of the mother to have answers to her questions at her fingertips.

Hauck and Dimmock (1994) conducted a study to evaluate duration of breast-feeding and breast-feeding success. They sampled 150 mothers of full term infants who were breast-feeding for the first time. Seventy five of these mothers were sent printed information on breast-feeding and were monitored at 6, 13, 20, and 52 weeks postpartum. The hypothesis that mothers would breast-feed longer if they were better
educated on how to breast-feed properly and have constant access to written material was supported. The group who received verbal information alone was not found to be as successful.

Another factor related to duration was sleep, especially in adolescent mothers (Benson, 1996). Benson suggested that adolescence is a period of rapid growth and that teenage mothers need more sleep than the adult mothers. If the baby did not sleep through the night and required frequent feedings, the younger mother decided to bottle feed so others could assist her in feeding the baby.

Benson (1996) also found that when the baby would not sleep through the night, the younger mothers thought the baby was not getting enough to eat, so solids were introduced. Some mothers were giving their baby solids as early as two weeks of age. The baby’s eating solids so early in life was viewed as a positive accomplishment of the mother by her peers. Consequently, when these mothers were told by their health care providers that they should not be giving solids until the baby was at least two months old, these teen mothers continued to offer solids to the baby and it was seen as a developmental milestone in the child’s life.

Other factors contributing to the discontinuation of breast-feeding in the teenage population were breast engorgement, nipple soreness, insufficient breast milk supply, and nipple confusion (Bar-Yam, 1993, and Benson, 1996). Nipple confusion was defined as the baby not being able to adequately attach to the nipple and breast-feed properly. These authors stated no infant successfully breast-fed once nipple confusion occurred. The mothers in the studies found bottle feeding the only solution to this problem. In reality,
this problem is commonly encountered by women of all ages, not just teenagers.

Neifert, Gray, Gary, and Camp, (1988) followed 244 mothers under the age of 18 years for 15 months. At two days postpartum, 53% of these mothers were breast-feeding. An attitude questionnaire was given to mothers in the hospital within 48 hours after delivery. Follow up interviews were done either in person or on the phone two weeks and two months after birth. Thirty five percent had discontinued breast-feeding within the first month postpartum. It appeared that adolescents who were breast-feeding at two months postpartum, would breast-feed long term. Results showed that none of the variables such as age, timing of the breast-feeding decision, ethnic group, or educational level had an influence on the duration of breast-feeding.

**Timing of decision to breast-feed**

Neifert et al (1988) discovered from their research the decision to breast-feed was made before pregnancy occurred (35%), 23% made the decision in the second trimester while 25% waited until the third trimester. These percentages support the position that an ideal time to initiate teaching about breast-feeding is before conception occurs. A subset of primiparous breast-feeding adolescents (n=60) were studied regarding the influence of several factors on the duration of breast-feeding. Of the subset of primiparous breast-feeding adolescents surveyed (n=60), 83% made the decision to breast-feed before the third trimester of pregnancy.

Purtell’s (1994) study of when the decision to breast-feed was made found an early decision to breast-feed by adolescent mothers is related to previous exposure
to breast-feeding or the literature that teens read. Other studies have shown adolescents are receptive to breast-feeding, especially if they have had previous exposure to the process and have a positive attitude (Neifert et al, 1988, Baisch et al, 1989, Benson, 1996, and Radius, 1989).

**Communication and Bonding**

Driscoll (1992) views breast-feeding as a relationship between mother and infant. During breastfeeding, mother and infant are communicating, verbally and non-verbally, through the mutual experiences. If the baby adapts immediately to the breast and is content, the mother feels secure in her ability to feed her baby. On the other hand, if the baby has trouble attaching to the breast or is fussy and cries a lot, the mother may become tense and the positive relationship between mother and baby may be hampered. Because of the mutual experience and relationship between the participants, breast-feeding cannot be viewed as purely a method of nourishing the infant. Glugiani et al (1994), also, found bonding was cited by the mothers as a favorable outcome of breast-feeding.

When breast-feeding fails, it may be perceived as a loss of bonding between the infant and mother and the self esteem of the mother may be at risk. For this latter reason, mothers may choose not to breast-feed at all because they do not want to experience failure. Due to the potentially negative influence, the first breast-feeding experience needs to be successful since it can affect important future decisions concerning breast-feeding (Driscoll, 1992).
Support

Perceptions and attitudes

Hewatt and Ellis (1985) looked at women’s perceptions of the breast-feeding experience. All participants were nine to thirteen months post delivery. Data were obtained from paired subjects (n=40), 20 who had breast-fed for two days to eight weeks and 20 who had breast-fed for six to fourteen months. The findings revealed positive feelings toward breast-feeding outweighed negative ones in the group that breast-fed from six to fourteen months. Some of the positive responses expressed were that breast-feeding caused the mothers to feel close to the baby and it was a convenient way to provide nourishment to their infant. Lawson and Tulloch (1995) found mothers breast-feed longer when they had a negative attitude toward bottle feeding.

Radius and Joffe (1988) surveyed adolescents (n=254) attending prenatal clinics to determine if the perception about breast-feeding differed between those who chose to breast-feed and those who did not breast-feed. The majority of the respondents (n=80.7%) stated they planned to bottle feed their infant. One of the greatest barriers to breast-feeding identified was the mothers embarrassment to breast-feed in the presence of other people (n=78%). Amazingly, 56% of the pregnant adolescents had the perception that if they breast-fed, their infant would be denied medical assistance.

Gigliotti’s (1995) qualitative study found attitude was a major factor with the women being asked to defend their infant feeding choices no matter what they chose. Each mother stated she did not want health professionals to push breast-feeding on her, and that breast-feeding needed to be her own decision. The conclusion from this study...
suggested that mutual respect and trust must exist between the mother and her health care provider if lines of communication are to remain open. This is vital if breast-feeding is to be implemented and be successful.

Baisch, Fox, and Goldberg (1989), conducted a study of 127 pregnant adolescents to assess their attitudes about breast-feeding. The participants were enrolled in a WIC program and had an average age of 17. The study found positive attitudes toward breast-feeding were directly related to the number of times the teen had been exposed to breast-feeding in the past. Nearly all felt breast-feeding was natural, inexpensive, the desirable way to feed an infant, and was in no way disruptive to the family.

The attitude of health professionals and the society the mother lives in has also been found to be a support to initiating and continuing breast-feeding. Dix (1991) found the health care providers need to present a positive attitude toward breast-feeding for the breast-feeding to be successful. Ellis (1986) and Purtell (1994) concluded from their studies that breast-feeding success depends on positive opinions and support of society as a whole. Interestingly, laws have been passed mandating a mother may breast-feed in public without being arrested for indecent exposure indicating some areas of the US society are looking to be supportive of mothers who are breast-feeding (Livingston, 1993).

Social and economic factors

Bar-Yam's (1993) study of teenagers revealed the decision to breast-feed is
influenced by peer and family views of breast-feeding, the father's attitude towards breast-feeding, and finally, how society views this issue. Teenagers may initiate breast-feeding, but may discontinue this practice after a few months due to lack of physical and emotional support from family and/or friends. Bar-Yam’s (1993) recommendations for increasing the incidence of breast-feeding in adolescents included: community involvement in breast-feeding issues for support of new mothers who are breast-feeding to reduce embarrassment, make child care available to lactating teen mothers so they may breast-feed when necessary, and teach breast-feeding techniques in high school curriculums. Support, however, may begin at home with the teenagers’ mothers taking time to explain breast-feeding, therefore, additional information can be explored with a loved one. If the lines of communication are open and teenagers know they have someone they can call for help, breast-feeding may be a success. Because teenagers are receptive to breast-feeding but have a high attrition rate of discontinuing breast-feeding within the first two months after delivery, guidance, support, and educational programs are important.

Johnson (1996) found that without support, sufficient encouragement, and enthusiasm, breast-feeding can dwindle within the first few days of attempting to breast-feed. She noted 61% of mothers who breast-feed in the hospital following birth, decreased to 47% after two months, 27% at six months, and only 12% after one year. These statistics become important when addressing areas that need to be studied in relation to duration of breast-feeding.

Glugiani et al’s (1994) study compared 100 breast-feeding mothers and 100 non-breast-feeding randomly sampled mothers. The purpose of the study was to investigate
the relationship between the mother’s choice of breast-feeding and support by health professionals and lay persons. The results of the study demonstrated prenatal classes, as well as breast-feeding support from lay people and fathers, played a role in the mothers’ choice to breast-feed regardless of age, ethnic group, education, or marital status. The authors proposed the inclusion of the father in the breast-feeding experience to diminish jealousy toward the infant. To facilitate the father’s participation, the mother may pump breast milk so he can feed the baby even though she is breast-feeding.

Low income has, also, been identified as a significant factor in whether breast-feeding is initiated and/or continued. Research has been done studying the impact on low income mothers and their infants. Nadel (1993), Bagwell, Kendrick, Stitt, and Leeper (1993), Baisch et al (1989), Bryant et al (1992), and Hawkins, Nichols, and Tanner (1987), found low income mothers breast-fed a very short time or they did not breast-feed at all. One hundred percent of the samples from each of these studies cite inadequate milk supply as the main reason why breast-feeding was either discontinued early or never initiated. However, for a woman on a limited budget, breast-feeding is an ideal way to feed her child because of the economic benefits and the convenience.

Bryant et al (1992), studied a random sample of 35 low income women for factors that prevented them from breast-feeding. When these mothers were interviewed individually, they stated they wished to bottle feed. However, when they were interviewed in groups, they were not as firm in their decision on the method they should use for feeding their child.
Culture

The family’s culture and socialization regarding breast-feeding plays a major role in the mother’s decision to breast-feed. For example, more than 90% of Japanese mothers breast-feed, but only 58% of American women breast-feed. Benson (1996) suggests these statistics can be attributed in part to the positive attitudes Japanese people exhibit toward breast-feeding and cultural aspects of parenthood.

Culture can affect the mothers’ available support systems for successful breast-feeding. A study by Baranowski et al (1983) found Black Americans gain support for breast-feeding from a close friend. A Mexican American mother usually obtains support from her mother and finally, Caucasian Americans strongest source of support is from the male partner (Kearney, 1988).

Cultural factors may affect the physiological processes involved in breast-feeding. The way the mother was reared and how open and comfortable others in her support system are with breast-feeding will influence how she will respond to breast-feeding and the response of physiological processes (Kearney, 1988).

A national survey was conducted by Timbo, Altekruse, Headdrick, and Klontz (1996) of 5,142 Black mothers who had given birth in 1988 and was done to identify factors that might be used as interventions to increase breast-feeding in black mothers. The sample was collected in 48 states from public health departments clients, specifically WIC participants. Multi-variate analysis showed breast-feeding was significantly associated with mothers who planned to breast-feed while they were pregnant, not after the birth of the child. Higher breast-feeding rates were reported when mothers were given...
prenatal advice to breast-feed, attended prenatal birthing classes, or were advised to breast-feed by WIC clinic staff during pregnancy. They also found that the Black women who were single, belonged to low income families, were under the age of 25, and possessed little education were least likely to breast-feed.

Education of the mother

Literature dating back to 1978 places responsibility on health care providers to teach and encourage breast-feeding by all mothers and to counter the commonly held myths. Hall (1978) conducted a study to identify factors that helped or hindered breast-feeding success. Of the 40 women interviewed, 30% had never witnessed another woman breast-feed her baby. The women were divided into three groups with one receiving routine hospital care, another routine care plus a slide tape presentation and a pamphlet on breast-feeding, while the third group received routine hospital care and extra nursing support for breast-feeding. Results showed group three was the most successful at breast-feeding. The critical factor was identified as the specific support received from a nurse in relation to breast-feeding. Hall (1978) also found women did not change their mind about breast-feeding due to the method of their delivery, the amount of nipple preparation done, or whether they were medicated during delivery.

Gulick’s (1982) study hypothesized expectant mothers who received educational information concerning breast-feeding, would breast-feed longer (four or more weeks) than a group who had little information provided to them. The mean age of the 251 mothers was 25 years. The main reasons for discontinuing breast-feeding were
attributed to lack of knowledge, the mother feeling as though she had an insufficient milk supply, fatigue, nervousness, embarrassment, and sore nipples. The author concluded that all of these factors could be alleviated and breast-feeding could be successful if the problems were recognized early and corrected immediately with appropriate information on breast-feeding.

Most mothers' first encounter with a health care provider is during pregnancy, therefore, teaching can begin during the first visit for prenatal care. The mothers revealed they were more comfortable with the nurse or midwife during prenatal visits (Dix, 1991). Dix (1991) also found a need for the health care providers to give consistent, reliable information for the breast-feeding to be successful. In contrast, the decision to breast-feed was prompted by information the mothers had received from their families, not from health care providers.

