Strategies to Help Promote and Support Breastfeeding

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To the faculty of Washington State University:

The members of the committee appointed to examine the Intercollegiate College of Nursing research requirements and manuscript of WENDY K. SMITH find it to be satisfactory and recommend that it be accepted.

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ABSTRACT

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The purpose of this paper is to present strategies that the Nurse Practitioner can use to promote and support breastfeeding to primiparous women in the prenatal phase. A comprehensive review of the research literature examining what factors influence women to breastfeed is presented first. An investigation into how various breastfeeding beliefs affect a woman's decision to breastfeed and what impact the Nurse Practitioner can have on women in the prenatal phase is explored. The advantages of breastfeeding an infant are emphasized in many of the articles reviewed and are also supported by the Healthy People 2010 campaign. The aim of this paper is to present strategies to promote and support breastfeeding to primiparous women early in pregnancy. The Theory of Multiple Intelligences is employed to produce such strategies. Three strategies are highlighted here with an end goal of helping women to increase the initiation of breastfeeding and helping the Nation meet the Healthy People 2010 objectives for breastfeeding.
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Strategies to Help Promote and Support Breastfeeding

Purpose Statement

The purpose of this paper is to present strategies that the Practitioner can use to promote and support breastfeeding to primiparous women in the prenatal phase. A comprehensive review of the research literature examining what factors influence women to breastfeed is presented first. An investigation into how various breastfeeding beliefs affect a woman's decision to breastfeed and what impact the Nurse Practitioner can have on women in the prenatal phase is explored. The Theory of Multiple Intelligences (Figure 1) is introduced and used to create new teaching strategies for potential breastfeeding mothers in the prenatal phase. A key focus is to examine the many benefits of breastfeeding in order to help Practitioners promote and support this feeding choice among new moms, while also helping meet the Healthy People 2010 objectives for breastfeeding.

Background

Influences on a woman's decision to breastfeed have changed immensely in the United States throughout history. This is due, in part, to changes in culture, society, and the family structure. The medical community has also transformed their opinion on breastfeeding over time. Until the 1940's, it was commonplace for most mothers to breastfeed their infants. From the 1940's to the 1970's, breastfeeding incidence dropped dramatically, reaching an all time low of 25% in 1970. Since that time, the proportion of all mothers who breastfeed their infants in the early postpartum period has risen. In
1980, the incidence had risen to 52% and in 1997 it was 62% (www.cdc.gov/nchs).

*Healthy People 2010*, the United States healthcare agenda, was established in the Year 2000 in order to set standardized goals for our Nation’s health. It is self-defined as, “... a national health promotion and disease prevention initiative that brings together national, state, and local government agencies to address major public health issues” (www.health.gov/healthypeople). Specific health objectives regarding breastfeeding goals for the year 2010 are found in Section 16: Maternal, Infant, & Child Health, Objective 16-19. Proposed targets are to increase the proportion of women who initiate breastfeeding from 64% (1998) to at least 75% by 2010, and to increase the prevalence of breastfeeding at 6 months from 29% (1998) to at least 50% by 2010. This paper references *Healthy People 2010* as a hallmark resource for research and uses it as a backdrop to compare statistical data.

Another important advocacy group was formed in 1995 called the United States Breastfeeding Committee (USBC). Initially, a small group of breastfeeding advocates met to discuss the need for coordination of breastfeeding in our Nation. In 2001, the USBC established a strategic plan for breastfeeding and named it *Protecting, Promoting, Supporting Breastfeeding in the United States: A National Agenda*. The strategic plan states, “...the health of our Nation is one of our most important resources. Breastfeeding, a relatively basic, simple, and cost-effective measure, can have a significant impact on establishing the foundation for a lifetime of optimal health and can result in reduced health care spending” (p. 4). The USBC has set forth several...
goals that are each defined by objectives, strategies, and activities aimed toward achieving the uniformed purpose of increasing breastfeeding. It is important to educate Nurse Practitioners about this plan in order to raise awareness about breastfeeding and its significance to the health of the United States.

Review of Literature

Many people hold varied beliefs about breastfeeding. A woman’s choice to initiate breastfeeding may stem from positive attitudes toward breastfeeding among social and familial contacts. Libbus, Bush, and Hockman (1997) studied beliefs regarding breastfeeding in low-income primigravid women. A descriptive design study was done under the conceptual framework of the Theory of Planned Behavior (TPB). Libbus et al. interviewed 41 pregnant women who intended to breastfeed. The investigators discovered most women in this study believed breastfeeding is a healthier feeding choice than formula, encompassing both its physical and emotional benefits. The study concluded that initiating breastfeeding requires deliberate action from the mother and can best be explained with the TPB model. Outcome findings suggested the advantages of breastfeeding were improved infant health and bonding, while the disadvantages were interference with maternal schedules, inability of others to feed the infant, and physical discomfort. Myths about breastfeeding may be an obstacle in a woman’s actual initiation of breastfeeding. The authors emphasized, “... information and instruction about breastfeeding that is accurate and positive must be provided to both women and key referent persons or groups who influence women’s feeding decisions” (p. 148). The health care community can provide substantial support and intervention for these women.
Health care professionals’ attitudes toward breastfeeding will be discussed at length later in this review.

