

**EFFECT OF A BREASTFEEDING SKILL TRAINING AND
SUPPORTIVE PROGRAM ON 6-MONTH-EXCLUSIVE
BREASTFEEDING AMONG FIRST-TIME MOTHERS**



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EFFECT OF A BREASTFEEDING SKILL TRAINING AND SUPPORTIVE PROGRAM ON 6-MONTH-EXCLUSIVE BREASTFEEDING AMONG FIRST-TIME MOTHERS

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ABSTRACT

The importance of exclusive breastfeeding is continually emphasized, but the incidence of exclusive breastfeeding until 6 months does not meet this recommendation. Many breastfeeding problems stem from improper positioning, and incorrect latch-on techniques; therefore, the mother requires learning skill on positioning and latching techniques to successfully achieve exclusive breastfeeding. The purpose of this study was to test the effects of a breastfeeding skill training and supportive program on exclusive breastfeeding for six months among first-time mothers. Pender's Health Promotion Model (HPM) provided the theoretical framework of this study.

The 84 first-time mothers were recruited to the study and randomly assigned to either an experimental or control group with 42 mothers in each group. The sample in the control group received only routine nursing care, while those in the experimental group participated in the breastfeeding skill training and supportive program combined with routine nursing care. Data were collected by demographic characteristic questionnaire, breastfeeding self-efficacy scale short form (BSES-SF), effective suckling checklist, feeding monitoring form and problems related to breastfeeding record form. The rate of exclusive breastfeeding at 6 months and BSES scores at discharge and at 6 weeks were compared between experimental and control groups by Chi-square test and Mann-Whitney U-test, respectively.

The findings showed that 36.6% of mothers in the experimental group achieved 6 months exclusive breastfeeding compared to 14.3% in the control group. The rate of 6 months exclusive breastfeeding in the experimental and the control groups significantly differed ($p=.011$). Furthermore, the mothers in the experimental group had higher mean scores of breastfeeding self-efficacy than those in the control group at discharge and at 6 weeks postpartum at a statistically significant level ($p=.011$ and $p=.001$), respectively.

The study findings showed the efficacy of this program to improve the exclusive breastfeeding rate at 6 months. Therefore, nurses should apply this program to continuously promote breastfeeding to mothers from pregnancy throughout the postnatal period and after hospital discharge.

KEY WORDS: BREASTFEEDING SKILL TRAINING AND SUPPORTIVE PROGRAM / EXCLUSIVE BREASTFEEDING / FIRST-TIME MOTHERS

179 pages

ผลของโปรแกรมการฝึกทักษะเลี้ยงลูกด้วยนมแม่ร่วมกับการสนับสนุน ต่อการเลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือนในมารดาที่มีบุตรคนแรก

EFFECT OF A BREASTFEEDING SKILL TRAINING AND SUPPORTIVE PROGRAM ON 6-MONTH-EXCLUSIVE BREASTFEEDING AMONG FIRST-TIME MOTHERS

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บทคัดย่อ

ความสำคัญของการเลี้ยงลูกด้วยนมแม่อย่างเดียวยังได้ถูกเน้นย้ำมาอย่างต่อเนื่อง แต่อัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือนกลับยังไม่ถึงเป้าหมายที่ได้กำหนดไว้ ปัญหาของการเลี้ยงลูกด้วยนมแม่ส่วนใหญ่เกิดจากทำในอุ้มลูกดูนมไม่ถูกวิธี ดังนั้นมารดาจึงควร ได้เรียนรู้ทักษะและเทคนิคในการอุ้มลูกดูนมที่ถูกต้อง เพื่อที่จะทำให้การเลี้ยงลูกด้วยนมแม่อย่างเดียวยประสบความสำเร็จ การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาประสิทธิภาพของโปรแกรมการฝึกทักษะเลี้ยงลูกด้วยนมแม่ร่วมกับการสนับสนุนต่อการเลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือนในมารดาที่มีบุตรคนแรก กรอบแนวคิดของการศึกษาครั้งนี้ใช้รูปแบบการส่งเสริมสุขภาพของเพนเคอร์

กลุ่มตัวอย่างเป็นมารดาครรภ์แรกจำนวน 84 ราย ถูกสุ่มเข้ากลุ่มทดลองและกลุ่มควบคุมกลุ่มละ 42 ราย กลุ่มควบคุมได้รับการพยาบาลตามปกติ กลุ่มทดลองได้รับโปรแกรมการฝึกทักษะเลี้ยงลูกด้วยนมแม่ร่วมกับการสนับสนุนและการพยาบาลตามปกติ เก็บรวบรวมข้อมูลโดยใช้แบบสัมภาษณ์ข้อมูลส่วนบุคคลแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดา แบบประเมินประสิทธิภาพการดูนมแบบติดตามการให้อาหารทารก แบบประเมินปัญหาที่เกี่ยวข้องกับการเลี้ยงลูกด้วยนมแม่ การเปรียบเทียบอัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือน และคะแนนการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดาขณะจำหน่ายออกจากโรงพยาบาลและ 6 สัปดาห์หลังคลอดระหว่างกลุ่มทดลองและกลุ่มควบคุม ใช้การทดสอบไคสแควร์ การทดสอบแมน-วิทนีย์ ยู ตามลำดับ

ผลการศึกษาพบว่า มารดากลุ่มทดลองมีอัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือนคิดเป็นร้อยละ 36.6 ขณะที่กลุ่มทดลองมีเพียงร้อยละ 14.3 ซึ่งแตกต่างกันอย่างมีนัยสำคัญทางสถิติ ($p=.011$) นอกจากนี้มารดากลุ่มทดลองยังมีคะแนนเฉลี่ยการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดาขณะจำหน่ายออกจากโรงพยาบาล และ 6 สัปดาห์หลังคลอดสูงกว่ากลุ่มทดลองอย่างมีนัยสำคัญทางสถิติ ($p=.011$ และ $p=.001$), ตามลำดับ

ผลการศึกษานี้แสดงถึงประสิทธิภาพของโปรแกรมในการเพิ่มอัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือน ดังนั้นพยาบาลควรนำโปรแกรมนี้ไปใช้ในการส่งเสริมการเลี้ยงลูกด้วยนมแม่อย่างต่อเนื่องตั้งแต่ระยะตั้งครรภ์ไปถึงระยะหลังคลอด และหลังจำหน่ายออกจากโรงพยาบาล

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CHAPTER I

INTRODUCTION

Background and Significance of the Study

Breastfeeding is identified as the most useful method of infant nutrition and the best way to enhance the health of all mothers and children. Breastfeeding is the most proficient intervention for preventing illness and mortality among infants and young children (Bhutta et al., 2008). Infants who breastfed exclusively for six months showed a significantly lower incidence of gastrointestinal infection, respiratory infection, otitis media and lower risk of hospitalization than those who breastfed exclusively less than six months (Chantry, Howard, & Auinger, 2006; Duijts, Jaddoe, Hofman, & Moll, 2010; Ip et al., 2007; Khadivzadeh & Parsai, 2004; Kramer et al., 2003). Breastfeeding not only benefits the infants, but also extends health advantages to mothers. Women who breastfeed their infants are more likely to decrease risk of postpartum hemorrhage, and premenopausal breast and ovarian cancers. In addition, they have a lower chance of developing type 2 diabetes mellitus, arthritis, osteoporosis and increased weight loss than those who did not breastfeed (Bernier, Plu-Bureau, Bossard, Ayzac, & Thalabard, 2000; World Health Organization, 2001). Beyond the breastfeeding advantages described above, these can be converted to economic advantage in terms of reduced medical costs. Breastfed infants tend to be healthier than formula fed infants, they visit the doctor less, have fewer and shorter hospital stays and require fewer medications (Newton, 2004).

The global guidelines developed by the World Health Organization (WHO) recommend that all mothers should breastfeed their children exclusively for the first six months. Thereafter, they should be given nutritious complementary foods and continue breastfeeding up to the age of two years or beyond. The WHO's implementation plan on maternal, infant and young child nutrition has set a global target to increase exclusive breastfeeding in the first six months of life by at least 50% (World Health Organization, 2002). Likewise, the UN Global Strategy for Women's

and Children's Health has set specific targets for increasing exclusive breastfeeding for the first six months for 21.9 million infants by 2015 (UNICEF, 2009). Although the importance of exclusive breastfeeding is continually emphasized, the rates of exclusive breastfeeding in many countries worldwide do not reflect WHO recommendations, including Thailand. The UNICEF's State of the World's Children Report 2012 showed that only 37% of all infants worldwide between birth and their fifth month are breastfed exclusively (UNICEF, 2012).

The Thai government has recognized the significance of breastfeeding whereby breastfeeding promotion has been carried out since the Fourth National Economic and Social Development Plan [1977-1981] until the present plan [2012-2016] with the aim to increase the exclusive breastfeeding rate for six months to 30%. The survey of the National Statistical Office in collaboration with UNICEF in 2006, showed that only 5.4% of infants aged 0 to 5 months were exclusively breastfed (Thailand National Statistical Office, 2006) and increase to 15% from 2006 to 2010 (UNICEF, 2012). In 2012, the latest national survey, MICs4, showed that only 12.3% of infants were exclusively breastfed (UNICEF, 2013). Even though, more Thai mothers exclusively breastfeed their infants, the exclusive breastfeeding rate at six months is still low and remains well below the national target. Moreover, when compared with other countries in Southeast Asia such as Cambodia (74%), Indonesia (32%), Lao PDR (26%), Myanmar (24%) and Vietnam (17%), the exclusive breastfeeding rate at six months by Thai mothers is the lowest in Southeast Asia (UNICEF, 2012).

Maintaining breastfeeding is frequently problematic, and several obstacles exist to continue exclusive breastfeeding until six months. The most frequently cited reasons for early termination of breastfeeding within the first month after child's birth included concern that the baby was not getting enough milk, baby had trouble suckling and latching on, discomfort while breastfeeding, lack of support and mother returned to work (Li, Fein, Chen, & Grummer-Strawn, 2008). By contrast, the common reasons mothers give for choosing to breastfeed comprised its benefits for the infant's and their own health, nature, strengthened bonding with their infant and convenience (Arora, McJunkin, Wehrer, & Kuhn, 2000; Brodribb, Fallon, Hegney, & O'Brien, 2007). The reasons mothers reported are related to many factors including breastfeeding

knowledge, attitude toward breastfeeding, breastfeeding problems, maternal breastfeeding self-efficacy and support from their partners, family members and health care professionals. These factors can influence the success or failure of exclusive breastfeeding, as described below.

Knowledge of breastfeeding is an important factor that influences perceptions and practices involving breastfeeding. Most mothers are conscious that breastfeeding is the best source of nutrition for most infants, however they appear to absence knowledge about its specific benefits and are unable to cite the risks related with not breastfeeding (McCann, Baydar, & Williams, 2007). Thus, without knowing this information, mothers may not properly weigh the advantages and disadvantages of breastfeeding versus formula feeding. As a result, they may not make an actual decision to breastfeeding their babies (DiGirolamo, Thompson, Martorell, Fein, & Grummer-Strawn, 2005; Zhang et al., 2015).