Women, infant, and children (WIC) services

The site for this study is a Women, Infant, and Children (WIC) clinic in Southern Utah because it allows many of the concerns of the literature to be assessed. The WIC program is accessible to persons of lower income without regard to age, culture, or race. The purpose of WIC is to teach nutrition and the benefits of breast-feeding, offer support and prenatal classes, and provide food vouchers for the purchase of nutritional foods needed to complete a balanced diet.

Services are available for children up to five years of age, pregnant women, and breast-feeding women. Women who are anemic and breast-feeding are able to use
services in order to obtain enough iron in their diet.

To receive WIC benefits, the following criteria must be met: low income standards, need of WIC services to maintain health status, and live in the area where application is made. Guidelines are relatively strict to meet these criteria all the while a person is receiving WIC benefits. WIC clients receive education on where they can receive low cost medical care, immunizations for children, prenatal care, and locations of family planning clinics. The service is available to encourage the mother to maintain health promoting behaviors in addition to nutritional teaching.

WIC clinics are supportive agencies that provide programs which assist the successful initiation and continuation of breast-feeding. It has been reported the WIC clinic personnel may sabotage the breast-feeding process. WIC clinic personnel have also been accused of undermining efforts to properly teach the breast-feeding technique. It has also been reported WIC’s educational efforts could be successful in improving current low rates of breast-feeding in low income women if prenatal classes were held regularly and participants were encouraged to attend (Gielen et al, 1992).

In 1989, Congress passed legislation that mandated WIC clinics to promote breast-feeding. These policy makers were aware of the cost of health care and, therefore, produced efforts towards breast-feeding promotion to help reduce health care costs and increase maternal and infant well-being (State of Utah WIC clinic guideline booklet, 1998).

Also in November 1989, the National Association of WIC Directors (NAWD), presented a position paper on the promotion of breast-feeding in the Utah WIC clinics.
They issued a strong statement in the support of breast-feeding. The position is this: since breast-feeding has been shown to have significant advantages for both women and infants, we as health care professionals have a responsibility to provide services to obtain optimal health of our clients. Since the WIC personnel have adopted breast-feeding as the preferred method of infant feeding, NAWD is calling for all state and local WIC departments to aggressively promote breast-feeding (State of Utah WIC clinic guideline booklet, 1998).

The WIC program has joined with the Nation and Healthy People 2000 to reach the goal of increasing breast-feeding to at least 75% early on in the postpartum period as well as increasing breast-feeding to at least 50% until the infant is at least five to six months of age.

WIC health professionals developed specific guidelines to promote support of breast-feeding and the decision of the mother of which form of infant feeding best meets her needs. The guidelines cover areas like: 1) all mothers will be encouraged to breast-feed unless medically contraindicated; 2) all WIC prenatal and postnatal participants shall receive counseling/education; 3) proper counseling to help the mother communicate effectively to the hospital staff, MD, etc. about her decision to breast-feed or not will be given; 4) inclusion of the mother’s family and/or friends in the teaching process and support sessions; and 5) implementation of a mechanism in each WIC clinic to have positive peer influence to accompany successful breast-feeding (State of Utah WIC clinic guideline booklet, 1998).

When a client applies for WIC certification, they must complete a prenatal
survey on infant feeding. Education on breast-feeding is individually constructed according to the responses elicited from the prenatal survey questionnaire. At least one class/individual contact must be offered to each pregnant woman enrolled in WIC (State of Utah WIC clinic guideline booklet, 1998).

Summary

The above studies show a general agreement by health professionals and mothers that breast-feeding is the best way to feed an infant. However, studies have inconsistent findings in relation to most other issues related to breast-feeding.

The literature reviewed shows information is lacking especially with women in WIC clinics. Age and education level have not been addressed at great lengths except for adolescents. More information from mothers of all ages is needed to assess the inconsistent findings of why women do or do not breast-feed their child. Factors that effect breast-feeding in the first six months need to be addressed more fully as this is identified as the most critical time for breast-feeding or until the infant can masticate and process solid foods.

The literature available about breast-feeding benefits and barriers is extensive with multiple views and findings. It is generally agreed it is important for a mother to understand the physiology of breast-feeding before other concepts such as proper positioning of the infant, the let-down reflex, stress responses, and when to initiate solids, can be addressed. Once breast-feeding physiology is understood, the activity of breast-feeding usually follows (Stashwick, 1994).
It is agreed that breast-feeding is the best way to feed a child, (American Pediatrics Society, 1997), especially in the adolescent low-income population (Baisch et al, 1989). Duration and successful breast-feeding has been shown to be related to educational level, income, and marital status of the mother (Hawkins, Nichols, & Tanner, 1987; Lawson & Tulloch, 1994). Teaching the pregnant woman about breast-feeding is identified as important, but the who, when, and what is not consistent. It is suggested the teaching be age appropriate considering the different lifestyles of the adolescent versus a twenty or thirty year old woman. It has been found that written information is key (Beske & Gravis, 1982; Rentschler, 1991) while others found breast-feeding was successful when the nurse or midwife was available to answer the breast-feeding mothers questions and help her solve some of the problems encountered while breast-feeding (Hall, 1978, Gulick, 1982, and Dix, 1991). It was also suggested that high school curricula should include information about advantages of breast-feeding (Bar-Yam, 1994).

Culture, also, must be considered in providing information to women about feeding their child (Barowski et al, 1983, Kearney, 1988, Timbo et al, 1996).

Findings are not in agreement or clear in relation to nipple preparation and treatments for nipple soreness, which is a main reason for discontinuing breast-feeding (Buchko et al, 1993, and Dix, 1991), or increasing attitudes on how to promote those that are supportive of breast-feeding from the individual to society as a whole. Timing of the decision to breast-feed or not and who has influence on the decision is not consistent (Neifert et al, 1988, Purtell, 1994).

In spite of all the literature on breast-feeding and its benefits to the mother, as
well as to the infant, only about one third of mothers in the US breast-feed their baby for more than six months. In the WIC clinic in Washington County, Utah, the site of this study, even though 77% of the mothers start breast-feeding their baby, only 26% continue to breast-feed through at least six months. More information is clearly needed to clarify why mothers, especially the WIC recipients, do not continue to breast-feed until the child is one year old as recommended by the American Pediatrics Society (1997). Consequently, this study is designed to address these concerns.

**Conceptual framework**

Dorothea Orem developed a self-care theory in the late 1950's. Her theory described self-care as individuals being able to care for themselves. When self-care cannot be performed by the individual, a nurse or health care provider gives the needed assistance. Self-care deficit is at the foundation of Orem's theory and delineates when nursing intervention is needed (George, 1990). Self-care deficits are the primary reason for patients of all ages to seek health care from a professional. Generally, patients will try to correct problems at home such as treating symptoms of nausea and vomiting from pregnancy by eating crackers, reducing a fever of an infant by immersing the child in a tepid bath, or reading about the symptoms of pregnancy in a book before making an appointment to see a practitioner.

Orem (1991) refers to her general theory of nursing as her self-care deficit theory of nursing because of the relationship between the action capabilities of the individual and the demands for self-care or the care demands of adults and/or children. The self-care
deficit theory assumes that nursing is a response of human groups to one recurring type of incapacity: the incapacity to care for oneself or one's dependents. Orem's theory states social and interpersonal dimensions are common to all helping services. The technological dimension is specific to nursing and lends direction to the form and substance of nursing. It is within this context the elements of therapeutic self-care demand, self-care agency, and nursing agency are interrelated (Hartweg, 1991).

Orem (1979) describes therapeutic self-care demand, self-care agency, and nursing agency as a triad of elements. She states these three concepts are essential because of their function in the nursing system. Therapeutic self-care demand is defined as objective actions that assist a person with the maintenance of present states of health and/or well-being. These actions are designed to link a person's self-care system to a larger health-care system. This may occur when a person has a breakdown in their present health and they seek help from a practitioner in the health care system.

Nursing agency, the second element of the triad, is conceptualized as the regulatory portion of the nursing system. It is also the principle portion of the triad. Nursing agency has been described as the power of one individual to provide for other individuals with health related self-care deficits. The nursing agency is exercised in the form of a dynamic system of human actions (Orem, 1979). If the nursing agency is exercised properly, nurses can communicate with their patients through what is called the information-transmitting media, where nurses get signals from patients, interpret this information, and in turn give information back to the patient in order to increase their health status or maintain their current health. This is sometimes referred to as a feedback
The third and final element of the triad is the self-care agency. Self-care agency is defined by Orem (1979) as the power of an individual to engage in the estimative and productive operations for self-care. This means there are practices performed by individuals in the best interests of their own life, health, or well-being. When the self-care agency is not operating or is underdeveloped, the nursing agency is the sole regulatory element in the system. Self-care agency is related to therapeutic self-care demand as a production mechanism (getting care accomplished) or as an estimating mechanism (determining what the demand is).

When both nursing agency and self-care agency are functioning properly in a nursing system, their relationship is mediated by therapeutic self-care demand. Each element works from each other. If one concept breaks down, the other must take over or compensate for the deficit (Orem, 1979). Orem believes there must be cooperation from each side in order to maintain harmony in a nurse-patient relationship.

Orem outlines three categories of self-care requisites. These categories are: 1) universal, 2) developmental, and 3) health deviation which are interrelated with each other. The universal self-care requisites, sometimes referred to as activities of daily living, are essential for life processes. Self-care requisites are: 1) maintenance of sufficient intake of food; 2) maintenance of a sufficient intake of water; 3) provision of care associated with elimination processes and excrements; 4) maintenance of balance between rest and activity; 5) maintenance of a balance between solitude and social interaction; 6) prevention of hazards to human life, human functioning, and development within social groups in
accord with human potential, known human limitations, and the human desire to be normal. Normal is referred to in this context as it relates to the genetic, constitutional characteristics, and talents of the individuals (George, 1990).

Orem's systems theory includes three classifications to identify self-care requisites of the patient. These are as follows: 1) Wholly compensatory system; a situation where the person is unable to completely care for themselves and requires someone to do their activities of daily living. An example of this is a newborn infant. 2) The partly compensatory nursing system is the nurse and patient equally participating in the care given and received. An example of this is a three year old child who can use the toilet by themselves, but is unable to take a bath without supervision. 3) The supportive-educative system is a person coming to the nurse for answers to questions. An example is a new mother coming to a WIC clinic for information on the correct way to position her infant as she breast-feeds it. Together, these nursing systems cover the total aspect of care between the nurse and patient.

Orem's self-care deficit model is ideal for this study since mothers and children need help with breast-feeding. The mothers seek out a health care provider to receive needed assistance. Nurses are the connecting link that consolidates Orem's self-care deficit theory. Together the nurse and patient can achieve a satisfactory goal. This theory is appropriate for this study as the mothers willingly come to the clinic for the specific purpose of proper nutrition and education for themselves and their children (George, 1990).

Orem's theory provides the connection between the mother and baby with the
mother being independent and the baby not. A self-care deficit exists and the mother must fill the gap in order for the needs of the baby to be met. Feeding is the most important function in the baby's first few months of life. Utilizing Orem's theory, mothers can offer the best to their babies by breast-feeding instead of bottle feeding. Breast-feeding connects mothers with their babies as part of the self-care dilemma that plagues the infant. By feeding the baby breast milk, the baby is receiving immune properties, is bonding with the mother, and growing from proper nutrients (George, 1990).

The components of WIC clinics and the low income participants who access the WIC clinics suit Orem's self-care theory. This theory relates well because women who choose to participate in the WIC program recognize something is lacking in their lives where health matters are encountered. This self-care deficit brings mothers into the WIC clinic for educational classes, food vouchers, or support from other mothers of the same age and in similar situations in life.

The portion of Orem's theory that lends itself to this study is two fold: 1) the children meet that classification of wholly compensatory due to the inability to fully care for themselves. As the child matures, they move into the classification of partly compensatory since they are able to perform some activities by themselves. 2) the mothers meet the classification of supportive-educative system. This is defined as a person seeking answers on proper breast-feeding or diet content to ensure high quality breast milk.

Orem combines concepts for her self-care theory and meshes components which consequently match this study. Self-care deficits relate to the needs of mothers as well as infants in this study because it is usually a self-care deficit that prompts patients to seek
Research questions

From the above literature and theory, the following research questions are proposed by this study:

1) What factors exist that encourage WIC mothers to initiate self-care in breast-feeding and/or to continue breast-feeding?

2) What problems do mothers encounter while breast-feeding?

3) What problems do mothers encounter that result in self-care deficits related to breast-feeding?

4) What part do other selected demographic variables play in whether a mother using WIC services breast-feeds her baby?