Mothers Attitudes Toward Breastfeeding

It has been well established that breastfeeding is the premium choice for feeding an infant child (Burglehaus, Smith, Sheps, & Green, 1997; HHS Blueprint for Action on Breastfeeding, 2000; Moreland & Coombs, 2000; www.aap.org; www.lalecheleague.org). According to statistics produced by the U.S. Department of Health & Human Services, the overall prevalence of postpartum breastfeeding in 1998 was 64%, with the proportion of all mothers whose infants still breastfed at age 6 months at 29% and at one year 16% (www.health.gov/healthypeople). A key area identified in the literature is the need to intervene with first-time mothers during the prenatal phase, to help them make an educated decision regarding breastfeeding.

Anderson-Keith (1997) performed a qualitative study using the methods of grounded theory to explore factors affecting infant feeding choice. Extensive interviews with 8 women were conducted and 14 themes were identified. Conclusions were made that breastfeeding affords positive benefits for infants. Anderson-Keith explored several conceptual categories, which revealed both positive and negative reasons why a woman chooses to breastfeed. The popular myth that breastfeeding is instinctual was dispelled in this study. Breastfeeding is a skill and takes the efforts of both the infant and mother dyad to be successful. Lactation is an inevitable result of pregnancy, however the skills necessary to breastfeed are not. The ability to breastfeed occurs on a learning curve,
which needs a degree of attention either from knowledgeable family members, friends, or health care professionals in order to assist a newly breastfeeding mother.

Duckett, Henly, Avery, Potter, Hills-Bonczyk, Hulden, & Savik (1998) used the Theory of Planned Behavior (TPB) to explain the variability in breastfeeding intention and duration. The study design was prospective, multi-correlational, and longitudinal. Groups of first-time moms from a total of 602 women provided datasets for the purpose of model-testing. The groups were separated into mothers who were homemakers (n=180), mothers who worked less (5-20 hours/week prior to 6 months postpartum) (n=110), and mothers who worked more (more than 20 hours/week prior to 6 months postpartum) (n=312). The authors found “... in each group, breastfeeding duration is more highly correlated with intention than any other predictor variable” (p. 331). This study supported the Libbus, Bush, and Hockman (1997) study, by including a comprehensive, theoretically based model, the Theory of Planned Behavior, to better explain breastfeeding outcomes and personal motivation for breastfeeding behaviors.

Forrester, Wheelock, and Warren (1997) explored attitudes and other factors toward breastfeeding. In their study, a survey questionnaire was sent out to 346 high school students and 244 college students in Alabama inquiring about their perceptions of breastfeeding. Significant to the study was the gender breakdown of those sampled (male, n=181; female, n=409). Numerous factors associated with the Nation’s low breastfeeding rate were identified repeatedly in the research. These factors include maternal age, low educational level, low socioeconomic class, ethnicity, and lack of
social networks or support. Information gathered by the investigators’ questionnaire included questions regarding students’ attitudes toward breastfeeding in various places, associated embarrassment, and sources from which students received information on breastfeeding. Most students in this study thought education could change perceived embarrassment associated with breastfeeding which would increase the number of women choosing to do so. This is significant to the nursing profession because both nurses and nurse practitioners are in a unique position to teach and positively influence women. According to Forrester and colleagues, “...in order for breastfeeding to be recognized as the norm, more effort must be directed toward educating school-aged children and the public” (p. 36). The authors’ findings suggested embarrassment to be a major barrier to breastfeeding beliefs among high school students even though positive attitudes about breastfeeding were high. As a result of this reported embarrassment, practitioners must be sensitive to the needs of pregnant women in this age group.

Forste, Weiss, and Lippincott (2001) studied how racial differences were associated with the decision to breastfeed. Logistic Regression technique was used with a sample of women with young children (18 months or younger) from the National Survey of Family Growth. The National Survey showed that many maternal characteristics affect the decision to breastfeed. Demographic factors included the mother’s age at the birth of the child, race, Hispanic ethnicity, and if the mother was born outside the US. The National Survey revealed about 20% of women of Hispanic ethnicity had ever breastfed their child, 26% of white women had done so, and 3% of black women had breastfed their child. Black women and white women were the focus.
of this particular study. The effects of other maternal characteristics on the decision to breastfeed were also examined, including measures of socioeconomic background, maternal employment, and education. About 57% of all the mothers in the study breastfed their infants, 65% of the mothers were white, 30% were black. "After controlling for background characteristics such as income, education, marital status, and low birth weight, race continued to have an independent effect on the decision to breastfeed. Black women were 2 1/2 times less likely to breastfeed than were white women" (p. 293). The primary reason given by black women to not breastfeed was "preference for bottle-feeding".