Positive attitudes toward breastfeeding were associated with a longer duration of breastfeeding (Brown & Lee, 2011), while negative attitudes toward breastfeeding especially when breastfeeding was painful or uncomfortable, were associated with formula mixed feeding (Wojcicki et al., 2010). They recommended that breastfeeding education should address breastfeeding problems and how to manage these problems, to enhance positive attitudes toward breastfeeding and increase the duration of exclusive breastfeeding. Breastfeeding problems are often cited as reasons for early formula use and termination of breastfeeding (Berridge, McFadden, Abayomi, & Topping, 2005). A systematic review found improper positioning and incorrect latch-on were the most common breastfeeding problems, especially among first-time mothers, leading to various types of problems and early weaning (Haroon, Das, Salam, Imdad, & Bhutta, 2013; Li, Fein, Chen, & Grummer-Strawn, 2008). The cause of these problems might be attributable to lack of knowledge, skills and support regarding breastfeeding the techniques.

Moreover, when mothers encounter breastfeeding problem, they do not feel confident in their ability to breastfeed unless they have proper assistance (Brand, Kothari, & Stark, 2011). Mothers who have low levels of breastfeeding self-efficacy are more likely to develop breastfeeding problems such as sore nipples and insufficient milk supply and discontinue breastfeeding within the first six weeks postpartum.

However, mothers with high levels of breastfeeding self-efficacy were more likely to continue to breastfeed, overcome obstacles and in particular perceive difficulties as positive challenges (Blyth et al., 2002; Creedy et al., 2003; McQueen, Dennis, Stremler, & Norman, 2011). Literature shows that mothers who receive antenatal education, providing appropriate knowledge and practice, increase maternal breastfeeding self-efficacy and breastfeeding duration (Huang, 2011; Schlickau & Wilson, 2005). Similarly, mothers who attended a breastfeeding empowerment program postpartum reported fewer breastfeeding problems and higher breastfeeding self-efficacy (Awano & Shimada, 2010; Kang, Choi, & Ryu, 2008).

Breastfeeding support has a positive impact on breastfeeding initiation and duration. Mothers lacking breastfeeding support are more likely to stop exclusive breastfeeding before six months and are also more likely to report breastfeeding difficulties than those who received support (Labarere et al., 2005). Support can be provided in the form of admiration, reassurance or positive empowerment, information and the chance to discuss and respond to a mother's questions, leading to higher breastfeeding self-efficacy and increased breastfeeding duration (Renfrew, McCormick, Wade, Quinn, & Dowswell, 2012). Breastfeeding support can start from antenatal to postpartum periods and beyond. However, several studies have reported that women expect to request and receive support for breastfeeding in the early postpartum period, viewing it as a time of learning (Shakespeare, Blake, & Garcia, 2004; Sheehan, Schmied, & Barclay, 2009).

All of the aforementioned factors influence successful or unsuccessful exclusive breastfeeding and could possibly be modified by providing appropriate breastfeeding knowledge and support. Thus, many studies regarding intervention have been implemented to increase the rate and duration of exclusive breastfeeding (Su et al., 2007). A systematic review by Hannula, Kaunonen, and Tarkka (2008) suggested that interventions conducted over long periods, from pregnancy throughout the postnatal period, were more effective than interventions focused on a shorter period. Moreover, interventions using a variety of educational approaches and support from well-trained professionals were more effective than a single approach. The most effective interventions during the prenatal period were interactive by involving mothers in discussions. The most effective interventions during the postnatal period

included home visits, and telephone support combined with peer support. Similarly, the systematic review conducted by Skouteries et al. (2014) examined any type of intervention designed to promote exclusive breastfeeding in high income countries. This review indicated a significant increase in the duration of exclusive breastfeeding was found with most interventions using supportive and educational approaches. Therefore, to achieve greater impact on long term exclusive breastfeeding practices, components of the intervention should combine a variety of approaches for antenatal education and postnatal support interventions. However, after implementing many antenatal and postnatal program interventions, a high rate of breastfeeding is initiated, but the target of increasing the exclusive breastfeeding rate to six months is still not accomplished, especially for first time mothers who never experienced breastfeeding directly.

Tasi, Huang and Lee (2015) explored breastfeeding practices among first-time mothers. The result shown that the rate of exclusive breastfeeding during the hospital stay was 66%, after that it declined to 37.5% at one month and 30.2% at three-month postpartum. Only 17.1% of these mothers continued breastfeeding until six months. It seems that continuous exclusive breastfeeding practice for six months is challenging and difficult for new mothers. Although first-time mothers received prenatal breastfeeding education, they could not breastfeed correctly and/or continue exclusive breastfeeding practices for six months because breastfeeding needs to be learned, practiced approved and guided by healthcare professionals before mothers face the real situation. First-time mothers do not have an opportunity to learn and practice how to breastfeed with good positioning and attachment, leading to lack of confidence in exclusive breastfeeding and the feeling that exclusive breastfeeding is very difficult (Kronborg, Harder, & Hall, 2015).

A recent study by Sakha (2009) investigated whether proper lactation training of breastfeeding mothers could enhance their lactation practices. The first time mothers in this study passed a short training course on latch-on and positioning techniques of breastfeeding as well as nutritional and immunological benefits of mother milk for growth of their baby. This study revealed that training mothers in proper lactation practices is the main clinical pathway toward successful and sustained exclusive breastfeeding for the first-time mothers. Training is a systematic process of

developing knowledge, skills, behaviors and motivation to improve performance on set tasks to achieve the established goals (Saleem, 2011). Therefore, breastfeeding skill training is an important step toward helping mothers to meet the recommended goals for exclusive breastfeeding. Breastfeeding latch-on skills and positioning techniques cannot be developed from listening to an explanation or lectures alone. The mothers should have the opportunity to practice breastfeeding until they can actually perform breastfeeding correctly. Therefore, developing interventions combining a variety of approaches concerning antenatal education is necessary. Skills training regarding latch-on skills and positioning techniques and appropriate postnatal support interventions to help the first time mothers initiate breastfeeding are needed to successfully achieve exclusive breastfeeding for six months.

Unfortunately, in Thailand, interventions combining a variety of approaches related to antenatal education, especially skills training on latch-on skills and positioning techniques and postnatal support interventions have not been sufficiently emphasized. No studies have been conducted to examine the effectiveness of breastfeeding interventions that focus on skills training combined with education and support among first time mothers. Although some breastfeeding education and supportive program have claimed to add skills training in their program, the mothers still spent time more obtaining breastfeeding knowledge than skills training. Furthermore, various research has been conducted on breastfeeding promotion, but most monitored only from 6 to 16 weeks of breastfeeding. Thus, knowing whether these mothers successfully performed exclusive breastfeeding until six months would be impossible. Also, in related studies, methods were weak due to nonrandom assignment. Therefore, conducting randomized controlled trials (RCTs) with sufficient power to test the effectiveness of breastfeeding promotion program would be certainly essential (Lumbiganon et al., 2012). Therefore, the purpose of this study was to investigate the effect of breastfeeding skill training and supportive program to achieve exclusive breastfeeding for six months among first time mothers using a randomized controlled trial design. The educating, skills training and supporting on breastfeeding in this program would affect the mother's learning process and enhance their ability in breastfeeding, increase maternal breastfeeding self-efficacy and continue exclusive breastfeeding until six months.

This program was based on Pender's Health Promotion Model (HPM). The HPM focused on three areas: (1) individual characteristics and experiences, (2) behavior-specific cognitive and affect and (3) behavioral outcomes. According to this model, the set of variables for behavior-specific cognitive and affect have important motivational significance. These variables can be modified through nursing actions. Changes in these variables can produce changes in health promotion behavior resulting in desired outcomes.

Research Questions

1. Does the breastfeeding skill training and supportive program affect the exclusive breastfeeding rate at six months among first time mothers?
2. Does the breastfeeding skill training and supportive program affect the breastfeeding self-efficacy scores at discharge and six weeks among first time mothers?

Objectives of the Study

In the current study, the experimental group refers to the group of mothers who received the breastfeeding skill training and supportive program with routine nursing care; the control group refers to the group of mothers who received only routine nursing care.

1. General Objective

To explore the effectiveness of the breastfeeding skill training and supportive program on breastfeeding outcomes among first time mothers

2. Specific Objectives

To compare the rate of exclusive breastfeeding at six months between the experimental and the control groups

To compare the breastfeeding self-efficacy scores at discharge and six weeks between the experimental and the control groups

Hypotheses

1. First time mothers in the experimental group have higher rates of exclusive breastfeeding at six months than those in the control group.
2. First time mothers in the experimental group have higher breastfeeding self-efficacy scores at discharge and six weeks than those in the control group.

Conceptual Framework of the Study

The conceptual framework used for this study was Pender's HPM (2011). The HPM focused on the relationship between individual's characteristics, experiences, behavior-specific cognitions and behavioral outcomes. Pender's HPM was chosen for this study because the set of variables (perceived benefits, perceived barriers, perceived self-efficacy, activity-related affect, interpersonal influences and situational influences) under the factor of behavior-specific cognition and affect are of major motivational significance that can guide the construction of interventions. According to Pender's HPM, individuals' behavioral outcomes result from two major factors, individual characteristics and experiences, and behavior-specific cognition and affect, as explained below.

1. Individual Characteristics and Experiences are uniquely personal and consist of the prior related experiences and personal factors.

1.1 Prior related experiences refers to behaviors related to the target behavior. Prior behaviors of individuals have both direct and indirect effects on health-promoting behaviors. A direct effect could be the development of a habit. The more a person exhibits this behavior, the more it becomes engrained and the habitual behavior is permanent (Pender, Murdaugh, & Parsons, 2011).

1.2 Personal factors refer to the distinguishing characteristics, which might affect behavior. These factors are biological, psychological and socio-cultural. The personal factors related to the individual could possibly explain the behaviors are the only ones that are observed (Pender, Murdaugh, & Parsons, 2011).

2. Behavior-specific Cognitions and Affect. This is the most vital part of the model. These variables can be modified, unlike the previous variables, and can, therefore, be quite positively influential for health promotion. The variables consist of perceived benefits, perceived barriers, perceived self-efficacy, activity-related affect, interpersonal influences and situational influences (Pender, Murdaugh, & Parsons, 2011).

2.1 Perceived benefits of the action refer to mental representations of the positive or reinforcing consequences of a behavior. Before a person decides to participate in any given behavior, the anticipated benefits are weighted against the action of the behavior in a mental cost and benefit type of analysis. Perceived benefits could directly affect health promotion behavior. It could also indirectly affect health-promoting behavior by positively affecting the development of a commitment to an action plan.