5) How well are WIC mothers in this sample meeting the Healthy People 2000 goal of 70% breast-feeding at birth and 50% at six months postpartum?

Operational definitions

1. **WIC** Women, Infant, and Children clinic. WIC is a federally funded program which is mandated by law to promote breast-feeding. The goal is to decrease health care costs and increase the well-being of both the mother and child.

2. **Breast-feeding** Breast-feeding is defined in this study as a mother who breast-fed at any point during the baby's first year of life. This includes breast-feeding for a short period of time and then stopping. It is limited to the baby currently enrolled in the WIC
program with the mother, not any previous children.

3. **Non-breast-feeding** Non-breast-feeding is defined as a mother who did not breast-feed her baby at all. If the mother had other children she breast-fed but did not breast-feed the baby she is currently bringing to the clinic, this is considered non-breast-feeding. Only the current child is considered in this study.

4. **Mother** A female who has given birth to a normal infant 38-40 weeks in gestation. The delivery is normal without complications. This does not exclude cesarean deliveries since these are considered to be a normal delivery.

5. **Support system** A support system as defined as someone who is present to offer physical and/or emotional support. This person or persons are readily available to the mother to help encourage the breast-feeding experience.

**Assumptions**

1. The assumption in this study is participants will answer the questions presented honestly.
CHAPTER III

METHODS AND PROCEDURES

Introduction

The purpose of this study was to identify factors that affect the decision to breast-feed and to answer the research questions. The design, setting, sample, data collection tools, and human subjects rights information follows.

Research design

This study utilized a descriptive, comparative research design. Polit and Hungler (1995) define descriptive research as the type that endeavors to describe the phenomena of interest rather than explain it. It reports the frequency in which the phenomena occurs and accurately portray characteristics of the individual, groups, or situation. The comparative aspect assessed the similarities and differences between the mothers who do not breast-feed and those who do breast-feed their infant.

Research setting

The WIC clinic serving Southern Utah was the setting for this study. It is the

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main access center for WIC clients serving approximately 84 square miles with a population of approximately 50,000 people and provides service to an average of 550 women per month.

A requirement of the WIC program is that the applicants are residents of the county in which they are applying for aid. This particular clinic is located in Washington County, Utah. Clients must meet specific criteria such as low or no income, pregnant or recently given birth and lactating, and/or have a nutritional deficit or a health problem such as iron deficiency anemia. Meeting this criteria indicates a self-care deficit in the lives of these women. The fact they recognize they are in need of support is also an indicator of a self-care deficit. The women recognize a problem and seek assistance from the WIC program personnel.

WIC clinics are federally funded programs and are a non-profit organization. Registered nurses are employed by WIC programs for the purpose of teaching mothers proper breast-feeding techniques, organizing and leading support groups, and being available to answer questions or assist with problems that may occur while the mother is breast-feeding.

Registered dieticians are also employed by the WIC clinic. Their responsibility is to teach mothers about the foods they need to eat, especially if they are breast-feeding. Since breast-feeding mothers require more calories and a general overall increase in food, it is important they choose foods that are appropriate to promote and maintain their health. Low income mothers often buy foods that are less nutritious because the more nutritious foods are sometimes more expensive. Food vouchers obtained by the mothers
allow them to obtain foods high in protein such as peanut butter or eggs, as well as fruits and vegetables. The dieticians work side by side with the registered nurses to deliver a well rounded package of information for a favorable outcome.

Sample

The sample for this study was taken from the population of a WIC clinic in Southern Utah that offers vouchers for food supplements to be redeemed from local merchants. Mothers of all ages and races who are breast-feeding or have breast-fed their youngest child, had equal opportunity to participate in the study. The only limitation of the WIC population was that the participant could read, write, and speak English. It was estimated that about 5% of the women served would not meet this criteria. This criteria was included to reduce biasing that might occur if the nurse researcher read the questionnaire to the participants. The population is more precisely described as only those WIC recipients who are literate in English. Mothers voluntarily access this clinic for supplemental foods needed by themselves and/or their children while breast-feeding is ongoing.

Data were collected on Tuesday and Thursday of each week because the clinic is only open these days in this district. The decision for inclusion of a WIC mother in the study was based on a coin toss at the start each day. When it was heads, the first mother was approached and then every other mother. When it was tails, the second client was approached and then every other mother who came into the clinic that day. This type of systematic sampling method allowed equal opportunity for participation by all clients from
the designated population (Polit & Hungler, 1995). It was not anticipated a mother would be approached more than once in the data collection period as most mothers visit the clinic twice shortly after delivery and then again in two months. To assure that a mother was not included more than once, the researcher asked each person if they had previously completed the forms. When this occurred, the next person in line was approached to participate.

The estimated sample size needed was approximately 150 women who had delivered a normal infant and were enrolled in the Washington County, Utah WIC program. It was estimated agreement to participate in the study would be in the 70% range. Attrition was estimated to be small, approximately 5%, since it took only about 10-15 minutes to complete the questionnaire and no follow-up or other contact was needed with the participant. With the proposed sample size and an alpha level of .05, a power level of .80 was expected to be achieved.

Human subjects rights

A cover letter accompanied the questionnaire explaining the purpose, significance and implications of the study, and how the data were to be used. The participants were informed the data would be held confidential and anonymous. They were informed they could receive a summary of the results of the findings if they choose. Women who accessed the clinic under the age of 18 were treated as emancipated adults as the State of Utah does not require any special consent from a parent or guardian to receive WIC services. All participants were informed that they could withdraw from the study at
any time without danger of compromising their care and that no raw data would be shared with the WIC personnel. Only grouped data was used in the report of the study.

Risk versus benefits were explained in the participant letter. The risks were determined to be minimal, if any, and the data was confidential with no identifying marks on the questionnaires. The potential benefits were deemed to be numerous. The results of this study can be used to initiate more focused information on breast-feeding for women of all ages to support their decision to breast-feed and help the mother feel comfortable in whatever decision she makes regarding how to feed her infant. Data were secured in a locked file.

The UNLV Department of Nursing Human Subjects Rights Committee and the UNLV Human Subjects Rights Committee reviewed this study proposal as well as WIC clinic personnel before data were collected.

Data collection

The procedure for data collection began by obtaining permission from the Supervisor of the WIC clinic for permission to use the site for data collection. When written permission was obtained, written consent was obtained from the participant after they read the consent form and had any questions about the study answered.

Data were collected at the WIC clinic from the eligible clients. The researcher approached the selected mothers and requested her participation in the study. When she indicated she was willing to participate, the study information sheet was given to her and questions were answered. The correct procedure for completing the questionnaire was
explained. The researcher then gave the mother time to complete the questionnaire and retrieved the completed form directly from the mother after she has placed it in a sealed envelope. All data were placed in a locked file cabinet at the end of each day of data collection.

Data collection tool

The measurement method used in this study was a questionnaire developed by Hill (1991). The tool was developed based on a literature review. It was used in a study to compare breast-feeding duration in WIC and non-WIC mothers. The tool is comprised of five sections. Section I asks questions concerning the mothers’ beliefs about breast-feeding. Questions one through four are answered by using a five point Likert scale. The answer “5” indicates the item is very important and “1” indicates a response of no importance. Question #5 asks “What is the most important reason for breast-feeding your baby?” The participant must respond by circling the most important reason from a list of eight responses. Section II asks questions related to, “How much of a problem did the following present to you while breast-feeding?” The questions are answered by using a five point Likert scale with “5” being lots of problems (so many that breast-feeding is discontinued) and “1” being no problem. Section III asks questions about who/what encouraged/discouraged the mother the most while breast-feeding. The answers are in a five point scale format with “5” representing very much encouragement and “1” represents very much discouragement. Section IV asks questions about resources available to mothers while breast-feeding. Again, the answers are arranged in a five point Likert scale.
format with "5" representing very often available and "1" representing never available. Question "5" of this section refers to how the husband or child’s father supported the breast-feeding activity. The final section, Section V, asks demographic questions. Included in this section are areas about age, marital status, ethnic background, employment status, and questions about breast-feeding. There are some questions in section V that are "yes" and "no" answers.

The level of measurement contained in this tool is nominal and ordinal. The original study reported validity support from literature review, past experience with breast-feeding questionnaires, experts in the area of breast-feeding, and questions used in a 1985 study (Hill, 1991). Hill (1991) first distributed the questionnaire to several women between the ages of 13 and 17. The tool was then taken and revised from the comments made by these women. This was the completed tool after the revisions. The reading level of the tool was determined to be at a grade level of five to six. Inter item reliability is not possible as most variables are measured with just "1" item (Hill, 1991).

In the current research study, the tool was adjusted to meet the needs of the study. Some questions were deleted and the tool revised for proper structure. The tool was then distributed to subjects who had breast-fed previously in the WIC clinic for a pilot study. After the questionnaires were retrieved, it was found that the questions were easily understood and no changes in the remaining questions were made. The only negative comment was the time it took to answer the questionnaire. The open ended questions took even more time to answer, therefore, it was anticipated participants would leave these questions blank.
Data analyses

Data were first analyzed using descriptive statistics to describe the sample obtained. After that, appropriate non-parametric statistics were used to answer the research questions. This type of analyses was appropriate as most of the data were nominal or ordinal. The SPSS 7.5 program was used to compute all the statistics after the raw data had been entered into the computer. Description of the analysis proposed to assess each of the research questions follows.

Any information omitted by the participant was identified as missing and coded as such when it was entered into the computer file. The SPSS program excluded that data from the analysis.
CHAPTER IV

DATA ANALYSES AND RESULTS

This chapter covers the statistical results of the data collected using the breastfeeding questionnaire. It includes demographic data and analyses of data to answer the research questions.

Raw data were entered into the computer and ten percent were checked for accuracy by comparing to the original data.

Sample description

The sample included 144 clients (n = 144) randomly selected from a Women, Infant, and Children clinic located in Southern Utah. The ages of the participants responding to the questionnaire ranged from 16 to 43 years of age with a mean of 26.1 years with a slight negative skew. Over 10% (n = 14) were 20 or younger and while 8.6% (n = 11) were 36 and over, the largest group of mothers were 21 to 35 years old (80.5%, n = 103). No age was provided by 16 participants. Marital status of the respondents revealed 72.0% (n = 95) were married, 15.9% (n = 21) had never been married, 9.1% (n = 12) were divorced, and 3.0% (n = 4) were separated. The ethnic diversity of the sample was

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reported as 86.7% (n=111) White/Caucasian, 7.8% (n=10) American Indian, and 3.1% (n=4) Mexican/American, which is comparable to the geographical area served by the WIC clinic. (See Table 1).

Data collected from the participants also revealed 60.0% (n=57) had completed 12 years of school, 20.9% (n=27) had completed 13 years of school, 18.6% (n=24) had completed 14 years of school with most of these respondents receiving an associate degree, while 13.3% (n=17) had not finished high school. The range of education was 9 years to master's degree. Thirty five percent (n=46) of the total population held a college degree. The mean number of years of education completed was 12.7.

This was the first child for 32.3% (n=41) of the participants. It was the second or third child for 47.2% (n=60) and for one, it was the seventh child. The mean number of children was 2.46. The mean age of the youngest child, the focus for this study, was 13.2 months. Most of these children were in the 1 to 26 month range with a small group in the 36 month and 48 month ages giving a multi-modal skew.

Data revealed most mothers accessed the WIC clinic with their current child at the interval of 0-26 months of age of their children. Also, between the ages of 26-33 months of age, there was a break in the mothers not returning for any type of services. Then again between the ages of 33 months and 38 months, there was some activity in the WIC clinic from mothers. Another break in service was noted from 38-47 months of age in the child that was enrolled in WIC. Another time the mothers accessed the WIC clinic after the latest break was from 47 months to 52 months.

The participants were asked to indicate how they were feeding their youngest
child of interest for this study. Of the 144 respondents, 103 indicated they were breast, formula, or using both types of feeding. (See Table 14). The other 41 did not respond or indicated it was not appropriate suggesting the child was too old for bottle or breast. Of the 72 \((n=69.9\%)\) who were formula feeding, 56 indicated they had breast-fed this child at some time and were considered as part of the breast-feeding group. This was done to give what is identified as a truer breast-feeding group assessment. This analysis gave a total of 87 or 84.3\% who breast-fed at some time in this child’s life. The group who responded N/A or did not complete the items are not considered in this percentage.

It also needs to be noted that out of the 144 respondents, approximately 15 responses were missing on most items. The missing data were not from the same individuals, but scattered with data missing just here and there. Consequently, no participants were dropped from the analysis.

The Hill (1991) questionnaire has five sections covering beliefs about breast-feeding, what encouraged or discouraged breast-feeding, how often resources were available, and personal questions related to breast-feeding. Most of the items were answered by circling a number in a Likert format with numbers 1-5 representing a particular response.