The 11th annual World Breastfeeding Week in August of 2001 was sponsored by Le Leche League International and the World Alliance for Breastfeeding Action and promoted the slogan "Breast Is Best". Historically, Black women have not been as receptive to this message. The U.S. Department of Health and Human Services (HHS) Blueprint for Action on Breastfeeding 2001 reports, "... breastfeeding is not viewed positively among African American women" (p. 9). There is difficulty for these women to receive information on breastfeeding, and to receive help initiating breastfeeding in the hospital. A number of reasons might explain why so few black women breastfeed. There have traditionally been wide racial and ethnic gaps in breastfeeding due to the lack of support for breastfeeding in the family, community, workplace, health care sector, and society.
According to statistics from the Center for Disease Control and Healthy People 2010, early postpartum breastfeeding rates for black women are 45%, compared to 68% of white women and 66% of Hispanic women (www.health.gov/healthypeople).

Nineteen percent of Hispanic or Latino women met the goal for women to breastfeed for the first full year of their infant’s life, 17% of white women did so. Only 9% of African American mothers met the goal for 25% of mothers to breastfeed their babies through the end of the first year (HHS Blueprint for Action on Breastfeeding, 2000). The Blueprint for Action emphasizes the importance of increasing breastfeeding rates and especially closing the wide racial and ethnic gaps in breastfeeding.

Attitudes Among Health Care Professionals

A mother’s decision to initiate and continue breastfeeding may also be influenced by the health care community. Several studies reviewed, (Burglehaus, Smith, Sheps, & Green, 1997; Freed, Clark, Sorenson, Lohr, Cefalo, & Curtis, 1995; Moreland & Coombs, 2000; Patton, Beaman, Csar, & Lewinski, 1996) beliefs about breastfeeding among health care professionals varied significantly. Freed et al., (1995) examined physicians’ breastfeeding knowledge, attitudes, training, and experience. This research study suggests physicians are ill-prepared for their role of counseling women about breastfeeding. The quantitative descriptive design used a survey to question a national random sample of 3115 resident physicians and 1920 practicing physicians. The outcomes of the authors’ assessments found 30% of practicing physicians chose incorrect advice for mothers with low milk supply. Additionally, less than 50% of residents chose appropriate clinical management for breastfed-jaundiced infants. These results can be
generalized to other physicians in the Nation, as the demographics of the sample are similar to those seen nationally. Freed et al., concluded that physicians and residents have neither the experience, nor the formal training to advise lactating women with breastfeeding concerns.

Burglehaus et al., (1997) conducted a study of physicians and breastfeeding which sought to determine which predisposing factors could be targeted in order to improve physicians’ willingness, motivation, and ability to counsel women who breastfeed. This Canadian research study was pilot-tested on 325 obstetricians, pediatricians, family practitioners, and general practitioners of British Columbia.

“The aims of the investigation were: 1) to provide baseline data on attitudes, beliefs, knowledge and self-efficacy concerning breastfeeding counseling in a generalizable population of physicians; and 2) to estimate the relative amount of variance in counseling practices accounted for by measures including cognitive factors, gender, specialty, years in practice and personal or spousal experience” (p. 384).

The method involved an 8-page questionnaire with 40 closed-ended questions. The study demonstrated a high prevalence of erroneous advice, lack of interest and misinformation regarding breastfeeding among the four specialties sampled. Reliability analyses using Cronbach’s alpha was performed on the questionnaire. Results showed 90% of respondents reported always or usually discussing breastfeeding with patients prenatailly and 88% of physicians reported always or usually attempting to convince mothers to breastfeed, if they intended to bottle-feed. Ninety-four percent of physicians reportedly
always or usually encourage patients to continue breastfeeding, in the face breastfeeding problems. Most physicians attempted to convince women to breastfeed if they believed in the immune properties of breast milk and were confident in their own breastfeeding counseling. Female providers expressed greater confidence in counseling the mother about breastfeeding problems and in positioning the infant at breast. There was evidence that physicians can influence breastfeeding initiation and duration. Specific short-term training sessions would probably improve physicians’ self-confidence in counseling these women.

Many other researchers (Burgelhaus et al., 1997; Humenick, Hill, & Speigelberg, 1998), studying health professionals and breastfeeding counseling have found disappointing gaps of knowledge among physicians and primary care providers, which builds upon Freed et al.’s (1995) research. Hollander (2001), however, found encouraging results in his study, which revealed, “... three-quarters of American women who give birth are encouraged by a doctor or nurse to breastfeed, and three-quarters of those who receive such encouragement nurse for some period of time” (p. 184). This study drew upon a large convenience sample of 1229 women who were randomly selected to complete a survey. In this study, 73% of the women were white, 13% were black and 14% were Hispanic. In the bivariate analysis, the highest proportions of women who had ever breastfed were married, older than 25 years, Caucasian or Hispanic. They also had the highest level of education (more than a secondary education), income (> $20,000), lived in the West, and had attended childbirth classes. The majority of the respondents to the survey (73%) said a physician or nurse had encouraged them to
breastfeed. There was no significant association found when logistic regression analyses looked to see if provider’s encouragement affected breastfeeding duration.