2.2 Perceived barriers to action refer to the unavailability, inconvenience, expense, difficulty or time-consuming nature of a particular action. These perceived barriers could directly affect health promotion behavior by creating a barricade before action takes place and indirectly influences health-promoting behavior by negatively affecting the development of a commitment to an action plan.

2.3 Perceived self-efficacy refers to a judgment of one's abilities to accomplish a certain level of performance, whereas an outcome expectation is judgment of the likely consequences the behavior will produce. The perceptions of self-efficacy could directly affect health-promoting behavior and indirectly affect health-promoting behavior by influencing a perceived barrier to action, and by affecting the development of a commitment to an action plan.

2.4 Activity related affect refers to subjective positive or negative feelings that occur before, during and following behavior based on the stimulus properties of the behavior itself. This variable directly affects health-promoting behavior and indirectly affects health-promoting behaviors through effects on self-efficacy and commitment to developing an action plan.

2.5 Interpersonal influences refer to cognitions involving the behaviors, beliefs, or attitudes of others. The interpersonal influences that one faces

will directly affect health-promoting behaviors, as well as indirectly affect it through social pressure or receiving encouragement to commit to taking action.

2.6 Situational influence refers to personal perceptions and cognitions of any situation or context facilitate or impede behavior. Situational influences can directly affect health-promoting behaviors by creating an environment with triggers that bring people to action. The situational influences can also indirectly affect health-promoting behavior through influencing the commitment to action.

3. Behavioral Outcome. The behavioral outcome consists of commitment to a plan of action, immediate competing demands and preferences and health-promoting behavior (Pender, Murdaugh, & Parsons, 2011).

3.1 Commitment to plan of action refers to a commitment that propels the individual into action unless there is a competing demand that cannot be avoided or a competing preference that is not resisted. This variable is influenced by the variables in the behavior-specific cognitions and affect.

3.2 Immediate competing demands and preferences refer to alternative behaviors that intrude into consciousness as a possible course of action immediately prior to the intended occurrence of planned health-promoting behavior. Immediate competing demands and preferences directly influence health-promoting behavior.

3.3 Health-promoting behavior is the end point or action outcome in the HPM.

According Pender's HPM, the individual characteristics and experiences refer to the mothers' individual demographic characteristics and behavior related to the target behavior. This study used only the first-time mothers aged 18 years old and higher who never experienced breastfeeding directly leading to minimizing threats to external validity. The individual characteristics and experiences have direct and indirect effects on health-promoting behaviors, but they are unmodifiable through nursing actions. Thus, these variables were not interesting, but it could distort the results of the study if the researcher did not control them. In this study, the researcher attempted to control these variables by using the random assignment the subjects to

the experimental and control groups so these variables were evenly distributed across conditions and did not become confounding variables. While, the behavior-specific cognitions and affect variables have important motivational significance and constitute a critical core for intervention because they are subject to modification through nursing actions. The behavior-specific cognitions and affect variables include (1) perceived benefits of breastfeeding, (2) perceived barriers to breastfeeding, (3) perceived self-efficacy, (4) activity related affect and (5) interpersonal influences used in the formation of the breastfeeding skill training and supportive program to promote exclusive breastfeeding six months. The situational influence was not examined in this study because it was beyond the researcher's control depending on each mother's context. The activities included in the breastfeeding skill training and supportive program are described below.

1. Dissemination of knowledge: The activities included letting pregnant women exchange knowledge and experience related to the benefits of breastfeeding, proper positioning and correct suckling, breastfeeding problems and solutions, method on hand expressing and storing breast milk, with the researcher summarizing using the PowerPoint Program. Moreover, pregnant women watched VCDs concerning breastfeeding techniques and hand expression and produced breast milk storage. The objective of the dissemination of knowledge was to increase pregnant women's knowledge about the benefits of breastfeeding, positive attitudes toward breastfeeding and reducing their perception of barriers to breastfeeding. It was believed that when pregnant women learned that breastfeeding benefited those who had made the decision about breastfeeding, they may have become more interested in breastfeeding and determined to breastfeed their infants. For those who had already decided to breastfeed their infants, the duration of breastfeeding may have been extended. In contrast, when pregnant women had a chance to learn about possible obstacles in breastfeeding, they would become better prepared to face such challenges. Additionally, the dissemination of knowledge and the group process enabled these women to develop positive feelings toward breastfeeding, which was a good starting point to increase the possibility of continuous breastfeeding.

2. Demonstration and practice of skills: Different skills that would benefit breastfeeding were demonstrated by the researcher and practiced by pregnant women

before they had to face an actual situation after child delivery. These skills included correct latch-on and proper positions. When pregnant women received the chance to learn and practice these skills before they had to face the actual situation, they would be more confident in their ability to perform exclusive breastfeeding leading to positive feelings toward exclusive breastfeeding.

3. Provision of support and assistance to postpartum mothers: The researcher enabled postpartum mothers to successfully breastfeed their infants by letting the infants suck the mothers' breasts within the first two hours after birth to stimulate consistent lactation. The researcher assisted the postpartum mothers recognize the baby's early feeding cues and signs when the infant is satisfied at the end of feeding. The researcher also provided the opportunity to significant persons in the mothers' life such as husband or grandmother to learn the benefits of breastfeeding to develop positive attitudes toward breastfeeding, provided information about breastfeeding support and encouraged them to participate in practice at assisting mothers to breastfeed and take care of the infants. Sufficient and appropriate support from the researcher as well as family members could assist the postpartum mothers in increasing breastfeeding self-efficacy leading to successfully perform and continue exclusive breastfeeding.

Telephone follow-up: The researcher provided continuous support and assistance by conducting periodic telephone follow-up calls to monitor problems and provide phone counseling. Providing counseling to help them solve problems helped mothers to improve breastfeeding self-efficacy and continue breastfeeding. When mothers received sufficient and appropriate assistance, guidance and support, they were more likely to be able to exclusively breastfeed their infants during the first six months. The conceptual framework of the present study is shown in Figure 1.1.

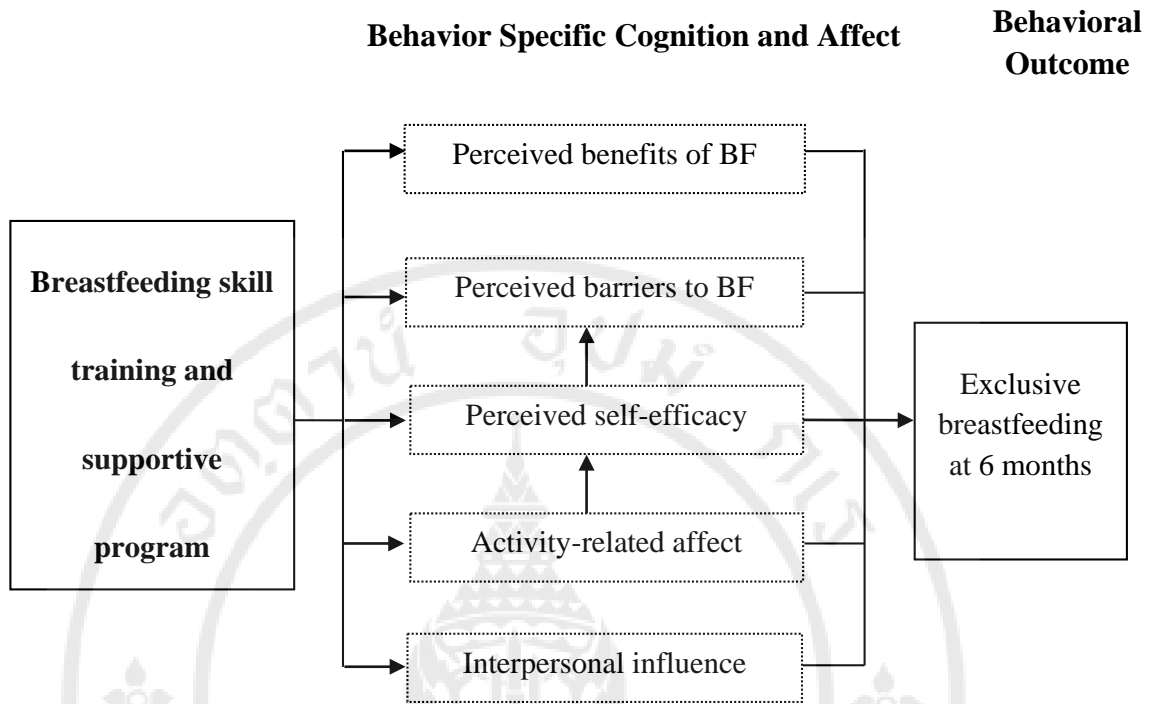


Figure 1.1: Conceptual framework of this study

Scope of Study

This study was an attempt to determine the effect of the breastfeeding skill training and supportive program on the breastfeeding self-efficacy, breastfeeding problems and exclusive breastfeeding rate at six months among the first-time mothers. The study will start when first-time mothers reach her gestational age of 36-37 weeks and continue until her infant is six months old. The study subjects involve first-time mothers who are 18 years and over and attending the antenatal care clinic (ANC) at Maharaj Nakorn Chiang Mai Hospital. Data collection was collected from October 2015 to July 2016.

Definition of Terms

1. **The breastfeeding skill training and supportive program** refers to the activities designed by the researcher to enhance exclusive breastfeeding for six

months. The program consisted of breastfeeding skill training and education during the pregnancy phase and support during the postpartum phase. Breastfeeding skill training and supportive program comprised the following main activities.

Pregnancy phase

1. Group discussion with pregnant women regarding the benefits of breastfeeding, the importance of exclusive breastfeeding for the first six months, effective positioning and latch-on techniques, common breastfeeding problems and appropriate solutions and hand expression and breast milk storage.
2. Demonstration and skills training of proper breastfeeding posture and hand expression and breast milk storage.

Postpartum phase

Support comprised the following activities.

1. Based on the principle of frequent feeding and correct suckling, the training subsequently assisted mothers in providing breastfeeding every two to three hours until they could do it by themselves with no need of assistance.
2. Promoting the participation of husbands and relatives in breastfeeding was accomplished by convincing them to join the group discussion, demonstration and training at least once during the hospital stay.
3. A breastfeeding handbook was distributed to refresh the mother's breastfeeding knowledge at home.
4. When mothers return home problems were monitored and counseling was provided by telephone.

2. Routine nursing care is defined as nursing activities that are regularly provided by the Maharaj Nakorn Chiang Mai Hospital in the ANC, delivery room (LR), and postpartum unit (PP). Usually, the ANC nurses educated pregnant women regarding breastfeeding and proper behavior during pregnancy in one session. In the delivery room, nurses helped mothers initiate breastfeeding to their infants within 30 to 60 minutes after birth or as soon as possible and assist mothers with suggestions on how to feed babies by demand. At the postpartum unit, nurses provided appropriate support for mothers and informed mothers about the importance and techniques of breastfeeding. Before discharge, postpartum discharge instruction was provided to all

mothers with the contents covering a variety of topics such as perineum care, breast care, activities and rest, expressing and storing breast milk etc.