Some items were open-ended and required written responses. Each written answer provided was coded with a number to represent that answer and was entered into the computer for statistical analysis. It was noted, however, that many of these open-ended items were left blank. This may have been due to the length of time it took to fill in these items or it may have been the participant did not have a response. It is not possible
to determine which was the situation. A caution is noted in interpreting the data from the open-ended items since only about 50% gave a written response. This situation is noted where appropriate.

It was also noted on such questions as "How are you currently feeding your child" that some mothers wrote "N/A" which it was determined indicated the child was too old to bottle or breast-feed and was truly "not applicable". This response was added into the code before analysis of the data.

Data analyses for research question one

Research question one asked "What factors exist that encourage WIC mothers to initiate self-care in breast-feeding and/or continue breast-feeding?" This question was answered by analyzing data from Sections I and III of the questionnaire. The data with the highest number, that number being "five", represented the items which mothers felt were the most important factors that helped them decide to breast-feed and/or continue breast-feeding. Responses of the number "three" represented a "neutral" feeling about the subject matter being inquired about. A "one" was the lowest number possible and was the least desirable response as far as perceiving encouragement to breast-feed. Valid percents were used when there were missing data.

The factor listed as most influencing the participant's decision to breast-feed was that breast-feeding was the best way to feed a baby (85.4%, n=123). The second most frequent response was the importance of breast-feeding (81.2%, n=117). The third most important factor was the mothers' confidence to breast-feed while she was
pregnant (68.3%, n=97). Finally, the fourth response was the mother’s anxiousness about breast-feeding (52.6%, n=70). Table 2 provides a summary of the participants’ responses.

Other factors that encouraged initiation of breast-feeding or encouraged the participant to continue breast-feeding were: 1) attending physician (50.4%, n=62), 2) nurses (50.4%, n=62), 3) books and/or magazines (43.2%, n=51), 4) client’s mother (41.8%, n=50), 5) husband/child’s father (39.8%, n=47), 6) friends (36.3%, n=45), 7) sisters (27.4%, n=31), 8) television (26.7%, n=31), 9) organizations (24.1%, n=27), and finally, 10) mother-in-law (22.7%, n=27). Table 3 summarizes these findings.

In response to the item, “If you are not currently breast-feeding or have never breast-fed, what would have helped you start or continue breast-feeding?” The most common reason given that would have helped the mother continue to breast-feed was for her milk to not have dried up (20.0%, n=9). The second reason was to have received more breast-feeding education (15.6%, n=7) with the third and fourth most common reasons being having less pain with breast-feeding (13.3%, n=6) and more time to breast-feed (11.1%, n=5) respectively. Having a work/schedule conflict (11.1%, n=5) ranked fifth in the order of factors that affected starting or continuing breast-feeding.

One section of the questionnaire asked, “How available were the following to you while you were breast-feeding for support and encouragement?” This question was answered by analyzing data from Section IV of the breast-feeding questionnaire. Four scenarios were given and the clients answered the questions by circling the most applicable scale number. The answers ranged from “one” for never available to “five” for very often available. The response of “three” was a neutral feeling about the item subject.
Responses showed the factors that were most available were: 1) practical information on breast-feeding (73.3%, n=88), 2) encouragement by others who had successfully breast-fed (71.1%, n=86), 3) shared experiences with people who had actually breast-fed (68.1%, n=83), and finally, 4) emotional support from people around you (65.6%, n=78). Refer to Table 4 for a more complete outline of responses.

In summary, the most influential factors that encouraged mothers to breast-feed are the importance of breast-feeding and the mother felt it was best for her baby. Because of the significance of these two factors, mothers sought information while pregnant to help her become successful at breast-feeding. By talking to her health care provider, reading magazines/books, and gaining support/encouragement from her family, mothers were able to initiate breast-feeding and successfully continue once they began.

Data analysis for research question two

Research question two asked, "What problems do mothers encounter while breast-feeding?" This question was answered by analyzing data collected in Section II of the breast-feeding questionnaire. Likert scale questions were answered by the respondent circling the most appropriate answer labeled from "one" to "five" with "five" being the most problems they could ever imagine or so many problems that breast-feeding was discontinued. Items were grouped into four main headings: 1) family issues/problems, 2) physical issues/problems, 3) baby's issues/problems, and 4) health professional issues/problems. The range of percentages indicating little or no problem with each specific item was from 65% to 87% in all categories. The average percentages reported
were in the mid to high eighties. The alpha for the four sections ranged from .7972 to .8642 supporting an acceptable level of internal consistency for the sections.

In the family issues category, husband feeling left out (87%), no support from family members (86%), and older children feeling upset/jealous (85%) were the main issues identified as not posing a problem for the participants and breast-feeding. (See Table 5). Physical problems that had little or no effect on breast-feeding were personal illness (82%), mother feeling tired (80%), and the mother losing her figure (80%). (See Table 6.)

The baby issues category that had little or no problems with breast-feeding were: 1) baby required too many feedings (82%), 2) breast-feeding blamed for baby’s size (81%), and 3) baby being a poor feeder (79%). (See Table 7).

Health professional issues were also identified as being only a little or no problem. Eighty-five percent indicated they had no problem with support from MD and/or nurses. Only one mother stopped breast-feeding due to lack of support from her attending physician. Little or no problem was noted when mothers were asked if the MD or nurse suggested they stopped breast-feeding for various reasons. Eighty two percent and seventy nine percent respectively reported little or no problem on these items. (See Table 8).

In summary, the data reveals the issues that were little or no problem related to breast-feeding. However, factors that may become a problem if left unattended are also listed. The health professional section revealed the least amount of problems with the breast-feeding mothers. The range of little or no problem for this group had a low of 79%
to a high of 85%. The next group that had little or no problem affecting breast-feeding was the baby issues section. The range for this group was from 73% to 82%. The next representative group that had little or no problem with breast-feeding was physical issues. This group had a low of 67% and a high of 82%. This data is almost equal to the numbers shown in the family issues section. The low for the family section was 65% as the low and 87% as the high.

The issues listed that may become a problem if left unattended are: breast swelling/engorgement, personal illnesses of the mother, baby being a poor feeder, leaking breasts, mothers feeling like they do not have enough breast milk, baby being fussy after eating, and mom not knowing how much milk the baby took in. The last item is hard to measure, except for how satisfied the baby is after breast-feeding. This may be just an educational issue that should be addressed by the health professional before the mother begins breast-feeding.

Data analysis for research question three

Research question three asked, “What problems do mothers encounter that result in self-care deficits related to breast-feeding?” This question was answered from items in Sections II and III. Problems mothers encounter that result in self-care deficits and deter them from continuing to breast-feed were identified and some clients indicated that even though there were problems, they continued to breast-feed anyway. In addition, issues were identified that caused so many problems that breast-feeding was stopped. For ease of reporting and interpretation of data, responses from the two categories of “problem but
continued breast-feeding” and “stopped breast-feeding” were combined. The following are the results showing deterrents to continuing breast-feeding and/or items severe enough to result in stopping breast-feeding: 1) painful nipples while breast-feeding (28%), 2) felt didn’t have enough milk (26%), 3) leaking breasts (21%), 4) work/schedule conflict (18%), 5) breast swelling/engorgement (18%), 6) not knowing exact milk intake (17%), 7) baby fussy after feedings (16%), 8) mother taking medication (12%), 9) mom felt tied down (11%), and 10) baby refused to breast-feed (11%). See Table 9 for specific results.

One variable that was not reported on a table but was written in and needs to be discussed is breast milk drying up before the mother was ready to wean her baby. Seven percent (n=7) of the sample stated this was a problem and it interfered with continued breast-feeding. Breast-feeding education may be needed in this situation as the mother may not understand the physiology of breast-feeding and may not be doing things like fully emptying each breast, which compromises the milk production. A related problem is the mother feeling she does not have enough breast milk. This also has potential to be avoided with proper education. Findings revealed that 26% of mothers felt/believed they did not have enough breast milk and 13% of them stopped breast-feeding because of this. Interventions can take place to assure the mother her baby is healthy while breast-feeding and that she does have enough milk. Teaching about baby’s weight gain and how frequently to feed a newborn child may help the mother overcome her fear of not enough breast milk and assist her to continue breast-feeding beyond the first few weeks.

Key items that were identified as factors that were overwhelming enough to stop breast-feeding in women were: work/schedule conflict (13%), mom feeling she did not
have enough milk (13%), painful nipples (12%), mom taking medication (8%), baby refusing to eat (8%), and baby being fussy after feedings (7%). In comparison, factors that had little or no problem with breast-feeding were as follows: husband feeling left out (87%), having no support from family members (86%), older children being upset/jealous (85%), no support from MD/nurse (85%), personal illness (82%), nurse suggesting mom stop breast-feeding (82%), baby required too many feedings (82%), breast-feeding blamed for baby's size (81%), mom feeling tired (80%), mom losing her figure (80%), and finally, other people giving the baby a bottle against the mother's wishes (79%). These results can be seen in Tables 5 through 8.

In summary, there are several issues that may be corrected through proper education of the mother about breast-feeding. By analyzing the data obtained in Sections II and III of the breast-feeding questionnaire, deterrents to breast-feeding have been identified and can possibly be addressed and eliminated in the future. Classes taught at the WIC clinic may be the answer to this problem.

Data analysis for research question four

Research question four asked, "What part do other selected demographic variables play in whether a mother using WIC services breast-feeds her baby?" This question was answered by analyzing data from Section V of the breast-feeding questionnaire. Questions in this section were demographic in nature. There were also some questions that asked for the belief or opinion of the participant about breast-feeding. Some of the questions in this section were answered by choosing an answer in a scale.
format. As in other sections, some of the open ended questions were omitted and/or left blank.

Several variables were analyzed and compared mothers choice of breast-feeding or formula feeding. The following presents the major factors found to affect the breast-feeding decision.

Mothers were asked how well informed they felt about breast-feeding before their current child was born. Ninety three percent (n=78) of the breast-feeding group responded they were somewhat/very much informed. Of the mothers not breast-feeding, 80% (n=12) felt somewhat/very much informed about breast-feeding.

When asked if the mother would breast-feed again, 97.8% (n=88) of mothers who had breast-fed, stated they would breast-feed another child. In contrast only, 46% percent (n=5) of mothers who were formula feeding stated they would breast-feed their next child. It was not certain why mothers said they would breast-feed their next child when they were formula feeding the current child.

When asked if they had received written information about breast-feeding before the baby was born, only 53% (n=8) of formula feeding mothers stated they did receive written information while 89.7% (n=87) of the breast-feeding mothers stated they received written information concerning breast-feeding.

The importance of breast-feeding was ranked by participants of the study. Ninety three percent (n=99) of mothers who breast-fed stated that breast-feeding was important or very important to them. Of the formula feeding mothers, 35.7%, (n=3) responded that breast-feeding held little or no importance to them.
When asked if she had breast-fed a previous child, 74.4% (n=67) of mothers who had breast-fed at some time or were currently breast-feeding this child, stated they had. In the formula feeding group, 58.3% (n=7) stated they had breast-fed a previous child.

Participants were asked if their baby had been fed water and/or formula in the hospital. Fifty three percent (n=49) of mothers who were in the breast-feeding category replied “yes”, 12.9% (n=12) received water only, and of the formula fed group, 93.4% (n=14) had been fed water and/or formula in the hospital.

When asked if she received formula from the WIC clinic, 47% (n=25) of breast-feeding mothers stated “yes”. In the formula feeding group, 42.9% (n=30) stated “yes” they had received formula. See Table 10 for details of the demographic variables that reflect a difference between the breast-feeding mothers and the formula feeding mothers. It needs to be kept in mind that the latter group is relatively small and conclusions must be made with great caution.

Variables found to have little or no difference between the two groups of respondents include: baby’s gender, mode of delivery, and whether the mother attended childbirth or breast-feeding classes. Attending breast-feeding classes showed no difference in whether a mother breast-fed or not. Thirty one percent (n=30) of the mothers attended breast-feeding classes with this pregnancy and breast-fed after delivery, yet 49% (n=47) never attended breast-feeding classes and was either currently breast-feeding or had previously breast-fed this child.

In summary, the findings suggest there are demographic type differences between the breast-feeding mothers and the formula feeding only mothers. The breast-
feeding mothers see breast-feeding to be important or very important, were well informed on breast-feeding before delivery, will breast-feed another child, and received written information about breast-feeding before delivery of this child. The formula only group did not respond as positively to these areas. However, the two groups were not found to be different in relation to the baby’s gender, type of delivery, and whether the woman had or had not attended childbirth or breast-feeding classes. The findings also suggested that those who have not attended classes do as well with breast-feeding as those who do attend. These findings offer areas for future study and have nursing intervention implications.