Humenick, Hill, & Spiegelberg (1998) studied breastfeeding and health professional’s encouragement. The large prospective study sampled 340 primiparous mothers or those giving birth to their second child. The authors’ objective was to determine the nature of the visits between health care professionals and the mothers with regards to breastfeeding encouragement. Over a 20-week prenatal period, 341 women rated the type of breastfeeding advice given to them. The results of the professionals’ advice were divided into strongly positive, mildly positive, mixed and negative. “Lactation consultants gave significantly more positive encouragement (98%) than either nurses (75%) or physicians (68%)” (p. 305). Lactation consultants were overwhelmingly most likely to give strongly positive breastfeeding advice.

Lazzaro, Anderson, and Auld (1995) found that medical professionals were more likely to hold the belief that the mother’s mother, friends, and husband were more influential in persuading one to breastfeed than a hospital nurse, lactation consultant or medical doctor. This study examined 464 medical professionals via confidential questionnaire. Respondents were asked at which age they thought weaning from breastfeeding was too early. The sample group consisted of mostly middle-class Caucasian professionals in Colorado who had regular contact with new mothers or pregnant women. Ninety-one percent of medical doctors (MD) sampled and 92% of nurses reported advocating breastfeeding when a mother was undecided about her
Feeding choice. Even more significant was the response to the question regarding advocating breastfeeding to a mother, who had decided to bottle-feed her infant. Forty-two percent of MD respondents, 27% of Licensed Practical Nurses, and 25% of Registered Nurses responded that they would advocate breastfeeding to a mother who already decided to bottle-feed. These statistics may be a better indicator of health care professionals' attitudes toward breastfeeding.

Patton, Beaman, Csar, and Lewinski (1996) specifically examined nurses' attitudes and behaviors that promote breastfeeding. This was a descriptive correlation study, which assessed maternity nursing staff at 20 midwestern hospitals. A total of 230 anonymous responses were received. Lewinski developed a 19-item questionnaire with open-ended questions. Each component had a 4-point Likert-type category to measure nurses' attitudes and behaviors toward breastfeeding. The study's findings suggested 64% of the nurses on the maternity floor sampled would recommend or actively encourage breastfeeding and were very interested in helping a woman learn how to breastfeed. Time was a significant barrier to teaching proper breastfeeding techniques to these women. The article acknowledged that staff members' preconceived ideas or personal beliefs about nursing sometimes hindered lactation success. The authors reported, "... our data supported the conventional wisdom that maternity nurses with higher education know more about breastfeeding, and that nurses' personal biases and knowledge deficits hinder breastfeeding promotion" (p. 114). In synthesizing the reviewed research, a central theme emerged. A woman's success with breastfeeding
is dependent on early informative management. Guidance must be offered before birth, immediately after birth, and for six months postpartum in order to achieve the goals set forth by Healthy People 2010.

**Mothers’ Intentions**

Similarities have been found in the literature regarding the demographics of women who choose to breastfeed. Lawson and Tulloch (1995) published results of a project that examined breastfeeding duration, prenatal intentions, and postnatal practices. According to Lawson and Tulloch, demographic variables can predict breastfeeding intentions immediately post-partum and at three months. Their study was unique because it considered 78 women who were experiencing their first pregnancy, as opposed to multiparous women whom may or may not have already breastfed their first child. “Previous breastfeeding experience has shown to powerfully influence whether an infant is breastfed” (p. 842). The authors inquired about women’s breastfeeding initiation and duration while trying to predict the continuation of breastfeeding for at least twelve weeks. Ages of the women ranged between 18 and 35 years old. Ninety percent of respondents had continued their education beyond grade ten. The authors’ found that 91% of women’s prenatal intentions were to breastfeed their infant for at least four to six months. This is a surprisingly high number, considering the statistics from Healthy People 2010 stated that for 1998, 64% of mothers breastfed their infant immediately postpartum (www.cdc.gov/nchs).

In the postpartum period, Lawson and Tulloch identified many variables as being influential on successful breastfeeding. Age, income level, and education have all been
identified as being influential on the decision to breastfeed. Also the type of birth, vaginal versus Caesarean, influenced breastfeeding incidence in this study. The authors found putting an infant to breast soon after birth supports the infant's strong rooting reflex, which in turn supports the initiation of breastfeeding continuation. Of those who had Caesarean deliveries, it was not always immediately feasible for the mother to nurse, even if there was the desire.