3. First-time mother is defined as a pregnant woman with singleton fetus, gestational age of 36 to 37 weeks and successful delivery of her first child in which number of gestations ending in abortion, miscarriage or dead fetus in utero will not be counted.

4. Exclusive breastfeeding is defined as an infant's consumption of breast milk from the mother (either directly from the breast or expressed) for six months, with no supplementation of any type of solids or liquids including water except for water following medication or vitamins as directed by a physician (World Health Organization, 2001).

5. Breastfeeding self-efficacy refers to the mother's perceived ability to breastfeed her infant. In this study, breastfeeding self-efficacy was evaluated by the short version of the breastfeeding self-efficacy scale (BSES-SF), developed by Dennis (2003), translated and modified to Thai by Thussanasupap (2006).

CHAPTER II

LITERATURE REVIEW

The present study aimed at investigating the effect of a breastfeeding skills training and supportive program on 6 six months of exclusive breastfeeding among first-time mothers. Review of literature for the present study is organized and presented under nine sections as listed below.

Section 1: Pender's Health Promotion Model

Section 2: Benefits of breastfeeding

Section 3: Factors affecting successful breastfeeding

Section 4: Breastfeeding promotion policy

Section 5: Breastfeeding promotion principles

Section 6: Breastfeeding techniques

Section 7: Common breastfeeding and its management

Section 8: Interventions promoting breastfeeding

Section 9: Learning

Pender's Health Promotion Model (HPM)

Pender proposed the HPM in the early 1980s as a framework for integrating nursing and behavioral science perspectives with factors influencing health behaviors (Pender, Murdaugh, and Parsons, 2011). The model offers a guide to explore the complex bio-psycho-social processes that motivate individuals to engage in behaviors directed toward enhancing health. The initial HPM stimulated studies to describe the potential of seven cognitive-perceptual factors and five modifying factors to predict health behaviors. As people became more knowledgeable about health as a positive state, Pender's HPM was revised in 1987 and 1996, and a number of studies were undertaken to determine the ability of Pender's HPM constructs to explain and predict health behaviors. The HPM was derived by integrating expectancy-value

theory, social cognitive theory and a nursing perspective of holistic human functioning (Bandura, 1986; Feather, 1982). The expectancy value theory states that the motivational importance of change is guided by subjective influences. For goal accomplishment to be successful, individuals must perceive the goal as attainable, have some type of positive value and feel action will lead to success. However, social cognitive theory recognizes the dynamic relationship as well as the interaction of environmental events, personal factors and individual behavior. Behavior is directed by a combination influences representing individual forces and environment stimuli (Pender, Murdaugh, and Parsons, 2011). The HPM considers the multidimensional nature of individuals interacting with interpersonal and physical environments as they pursue health.

Major assumptions of the HPM

The major assumptions of the HPM, reflecting both nursing and behavioral science perspectives as described below.

- Individuals seek to create conditions of living through which they can express their unique human health potential.
- Individuals have the capacity for reflective self-awareness, including assessing their own competencies.
- Individuals value growth in directions viewed as positive and attempt to achieve a personally acceptable balance between change and stability.
- Individuals seek to actively regulate their own behavior.
- Individuals in all their biophysical complexity interact with the environment, progressively transforming the environment and being transformed over time.
- Health professionals constitute a part of the interpersonal environment, which exerts influence on individuals throughout their life span.
- Self-initiated reconfiguration of person-environment interactive patterns is essential to behavior change.

These major assumptions emphasize the active role that individuals have in shaping and maintaining their own health behaviors and in modifying the environmental context for health behaviors.

Major constructs and definitions

The revised HPM consists of three constructs that include (1) individual characteristics and experiences, (2) behavioral-specific cognition and affect and (3) behavioral outcome. Pender (2011) postulated that individual characteristics and behavior-specific cognitions and affect are considered determinants of health behaviors. Individual characteristics and experiences influence behavior specific cognition and affect and lead to a commitment to plan of action. Commitment to a plan of action results in the behavioral outcome of practicing health-promoting behavior. Pender posits that competing demands and preferences may influence and modify the outcome.

1. Individual characteristics and experiences reflect the uniqueness of each person. It includes two concepts: prior related behavior and personal factors. Pender views individual characteristics and aspects of experiences as determinants for healthy behaviors. She believes that the best indicator of behavior is the frequency of the same or similar behavior in the past. This frequency of behavior was viewed as having a direct and indirect effect on the likelihood of engaging in health promoting activities. As for personal factors, Pender believes that each person has unique biological, psychological and socio-cultural characteristics that affect the subsequent action and predicts a given behavior. Biological factors include variables such as age, body mass index, pubertal and menopause status, aerobic status, strength, agility and balance. Moreover, psychological factors include variables such as self-esteem, self-motivation and perceived health status. Finally, sociocultural factors include variables such as race, ethnicity, acculturation, education and socioeconomic status.

1.1 Prior related experience comprises behavior related to the target behavior. Prior behaviors of individuals have both direct and indirect effects on health promoting behaviors. A direct effect could constitute development of a habitual behavior. When individuals have had such behavior in the past, it is more likely that they will perform such behavior again. On the contrary, when individuals have never performed such behavior, there may be less chance for them to perform the behavior. The indirect way in which a behavior can affect health promotion is through the development of self-efficacy. When a person has self-efficacy, the chance is higher

that person will engage in self-motivated, promotional-type behaviors (Pender, Murdaugh, and Parsons, 2011).

1.2 Personal factors are the distinguishing characteristics, which might affect future behavior, which can be divided in three groups: (1) biological factors, (2) psychological factors and (3) socio-cultural factors. Biological factors include concepts such as age, BMI, aerobic capacity, strength, pubertal and menopause status, balance and agility. Psychological factors include perceived health status, self-esteem and self-motivation. Socio-cultural factors include race, ethnicity, acculturation, socioeconomic status and education. Personal factors related to the individual could possibly explain that behavior constitute not only ones that are observed.

2. Behavior-specific cognitions and affect are represented by a major portion of the model and are considered to be the major motivations for health-promoting behavior. The construct consists of six variables including perceived benefits of action, perceived barriers to action, perceived self-efficacy, activities-related affect, interpersonal influences and situational influence.

2.1 The perceived benefits of action refer to beliefs about the effectiveness of the behavior in reducing a health condition or favorable outcomes resulting from the behavior. The perceived benefits come from personal experiences or observational learning from others participating in the behavior. Although perceived benefits of action directly influences health-promoting behavior, the perceived benefits of action variable is necessary, but insufficient to sustain the behavior change alone. These perceived benefits may be intrinsic or extrinsic, but in the case of health-promoting behaviors, the intrinsic benefits may have more influence in sustaining a health-related behavior.

2.2 Perceived barriers to action is the unavailability, inconvenience, expense, difficulty or time-consuming nature of particular action. It can be a real or imagined barrier to health-promoting behaviors and may be internal or external affecting one's intentions to engage in those behaviors. Internal barriers can comprise a lack of knowledge or motivational orientation. External barriers can consist

of a lack of facilities or materials. When individuals feel this way about a behavior, feelings of avoidance usually set in.

2.3 Perceived self-efficacy, the personal judgment of one's capability to carry out a course of action, is personally based on performance accomplishments, vicarious experiences, verbal persuasion and physical and emotional states. When one feels skilled and competent in an area, then this area is likely to be developed further than areas in which a person does not have this level of confidence. Perceived self-efficacy directly influences health-promoting behaviors by promoting the confidence that one can commit to the health-promoting behavior and by increasing the persistence to accomplishing the goal. Perceived self-efficacy also indirectly influences health-promoting behavior through perceived barriers to action. The more perceived self-efficacy a person has, the fewer the perceived barriers because one will be more confident that the action can take place.

2.4 Activity-related affect comprise subjective emotions felt before, during or after implementation of the behavior. This variable consists of three components. The first is the emotional reaction to the action that will be performed (act related). The second is the person performing the action (self-acting) and the third is the environment that surrounds the action that is taking place (context related). The resultant feeling state is likely to affect whether an individual will repeat the behavior again or maintain the behavior long term. The individual's response to thinking about taking the action can range from mild to strong, and these thoughts are stored in memory so that when the action is thought of, the same emotions will arise that are associated with action. This will affect whether the person will want to continue taking the action or not. When the behaviors are linked more to a positive than a negative effect, then they will likely be repeated, which means the more positive the subjective feeling, the greater the feeling of efficacy. In turn, increased feelings of efficacy can generate further positive affect.

2.5 Interpersonal influences are the cognitions of the behaviors, beliefs or attitudes of others, the principal source of which is families, peers and health care providers. People are greatly influenced by others' expectations, encouragement from other people and other people's behaviors that are observed. Interpersonal influences also are inclusive of norms, social support and modeling.

Norms include expectations of others, social support includes encouragement of others and modeling includes vicarious observational learnings of others. Although, not all people value the opinion of others with the same magnitude, it does affect everyone to some extent.

2.6 Situational influences are the personal perceptions of a situation or the context that facilitates or interferes with a behavior. It consists of the perceptions of the options available, demand characteristics of the situation and the esthetic features of the environment where the behavior is to occur. When a situation is appealing, the commitment will be easier to adhere to. People will be drawn to performing behaviors in environments that feel safe and stimulating. When people feel compatible with the situation and can relate to the context of the environment that it is taking place in, then they are more likely to be drawn to it.

3. Behavioral outcome

The behavioral outcome category consists of (a) commitment to a plan of action, (b) immediate competing demands and preferences and (c) health-promoting behavior.

3.1 Commitment to a plan of action is a specific commitment to take an action and a strategy to complete the plan for the occurrence of the health-promoting behavior. Commitment goes beyond intentionality to further the likelihood that the plan of action will be successfully implemented. Once a person makes a commitment to action, then the behavior is engaged. Therefore, choosing strategies supporting commitment to the behavior increase the likelihood of performing the behavior.

3.2 Immediate competing demands and preferences are blocks that arise immediately preceding a positive health action either from external demands that would result in unfavorable consequences or last minute urges. This variable is not directly influenced by any of the previously discussed variables, according to the HPM. Immediate competing demands can be variables that a person cannot control because they are from outside sources, such as the needs of family or work responsibilities. These are different than the barriers that were discussed because these take place at the last minute, just before the action is to take place and after the

commitment has been made. Immediate competing demands and preferences can not only obviously directly affect the initiation of health-promoting behaviors, but they can also indirectly affect the behaviors by negatively swaying the commitment to action. These demands and preferences constitute competing ideas that can lead a person astray from the original commitment to action, so this is something to be aware of.

