CHAPTER 1

INTRODUCTION

Background and Significance of Research Problem

Breastfeeding is recognized universally as the best means of providing nutrition for all infants. The scientific and lay communities agree that human milk is the best food for newborn infants. There are a number of advantages including health, nutritional, immunologic, developmental, psychological, and economic benefits (World Health Organization [WHO], 2001; Yimyam & Morrow, 2003). Morbidity and mortality are lower in breast-fed infants and their mothers, resulting in better health and lower health care costs (Wight, 2001).

Preterm mothers' milk also provides documented health benefits tailored to the specific nutritional and immunological needs of the preterm neonates (Bier et al., 1993; Spicer, 2001; Wight, 2001). Preterm infants, particularly those weighing 1200 grams or more, can grow properly by exclusive breastfeeding (Ruiz, Charpak, & Figuero, 2002). It has been proven that the nutrient composition of preterm mothers' milk is more appropriately matched to the needs of their babies (Luukkainen, Salo, & Nikkari, 1994). The total nitrogen concentration of preterm mothers'milk is higher than that of full term mothers and this is consistent with the protein requirements of preterm infants.

IgA is the principal immunoglobulin that is present in greater concentration in the milk of mothers of preterm infants. Its role in controlling the microbial

environment of the intestinal tract is of great importance to the preterm infant who is at increased risk for gastrointestinal problems, such as necrotizing enterocolitis (NEC) (Lucas & Cole, 1990)

In addition, preterm mothers' milk provides other benefits including reduced risks of later allergy, improved retinal function (Williams, Birch, Emmett, Northstone, & Avon, 2001), and enhanced neurological and cognitive development (Meier & Brown, 1996). Encouraging lactation can also enhance maternal attachment while decreasing the feelings of helplessness and separation from their infants that arise from the baby's need for highly skilled and technical care.

Given all benefits of breastfeeding, the American Academy of Pediatrics (1997) has recommended breastfeeding as the optimum nutrition choice for both preterm and full term infants, and it is also recommended as the primary source of nutrition during the first year of life. Several studies showed that infants who are exclusively breastfed for at least 4 months have significantly less gastrointestinal and respiratory illness, including ear infections and asthma, than those who are not breasfted (American Academy of Pediatrics Committee of Nutrition, 1976). The World Health Organization and United Nation Children's Fund [WHO/UNICEF] (1993) have recommended that infants be exclusively breastfed on demand from birth for at least 6 months of age.

Despite being the best infant feeding method, many studies and reports showed that breastfeeding in preterm infants pointed to the problems in both initiation and duration. (Baker & Rasmussen, 1997; Hill, Ledbetter, & Kavanaugh, 1997; Wheeler, Chapman, Johnson, & Langdon, 2000). The technology and separation of the mother and infant in the neonatal unit caused barriers to breastfeeding (Wheeler,

Johnson, Collie, Sutherland, & Chapman, 1999). The factors influencing the breastfeeding practice among mothers of healthy term infants may not be applied to those of high risk and premature infants (Kavanaugh, Mead, Meier, & Mangurten, 1995). A variety of factors contributed to breastfeeding problems in preterm infants can be categorized into three major factors related to the mother, the infant, and to the support available in the environment.

The factors related to mother include having medical complications, concern about the infants' well-being or survival, fatigue, emotional stress, and the late contact with the infant (Taylor as cited in Groh-Wargo et al., 1995). Additionally, factors related to infant include the infant resisting latching onto the breast, having a weak sucking, refusing the breast, and having difficulty with latch–on because of the infants' small sizes and immature feeding behaviors (Hill et al., 1997; Kavanaugh et al., 1995).

Breastfeeding is also dependent on the factors related to the support available in the environment. These factors include the environment that provides mothers with the feeling of comfortable breastfeeding, having privacy, and sanctioning from family or mate (Mozingo, Davis, Droppleman, & Merideth, 2000). Health care providers are also influential persons. The formula-feeding mothers identified that health care providers are the second most influential persons affecting their decision-making process in their breastfeeding practices (Hung, Ling, & Ong, 1985).