Predictors of breastfeeding duration were divided into two groups in Lawson and Tulloch's study. The first consisted of characteristics and attitudes identified prior to the baby's birth. A higher level of education, high school or above, was correlated with a higher number of those who chose to breastfeed their infants. Timing of the decision to breastfeed also impacted breastfeeding duration. If the decision to breastfeed was made prenatally or very early in the pregnancy, the woman would be less likely to wean before 12 weeks. Intended duration of breastfeeding and commitment to feeding for that period was influential on actual breastfeeding duration. This supports the work done by Libbus et al., (1997) and Duckett et al., (1998) with the use of the Theory of Planned Behavior model. Women's confidence in coping with breastfeeding problems and attitudes toward formula were found to correlate with increased breastfeeding duration. The second group of predictors comprised post-birth experiences. If the timing of the first feeding occurred within the first few hours of birth, the duration of breastfeeding was greater. The number of hours the infant was cared for by others in the first 72 hours of life and total number of breastfeeding problems encountered were also influential. In analysis of all variables, it was determined that women who breastfed fully for the entire twelve week post-partum
period had on average, a grade 10 or higher level of education. They also made their
decision to breastfeed prior to conception, intended to feed for at least four to six months
and had a negative attitude toward formula. Additionally, the women’s infants had more
often been nursed within the first hour of life and were cared for by others for less than
16 hours in the first 72 hours of life. This supports the movement in maternity wards to
have the newborn room-in with the mother in order to facilitate post-partum bonding and
early successful breastfeeding. The time spent between mother and infant in the
immediate postpartum period has also been shown to be beneficial in other ways. For
example, it allows the mother to detect cues of hunger from the baby. The time spent
aids in bonding, as well as providing an opportunity for maternity nurses to educate
women on the basics of lactation management (Lawson & Tulloch, 1995).

Sable and Patton (1998) correlated prenatal lactation advice and intention to
breastfeed with consideration of selected maternal characteristics. This study utilized the
Healthy People 2000 objective as a framework to emphasize the need for concentrated
efforts by prenatal providers to help women initiate breastfeeding. Their study explored
whether mothers’ prenatal providers asked them to consider breastfeeding and if this
influenced mothers’ prenatal plans to breastfeed. This was then compared with how the
women would feed their infants considering certain maternal characteristics. The
hypothesis is that women with certain demographics are less likely to have planned to
breastfeed and that these women are less likely to be counseled to consider breastfeeding.
The demographic variables included young, non-white, unmarried, lower educated, and
poor women. The investigators used data from the National Institute of Child Health and Human Development (NICHD)/Missouri Maternal and Infant Health Survey (MMIHS). Data were obtained from maternal questionnaires. Women were queried about their prenatal plans for infant feeding. The total population studied was n=2205. About half the women in the study sample were in their twenties (52.8%). Results showed that prenatal providers do not appear to be routinely advising women to consider breastfeeding. A disappointing 37.1% of mothers in the study reported receiving this advice. Among those who received prenatal breastfeeding advice, 43% reported planning to exclusively breastfeed their infant, 18.2% planned to both breast and bottle-feed, 37.2% planned to bottle-feed, and 1.7% did not know how they were going to feed their infants. Differences among breastfeeding rates of all demographic categories were also statistically significant. In summary, the study found numerous reasons for the issues of breastfeeding to be discussed early in the prenatal period, noting that most women make their choice about how they will feed their infant well in advance of the birth of their child, and are unlikely to change their minds. The earlier the breastfeeding can be introduced the better chance of influencing a mother’s decision.

In a somewhat contradicting study, Humphreys, Thompson, and Miner (1998) found breastfeeding rates may be improved with the use of family members, peer counselors, and lactation consultants. It was found that these key referent people might be more effective in aiding a newly lactating mother than health care professionals. The baby’s father was typically found to be the most influential member of the woman’s social support system and seemed instrumental in the infant feeding decision. The
method used in this study was a cross-sectional, convenience sampling strategy. The women were of any age, race, or ethnicity and were in any stage of pregnancy. The sample was comprised of 1001 women who were predominantly African American or Hispanic, unmarried, and recipients of federal assistance programs. Simple regression analyses were conducted to identify relationships between the variables and maternal intention to breastfeed. The statistics revealed that, 77% (n=205) of women with any amount of previous breastfeeding experience intended to breastfeed. Only 41.9% of the "no previous breastfeeding" women planned to breastfeed this time. This study specifically looked at breastfeeding intention, as opposed to breastfeeding initiation. A positive association between breastfeeding intention and hearing about breastfeeding benefits from family members, the baby’s father, and lactation consultants was reported. The authors established a critical point in this article stating that, "... successful breastfeeding initiation, even for a short duration among mothers planning to formula feed, may encourage future breastfeeding" (p. 172). There needs to be a key focus on breastfeeding initiation, rather than intention, by those who are influential in a woman’s decision to breastfeed. Incorporation of key referent people in a lactating mother’s life should also be considered in breastfeeding educational strategies to maximize the persuasive power for influencing a woman’s feeding choice.