3.3 Health-promoting behavior is the positive health end point or action outcome. When people of any age develop and integrate health-promoting behaviors in their lifestyle, they have a better quality of life

Benefits of breastfeeding

Breast milk has been called, “the Gold Standard”, for the nourishment of all infants, as it provides all the essential ingredients needed for health, growth and intellectual development of infants. This is because breast milk is a highly complex and unique fluid that is strikingly different from the milks of other species, including the cow. Thus, breast milk is the only kind of food in the world which provides everything infants need. No other food has been developed which can substitute or be equivalent. Breast milk contains lactose, which is a disaccharide composed of a galactose and glucose molecule, that provides energy for the growing infant. Also, whey protein in breast milk is easier to digest than the protein found in formula. Many essential amino acids and fatty acids, indispensable for the growth and function of healthy brain and nervous tissue, are not found in formula.

Breast milk also provides a more balanced amount of vitamins and minerals compared with formula. Hundreds of breast milk components interact synergistically to fulfill the dual function of breast milk, nourishing and protecting infants and young children who are breastfed. Moreover, breast milk is naturally clean. It passes directly from the breast to the infant’s mouth and cannot be contaminated by improper handling as can happen in bottle feeding. Kept exactly at body temperature, breast milk is ready at any time of the day or night and in any place. The natural characteristics of breast milk, together with the nutritional contents abundant in breast

milk, makes breast milk of vital importance to infants. In addition, mothers who breastfeed and society can reap indirect benefits of breastfeeding as described below.

1. Benefits of breastfeeding for infants

Breastfeeding offers advantages for infants that cannot be duplicated by any other form of feeding. The benefits of breastfeeding begin from the first moment after birth and last for many years after breastfeeding ends. Bhutta et al. (2008) and Chantry, Howard, and Auinger (2006) found that exclusive breastfeeding for the first six months of life is the best effective intervention to prevent morbidity and mortality during infancy and childhood and the protective effect is enhanced with longer exclusive breastfeeding. However, the benefits of breastfeeding for infants may depend on the type of breastfeeding such as exclusive, predominant or mixed and also the age of the infants. The benefits of breastfeeding for infants include preventing allergies, decreasing the risk of infectious and chronic diseases as well as enhancing intelligence and neurological development.

1.1 Preventing allergies

Allergies during infancy and childhood are a health problem of major significance. Specific allergy symptoms can include atopic dermatitis, rhinitis, chronic pulmonary disease, failure to thrive, spitting up, colic, diarrhea, blood in the stools, vomiting and weight loss. A meta-analysis of 18 perspective cohort studies on full term infants reported a 42% lower risk of atopic dermatitis among children with a family with history of atopic and exclusively breastfed for at least three months compared with those who were breastfed less than three months (Gdalevich, Mimouni, David, and Mimouni, 2001). Cow's milk is high on the list of food allergens especially among children. Breast milk is species specific and human milk does not produce an allergic response in human infants. When milk from one species is fed to another species, it is not surprising that specific antigens are recognized (Lauwers and Swisher, 2011).

1.2 Decreasing the risk of infectious diseases

Several studies have repeatedly demonstrated lower rates of infectious disease among breastfed infants. When a lactating mother is exposed to an infectious agent, her immune systems begin to produce secretory immunoglobulin A

(IgA), a compound that is the primary disease fighter in the human immune system. This substance is secreted in her breast milk and consumed by her nursing infant. The composition of the mother's IgA not only provides active resistance to disease, it also stimulates the production of additional IgA in the infant, resulting in stronger immune responses among breastfed infants than in their formula fed peers. The lower risk of infectious diseases including gastrointestinal infections, respiratory infections and otitis media

(1) Gastrointestinal infections. Breastfeeding could reduce the risk of nonspecific gastrointestinal infections during the first year of life among infants who were breastfed exclusively until the age of four months and partially in developed countries, compared with never breastfed infants (Duijts, Jaddoe, Hofman, and Moll, 2010; Ip et al., 2007). Similarly, a recent case control study from England reported that infants who were breastfeeding for at least six months had a 64% reduction in the risk of nonspecific gastrointestinal diseases compared with infants who were not breastfeeding (Quigley, Kelly, and Sacker, 2007).

(2) Respiratory tract disease. Bachrach, Schwarz and Bachrach (2003) found that the risk of hospitalization due to lower respiratory tract infection among infants less than one year was reduced 72% when infants were breastfed exclusively for four months or more. The severity of respiratory syncytial virus bronchiolitis was reduced 74% among infants with four months exclusive breastfeeding compared with those who were never or only partially breastfed (Nishimura, Suzue, and Kaji, 2009).

(3) Acute otitis media (AOM). A systematic review reported that breastfeeding was associated with a significant reduction in the risk of acute otitis media. The introduction of infant formula in the first six months of life is associated with increased incidence of acute otitis media in early childhood (Abrahams and Labbok, 2011). Comparing breastfeeding with exclusive formula feeding, the risk reduction of acute otitis media was 23%. When comparing exclusive breastfeeding for six months with exclusive formula feeding, the risk reduction was 50% of (Ip et al., 2007).

1.3 Decreasing the risk of chronic diseases

Not only does breastfeeding present clear benefits for mainly protecting against morbidity and mortality from infectious diseases, it has also shown benefits on the long term consequences of breastfeeding. Several scientific publications are available reporting the association between breastfeeding and health outcome beyond infancy including lower rate of chronic diseases such as type I diabetes, obesity, lower blood pressure, acute leukemia and cardiovascular disease.

(1) Type I diabetes. Type I diabetes results from destruction of the insulin-producing β cells of the pancreatic islets. Various exogenous triggers such as certain dietary factors and viruses are thought to induce the immune-mediated process leading to extensive β cell destruction. Mechanisms of protection against type I diabetes afforded by breast milk include passive immunity provided by secretory immunoglobulin A, increased β cell proliferation observed in breastfed compared with formula-fed or delayed exposure to foreign food antigens in exclusively breastfed infants. Several studies have linked type I diabetes with the early use of infant formula. It is believed that protein found in cow's milk might sensitize the immune system in vulnerable infants, leading to an increased risk of type I diabetes, while breast milk contains substances that promote the maturation immune system, which protect against the onset of type I diabetes (Sadauskaite-Kuehne, Ludvigsson, Padaiga, Jasinskiene, and Samuelsson, 2004; Stuebe, 2007); Therefore, children who were exclusively breastfed for five months had significantly lower rates of type I diabetes than those who were formula-fed (Cakmak and Kuguoglu, 2007; Celi, Rich-Edwards, Richardson, Kleinman, and Gillman, 2005; Kramer and Kakuma, 2012).

(2) Obesity. Differences in protein intake and energy metabolism may be one of the biological mechanisms linking breastfeeding to later obesity. Furthermore, breastfed and formula-fed infants have different hormonal responses to feeding, with formula feeding leading to greater insulin response resulting in fat deposition and increased number of adipocytes (Horta, Bahl, Martínés, and Victora, 2007). Therefore, breastfeeding can prevent the development of obesity, not only in early life but also long term (Gillman et al., 2001). A recently published systematic review and meta-analysis with more than 69,000 participants showed that breastfeeding significantly reduced the risk of obesity in childhood (Arenz, Ruckerl,

Koletzko, and von Kries, 2004). In addition, a longer duration of breastfeeding is associated with a larger decrease of the risk of obesity; each month of breastfeeding was found to be associated with a 4% lower risk of obesity (Harder, Bergmann, Kallischnigg, and Plagemann, 2005).

(3) Low blood pressure. Adult blood pressure is influenced by early life exposures such as intrauterine growth, and infant feeding (Eriksson, Forsen, Tuomilehto, Osmond, and Barker, 2001). Two meta-analysis of association between breastfeeding and blood pressure in later life found differences in systolic and diastolic blood pressure were lower among breastfed subjects, when comparing those who were breastfed at least two months to those who were exclusively bottle-fed (Martin, Gunnell, and Smith, 2005; Owen, Whincup, Gilg, and Cook, 2003).

(4) Acute leukemia. The etiology of childhood leukemia has been studied for a half of century, but causal factors associated with leukemia are largely unidentified (Belson, Kingsley, and Holmes, 2007). Many studies have suggested that breastfeeding can protect children from developing acute leukemia (Altinkaynak, Selimoglu, Turgut, Kilicaslan, and Ertekin, 2006; Guise, Austin, and Morris, 2005; Shu et al., 1999). Studies have examined the associations between formula feeding and childhood leukemia. They found a higher risk of acute leukemia among formula-fed children compared with children who were breastfed less than six months (Bener, Hoffmann, Afify, Rasul, and Tewfik, 2008; Kwan, Buffler, Abrams, and Kiley, 2004). However, having breastfed was found to be associated with decrease risk of childhood acute leukemia (Guise, Austin, and Morris, 2005).

(5) Cardiovascular disease. Epidemiologic evidence has suggested that breastfeeding in infancy provides a protective effect on cardiovascular disease risk in adulthood (Niinikoski et al., 2012; Pahkala et al., 2013). A study was conducted in Scotland to assess whether breastfeeding in infancy was related to vascular function in later childhood. The result showed that the risk of later cardiovascular disease was reduced by exclusive breastfeeding during infancy (Khan et al., 2009). Moreover, one recent study confirmed that the longer the duration of breastfeeding the greater the protection against future long term cardiovascular disease (McDade et al., 2014).

1.4 Enhancing intelligence and neurological development

In addition to physiological benefits, a number of studies have shown that breastfeeding is associated with positive effects on neurodevelopment. These advantageous effects have been attributed to the presence of long chain polyunsaturated fatty acids in human milk. The fatty acids, eicosapentaenoic acid [EPA] and docosahexaenoic acid [DHA], present in human milk, may be responsible for advanced neurodevelopment (American Dietetic Association, 2001) To examine the association between breastfeeding and developmental milestones, 1,656 infants were followed for eight months. Milestones included fine motor skills, general motor skills and language development. Results showed that increased duration of breastfeeding was associated with increased mastery of the milestones, and the authors concluded that breastfeeding benefited neurodevelopment (Vestergaard et al., 1999).

Not only does breastfeeding produce clear benefits such as neurodevelopment, but has also been shown to be associated with an increase in intelligence. In the study by Victora et al. (2015), who explored the association between breastfeeding and intelligence, the study followed 3,500 newborns who breastfed over 30 years reporting that subjects who were breastfed for 12 months or more had a higher performance in IQ, with an average of 3.76 IQ points higher, as well as higher monthly incomes and a higher level of education than did those who were breastfed for less than one month.

2. Benefits of breastfeeding for mothers

Physiological benefits of breastfeeding for the mother are related to the direct suckling of the infant which stimulates the release of a variety of female hormones. When suckling occurs, oxytocin is released. Oxytocin is responsible for the contractions and involution of the uterus, which helps to prevent postpartum maternal hemorrhage (Lauwers and Swisher, 2011). Oxytocin is also responsible for the direct ejection of milk from the breast or the let-down reflex. Moreover, breastfeeding can increase child spacing since exclusive breastfeeding prevents ovulation. Only 33% of lactating women have a menstrual period by the end of the third postpartum month (Lauwers and Swisher, 2011). Not only does breastfeeding present clear and immediate benefits for mothers, it has also been shown to benefit the long term

consequences of breastfeeding such as reduced risk of ovarian cancer, breast cancer, type 2 diabetes and weight and enhanced maternal bonding.