Data analysis for research question five

Research question five, “How well are mothers in this sample meeting the Healthy People 2000 goal of 70% breast-feeding at birth and 50% at six months post partum?” This question was answered by analyzing data from Section I of the Hill (1991) Questionnaire. Eighty seven (84%) of the respondents, who specifically indicated how they were currently feeding their youngest child, had breast-fed at some time after the birth of their youngest child. Thirty-one respondents (25.6%) were currently breast-feeding. About 42% (n=42) were breast-feeding at 24 weeks and 33% (n=33) were still breast-feeding from 28 to 76 weeks. One mother was an outlier to the rest of the participants, breast-feeding for 104 weeks. The Healthy People 2000 goal of 70% at birth was exceeded by this group as 84% (n=87) had breast-fed their youngest child at some time. However, the goal of 50% breast-feeding at six months was not met with only 42%
(n=43) continuing to breast-feed through 24 weeks. The range of breast-feeding was 1 to 104 weeks.

Table 11 provides a summary of the current feeding type and shows a difference in how long the baby receives breast or formula feeding. Of the currently feeding formula only group, the child may receive a bottle until at least 24 months while breast-feeding stops at about one year for nearly all participants. This may be due to the fact that the currently breast-feeding mothers who participated just happened to have the younger babies, as the total sample data shows some have breast-fed a baby until about two years of age.

The data presented in Table 12 also suggests a need to look at why breast-feeding is started by a large percentage of the mothers but does not continue beyond the 3rd-4th weeks (25%). Data in Table 13 suggests a need to intervene very early to assist the mother to continue to breast-feed. About 80% of the participants started to breast-feed their child, but only about 41% of those who started to breast-feed, continued to 24 weeks (6 months).

Martial status and years of education were not found to be significantly related to duration of breast-feeding. Age of mother was correlated with duration of breast-feeding, \( r=0.362, p=0.000 \) \((n=98)\).

In summary, the WIC sample do meet the Healthy People 2000 goal for breast-feeding at birth, but fall short for the six month goal of 50%. Breast-feeding was voluntarily chosen by the mothers participating in the study.
CHAPTER 5

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

Discussion

This descriptive, comparative study was conducted to examine factors that affect breast-feeding choice and practice in mothers served by a WIC clinic in the southwestern United States. The breast-feeding questionnaire developed by Hill (1991) was used for data collection. The questionnaire had been used by the author to assess factors that affect breast-feeding in WIC served mothers versus non-WIC served mothers.

The study population was defined as women who access a WIC clinic in Southern Utah. The data were collected by randomly selecting participants as they came into the clinic for services. Some women accessing this clinic were under 18, but are considered emancipated minors and are treated as adults by the clinic. Data analysis was conducted by entering raw data into the computer and computing appropriate analyses. The sample obtained was generally reflective of the area served by the WIC clinic. The majority of the participants were married, Caucasian, and were in the 21 to 35 year age range. Of the 150 randomly selected women, 144 completed the questionnaire for a 96% participation rate.
At the time of the survey, 69.9% of the mothers were formula feeding their youngest child while 18.4% were only breast-feeding and another 11.7% were using both breast-feeding and formula to feed their youngest child. The mean age of the participants' youngest baby (the child of interest for this study) was 13.19 months. The ages ranged from 1-48 months.

The first research question "What factors exist that encourage WIC mothers to initiate self-care in breast-feeding and/or to continue breast-feeding?" was answered with data related to feelings about breast-feeding and its importance, and things and people who were encouraging or discouraging to the participant breast-feeding.

The strongest feeling about breast-feeding was that it "is the best way to feed the infant". The people and things the participants found most encouraging were the physician and nurse (50% by each), and books/or magazines (43%) and the participant's mother (43%). The latter should be considered when planning and offering educational programs.

Things that were identified as less supportive or problematic were "being anxious about breast-feeding" (27%) and worried about "ability or confidence to breast-feed". In addition, the mothers noted more education, having less pain while breast-feeding, and having more time to breast-feed would have helped to continue breast-feeding longer. The most mentioned item was having milk dry up before the mother planned to stop breast-feeding. Considering the age of most of the babies, the latter may have been due to a lack of knowledge on how to maintain lactation as long as the mother desired. This finding is consistent with the noted need for more education on breast-feeding. These
findings are also supported by other studies (Hauck and Dimmock, 1994).

Research question two was “What problems do mothers encounter while breast-feeding?” The family issues showed four areas of problems: people giving a bottle, lack of privacy, feeling tied down, and return to work or schedule conflict. The physical issues found to be problem areas for at least 10% of the respondents were taking medications, not knowing how much milk the baby had taken, breast swelling/engorgement, felt she did not have enough milk, and leaking breasts. Baby issues were poor feeder, refusing to eat from the breast, and being fussy after feeding. The most noted problem in the professional area was the physician suggesting the mother stop breast-feeding. There are interventions to reduce the degree of problems of each of these areas. More information being provided both before delivery and especially in the early days and weeks after delivery would seem a good opportunity for the nurse agency to intervene and result in the mother breast-feeding longer.

Research question three “What problems do mothers encounter that result in self-care deficits related to breast-feeding?” was answered with a summary of items in section three of the questionnaire. Findings from four areas showed problems encountered with breast-feeding that resulted in the participant’s stopping breast-feeding were: return to work/conflict, felt did not have enough milk, baby refusing to eat and being fussy after eating, the physician suggesting the mother stop breast-feeding, and taking medication. The problems related to not enough milk and baby being fussy after feedings, have potential to be reduced with more support and information about how to be more effective in breast-feeding. Work schedule suggests support in the work place for
pumping breasts and storing the milk so the mother can continue to breast-feed while she works is a project for the mother to negotiate with her employer and also a good project for breast-feeding support organizations to raise consciousness of the business world to the benefit of such support for their employees and the community as a whole with potentially healthier children and good publicity. Taking medications may not be modifiable if the health of the mother would be compromised. However, modifications of a prescription might be possible if the practitioner looks at all options before prescribing a medication that is contraindicated for a breast-feeding mother. Again, the literature has similar findings (Bar-Yam, 1993, Benson, 1996, Buchko et al, 1993, Dix, 1991).

Breast swelling, baby refusing to eat, returning to work/schedule conflict, feeling tied down, and the mothers believing she will enough breast milk for the baby are all examples of problems identified in this study. These problems can be extinguished if proper interventions are taken. WIC clinic staff take these problems into account when the mothers come in for other WIC services. Leaking breasts may be more of a social problem than a physical one, but this is an example of a problem that may lead to breast-feeding discontinuation if left unresolved. Intervention by a health professional may be adequate to help overcome this problem. Nursing pads may be given to the client with specific instructions on how to use them and this may alleviate the problem. Painful nipples also may be a problem due to improper positioning of the baby while breast-feeding. Nursing education with some specialized attention may be enough to alleviate this problem also.

Buchko et al (1993) and Dix (1991) discuss that comfort measures are important
for breast-feeding continuation. If the mother had painful nipples, leaking breasts, or breast swelling/engorgement, this is uncomfortable and may pose such a problem that breast-feeding is stopped. Interventions can be implemented early on to possibly prevent this problem from occurring and deterring breast-feeding duration. The other problems mentioned may also be avoided if identified early.

Research question four was, "What part do other selected demographic variables play in whether a mother using WIC services breast-feeds her baby?" Differences were identified between the mothers who breast-fed at some time and those who used only formula to feed their child. Nearly all breast-feeding mothers (92.5%) viewed breast-feeding as "very important" compared to the formula only group (35.7%). Also, 97.8% of the breast-feeding group responded they would breast-feed again in comparison to only 45.5% of the formula only group. The latter finding can be viewed as a group to target for increasing breast-feeding. The way to do this may be identified by another difference that was found. In the formula only group, only 53.3% responded they had information on breast-feeding before delivery compared to 89.7% of the breast-feeding group. This finding suggests a need for breast-feeding information early in the pregnancy and is supported by the fact that most of the breast-feeding mothers indicated they made the decision to breast-feed early in their pregnancy. Providing information on breast-feeding and providing it early is supported by Beske and Garvis, 1982, Rentschler, 1991.

An interesting finding is that while 31% of the breast-feeding mothers attended breast-feeding classes at some point, 49% indicated they had never attended such classes. This finding suggests mother's are getting information in other ways and this fact should
be kept in mind when planning breast-feeding information activities. This should also be considered as an area of further study to refine the information process and procedures to be more efficacious. Planning and holding breast-feeding classes is expensive in the professionals time, effort, and salary. There is much to motivate refinement of the educational offerings.

Gigliotti (1995) revealed attitude as a major factor in breast-feeding success. It is the opinion of this researcher that if the attitude of the mother is positive from the beginning, these hurdles can be overcome and hopefully avoided. In comparison, if the mother has a negative attitude in any way, the appearance of a minor problem can quickly become a major one and breast-feeding could become a part of the past. In support of this fact, Baisch, Fox, and Goldberg (1989) found that positive attitudes towards breast-feeding was directly related to previous exposure to breast-feeding. Again, the current study supports this finding. Sixty seven percent of the respondents state previous experience as the reason breast-feeding was chosen before delivery. The intervention of teaching the mother about breast-feeding while receiving pre-natal care, gives the mother facts in which she can make an informed decision.

The current study revealed employment status, the number of the current child in birth order, the mother receiving formula from the hospital, the baby being fed water and/or formula in the hospital, and how successful the mother felt about breast-feeding while pregnant, all had an impact on the breast-feeding decision. The literature reviewed only slightly mentions, if at all mentions, these latter issues. It should be noted that the sample surveyed is fairly representative of the total population. Random selection of

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participants was done to help eliminate any bias the study might have.

Research question five was "How well are the mothers meeting the Healthy People 2000 goal of 70% breast-feeding at birth and 50% at six months postpartum?"
The data supported the position that this group exceeded the goal of 70% at birth with at least 84% of the sample breast-feeding at some time with their youngest child. However, the data shows that the six months or 24-26 week age most had stopped breast-feeding (66.7%, n=68). By 44 weeks, 83.3% had stopped breast-feeding and most stopped at 52 weeks (91.2%). Another area for further study is why one fourth stop breast-feeding before one month. There was one outlier who continued breast-feeding for two years. The small group who continue to breast-feed for the 12 to 18 months should be studied in more detail to determine if there are some key variables that keeps them breast-feeding. These findings could be used in extending the breast-feeding duration of other mothers.

Conclusions

The study findings are supported by the literature. Hawkins, Nichols, and Tanner (1987) found that breast-feeding was longer in duration in women enrolled in WIC if they were married and had a higher education level. Age was positively correlated with duration of breast-feeding while marital status and years of education were not found to be correlated.

Neifert, Gray, Gary, and Camp (1988) suggested that women who were still breast-feeding at two months post partum, would breast-feed longer. Age, ethnic background, and/or educational level had no bearing on breast-feeding duration in their
study. Support of the breast-feeding mother is a huge factor that will help with the initiation/continuation of breast-feeding. The American Academy of Pediatrics (1997) and the La Leche League (1997) both have published books stating breast-feeding is the best method of feeding for a child in its first year of life and both comment that support of the mothers breast-feeding decision is a key factor for increased duration of actual breast-feeding activities.

Support of Orem’s Self Care Deficit Theory

Results derived from this study supports the self-care deficit theory developed by Orem. These women sought assistance from the WIC clinic staff with the pregnancy and/or care and feeding of their child, indicating a self-care deficit of supportive-educative systems. Findings from the study supports the position the participants seek and use professional intervention in order for their breast-feeding to be successful. Satisfaction of breast-feeding and length of breast-feeding once initiated, were important variables in the self-care deficit theory used to support this study.

It is important for the mother to identify a need for assistance or a deficit in their child and then seek help from professionals to find an answer to her breast-feeding questions or problems.

Orem’s theory of self-care is supported or initiated by the client in attempting their own remedies at home to correct a specific problem and if this is not sufficient, seeking supportive-educative intervention by the health professionals through the WIC clinic. Breast-feeding is a unique activity that requires information or knowledge even
though many see breast-feeding as a natural behavior to be accomplished by all new mothers. However, mothers need to be taught how to breast-feed as much as they need anticipatory guidance for their child each time they visit their health care provider. Caring for a child requires as much teaching and learning as how to breast-feed successfully. Contrary to the myths, neither one just comes naturally. Both takes a lot of attention and support.