Breastfeeding affords highly specific health benefits for both the mother and infant. The facilitation and promotion of breastfeeding is supported by the scientific evidence that breastmilk is invaluable to an already vulnerable population of newborns.
"The rewards outweigh the efforts," describes a qualitative study undertaken by Kavanaugh, Meier, Zimmerman, and Mead in their 1997 research publication. This study examined breastfeeding outcomes for mothers of preterm infants. Their description of the rewards and efforts for mothers who were breastfeeding preterm infants was done using a semi-structured interview guide. Twenty mothers were sampled via convenience method over a one-month period after discharge from a Neonatal Intensive Care Unit. The emotional benefits for the mother were delineated as a tangible way for the mother to participate in her infant's care. Breastfeeding was also found to help compensate for the physical separation from the mother's preterm infant. This study focused on rewards and efforts of the maternal experience of breastfeeding a preterm infant post-discharge. The naturalistic inquiry employed the use of Ethnography for data analysis. As data were analyzed, several themes emerged: the rewards of breastfeeding, knowing that the mothers were providing the healthiest nutrition to the infant, enhancing mother-infant closeness, perceiving infant contentment and tranquility during breastfeeding, providing convenience for the mother, giving the mother a tangible claim of the infant, and the efforts of breastfeeding. This study was done only on mothers of preterm infants and cannot be generalized indiscriminately to other populations. However, the data can be used as a foundation for documentation of the importance of breastfeeding, including education and promotion of breastfeeding.

Teaching Strategies

Several of the studies reviewed in this manuscript are particularly useful in pointing out both the strengths and weakness of medical professionals' advice about
breastfeeding for mothers in the prenatal phase. "Because most women have made
important decisions about infant feeding by the beginning of the third trimester, prenatal
education about breastfeeding should begin at the first prenatal visit and continue
throughout the pregnancy" (Meyers 2001, p. 931). Promoting breastfeeding during the
prenatal phase of pregnancy is not emphasized enough in this country. The Theory of
Multiple Intelligences is employed to produce new teaching strategies. Dr. Howard
Gardner, Ph.D. developed this theory in 1983. His theory suggests that there are 8
different intelligences, which contribute to learning potential in children and adults.
These intelligences are: Linguistic intelligence ("word smart"), Logical-mathematical
intelligence ("number/reasoning smart"), Spatial intelligence ("picture smart"), Bodily-
Kinesthetic intelligence ("body smart"), Musical intelligence ("music smart"),
Interpersonal intelligence ("people smart"), Intrapersonal intelligence ("self smart"), and
Naturalist intelligence ("nature smart") (Gardner, 1983). Considering the different ways
in which people learn, the Theory of Multiple Intelligences proposes a major
transformation in the way we teach. Teachers and health care professionals should
consider teaching in a way that includes music, cooperative learning, role-play,
multimedia, and more. The goal is to get the material out in a way that offers harmony
between learning and unique minds (Gardner, 1983).

The implications of this theory when applied to the adult learner can be great.
There are 8 different potential pathways and, "... whether you are a kindergarten
teacher, a grade-school instructor, or an adult learner seeking better ways of pursuing
self-study on any subject of interest, the same basic rules apply”

www.thomasarmstrong.com/multiple_intelligences.htm). Not all 8 pathways need to be used with every subject. The theorist suggests putting your topic of interest (breastfeeding) in the center of a blank sheet of paper and drawing 8 straight lines out from the center. Label each with a different intelligence. Next, brainstorm the ideas for teaching/learning your subject under each intelligence subject. Figure 1 is an author-produced schematic, supported by a literature review and grounded in the Theory of Multiple Intelligences, which outlines ideas for how the topic of breastfeeding might best be presented to women early after conception of a child (see Figure 1). If Practitioners could use this theory and couple it with breastfeeding education and pregnant mothers, the number of moms who breastfeed would hopefully increase. Many of the eight strategies for teaching are appropriate for the topic of breastfeeding. However, due to the practical constraints of time, money, and the nature of interactions between a woman and her provider, three of the most practical strategies will be highlighted here. The outcome will hopefully help women increase the initiation of breastfeeding and help the Nation meet the Healthy People 2010 objectives for breastfeeding. According to the literature reviewed in this manuscript, this approach has never been tested before. It is an author-produced notion generated to guide Medical Professionals in assembling fresh ideas with a theory-based foundation to help promote and support breastfeeding.

Strategy number one uses the linguistic, “word smart”, intelligence from Dr. Gardner’s theory. As studies have indicated, (HHS Blueprint for Action on
Breastfeeding, 2000; Moreland & Coombs, 2000; United States Breastfeeding Committee, 2001;) breastfeeding is the best form of infant nutrition. Extensive research on the benefits of breastfeeding and the health outcomes for breastfed infants has established breastfeeding to be the “gold standard” for the nourishment of infants. The American Academy of Pediatrics (AAP) supports evidence-based practice. The AAP published in their policy statement: Breastfeeding and the Use of Human Milk, “...the breastfed infant is the reference or normative model against which all alternative feeding methods must be measured with regard to growth, health, development, and all other short- and long-term outcomes” (www.aap.org). In an attempt to communicate the benefits of breastfeeding to a pregnant mother contemplating breastfeeding, a concise, factual pamphlet on breastfeeding should be handed out at the first obstetrical exam of pregnant women (see Table 1). Additionally, Moreland and Coombs (2000) recommend that breastfeeding promotion take place with each office interaction between pregnant mothers and health care professionals. They suggest all staff should be trained on the basic techniques of breastfeeding. A list of ten informational websites for providers is available at the conclusion of this manuscript (see Table 2). Literature and posters promoting breastfeeding should also be prominently displayed in offices that provide obstetrical care, in order to support the women who are “word smart” or are linguistic learners.