2.1 Ovarian cancer. Breastfeeding can reduce the risk of ovarian cancer. Danforth et al. (2007) found that for each mother providing an additional month of breastfeeding; the risk of ovarian cancer was reduced by 2%. Similarly, Jordan, Siskind, Green, Whiteman and Webb (2010) reported a 1.4% reduction in ovarian cancer risk for every additional month of breastfeeding. Moreover, breastfeeding has been found not only to reduce the risk of developing ovarian cancer, but also to improve the chance of surviving in women who do develop it (Nagle, Bain, Green, and Webb, 2008).

2.2 Breast cancer. Breastfeeding may protect against breast cancer by suppressing ovulation and thus limiting lifetime estrogen exposure (Clemons and Goss, 2001). Theoretically, reductions in total estrogen exposure may reduce the risk of breast cancer, because estrogen increases the rate of breast cell proliferation and differentiation. Moreover, it provides more opportunities for mutations to occur and, when they do, fuel cancer growth. A meta-analysis study found a protective effect of breastfeeding on breast cancer. This effect was strong among women who had breastfed for longer than 12 months (De Silva, Senarath, Gunatilake, and Lokuhetty, 2010).

2.3 Type 2 diabetes. One recent research study indicated that breastfeeding can reduce the risk of developing type 2 diabetes. Women who reported a life time history of breastfeeding more than one year were less likely to develop postmenopausal diabetes than those women who never breastfed (Schwarz et al., 2010) Likewise, the study of Stube et al. (2009) found that women who breastfed over their lifetime for two years or more were 23% less likely to develop type 2 diabetes than those who never breastfed.

2.4 Weight loss. Another maternal physical benefit of breastfeeding is the increased expenditure of energy which leads to a reduction in stored maternal fat (King, 2000). This energy expenditure allows the mother to return more quickly to her prepregnancy weight. It has been suggested that the maternal caloric intake be an additional 500 calories daily. Quicker weight loss will result with breastfeeding even though increase caloric intake is recommended (Baker et al., 2008)

2.5 Maternal bonding. Breastfeeding also enhances the process of maternal-infant bonding. A study by Feldman, Weller, Zagoory-Sharon, and Levine (2007) suggested that oxytocin is important for maternal bonding, for instance, plasma oxytocin levels during pregnancy and the postpartum period predict more maternal bonding behavior, such as eye gaze, vocalizations, positive effects and affectionate touch. A study on the mother-infant interactions revealed that mothers who had breastfed for at least one week showed higher quality interactions with their infants at 12 months than those who never breastfed (Liu, Leung, and Yang, 2014). Mothers who were supplying over one half of their infant's diet through breastfeeding at six months postpartum reported that they were more emotionally bonded to their infant at that time than women who were supplying less than one half of their infant's diet through breast milk or were not breastfeeding at all (Nishioka et al., 2011).

Factors affecting successful breastfeeding

Although, a number of factors affect breastfeeding, for purposes of this study, breastfeeding is viewed as one aspect of health-promoting behaviors, for those women choosing to breastfeed. Thus, the review of the factors that influence breastfeeding will be based on the variables in the theoretical framework. According to Pender's HPM, the behavior-specific cognitions factor is the most vital part of the HPM; the variables of this factor can be modified, and can therefore be quite influential for health-promoting behavior that can guide the construction of interventions. These variables consist of perceived benefits, perceived barriers, perceived self-efficacy, activity-related affect, interpersonal influences and situational influences.

1. Perceived benefits of exclusive breastfeeding

People tend to engage in health-promoting behaviors when they anticipate benefits from those behaviors (Pender, Murdaugh, and Parsons, 2011). Perceived benefits of behaviors encourage positive health behaviors. A comparative study was conducted to assess the mothers' knowledge about breastfeeding among 108 women. The results revealed that all mothers were aware that breastfeeding is a natural need

and important element of emotional bonding with the newborn. Among 78.7% of women, the priority of breastfeeding was the health of the infant. Notably, 16.7% pointed out the advantage of breast milk, and 37 % of mothers found breastfeeding convenient. The source of education was magazines for 60%, books for 53.6%, family for 32% and only 24.1% of the mothers took advantage of antenatal classes. The study concluded that the mothers' knowledge about breastfeeding was essential for upholding the health of their infants. Providing lactation knowledge to all mothers was necessary (Jarosz et al., 2010). Petit (2008) reported that of women who were knowledgeable about the benefits of exclusive breastfeeding, one half (49.8%) practiced exclusive breastfeeding for six months and 12% for more than six months.

Some researchers suggested that when knowledge about the benefits of exclusive breastfeeding improves the mother's breastfeeding intentions and attitudes, the rates and duration of breastfeeding would increase (Chezem, Friesen, and Boettcher, 2003; McLeod, Pullon, and Cookson, 2002; Ryser, 2004). The greater the perceived benefits of breastfeeding, the greater the number of women practice exclusive breastfeeding for six months. Likewise, mothers who perceived inadequate breastfeeding information were two or more likely to have the breastfeeding problems than those who did not (Hauck, Fenwick, Dhaliwal, Butt, and Schmied, 2011). Abul-Fadl, Shawky, El-Taweel, Cadwell and Turner-Maffei (2012) evaluated the knowledge and attitudes among mothers towards breastfeeding, emphasizing the importance of prenatal education to increase the rates of breastfeeding. The authors; therefore, suggested that providing more prenatal education achieved higher knowledge levels and better attitudes towards breastfeeding. Therefore, perceived benefits of breastfeeding can influence the rate and duration of exclusive breastfeeding.

2. Perceived barriers of exclusive breastfeeding.

People sometimes experience barriers to health-promoting behaviors that affect a person's intentions to engage in those behaviors. Barriers affecting personal health behavior may be imagined or real and may consist of perceptions concerning the unavailability, inconvenience, expense, difficulty or time consuming nature of a particular action (Pender, Murdaugh, and Parsons, 2011). Nabulsi (2011) in focus group discussion, discovered that perceived barriers to exclusive breastfeeding for

Lebanon women included advice from others, the infant crying a great deal, breast engorgement and pain. In interviews with adolescent pregnant mothers, barriers to breastfeeding were perceived as excessive attachment and pain (Hannon, Willis, Bishop-Townsend, Martinez, and Scrimshaw, 2000). Powell, Davis, and Anderson (2014), conducted in-depth interviews with 21 women to understand the current breastfeeding experiences of mothers. They found that over one half of the women perceived their milk supply was insufficient for their infants. Perceived insufficient milk can cause mothers to feel low self-efficacy and unsuccessful at breastfeeding leading to premature breastfeeding cessation (Blyth et al., 2002; McCarter-Spaulding and Kearney, 2001; Otsuka, Dennis, Tatsuoka, and Jimba, 2008).

Gatti (2008) found that most women discontinued breastfeeding during the first few weeks of the postpartum period because of perceived insufficient milk supply and approximately 35% of all women who wean early reported perceived insufficient milk as the primary reason. Several studies examined the relationship between perceived barriers and breastfeeding behavior among postpartum mothers. The results showed that mothers who perceived breastfeeding problems in the first week postpartum showed the negative impacts continued in their breastfeeding effort, even among those with a high intention to exclusively breastfeed (Dewey, Nommsen-Rivers, Heinig, and Cohen, 2003; Kronborg and Vaeth, 2009). As barriers increased, the extent of exclusive breastfeeding decreased.

3. Perceived self-efficacy of breastfeeding

Pender regarded Bandura's theory in developing the HPM and adopted self-efficacy as section of the model, seeing it as having a direct or indirect affect on the perceived barriers and benefits of health-promoting behavior. Within the HPM, perceived self-efficacy is shown to motivate health-promoting behavior directly by increasing expectation of success or indirectly by affecting perception of barriers (Pender, Murdaugh, and Parsons, 2011). Self-efficacy is a complex concept that can change across time, since it is influenced by four main sources of information (Dennis, 1999); (1) personal accomplishments (breastfeeding experiences); (2) vicarious experiences (observing other women breastfeed); (3) verbal persuasion (encouragement from friends, family, and health care providers) and (4) psychological

and affective states (such as nipple pain, fatigue, stress, anxiety, perception of insufficient milk supply). Breastfeeding self-efficacy plays an important role in achieving breastfeeding outcomes (Dennis, 1999). Mothers with high self-efficacy continued to breastfeed to four months postpartum and do so exclusively significantly more than mothers who had lower self-efficacy scores (Blyth et al., 2002). Lower levels of breastfeeding self-efficacy might cause a mother to doubt her ability to produce adequate milk and lead to premature breastfeeding cessation (McCarter-Spaulling and Kearney, 2001).

Breastfeeding self-efficacy can be enhanced by helping mothers identify the barriers to breastfeeding and explore strategies to remove those barriers (Leahy-Warren and McCarthy, 2011). Mothers who have high self-efficacy will seek information to prevent or stop risk of the incidence of breastfeeding problems and seek solutions when they face breastfeeding barriers more often than those with low self-efficacy. Mannion, Hobbs, McDonald and Tough (2013) reported that mothers feel more capable and confident about breastfeeding when they perceive their partners are supportive by way of verbal encouragement and active involvement in breastfeeding activities. When mothers believe that they have self-efficacy, they will demonstrate capable, tolerant and accomplished behaviors. Therefore, interventions focused on enhancing breastfeeding self-efficacy can help women achieve their breastfeeding outcomes (Laantera, Pietila, Ekstrom, and Polkki, 2012)

4. Activity-related effects

The subjective feeling that occurs before, during and following an activity are likely to affect whether an individual will repeat or maintain the behavior (Pender, Murdaugh, and Parsons, 2011). Activity-related affect may represent emotional arousal to the action that will be performed (act related), the person performing the action (self-acting) or the environment that surrounds that action that is taking place (context related). Brown and Lee (2011) explored the attitudes and experiences in mothers who successfully breastfed exclusively for six months. They found that a positive attitude towards breastfeeding was associated with a longer duration of breastfeeding and high level of support; confidence and intention to breastfeed had a connection to a positive attitude. The mothers were able to list several advantages with

exclusive breastfeeding and that it was the most natural and healthiest choice for both themselves and their infants. They also felt that they enjoyed it and that it created a closer bond between mother and infant. Mothers who were using instant formula were more likely to have a negative attitude towards breastfeeding. Elements that promoted negative attitudes included embarrassment of breastfeeding in public, physical concerns, uncomfortable feelings and negative influence from family/friends (Wojcicki et al., 2010). Stuebe and Bonuck (2011) also found comfort with breastfeeding in social environments was factors related to the intension of exclusively breastfeeding. The authors suggested strategies to encourage breastfeeding in social environments should increase its duration and the exclusivity.