Orem discusses in her work the self-care agency. She describes this as the power of the individual to engage in the estimative and productive operations for self-care. Breast-feeding is part of the self-care agency. Mothers need to become very active in the process of breast-feeding if they are to be successful at it. Many of the respondents in this study were breast-feeding and were attending breast-feeding classes to learn the correct technique to master this activity. However, interestingly enough, conclusions show breast-feeding was not automatically chosen after taking breast-feeding classes nor was a correlation found between successful breast-feeding and attendance at breast-feeding classes. This raises the question of why. The answer could be the theory is lacking or the classes do not meet the self-care deficit needs. This study cannot determine if either is the reason the position was not supported. Further study is needed to answer this question.

Orem also discusses that all of her concepts must work from each other to create a whole concept. This crosses over to the mother accessing the WIC clinic. The registered nurses and dieticians must work together with the mother in order for the whole concept to work. Togetherness is the major factor in this study since no one should work alone when it comes to the health of a newborn child. Again, the data from this study do
not directly support or negate this position and requires further study.

Limitations of the Study

Limitations noted in this study are several in number. First, the questionnaire was lengthy and some clients did not finish the questions completely. It was noted that questions that required more than just circling the most appropriate answer, such as the open ended questions were left blank. This resulted in missing data.

Another limitation observed by this researcher was the fact 150 questionnaires were distributed to clients, but only 144 were returned. It is assumed the clients took them home or threw them away before they were completed. However, the 96% return rate is acceptable.

Limitations due to the questionnaire's lack of prior use should also be noted. As previously discussed, this questionnaire has only been used once before by the researcher who developed it for her own research project. Further reliability and validity testing is suggested. Length of the tool and use of open-ended items should also be considered in future use.

One limitation that may or may not impact this study is the fact that 86.7% of the respondents were White/Caucasian. The next group most represented were American Indians (7.8%). Other ethnic groups were minimally represented. The response by race is relatively similar to the community served. However, projection of the findings and conclusions beyond the clinic under study should be done with caution.
Implications of the study for nursing

This study will help enhance the nursing field where maternal/child health is concerned. By identifying factors that hinder or encourage breast-feeding, programs around the nation can be developed to help promote the breast-feeding decision made by mothers on a daily basis. Information can be distributed early on even before pregnancy occurs, to help mothers understand the process of breast-feeding—the mental process as well as the physical process. If the mother has a positive attitude about breast-feeding, generally anything can be accomplished.

While analyzing data collected from this study, it was discovered many women attributed their breast-feeding success on materials read either before pregnancy or during pregnancy. Health care professionals should take the responsibility to discuss the breast-feeding subject with each and every woman of child bearing age. The mother may not choose to breast-feed after listening to the discussion or reading the literature, but at least the decision she makes will be an “informed” decision.

The literature and the findings of this study show a relatively high percent of women make breast-feeding decisions before pregnancy occurs. In response to this, the literature by Neifert et al, 1988 and Bar-Yam, 1993, suggests breast-feeding education be initiated in the high school curriculum for teenage girls in order for them to be made aware of breast-feeding and its concepts. This is something to be considered with the rise of teenage pregnancy.
Recommendations for further research

The findings and conclusions raise support for further research and study. Further revisions and refinement of the breast-feeding questionnaire is recommended. More study designed to test the validity and reliability of the tool is needed. Other populations use of breast-feeding should be studied in addition to the low income population used in this study. Women of higher education should be sampled as well as women of diverse ethnic backgrounds. Religious influence on the decision to breast-feed may or may not want to be addressed, depending on the majority of religious affiliates in the area sampled.

With all the available information, scientific facts, and support groups, breast-feeding percentages continue to be low. The reason for this is not clear, especially since the benefit of breast-feeding has been published repeatedly in the literature. As the twenty-first century approaches, mothers need to take the initiative to better educate themselves on the best choice of infant feeding not only for themselves, but for their children.

In conclusion, specific assessments should be made of all patients in clinics that deliver pre-natal care in order to identify potential problems early so interventions can be initiated immediately for in a more timely manner to increase initiation, duration, and success of the breast-feeding process. The outcome, based on scientific support of the benefit of breast-feeding to child development, will be healthy, more able children, and adults.
Additional comments

It was noted that some information reported on the breast-feeding questionnaire was alarming when interpreted. For example, one WIC mother indicated that her child was 12 months old and had not yet received solid foods. Although the identity of the mother was unknown, this finding was discussed with the registered nurses and dieticians in the WIC clinic. Ironically, a mother had visited the WIC clinic that day that had a child fitting the problems indicated in the questionnaire. It was discovered the child really hadn't received any solid foods and had dropped a tremendous amount of weight. The doctor was notified and the child was hospitalized for the treatment of malnutrition. The mother was taken aside and issues of child feeding was discussed. An incident similar to this one occurred again two weeks later with another child. Again, the doctor was notified and proper treatment was initiated. These incidents are excellent examples of how appropriate information can be both preventative and curative.
REFERENCES


Table 1

Demographic Data Summarizing Age, Marital Status, and Ethnic Background of the Sample (n=144).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-20 years</td>
<td>14</td>
<td>10.9</td>
</tr>
<tr>
<td>21-25 years</td>
<td>59</td>
<td>46.1</td>
</tr>
<tr>
<td>26-30 years</td>
<td>31</td>
<td>24.2</td>
</tr>
<tr>
<td>31-36 years</td>
<td>16</td>
<td>10.2</td>
</tr>
<tr>
<td>37-43 years</td>
<td>8</td>
<td>8.6</td>
</tr>
<tr>
<td>Missing</td>
<td>16</td>
<td>-</td>
</tr>
<tr>
<td>Marital Status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Married</td>
<td>21</td>
<td>15.9</td>
</tr>
<tr>
<td>Married</td>
<td>95</td>
<td>72.0</td>
</tr>
<tr>
<td>Divorced</td>
<td>12</td>
<td>9.1</td>
</tr>
<tr>
<td>Separated</td>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td>Ethnic Background:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>111</td>
<td>86.7</td>
</tr>
<tr>
<td>American Indian</td>
<td>10</td>
<td>7.8</td>
</tr>
<tr>
<td>Mexican/American</td>
<td>4</td>
<td>3.1</td>
</tr>
<tr>
<td>Missing</td>
<td>16</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 2

Summary of factors that influenced mothers to choose breast-feeding.

<table>
<thead>
<tr>
<th></th>
<th>None/Little</th>
<th>Neutral</th>
<th>Lot/Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>1. Breast-feeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Best way</td>
<td>2</td>
<td>1.4</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Importance of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast-feeding</td>
<td>7</td>
<td>4.9</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Confidence of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast-feeding</td>
<td>24</td>
<td>16.9</td>
<td>21</td>
</tr>
<tr>
<td>During pregnancy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Anxiousness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>About Breast-feeding</td>
<td>37</td>
<td>27.0</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3

Summary of factors that encourage or very much encourage

( initiate/continue ) breast-feeding ( n=99 ).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending Physician</td>
<td>62</td>
<td>50.4</td>
</tr>
<tr>
<td>Nurse</td>
<td>62</td>
<td>50.4</td>
</tr>
<tr>
<td>Books/Magazines</td>
<td>51</td>
<td>43.2</td>
</tr>
<tr>
<td>Your Mother</td>
<td>50</td>
<td>41.8</td>
</tr>
<tr>
<td>Husband</td>
<td>47</td>
<td>39.8</td>
</tr>
<tr>
<td>Friends</td>
<td>45</td>
<td>36.3</td>
</tr>
<tr>
<td>Sister</td>
<td>31</td>
<td>27.4</td>
</tr>
<tr>
<td>Television</td>
<td>31</td>
<td>26.7</td>
</tr>
<tr>
<td>Organizations</td>
<td>27</td>
<td>24.1</td>
</tr>
<tr>
<td>Mother-in-law</td>
<td>27</td>
<td>22.7</td>
</tr>
</tbody>
</table>
Table 4

**Availability of factors for breast-feeding support and encouragement.**

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>%</th>
<th>Rarely avail.</th>
<th>Neutral</th>
<th>%</th>
<th>Available/ very often avail.</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Practical info</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On breast-feeding</td>
<td>6</td>
<td>5.0</td>
<td>26</td>
<td>21.7</td>
<td>88</td>
<td>73.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Encouragement by</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others who had</td>
<td>15</td>
<td>12.4</td>
<td>20</td>
<td>16.5</td>
<td>86</td>
<td>71.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Successfully BF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Shared experiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with people who</td>
<td>17</td>
<td>13.9</td>
<td>22</td>
<td>18</td>
<td>83</td>
<td>68.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>had actually BF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Emotional support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From people</td>
<td>14</td>
<td>11.7</td>
<td>27</td>
<td>22.7</td>
<td>78</td>
<td>65.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Around you.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5

Summary of family issues/problems encountered while breast-feeding (least to most).

<table>
<thead>
<tr>
<th>Problem</th>
<th>No/little prob. %</th>
<th>Neutral %</th>
<th>Prob. but cont. %</th>
<th>Stopped %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family issues:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Husband feeling Left out</td>
<td>87</td>
<td>11</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2. No support from Family members</td>
<td>86</td>
<td>11</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3. Older children Upset/jealous</td>
<td>85</td>
<td>13</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. Illness of Family Members</td>
<td>85</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5. Other people Gave bottle Against wishes</td>
<td>79</td>
<td>13</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>6. No privacy to Breast-feed</td>
<td>79</td>
<td>11</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>7. Felt tied down</td>
<td>75</td>
<td>12</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>8. Return to work/ Schedule conflict</td>
<td>65</td>
<td>14</td>
<td>5</td>
<td>13</td>
</tr>
</tbody>
</table>
Table 6

Summary of physical issues/problems encountered while breast-feeding (least to most).

<table>
<thead>
<tr>
<th>Problem No/little prob.</th>
<th>Neutral %</th>
<th>Prob. but cont. %</th>
<th>Stopped %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical issues:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Personal Illness</td>
<td>82</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>2. Mom felt tired</td>
<td>80</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>3. Lost your Figure</td>
<td>80</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>4. Breast infection</td>
<td>79</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>5. Taking Medications</td>
<td>78</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>6. Inverted/flat Nipples</td>
<td>77</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>7. Not knowing Exact milk Intake</td>
<td>71</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>8. Breast swelling/Engorgement</td>
<td>69</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>9. Felt didn’t Have enough Milk</td>
<td>69</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>10. Leaking breasts</td>
<td>67</td>
<td>11</td>
<td>18</td>
</tr>
</tbody>
</table>
Table 7

Summary of baby issues/problems encountered while breast-feeding (least to most).

<table>
<thead>
<tr>
<th>Problem No/little prob.</th>
<th>Neutral %</th>
<th>Prob. but cont. %</th>
<th>Stopped %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby issues:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Baby required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Too many Feedings</td>
<td>82</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>2. BF blamed for Baby's size</td>
<td>81</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>3. Baby poor Feeder</td>
<td>79</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>4. Baby refused To eat</td>
<td>77</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>5. Felt respons. For feeding Baby</td>
<td>77</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>6. Baby fussy after Feedings</td>
<td>73</td>
<td>10</td>
<td>9</td>
</tr>
</tbody>
</table>

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Table 8

**Summary of health professionals issues/problems encountered while breast-feeding**
(least to most)

<table>
<thead>
<tr>
<th>Problem</th>
<th>No/little prob.</th>
<th>Neutral</th>
<th>Prob. but cont.</th>
<th>Stopped</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td><strong>Health professionals issues:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. No support</td>
<td>85</td>
<td>13</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>From MD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. No support</td>
<td>85</td>
<td>12</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>From nurse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Nurse suggested</td>
<td>82</td>
<td>13</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Stop BF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. MD suggested</td>
<td>79</td>
<td>11</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Stop BF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Only % reported as n was 99 for each table.
Table 9

Summary of problems that deter mothers from continuing breast-feeding (most to least (n= 99)).