Strategy number two employs interpersonal intelligence, “people smart”, to promote and support breastfeeding. The idea is to make available “peer-models” during prenatal classes to come speak to mothers-to-be about their experiences with
breastfeeding. A social interaction with those who have already breastfed may potentially reach a mom who best learns through interpersonal communication rather than pamphlets or advertisements. It is crucial however, to understand that Practitioners need to have opportunity for an interpersonal interaction with each prenatal visit. Even if the discussion on breastfeeding is brief, the effort will not be missed.

Strategy number three involves spatial intelligence “picture smart”. It is actually a combination of spatial, interpersonal, and linguistic intelligence, which proposes a meeting very early in a mother’s prenatal phase with a lactation consultant. This meeting would serve to properly introduce primiparous mothers to breastfeeding. Spatial learning would occur through posters and pictures observed at the lactation consultant’s office (see Figure 2). Potentially, videos could be checked out teaching proper breastfeeding technique and the pros/cons of breastfeeding. And perhaps, a model of a newborn baby could help women learn how to hold an infant in different breastfeeding positions.

Limitations

This manuscript presents some of the benefits of breastfeeding and suggests ways in which Practitioners can help promote and support breastfeeding. Limitations do exist, however, and these need to be addressed in order to minimize restrictions on progress toward the Nation’s breastfeeding goals. For instance, some women should not be advised to breastfeed. These women include HIV-infected women and women with human T-cell leukemia virus type 1 because of the risk of transmission to the child. Under certain conditions, an individual assessment made by a primary care provider
would warrant caution with breastfeeding: environmental exposures, Hepatitis C, illicit drug use, implants and breast surgery, metabolic disorders, pharmacological drug use, and tobacco and alcohol consumption (HHS Blueprint for Action on Breastfeeding, 2000).

Some common misperceptions which act as barriers to breastfeeding are: loss of freedom, embarrassment, jealousy, difficulty returning to work, physical discomfort, weaning, lack of confidence, fear that the baby is “starving” due to lack of milk production, and perception that formula is equal to breast milk (Moreland & Coombs, 2000). Additionally, work is necessary to properly train health care professionals about the benefits of breastfeeding in order to educate expectant mothers. Many health care providers are not prepared to give breastfeeding advice. Further education, needs to be offered in both colleges and continuing education classes, especially for those who interact frequently with the obstetric population. Another limitation is the fact that only one kind of educational strategy is presented here. Several other teaching strategies may also work well for promoting and supporting breastfeeding.

Conclusions

This literature review and discussion of strategies to increase breastfeeding emphasizes the need for more women to initiate breastfeeding in our country. The advantages of breastfeeding an infant are emphasized in many of the articles and are also supported by the Healthy People 2010 campaign. However, gaps in the literature do still exist prompting further research in to this important area of infant health. These gaps include questions about racial and ethnic differences among breastfeeding women. More
studies need to be done to discover the reasons why certain demographic groups of women choose to breastfeed and some do not. Also, research is needed to better understand the ways that educators and health care providers can reach pregnant women. The strategies presented in this manuscript, which are grounded in the Theory of Multiple Intelligences, are just some ideas that Nurse Practitioners can use to help promote and support breastfeeding. It is well established that breastfeeding is the supreme infant feeding choice and work is still needed to increase the prevalence of breastfeeding in our country today.
Patient Information: Facts on Breastfeeding

Some of the many benefits of breastfeeding are:

• **Resistance to Infectious Disease:** breastfeeding can make your baby’s immune system stronger. This will help protect your baby from illness. Breastfeeding will provide a distinct advantage in your baby’s immune system that formula-fed infants do not experience.

• **Enhanced Immune System:** when compared with formula-fed infants, breastfed infants produce an enhanced immune response to polio, tetanus, diptheria, and Haemophilus influenzae immunizations, and to respiratory syncytial virus, a common infant respiratory infection.

• **Nutritional and Growth Benefits:** Human breast milk is tailored made for your baby’s growing needs. It is easy to digest and less stressful on immature infant kidneys. Children who are breastfed are less likely to be overweight and obese later in life.

• **Reduced Risk for Chronic Disease:** your baby is less likely to suffer from long-term and sometimes devastating diseases such as type 1 and 2 diabetes, celiac disease, inflammatory bowel disease, childhood cancer, and allergic disease/asthma.