Mothers of premature infants face special difficulties in lactation and breastfeeding. They need more consistent, expert, and timely assistance with breastfeeding in the hospital and better continuity of care during the first few weeks at

home to meet their special needs (Baker & Rasmussen, 1997; Lawrence, 1994). Several authors proposed the nursing interventions that may enhance breastfeeding in preterm infants include kangaroo care and early contact with the breast, avoidance of artificial nipple such as bottles (Gupta, Khanna, & Chattree, 1999; Kliethermes, Cross, Lanese, Johnson, & Simon, 1999), rooming-in, beginning to express breast milk within 6 hours of birth and more than 6 times a day (Hill, Aldag, & Chatterton, 1999), using an electric pump, providing information on feeding choices and their benefits, the lactation process, acknowledging the mothers' role as being unique, assisting mothers to produce maximum milk volumes with minimum energy expenditure, as well as reducing breast/nipple pain and trauma (Auerbach & Walker, 1994; Clum & Primomo,1996; Kavanaugh et al.,1995; Meier et al., 2000; Stine, 1990; Walker, 1992).

Besides in-hospital management, the postdischarge management has been used to maintain maternal lactating. The programs for postdischarge care were arranged such as the telephone follow-up program by Elliott and Reimer (1998), the home visit program for breastfeeding education and support (Johnson, Brennan, & Flynn-Tymkow, 1999), and the community breastfeeding center (Adams, Berger, Conning, Cruikshank, & Dore, 2001). The mothers from each program found the program helpful, and they rated their overall experience as excellent or good. However, most of the studies did not mention about the effects of the program on the breastfeeding practices of those mothers.

The literature has shown that there are a lot of studies about breastfeeding programs for preterm infants. Some non-experimental studies reported an increase in breastfeeding as a result of those programs, but some did not demonstrate a significant

difference. Additionally, in some studies there was no data on the incidence or duration prior to initiation of the breastfeeding program. Several programs initiated have failed in the past; one reason might be because of the cultural inappropriateness. Therefore, further studies about breastfeeding program for preterm infants are required to determine the appropriateness and the effectiveness with respect to a different situation.

In 1991, the Thai government launched the Baby Friendly Hospital Project, a program in which hospitals were designated as the center for breastfeeding education and promotion (the Ministry of Public Health, 1996a) by using the ten steps recommended by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF). However, after monitoring and evaluating the Thai Child Health Development Programs in accordance with the Mid-Decade Goals in 1995 (with 10 goals for children), it was found that breastfeeding promotion was one of the indicators that has not been achieved (the Ministry of Public Health, 1996b). The target of increasing the exclusive breastfeeding rate to 30 percent by the end of the Health Development Plan under the 8th Plan (1997-2001) (the National Economic and Social Development Committee, 1996) was still not accomplished. The rate of exclusive breastfeeding in 1996 and 1999 were 3.6% and 2.9 % respectively (The College of Public Health, 2001; The Ministry of Public Health, 2001).

Bangkok Metropolitan Administration (BMA) Medical College and Vajira Hospital is the largest of the 9 hospitals run by the Bangkok Metropolitan Administration. The hospital has a 30 bed-premature infant unit apart from a normal newborn nursery. Premature infant unit has been partially implementing the Baby Friendly Hospital Initiative Project because it is limited by the unique problems. A

study at BMA Medical College and Vajira Hospital showed that the duration of breastfeeding in stable preterm infants whose birth weight was between 1,500-2,200 grams was only 1.6 months (Chewwattana, 1993). Related to this concern, an informal survey was conducted from January to September 2002 and found that on discharge most of preterm infants were not exclusively breastfed and 63 percent were fed with both breast milk and formula, with 37 percent being solely formula fed. This meant that one-third of the preterm infants were not initiated breastfeeding and those breastfed were weaned very early.

Health care providers are known as one of the most influential persons affecting the mother's decision-making process in their breastfeeding practices (Hung et al., 1985). In addition, by recognizing their vital role as the patients' advocates and health promoters and as the largest group of hospital-based health professionals, WHO and UNICEF have been asking nurses to facilitate the implementation of the initiative in their hospitals (Jones & Green, 1993). Nurses have been mentioned because of their critical role in influencing the breastfeeding outcome. They can contribute significantly to the successful initiation and continuation of breastfeeding (Hong, Callister, & Schwartz, 2003; Nyqvist, 2002; Wheeler et al., 1999). Moreover, newborns' non-exclusive breastfeeding in the hospital after birth was a factor that increased the tendency to turn to mixed or formula feeding during the first 3 months of life (Li, Kong, Hotta, Wongkhomthong, & Ushijima, 1999). Therefore, newborn feeding type in hospital after birth may play key roles in the duration of breastfeeding, pointing the importance of strengthening breastfeeding initiation in the hospital, especially by nursing support.