<table>
<thead>
<tr>
<th>Problem</th>
<th>Problem but cont.</th>
<th>Stopped BF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painful nipples</td>
<td>16%</td>
<td>12%</td>
<td>28%</td>
</tr>
<tr>
<td>Felt didn’t have enough milk</td>
<td>13%</td>
<td>13%</td>
<td>26%</td>
</tr>
<tr>
<td>Leaking breasts</td>
<td>18%</td>
<td>3%</td>
<td>21%</td>
</tr>
<tr>
<td>Breast swelling/engorgement</td>
<td>13%</td>
<td>5%</td>
<td>18%</td>
</tr>
<tr>
<td>Work/schedule conflict</td>
<td>5%</td>
<td>13%</td>
<td>18%</td>
</tr>
<tr>
<td>Not knowing Exact milk intake</td>
<td>12%</td>
<td>5%</td>
<td>17%</td>
</tr>
<tr>
<td>Baby fussy after Feeding</td>
<td>9%</td>
<td>7%</td>
<td>16%</td>
</tr>
<tr>
<td>Taking medication</td>
<td>4%</td>
<td>8%</td>
<td>12%</td>
</tr>
<tr>
<td>Felt tied down</td>
<td>8%</td>
<td>3%</td>
<td>11%</td>
</tr>
<tr>
<td>Baby refused to eat</td>
<td>3%</td>
<td>8%</td>
<td>11%</td>
</tr>
<tr>
<td>Lost her figure</td>
<td>8%</td>
<td>-</td>
<td>8%</td>
</tr>
</tbody>
</table>

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Table 10

*Selected variables and decision to breast-feed or formula feed.*

<table>
<thead>
<tr>
<th></th>
<th>Breast-fed sometime</th>
<th>Formula feeding only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>1. Importance of BF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No/little</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>7</td>
<td>6.5</td>
</tr>
<tr>
<td>Imp/Very Imp.</td>
<td>99</td>
<td>92.5</td>
</tr>
<tr>
<td>2. How well informed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did you feel about BF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>While you were preg.?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not</td>
<td>5</td>
<td>2.1</td>
</tr>
<tr>
<td>Poor</td>
<td>5</td>
<td>5.3</td>
</tr>
<tr>
<td>Some/Very</td>
<td>78</td>
<td>92.6</td>
</tr>
<tr>
<td>3. Received written info</td>
<td></td>
<td></td>
</tr>
<tr>
<td>About BF before delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>87</td>
<td>89.7</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>10.3</td>
</tr>
<tr>
<td>4. BF any previous Children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=102)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>67</td>
<td>74.4</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>21.1</td>
</tr>
</tbody>
</table>

(table continues)
5. Would you BF again? 
(n=101)

<table>
<thead>
<tr>
<th></th>
<th>Breast-fed sometime</th>
<th>Formula feeding only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>88</td>
<td>97.8</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>2.2</td>
</tr>
</tbody>
</table>

6. Baby fed water or Formula in hospital

<table>
<thead>
<tr>
<th></th>
<th>Breast-fed sometime</th>
<th>Formula feeding only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>49</td>
<td>52.7</td>
</tr>
<tr>
<td>No</td>
<td>35</td>
<td>37.6</td>
</tr>
</tbody>
</table>

7. Received formula from WIC (n=60)

<table>
<thead>
<tr>
<th></th>
<th>Breast-fed sometime</th>
<th>Formula feeding only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>25</td>
<td>47.2</td>
</tr>
<tr>
<td>No</td>
<td>28</td>
<td>52.8</td>
</tr>
</tbody>
</table>
Table 11

Summary of type of feeding at the time of the survey (n=103).

<table>
<thead>
<tr>
<th>Type of feeding</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula only</td>
<td>72</td>
<td>69.9</td>
</tr>
<tr>
<td>Breast only</td>
<td>19</td>
<td>18.4</td>
</tr>
<tr>
<td>Both</td>
<td>12</td>
<td>11.7</td>
</tr>
<tr>
<td>Missing/NA</td>
<td>41</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 12

Summary of type of feeding and duration of feeding in weeks.

<table>
<thead>
<tr>
<th>Current age</th>
<th>Bottle</th>
<th>Breast</th>
<th>Both</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>0-3</td>
<td>12</td>
<td>17.6</td>
<td>7</td>
<td>36.8</td>
</tr>
<tr>
<td>4-8</td>
<td>18</td>
<td>26.5</td>
<td>8</td>
<td>42.1</td>
</tr>
<tr>
<td>9-12</td>
<td>17</td>
<td>25.0</td>
<td>4</td>
<td>21.1</td>
</tr>
<tr>
<td>13-18</td>
<td>12</td>
<td>17.6</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>19-24</td>
<td>9</td>
<td>13.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>25-48</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Duration in weeks</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4</td>
<td>19</td>
<td>21.9</td>
</tr>
<tr>
<td>6-8</td>
<td>8</td>
<td>9.2</td>
</tr>
<tr>
<td>9-12</td>
<td>7</td>
<td>8.0</td>
</tr>
<tr>
<td>13-16</td>
<td>8</td>
<td>9.2</td>
</tr>
<tr>
<td>17-20</td>
<td>4</td>
<td>10.3</td>
</tr>
<tr>
<td>24 (6 months)</td>
<td>8</td>
<td>9.2</td>
</tr>
<tr>
<td>23-44</td>
<td>10</td>
<td>11.4</td>
</tr>
<tr>
<td>28</td>
<td>4</td>
<td>4.8</td>
</tr>
<tr>
<td>52 (1 year)</td>
<td>7</td>
<td>8.0</td>
</tr>
<tr>
<td>60-72</td>
<td>7</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Table 13

Summary of when the breast-feeding is stopped (n=87).
APPENDIX B
BREAST-FEEDING QUESTIONNAIRE
Section I: This section asks questions about your beliefs about breast-feeding.

1. What is the age of your youngest child? ____________________________

2. How are you currently feeding this child? _____ Bottle _____ Breast _____ Both

3. If you are bottle-feeding, did you breast-feed your youngest child at any time?
   Yes _____ No _____ If you answered yes, how long did you breast-feed? ____________________________

Instructions: Please circle the number that most accurately describes your feelings for each question.

4. During pregnancy, how important was it for you to breast-feed your baby?

   Of no importance Of little importance Neutral Importance Very important
   ___________ ___________ ___________ ___________ ___________

5. When all things are considered, how much do you believe that breast-feeding is better than other types of infant feeding?

   Not at all A little Neutral A lot Very much
   ________ ________ ________ ________ ________

6. During pregnancy, how confident did you feel about breast-feeding your baby?

   Very Slightly  Neutral Very
   Worried Worried Confident Confident
   ________ ________ ________ ________

7. Generally speaking, how anxious were you about breast-feeding once you were actually breast-feeding your baby?

   Not anxious Not very  Neutral Very
   At all Anxious Anxious
   ________ ________ ________ ________

8. What is the most important reason for breast-feeding your baby?
   (Circle the MOST important one.)

   Believed that you and baby would develop close feelings ____________________________
   Believed that breast-feeding was the most natural way to feed your baby ____________________________
   Convenience of breast-feeding ____________________________
   Breast-feeding provides better food for baby than bottle feeding ____________________________
   Breast-feeding would help regain your figure ____________________________
   Breast-feeding would save time ____________________________
   Desire to be a "complete" woman or feel self-satisfied ____________________________
   Other (please explain) ____________________________

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### Section II: How much of a problem were the following for you while breast-feeding?

(Answer that the answer "lots of problems" means you had problems serious enough to make you stop breast-feeding.)

**Instructions:** Before responding to the questions that follow, please study carefully what numbers 1-5 mean.

1. **Personal illness**
2. **Illness of other family members**
3. **Inverted/bent nipples**
4. **Taking medications**
5. **Unhappy/hot feeling left out**
6. **Baby was fussy after most feedings**
7. **Baby was not gaining weight**
8. **Baby was a poor feeder**
9. **Had painful nipples**
10. **Had leaking breasts**
11. **Breast swelling/engorgement**
12. **Refused to eat**
13. **Breast infection**
14. **Baby required too many feedings**
15. **Feeling tired**
16. **No privacy during breast-feeding**
17. **Lost your figure**
18. **Older children were upset or jealous**

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illness of other family members</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inverted/bent nipples</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taking medications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unhappy/hot feeling left out</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby was fussy after most feedings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby was not gaining weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby was a poor feeder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had painful nipples</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had leaking breasts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast swelling/engorgement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refused to eat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast infection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby required too many feedings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling tired</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No privacy during breast-feeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lost your figure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Older children were upset or jealous</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section II: (continued)

<table>
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<tr>
<th>Number</th>
<th>Description</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.</td>
<td>You received no support from your doctor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>You received no support from your husband/child's father for</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>breast-feeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>You received no support from family members</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Other people gave the baby bottle feeding against your wishes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Physician suggested you stop breast-feeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Nurse suggested you stop breast-feeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Breast-feeding was blamed for your baby's small size or slow growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>You had to return to work and could not arrange your schedule to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>continue breast-feeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>You felt tied down at home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>You felt totally responsible for feeding your baby</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Not knowing exactly how much milk your baby had taken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>You felt/believed you did not have enough milk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you circled 4 or 5, what made you think you did not have enough milk?

---

31. Other reasons for stopping breast-feeding

---

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Section III: This section asks questions about who encouraged and discouraged you while breast-feeding.

Instructions: Before responding to the questions that follow, please study carefully what numbers 1-5 mean.

1 = Definitely discouraged me while breast-feeding;
2 = Slightly discouraged me while breast-feeding;
3 = Neutral. I have no opinion about this; I have no feelings one way or another;
4 = Encouraged me during breast-feeding;
5 = Very much encouraged me while breast-feeding;

How much influence did the following have on you while breast-feeding?

1. Friends who had nursed their babies .................................................... 1 2 3 4 5
2. Your mother ........................................................................... 1 2 3 4 5
3. Mother-in-law/child's father's mother .................................................... 1 2 3 4 5
4. Sister ................................................................................................ 1 2 3 4 5
5. Your husband/child's father .............................................................. 1 2 3 4 5
6. Your physician ............................................................................. 1 2 3 4 5
7. Nurse ............................................................................................. 1 2 3 4 5
8. Your friends at work ....................................................................... 1 2 3 4 5
9. Classes on breast-feeding you attended ........................................... 1 2 3 4 5
10. Books or magazines on breast-feeding you read ................................ 1 2 3 4 5
11. Television or other groups .............................................................. 1 2 3 4 5
12. Organizations or other groups ......................................................... 1 2 3 4 5
13. Other (please specify)____________________________________________

14. Prior to delivery, what most influenced your decision on how to feed your child?

___________________________________________________________

___________________________________________________________

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Section IV: How often were the following resources available to you during the entire time you breast-fed your baby?

Instructions: Before responding to the questions that follow, please study carefully what numbers 1-5 mean.

1 = Never available to me during breast-feeding;
2 = Rarely available to me during breast-feeding;
3 = Neutral. I have no opinion about this; I have no feelings one way or another;
4 = Available to me during breast-feeding;
5 = Very often available to me during breast-feeding;

1. Shared experiences with people (friends, relatives) who had actually breast-fed their babies ..................................................... 1 2 3 4 5
2. Encouragement by others you know who had successfully breast-fed their babies ................................................................. 1 2 3 4 5
3. Practical information on breast-feeding ............................................................. 1 2 3 4 5
4. Emotional support from people around you ................................................ 1 2 3 4 5
5. Generally speaking, how important was your husband's (or child's father's) support to your efforts to breast-feed during the entire time you breast-fed your baby?

<table>
<thead>
<tr>
<th>Importance</th>
<th>Of little Importance</th>
<th>Neutral</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

6. Generally speaking, how did your husband (child's father) react to your breast-feeding during the entire time you breast-fed your baby?

<table>
<thead>
<tr>
<th>Strongly Displeased</th>
<th>Displeased</th>
<th>Neutral</th>
<th>Pleased</th>
<th>Very Pleased</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

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Section V: This section asks some personal questions including how you are now feeding your infant.

Instructions: Please circle only one number for each question, or fill in the blank where specified.

1. Your current age: ________ years

2. Your marital status: (Circle number):
   - Never married .............................................. 1
   - Married ..................................................... 2
   - Divorced ................................................... 3
   - Separated .................................................. 4
   - Widowed ................................................... 5

3. How many years of schooling have you completed?

   Highest Degree awarded: ______________________

4. What is your race/ethnic background:
   - White/Caucasian ............................................. 1
   - Black/African American .................................... 2
   - Oriental ...................................................... 3
   - Mexican/American .......................................... 4
   - Puerto Rican ................................................ 5
   - American Indian ............................................ 6
   - Other .......................................................... 7
   - If other, please specify ______________________

5. Are you currently employed outside the home?
   - Yes, presently employed full time ...................... 1
   - Yes, presently employed part time ...................... 2
   - No, do not work outside the home ...................... 3
   - No, but planning to go back to work ................... 4
   - Attending school part or full time ..................... 5
   - I am both working and attending school ................ 6

   This is the ______ child for me (list which child 1st, 2nd, etc).
Section V: (continued)

7. Did you breast feed any of your previous children? (Circle one).

   Yes ... 1
   No ... 2

Breast-fed:

<table>
<thead>
<tr>
<th>Child</th>
<th>Yes</th>
<th>No</th>
<th>How long?</th>
<th>Successful?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Sex of present baby? (Circle one.)