5. Interpersonal influences

Interpersonal influences (family, peers and health professionals) affect health-promoting behavior directly or indirectly through social pressures or encouragement to commit to a plan of action (Pender, Murdaugh, and Parsons, 2011). The Cochrane reviews indicated that good support for breastfeeding mothers, both professional and peer support, increased exclusive breastfeeding practice and duration. (Britton, McCormick, Renfrew, Wade, and King, 2007). On the other hand, poor support might contribute to early cessation of breastfeeding (Mozingo, Davis, Droppleman, and Merideth, 2000; Sheehan, Schmied, and Barclay, 2009).

Professional support has the potential to influence the duration of breastfeeding by the early identification of problems, active interventions and continuous encouragement (Naylor, 2001). However, inadequate or inappropriate support and advice from health care providers can negative influence breastfeeding (Dennis, 2002; DiGirolamo, Grummer-Strawn, and Fein, 2001). Professional support only may be insufficient to give mother's the confidence to breastfeed their infants in societies (Cooke, Sheehan, and Schmied, 2003; Dykes, 2005). On the other hand, family and peer support is considered to facilitate the development of breastfeeding skills and increase self-efficacy in the ability to continue any breastfeeding. It appeared to have greater association with breastfeeding intention than those of health professionals (Wilkins, 2006).

Partner and family support have been demonstrated empirically to strongly influence a mother's decision to initiate and continue breastfeeding (Arora, McJunkin, Wehrer, and Kuhn, 2000; Swanson and Power, 2005). A qualitative study conducted by Bonia et al. (2013) revealed that women perceiving their partners approved of their breastfeeding was related to their breastfeeding intentions, breastfeeding initiation and continuing to breastfeed longer. However, perceiving negative attitudes of their partner, family members and friends towards breastfeeding could pose a barrier to breastfeeding. Some mothers complained that they did not ask for help with breastfeeding from their family members or friends because of contradictory information they received from nurses.

6. Situational influences

Personal perceptions and cognitions of any situation or context facilitate or impede behavior. Comfortable, clean, private and safe environments are situational influences that make breastfeeding easy and convenient, especially for new mothers. A qualitative study by Bonia et al. (2013) found that the most frequent reasons mothers' decide to formula-feed their infants was embarrassment with breastfeeding in public. However, embarrassment about breastfeeding was not limited to public settings; women may find themselves excluded from social interactions when they are breastfeeding because others are reluctant to be in the same room while they breastfeed (McFadden and Toole, 2006). Stuebe and Bonuck (2011) found comfort with breastfeeding in social environments was factors related to the intension of exclusively breastfeeding. The authors suggested strategies to encourage breastfeeding in social environments should increase its duration and the exclusivity.

Rooming-in situationally also influences breastfeeding. Infants staying together with their mother throughout their hospital stay would have more frequent suckling of the breast and thus promote closeness and bonding. Whereas, infants separating from their mothers after birth could reduce the frequency of breastfeeding and the amount of breast milk a mother produces. Jaafar, Lee and Ho (2012) explored the duration of breastfeeding between separate care for new mother and infant versus rooming-in. The authors reported that the duration of breastfeeding of four months was significantly lower in the separate care group compared with the rooming-in

group. Chantry, Dewey, Peerson, Wagner and Nommsen-Rivers (2014) examined the association between in-hospital formula use and early breastfeeding cessation among first-time mothers who intended to exclusively breastfeed. The study revealed that in-hospital formula supplementation was associated with a two-fold greater risk of not fully breastfeeding days 30 to 60 and a three-fold risk of breastfeeding cessation by day 60. The authors suggested that nurses should avoid unnecessary in-hospital formula supplementation and support breastfeeding when in-hospital formula supplementation is unavoidable.

As mentioned above, these variables are very important because they can greatly influence exclusive breastfeeding at six months and will guide the researcher constructs to create effective interventions to promote and support exclusive breastfeeding.

Breastfeeding promotion policy

Breastfeeding has tremendous benefits for infants, mothers and the nation. Recognizing these benefits, both WHO and the United Nations Children's Fund (UNICEF), recommend that all mothers should breastfeed their children exclusively for the first six months (World Health Organization, 2002). Thereafter, they should continue to breastfeed for as long as the mother and child wish, and both appropriate and sufficient weaning food should be added. To promote breastfeeding, UNICEF and WHO have developed the Baby Friendly Hospital Initiative (BFHI), requiring hospitals to follow ten steps to achieve baby friendly status, and have taken action by adopting the International Code of Marketing of Breast Milk Substitutes. The WHO Code and subsequent resolutions aim to curtail the marketing of infant formula and related products by companies more interested in shareholder value than infant health.

In Thailand, government policy has consistently supported breastfeeding as the best way of ensuring a healthy start for infants. In 1992, the Thai government launched the National Breastfeeding Project. Its objective is the empowerment of all women to breastfeed their children exclusively for the first four to six months and to continue breastfeeding with complementary food well into the second year and beyond. The aims are to ensure that all mothers are able to exclusively breastfed their

infant for at least four months and subsequently breastfeed with the addition of appropriate complementary food until the infant is two years of age. To accomplish this, relevant information and training is provided to ensure that all hospitals reach BFHI status, by June 1993 and end the donation and sale of infant formula in all government hospitals to ensure strict adherence to the 1995 Code of Marketing of Breast Milk Substitutes and other related products by both the public and private sectors. In addition, the WHO indicators were used to assess national breastfeeding promotion. In 2003, the guidelines of infant feeding in Thailand were changed by recommending exclusive breastfeeding from four to six months to six months (Department of Health, Ministry of Public Health, 2005) to be consistent the WHO and the UNICEF recommendations. The aim of the BFHI is to provide every infant the best start in life by ensuring a healthcare environment where breastfeeding is the norm (Grizzard, Bartick, Nikolov, Griffin, & Lee, 2006). To truly achieve the Baby-Friendly Hospital Initiative objectives, hospitals and maternity units are giving practical effect to the principles described in the joint WHO/UNICEF statement that have been synthesized in the Ten Steps to Successful Breastfeeding.

The Ten Steps to Successful Breastfeeding are described below

1) Have a written breastfeeding policy that is routinely communicated to all health care staff. Policies need to be communicated to all healthcare staff who encounters breastfeeding mothers and infants. Breastfeeding policy based on current scientific knowledge will help eliminate unnecessary and intrusive interventions that negative affect the initiation of breastfeeding.

2) Train all health care staff in skills necessary to implement this policy. Educate the healthcare staff in how to implement breastfeeding policies. Basic instruction should include positioning and latch, evaluating the quality of feeding and when and how to supplement infants. It will also ensure that mothers will receive appropriate and consistent help.

3) Inform all pregnant women about the benefits and management of breastfeeding. All women need to know about the benefits and management of breastfeeding in order to make an informed decision about how they will feed their

infant and to dispel any misconceptions. Offering breastfeeding information should start in the prenatal period.

4) Help mothers initiate breastfeeding within one hour of birth. The duration of breastfeeding is higher for mothers who breastfeed immediately after birth. There are many advantages to initiating breastfeeding as early as possible such as stimulates lactation, contracts the uterus more quickly and control bleeding, as well as promotes development of attachment and bonding between the mothers and infants.

5) Show mothers how to breastfeed and how to maintain lactation even when they should be separated from their infants. The healthcare staff should teach mothers how to correctly breastfeed and latch-on their infants, it will help the mothers to establish breastfeeding practices and will help to prevent breastfeeding problems, such as cracked nipples, engorged breast that caused by improper feeding and latch-on. Moreover, mothers who are separated from their infants need special assistance with establishing milk production.

6) Give newborn no food or drink other than breast milk, unless medically indicated. Infants should never receive supplements routinely, and a mother should never receive a bottle to give her infant without specific instructions. There is clear evidence that breastfeeding infants do not need supplement water. Infants who are given supplements are increased risk for early termination of breastfeeding.

7) Practice rooming-in and allow mothers and infants to remain together 24 hours a day. Rooming-in provides maximum opportunity for the mother and infant to interact. Keeping the infant with the mother in her room increases the mother's self-confidence in handling her infant. She learns to recognize hungry cues and can feed her infant as frequently as her infant desires.

8) Encourage breastfeeding on demand. Encourage breastfeeding on demand means that the mother responds to her infant's feeding cues. Newborns become hungry every 1½ to 3 hours and sometimes sooner thus the mothers should breastfeed their infants when they are hungry, every two to three hours.

9) Give no artificial teats or pacifiers to breastfeeding infants. An infant suckles differently on an artificial nipple than on the breast. Thus, the use of bottles and pacifiers can cause considerable confusion for some infants and make them to reject their mother's breasts.

10) Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital clinic. Establishment of a system of follow-up support for breastfeeding mothers after they are discharged, such as early postnatal or lactation clinic check-ups, home visits, and telephone-call. Moreover, the hospital gives education to key family members so they can support the breastfeeding mother at home.

Breastfeeding promotion principles

To ensure successful breastfeeding, the three principles of breastfeeding should be adhered to as described below.

1. Early suckling means infants should begin suckling their mother's breasts immediately in the delivery room or within 30 to 60 minutes after birth. This is because it is the period when infants are sensitive to suckling stimulation and mothers' attention is fully focused on infants. Initiating breastfeeding at this time stimulates bonding and attachment between mothers and infants and also stimulates the production and secretion of prolactin and oxytocin hormones; the first stimulates lactation while the second stimulates expression of breast milk.

2. Frequent suckling means infants are allowed to suckle their mother's breasts as much and as often as they want, day and night and without any fixed timetable. This will ensure that the infant has the full benefits of colostrum. Frequent feeding and emptying of the breast will also favor better and faster establishment of lactation. Initially, infants should be breastfed every two to three hours to ensure consistency of the production and secretion of prolactin and oxytocin hormones. The more the infants suck their mother's breast, the more the lactation. When infants do not have a chance to be breastfed, lactation will decline until nonexistent. Therefore, infants must stay with the mother at all the time and is often called "rooming-in".

3. Correct suckling means infants correctly suck their mother's nipples, which ensures sufficient intake of breast milk, prevents nipple sores and maintains consistent lactation. Therefore, the infant must be latched on correctly. The following tips may be offered to promote correct suckling. The mother should let her nipple gently brush the lower lip of her infant because doing so will stimulate the rooting reflex and cause the infant to open its mouth widely. The mother must then quickly move her infant's head toward the nipple while inserting the nipple into the infant's mouth as deeply as possible until its lip and gums latch onto the areola and its mouth covers the whole areola. While suckling, the infant will move its gums in and out on the nipple base to express the milk into its mouth.

As the infant begins to suckle, the nipple and areola will protrude onto the infant's tongue and be pushed towards the roof of the infant's mouth. When the nipple is swallowed deeply enough, it will stimulate the area joining the hard and soft parts of the roof of the mouth, which is the area joining where the suckling reflex responds most vigorously. The infant's tongue beneath the areola and the nipple also helps express the milk into the mouth. When the infant fails to latch onto the nipple deeply enough, the gums will press on the nipple and the infant will forcefully lick the front of the nipple which results in soreness or cracked nipples. Therefore, correct latching onto the breast and correct suckling will allow infants to receive sufficient amounts of breast milk lactation frequently stimulates, and the mother will produce an adequate milk supply.