• **Developmental Benefits:** your baby will have enhanced brain development and growth.

• **Improved Maternal Health:** you may see positive hormonal, physical, and mental/social effects on you, the mother if you breastfeed. Breastfeeding helps to push out the placenta after birth, minimize blood loss from the mother after the baby is born, and stimulates a more rapid return of your uterus to normal size. Also some mothers may experience mental benefits, such as increased self-confidence and bonding with their child.

• **Socioeconomic Benefits:** families can save hundreds of dollars over the cost of feeding breast milk substitutes. Breastfed babies also typically require fewer sick care visits, fewer prescriptions, and fewer hospitalizations.

• **Additional Benefits of Breastfeeding:** lower rates of pre-menopausal breast cancer, lower rates of maternal osteoporosis, and lower rates of pre-menopausal ovarian cancer.

(HHS Blueprint for Action on Breastfeeding, 2000; Moreland & Coombs, 2000)
Table 2

An Internet Guide for Nurse Practitioners:

Ten Helpful Internet Resources for the Promotion of Breastfeeding


The Office of Disease Prevention and Health Promotion works to strengthen the disease prevention and health promotion priorities of the Department within the collaborative framework of the Health & Human Services agencies.

2. www.lalecheleague.org

La Leche League International’s mission is to help mothers worldwide to breastfeed through mother-mother support, encouragement, information and education, and to promote a better understanding of breastfeeding as an important element in the healthy development of the baby and the mothers.

3. www.leron-line.com

From novice to expert, Lactation Education Resources can provide training programs and materials to meet your educational needs.

4. www.ilca.org

The International Lactation Consultant Association (ILCA) promotes the professional development, advancement, and recognition of lactation consultants worldwide for the benefit of breastfeeding women, infants and children.

5. www.4women.gov/breastfeeding

The National Women's Health Information Center (NWHIC) is a service of the Office on Women's Health in the Department of Health and Human Services. The NWHIC provides a gateway to the vast array of Federal and other women's health information resources. Our site on the World Wide Web can help you link to, read, and download a wide variety of women's health-related material developed by the Department of Health and Human Services, other Federal agencies, and private sector resources.

**Healthy People 2010** challenges individuals, communities, and professionals—indeed, all of us—to take specific steps to ensure that good health, as well as long life, are enjoyed by all.

7. www.cdc.gov/breastfeeding

**The Centers for Disease Control** offers this web site exclusively for the promotion of breastfeeding. It offers information on breastfeeding promotion and support, government activities, and national policies.

8. www.usbreastfeeding.org

**The United States Breastfeeding Committee** is a collaborative partnership of organizations. The mission of the committee is to protect, promote and support breastfeeding in the U.S. The USBC exists to assure the rightful place of breastfeeding in society.

9. www.aap.org

**MISSION OF THE AAP:** The mission of the **American Academy of Pediatrics** is to attain optimal physical, mental and social health and well-being for all infants, children, adolescents and young adults. To this purpose, the AAP and its members dedicate their efforts and resources. There is a specific section set aside for the purpose of promoting and supporting breastfeeding on the AAP website.

10. www.bflrc.com

**Bright Futures Lactation Resource Center** supports the people who support breastfeeding with articles, education and motivation resources for healthcare professionals including doctors, nurses, lactation consultants, peer counselors, peer helpers and others providing parents with infant feeding information. In our resources area, you will find articles about breastfeeding and lactation topics written by and for professionals and expert volunteers. There are no clinical or decorative illustrations on this site as they take too long to download and would limit the space available for other articles.
Figure 1: Schematic of Multiple Intelligence Theory Presenting Teaching Strategies

**Teaching Strategies: Promoting and Supporting Breastfeeding**

**Linguistic Intelligence**
- Pamphlets
- Written materials
- Internet
- Publications

**Logical-mathematical Intelligence**
- Graphs
- Pros/cons of nursing a baby
- Statistics
- Tables
- Figures
- Internet

**Naturalist Intelligence**
- Hands-on
- Friends/family
- Immediate post-partum breastfeeding support
- Advertising the "natural feeding choice"
- Documents explaining the biology of breast milk
- Immune benefits
- Physiological benefits to mom

**Intrapersonal Intelligence**
- Personal beliefs
- Attitudes
- Pre-conceived ideas

**Interpersonal Intelligence**
- Promote positive social interactions
- Listen to friends experiences with breastfeeding
- Classes
- Family
- Expel rumors
- "Advice" vs. facts
- "Peer models"
- Visits to lactation specialist

**Bodily-Kinesthetic Intelligence**
- Hands-on model
- Pumps
- Practicing breastfeeding positions
- Tangible items such as breast models/ baby models

**Musical Intelligence**
- Relaxation techniques set to music

**Spatial Intelligence**
- Diagrams
- Figures
- Video
- Posters
- Pictures
- Internet
Figure 2: Picasso's Image of a Breastfeeding Mother and Infant
REFERENCES