   Male ........ 1
   Female ...... 2

9. Baby's birth weight: __________________________

10. How was the baby delivered? (Circle one)

   Through the vagina ..................... 1
   Ceparectomy section .................... 2

11. While in the hospital, did you keep your baby in the room with you? (Circle one)

   Yes .................................. 1
   No ................................... 2
   Not applicable, baby born at home ...... 3

12. While in the hospital, was your baby fed water and/or formula? (Circle one).

   Yes, water only .......................... 1
   Yes, formula only ........................ 2
   Yes, both water and formula ............ 3
   No water or formula ..................... 4
   I am not sure ............................ 5

13. Did you and your baby go home from the hospital at the same time?

   Yes .................................. 1
   No ................................... 2
   Does not applicable, baby born at home . 3
Section V: (continued)

14. Did you attend childbirth classes? (Circle all that apply)

- Yes, with this pregnancy .......... 1
- Not with this pregnancy .......... 2
- Attended with prior pregnancy .......... 3
- Have never attended .......... 4

15. Did you attend classes on breast-feeding? (Circle all that apply).

- Yes, with this pregnancy .......... 1
- Not with this pregnancy .......... 2
- Attended with prior pregnancy .......... 3
- Have never attended .......... 4

16. Did you receive written information about breast-feeding during this pregnancy? (Circle One)

- Yes .......... 1
- No .......... 2

If the answer was yes, was the information from a book, pamphlet, etc? (Please explain and identify source of material if possible).

17. Please indicate where you received breast-feeding instructions or help? (Circle all that apply).

Received breast-feeding help:

<table>
<thead>
<tr>
<th>Help Type</th>
<th>Before Birth</th>
<th>After Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. In doctor's office by doctor</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>B. In doctor's office by nurse</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>C. Classes at hospital</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>D. Clinic at WIC center</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>E. A nurse calling on phone</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>F. A nurse visiting my home</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>G. Friends or relatives that have breast-fed</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>H. A member of a group of mothers</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Other—please explain:__________________________

18. Before your baby was born, how well informed about breast-feeding did you feel? (Circle one).

- Very informed .......... 1
- Some what informed .......... 2
- Poorly informed .......... 3
- Not informed .......... 4
## Section V: (continued)

19. When did you decide how you were going to feed your baby? (Circle one).

<table>
<thead>
<tr>
<th>Duration</th>
<th>Circle One</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before becoming pregnant</td>
<td>1</td>
</tr>
<tr>
<td>During first three months</td>
<td>2</td>
</tr>
<tr>
<td>During 4-6 months</td>
<td>3</td>
</tr>
<tr>
<td>During 7-9 months</td>
<td>4</td>
</tr>
<tr>
<td>After baby's birth</td>
<td>5</td>
</tr>
</tbody>
</table>

20. Who most influenced on how to feed your baby? 

21. How soon after the birth of your baby did you begin to feed your baby? (Circle one).

<table>
<thead>
<tr>
<th>Time After Delivery</th>
<th>Circle One</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 1 hour</td>
<td>1</td>
</tr>
<tr>
<td>2 hours</td>
<td>2</td>
</tr>
<tr>
<td>3 hours</td>
<td>3</td>
</tr>
<tr>
<td>4 hours</td>
<td>4</td>
</tr>
<tr>
<td>5 hours</td>
<td>5</td>
</tr>
<tr>
<td>6 hours</td>
<td>6</td>
</tr>
<tr>
<td>7 hours</td>
<td>7</td>
</tr>
<tr>
<td>8 hours</td>
<td>8</td>
</tr>
</tbody>
</table>

21. A If you did not start breast-feeding within 8 hours after delivery, please indicate in the blank below how many hours it was after delivery when you breastfed for the first time.

<table>
<thead>
<tr>
<th>Hours After Delivery</th>
<th>Circle One</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>I am not sure</td>
<td>10</td>
</tr>
</tbody>
</table>

22. Have you received samples of infant formula from: (Circle all that apply).

<table>
<thead>
<tr>
<th>Source</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Physician</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. WIC Clinic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

23. If yes on any of the above, how old was your baby when you first gave formula? (Be as specific as possible.)

<table>
<thead>
<tr>
<th>Days/weeks</th>
<th>Circle One</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No formula given</td>
</tr>
</tbody>
</table>

24. Would you continue to give infant formula if WIC formula coupons were not available? (Circle one)

<table>
<thead>
<tr>
<th>Answer</th>
<th>Circle One</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Not applicable</td>
<td>3</td>
</tr>
</tbody>
</table>
Section V: (continued)

25. If WIC vouchers for formula were not available, would you continue to use WIC for any other services?
   Yes ........................................ 1
   No ........................................ 2

26. How old was your baby when you completely stopped breast-feeding? (Be as specific as possible).
   __________ Days or weeks
   __________ Am still breast-feeding

27. If you are no longer breast-feeding or did not breast-feed, what (if anything) would have helped you to start or continue to breast-feed?

28. Did you feel you had enough breast milk to satisfy your baby while you were breast-feeding?
   Yes ........................................ 1
   No ........................................ 2

29. During the first 8 weeks, did you feed your baby solid foods such as cereal or fruit? (Circle one).
   Yes ........................................ 1
   No ........................................ 2

30. If yes, how old was your baby when solid foods were started? (Be as specific as possible).
   __________ weeks
   __________ Not giving solids yet

31. If you have started solids, what was the reason you did so?

32. How successful did you/do feel about breast-feeding?
   (Circle the number that applies to you).
   Not at all  Slightly  Successful  Very Successful  
   Slightly  Neutral  Successful  Successful
   1  2  3  4  5

33. If you have another child, would you breast-feed that child? (Circle one)
   Yes ........................................ 1
   No ........................................ 2
APPENDIX C
PERMISSION TO USE INSTRUMENT
UniversiTy of Illinois
at Chicago

February 10, 1998

Sandy Snow
PO Box 1507
Saint George, Utah 84771

Dear Ms. Snow:

Thank you for your inquiry today with respect to breastfeeding tools. Please find enclosed three sets of questionnaires. The blue breastfeeding booklet was used with WIC and non-WIC mothers. The three booklets paper clipped were used with mothers of LBW infants and the last two sheets are being used with mothers of preterm infants in an ongoing project.

You have my permission to use any of the materials enclosed. Please provide credit where appropriate. Thank you.

Sincerely,

Pamela D. Hill, PhD, RN
Associate Professor
UNIVERSITY OF NEVADA, LAS VEGAS

Protocol Form for Research Involving Human Subjects

Submit to Office of Sponsored Programs: Original of this cover form and attach your protocol (including any questionnaires and informed consent) Log Number: ____________ Date Received: ____________

Investigator (Please print). Last person principally responsible for the investigation on line B. If principal investigator is a student, faculty advisor on line B.

Investigator: ____________
Department: ____________
Mail Stop: ____________

A. SANDRA SNOW
NURSING

B. MARGARET LOUIE
NURSING

Title of Project: FACTORS THAT EFFECT BREAST-FEEDING IN WOMEN WHO ACCESS WIC CLINICS IN SOUTHERN UTAH


Type of Submission: ______ New ______

Previous Log Number (If any):

Location of Facilities where study will take place: SOUTHERN UTAH WIC CLINIC

Subjects: (Please estimate numbers.)

☐ Patients as experimental subjects
☐ Persons as controls
☐ Minors (under 18)
☐ UNLV students
☐ Program women or females
☐ Mentally disabled

Numbers: 25 Normal weight women
1 UNV WIC MINORS
25 EMANCIPATED PERSONS
125 NORMAL ADULTS
25 EMANCIPATED PERSONS

Procedures ATTACH reader materials, such as questionnaires, interview schedules, written test instruments, etc.

☐ Survey, questionnaire(s)
☐ Interview: face-to-face person
☐ Medical or other personal records
☐ Filming, taping, recording (Attach written consent)
☐ Observation
☐ Participate observations
☐ Anthropological fieldwork (attach CURRENT approval)
☐ Psychological interviewing
☐ Incomplete disclosure of procedure
☐ Vocational
☐ Other body fluids, excreta

☐ Investigational drug
☐ Approved drug, new use
☐ Investigational Device
☐ Placebo
☐ Irritating Radiation
☐ Surgery
☐ Payment of subjects

*Provide FDA Authorization and IHO Number

Date: 6/1/98

Principal Investigator's Signature

Date: ____________

Faculty Advisor's Signature (if applicable)
DATE: June 23, 1998

TO: Sandra Snow (NUR-3018)

FROM: Dr. William E. Schulze, Director
       Office of Sponsored Programs (X1357)

RE: Status of Human Subject Protocol Entitled:
    "Factors That Affect Breast-Feeding in Women Who
    Access WIC clinics in Southern Utah"
    OSP #501s0698-047e

The protocol for the project referenced above has been
reviewed by the Office of Sponsored Programs and it has been
determined that it meets the criteria for exemption from
full review by the UNLV human subjects Institutional Review
Board. This protocol is approved for a period of one year
from the date of this notification and work on the project
may proceed.

Should the use of human subjects described in this protocol
continue beyond a year from the date of this notification,
it will be necessary to request an extension.

If you have any questions regarding this information, please
contact Marsha Green in the Office of Sponsored Programs at
895-1357.

cc: M. Louis (NUR-3018)
    OSP File
PROTOCOL FORM APPROVAL SHEET
FOR RESEARCH INVOLVING HUMAN SUBJECTS

Log Number: ____4-1998__________________

Title of Project: Factors that effect breast feeding in women who access WIC clinics in southern Utah

Investigator: ____Sandy Snow and Margaret Louis

After reviewing this proposal, the members of the Department of Nursing, Human Subjects Rights Review Committee indicated below their approval/disapproval of this proposal.

<table>
<thead>
<tr>
<th>Signature of Committee Members</th>
<th>Approve</th>
<th>Disapprove</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____________________________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____________________________</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>_____________________________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____________________________</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above named project is hereby ___approved___ (circle one).

Date: 6-13-98 ________________________

Committee Chairperson's Signature

________________________

Committee Chairperson's Signature
CONSENT FOR PARTICIPATION

Dear Mom:

Let me take a few moments to introduce myself. I am Sandy Snow, a graduate student at the University of Nevada, Las Vegas. Women using the WIC clinic are being approached at random and are being asked to participate in a study on why mothers decide to breast-feed. The information obtained from participants such as yourself will be used to better help other women who come to WIC for information on how best to feed their newborn child.

I would like to invite you to fill out a questionnaire as a voluntary participant in a project being conducted to assess factors that either encourage or discourage mothers to breast-feed or not to breast-feed. Your involvement will take about 15 minutes, just the amount of time it takes to complete a survey form answering a few questions about how you are feeding your child.

All information obtained will remain confidential and your name will not be used. The information will only be used by the researcher to draw conclusions from this study. If you wish to have information sent to you concerning the results, please contact the researcher at the number listed below.

If you have any questions regarding this research study, please contact Sandy Snow at (702) 895-3360. If you have any questions concerning your rights as a research subject, contact the UNLV Special Projects Office at (702) 895-1337.

Again, let me remind you that your participation is voluntary and you are able to withdraw from the study at any time. Participation in this project in no way jeopardizes your involvement in the WIC program nor does it affect the services you need.

Thank you for your cooperation in this research study.

Sincerely yours,

Sandy Snow, R.N., B.S.N.
APPENDIX E
PERMISSION TO USE WIC CLINIC SITE

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To Whom It May Concern:

Sandy Snow has permission from The Washington County Health Department and the Utah State WIC Office to use the Washington County WIC Clinic in collecting data for her thesis. Sandy has developed a questionnaire and once the WIC employees receive the okay from the client, the questions will be presented by Sandy.

Pregnant teens and moms under the age of 18 do not need parental or guardian permission to access the WIC clinic; they are treated as legal adults when it comes to access for services. Sandy has agreed to maintain the confidentiality of the information obtained as well as the identification of the clients.

If any questions or concerns arise during this study, Sandy may feel free to contact us. We appreciate your support of our services.

Sincerely,

Den Johnson, MPA
Utah State WIC Program Director
SLC, Utah 84114-4470
(800) 662-3638

Pat Thomas, RN
Washington County Nursing Supervisor
285 West Tabernacle
St. George, Utah 84770
(435) 673-3528 ext. 45
VITA
Graduate College
University of Nevada, Las Vegas

Sandra C. Snow

Home address:
St. George, Utah

Degrees:
Associate Degree of Science, Nursing, 1983
Weber State University

Bachelor of Science, Nursing, 1987
Westminster College, Salt Lake City

Thesis Title: Factors that effect breast-feeding in women who access WIC clinics in Southern Utah

Thesis Examination Committee:
Chairperson, Dr. Margaret Louis, R.N., Ph.D.
Committee Member, Dr. Rosemary Witt, R.N., Ph.D.
Committee Member, Patricia Alpert, R.N., MSN.
Graduate Faculty Representative, Dr. Shirley Emerson, Ph.D.