Mothers of preterm infants emphasized the need for nursing support and attention in this difficult environment (Meier et al, 1993). The support perceived by the mothers was emotional, informational, and tangible. However, studies indicated that support provided by nurses is still inadequate (Hailes & Wellard, 2000; Hong et al., 2003). Many mothers reported conflicting advice in breastfeeding (Hoddinott & Pill, 2000). Tarrant, Dodgson, and Fei (2002) found that their participants who were new mothers had high praise for the support they received from the nurses in the hospital, but few reported having receiving a timely and appropriate lactation management. The researchers suggested that establishing successful breastfeeding requires encouragement from appropriate lactation management and consistent evidence-based advice from the health professionals providing care for the mothers and their infants.

Participatory action research (PAR) method was employed as the methodological framework for this study because PAR is a way of creating knowledge to effect necessary action and change (Cornwall & Jewkes, 1995). The first goal is to increase the closeness between the day-to-day problems encountered by the participants and the theory used to explain and resolve the problem. The second goal is to assist participants in lifting their veil of clouded understanding, and help them better understand fundamental problems by raising their collective consciousness (Holter & Schwartz-Barcott, 1993). This is accomplished by developing a social critique, wherein the consideration of theory and practice come together. The combination of theory and enlightenment provides the emancipation and empowerment to the participants, then leading to action and change (Berg, 2001).

In addition, the basic assumption in action research is that only members of a community can explore and develop their own community's functions in the best possible way (Holter & Schwarz-Barcott, 1993). If the participants have been seen as passive objects of the inquiry or recipients of the results but not as actual researchers, the development of a program has not been appropriate (Hyrkas, 1997). As mentioned by Foster (1969), the research which has as its purpose the bringing about of change must involve the people themselves in the planning phases if it is to be successful. Therefore, the breastfeeding support program for preterm infants at BMA medical college and Vajira Hospital was developed by nurses as the participants within their specific context by using participatory action research. It offered the nurses a possible and flexible approach to the improvement of breastfeeding support through critically informed action and reflection which was appropriate to their real and complex circumstances.

Objective of the Study

This study was designed to develop a breastfeeding support program for preterm infants at BMA Medical College and Vajira Hospital.

Research Questions

1. What are the breastfeeding problems among preterm infants at BMA Medical College and Vajira Hospital?

2. What is the breastfeeding support program for preterm infants that will enhance practical nursing practice at BMA Medical College and Vajira Hospital?

3. How do the researcher and the participants develop the breastfeeding support program for preterm infants?

4. What are the outcomes of implementing the breastfeeding support program for preterm infants?

Definition of Terms

The following terms are defined for the purpose of this study.

A breastfeeding support program refers to a program composed of activities for breastfeeding support, including documents and all other resources, both tangible and intangible, which the participants required to facilitate the practice. The program was divided into two parts: 1) the main program and 2) the strategies for practice and the resource management. In this study the breastfeeding support program for preterm infants was developed through a participatory action research.

Preterm infant refers to an infant of less than 37 completed weeks of gestation who was admitted to Premature Infant Unit (PU).

Breastfeeding was defined by WHO as follows:

Full breastfeeding was defined as exclusive (no other solid or liquid) or almost exclusive (vitamin, minerals, juice, or ritualistic feeding given infrequently, in addition to breastfeeding);

Partial breastfeeding included subcategories of high (more than 80% of feedings at the breast), medium (20- 80% at the breast), and low (less than 20% at the breast). Infants who received complementary or supplementary feedings or human milk or formula were considered as partially breastfed.

Breastfeeding initiation is defined as putting an infant to the breast, even if only once.

Duration of breastfeeding is defined as the length of time an infant was continually fed of breast milk.

Scope of the Study

The study took place at the premature infant unit, BMA Medical College and Vajira Hospital from June 2003 to January 2004.