To ensure first-time mothers promote breastfeeding behaviors using these three principles, mothers must receive care that helps prevent stress or anxiety because these factors will affect oxytocin hormone release influencing breast milk supply. In addition, creating confidence and satisfaction in breastfeeding while letting husband, parents, relatives and friends support and encourage the mother will also contribute to successful breastfeeding among first-time mothers.

Breastfeeding techniques

Breastfeeding is not overly complicated. When first-time mothers learn the correct techniques in breastfeeding, they will be able to feed their infant with convenience and satisfaction. The correct techniques in breastfeeding behavior are summarized below (Lauwers and Swisher, 2011; Walker, 2011).

Before breastfeeding

1. The mother should clean her hands with water and soap and dry them before each breastfeeding.
2. The mother should sit or lay down in a position that is comfortable for breastfeeding.
 - In the sitting position, the mother should sit upright and have support at the back with a pillow or cushion on her lap. Her feet should be able to reach the floor, or use a footstool beneath her feet to help maintain good posture.
 - In the lying down position, the mother should lay on her side with a pillow under her hand. There should also be a pillow for back support to prevent back pain.
3. The mother should hold the infant on the side facing her. The mother holds the infant chest-to chest, level with her breast. The Infant's ear, shoulder, and hip are all in alignment, and the body is in a flexed posture with the head raised slightly higher than the body and the mouth should be at the same level as the mother's nipple.

Breastfeeding positions

Proper positioning during feeding affects respiratory mechanisms, oral motor control, swallowing and the development of head and neck postural responses. No one attribute of positioning (head flexion, body alignment etc.) is more important than another in relation to the degree of nipple pain experienced by the mother (Blair, Cadwell, Turner-Maffei, and Brimdyr, 2003). It appears that all attributes work together to achieve a position that is compatible for good milk transfer in each individual mother-baby pair. Four common positions for breastfeeding exist, with many variations available to suit special circumstances. The mother does not need to

know all these positions but can be assisted to find which position or positions work best for her and her infant. Before her discharge from hospital, the mother should be able to demonstrate at least one position in which she is comfortable and in which she can position the infant by herself on both sides or with minimal help (Walker, 2011). The detail of four common positions for breastfeeding are described below.

1. Cradle hold

The infant is held completely facing the mother, typically at a slight angle with the head and shoulders a little higher than the hip. The infant lies on his or her side indirectly contacting the mother's midriff. The infant's head rests on the upper forearm. The breast should not be pushed sideways to the infant. The infant is well supported by the mother's arm across his or her back, tucking the hip into flexion and molding or wrapping the infant's body around her waist. This positioning should place the infant's nose at about the level of the nipple and the lower lip and chin below the nipple. The infant's head and neck should be aligned straight with the shoulders and hips. Some mothers find this position awkward at first with the infant's head disrupting the contact between the infant's mouth and the breast.

2. Cross-cradle hold

The infant is in the same position as in the cradle hold but is held with the mother's opposite arm. The neck and shoulders of the infant are supported with the mother's hand, her fingers rest back behind the ears, putting no pressure on the occipital region of the head, and the mother's forearm supports the infant's back. This gives the mother more control over positioning the infant's head and may be easier to learn at first. The breast is accessed by the mother's hand without having to be inserted between the infant and the breast tissue and the nipple areola is more visible to the mother. Some mothers start the feeding with the cross-cradle hold and once the infant is positioned, change to the cradle hold. This position is frequently used as a learning position for a full-term infant or to position a small or preterm infant who tends to roll up when placed in the cradle hold.

3. Clutch or football hold

The infant is positioned on pillow to the side of the mother turned slightly sideway or sitting partially upright. The mother's hand and wrist support the infant's back and shoulders and her fingers rest behind the infant's ears.

This position may be much easier for some mothers, giving them the most control over the infant's head and allowing the best visualization of the nipple areola. Care should be taken that the weight of the breast is not placed on the infant's chest, that the infant is not placed so low that he or she pull down on the nipple or that the mother leans down over the infant. This position is also good for learning and for small or preterm infants.

4. Lying down (side-lying position)

Many mothers find this position an especially restful way to feed their infant, although some mothers may find it difficult to learn at first. The mother lies on her side with the infant's body on his or her side and completely facing and in contact with her. The infant's head may be resting on the bed or on the mother's forearm that supports the infant's back and hips. Some mothers place a rolled towel or blanket behind the infant to keep the infant on his or her side and place a pillow behind her own back for support. Mothers can offer the top breast by adjusting their position such that they are turned further prone, thus avoiding having to move the infant and themselves to the other side.

During breastfeeding

1. The breast is held and the nipple is inserted in the infant's mouth. The mother should hold the breast with the thumb on the upper side of the breast as the remaining four fingers support the breast from beneath with all fingers slightly away from the areola. The fingers are adjusted along the infant's mouth line. The three common ways to hold the breast include the scissor or V-hold, C-hold, and U-hold positions with a number of variations also available for special situations. The way in which a mother is positioned and how she holds her breast can affect the angle at which the infant approaches the breast and can distort and firm the shape of both the breast and areola. The details of the three common ways to hold the breast are describes presented below.

1.1 Scissor or V-hold: The breast is held by the index and middle fingers separated over the top and bottom of the areola. Some mothers and infants thrive with this hand position. Others find that although this is not wrong it has some potential drawbacks. The fingers may exert enough pressure over milk ducts to

partially obstruct the milk flow. When the areola is large and/or the mother's hand is small, the fingers may cover part of the areola that should be in the infant's mouth, causing an incorrect latch-on to only the nipple. Pressure toward the chest wall from either or both fingers could exert enough traction on the nipple areola to keep the infant from drawing sufficient tissue far enough into the mouth or pull the nipple out of infant's mouth such that the infant applies vacuum to just the tip of the nipple. Too much pressure from one or the other finger could distort the nipple shape in the infant's mouth by tipping it up or down.

1.2 C-hold: The breast is supported by four fingers underneath the breast and the thumb rests on top. This position helps keep the infant's jaw from having to support the weight of the breast. Women with large breasts may find that they cannot comfortably hold the breast in this manner and may benefit from a folded towel or rolled receiving blanket tucked under the breast for support. The support from the C-hold often helps to firm a very soft breast, stabilizing it during the latch, and controlling the angle of the nipple areola as it is presented to the infant.

1.3 U-hold: This is a C-hold rotated 90 degrees such that the thumb is placed on the lateral margin of the breast and the four fingers rest on the medial aspect of the breast or vice versa. This hand position is often recommended for preterm infants, infants with a weak suck or infants with muscular or neurological problems that prevent them from executing normal jaw movement (Walker, 2011). The entire jaw is supported simultaneously with the breast. The thumb and index finger are in a position to be placed on both cheeks of the infant and can be gently pressed inward to cause contact between the buccal surface of the mouth and the nipple. This action fills the gap in a preterm infant's mouth between the buccal surface inside the mouth and the nipple, causing all parts of infant's mouth to come in contact with the breast.

2. In latching on, the infant is helped to latch on correctly by letting the nipple gently brush against the infant's lower lip to stimulate the infant's rooting reflex. The mother should wait until the infant turns toward the breast with the mouth open wide. The mother must move the infant's head quickly and gently towards the nipple as she inserts the nipple into the infant's mouth to encompass the areola. Notably, the upper gum presses on the areola, the nose touches the breast the upper

and lower lips are open wide and do not curl under, the chin touches the breast and the cheeks are full and rounded when suckling against the mother's breast.

3. During correct breastfeeding, the cheek will not be depressed. Loud noise during the suckling is not made, except for the quiet sound of swallowing.

4. During breastfeeding, the mother ought to see the infant's face and talk to the infant, making eye-to-eye contact between the mother and the infant to stimulate attachment because the infant can see, hear, smell, feel and taste from the time of birth; thus, making the infant ready to be stimulated for optimal infant development and growth.

5. The infant should be breastfed according to demand until dull when it will release the nipple. Nevertheless, the feeding from each breast should not be less than 10 to 15 minutes so that prolactin and oxytocin releases are sufficiently stimulated. The infant should be awakened when falling asleep during suckling wherein the mother presses the thumb gently on top of the breast to stimulate the infant to continue breastfeeding.

6. The infant is allowed to feed on both breasts by consuming the lion's share of the milk from one breast at a time.

7. When the mother wishes to remove the nipple from the infant's mouth, she should push a finger into the infant's chin or insert a finger into the corner of the infant's mouth between the gums so the infant will open its mouth to prevent cracking.

After breastfeeding

1. Before the mother lets the infant feed on the other breast or before the infant is full from breastfeeding, the mother should burp the infant to eliminate air and relieve uncomfortable pressure in the stomach from swallowing a little air while breastfeeding. This can be done by holding the infant in a sitting position in the mother's lap and supporting the infant's head and back with one hand and the chin and front with the other. Or the infant is held upright with the head on the mother's shoulder and chest against the mother with one arm supporting the infant's bottom waiting one to two minutes for the milk to flow completely into the stomach. Burping noise may or may not hear.

2. After burping, the infant is laid in the right side position, which can help the milk to flow into the intestines better and prevent vomiting and gagging.

3. The infant will not need water following breastfeeding because about 87% of human milk is water. In addition, after breast milk is digested, a little waste passes through the infant's kidney. Breast milk also has lactoferrin, which can stop growth of *Candida albicans* and *E. coli* (Lauwers and Swisher, 2011). Therefore, the infant who has breastfed exclusively will have no fungi in the oral cavity and little chance of diarrhea.

4. The mother should let the infant breastfeed exclusively without any formula or other foods because infants who feel full on other formula or food will not breastfeed; thus, inhibiting breast milk production and resulting in smaller amounts of milk. During the first two to three days after birth, only a small amount of colostrum is produced and this makes some mothers feel that it is not enough for the infant. Then mixed milk or other food is given. In reality; however, infants born at full term will have plenty of water and energy reserved in their bodies for the first two to three days following delivery. Thus, within this time the infant does not require water or other food. Finally, the breast milk supply will gradually increase as lactation is initiated to constantly fulfill the infant's needs. For this reason and more all infants should be exclusively breastfed during the first six months of life.

5. After breastfeeding the infant, the mother should express a little breast milk to rub the nipple and let the nipple dry. Then the mother should wear a suitable brassier to provide adequate breast support at all times to prevent sagging.

6 After breastfeeding, the mother's milk should not be expressed because the postproportion provides more nutrients and energy than foremilk. However, when mothers suffer from breast engorgement, some milk can be expressed to relieve the uncomfortable feeling.

7. Infants should be allowed to breastfeed as often as they need during the day and night. When the infant sleeps over two to two and one half hours in the first two to three days after delivery, the mother should awaken her infant. Once the milk supply has been firmly established, the infant will not require as many feedings as before. However, infants who sleep more than three hours should be awakened for breastfeeding.

8. At the time of next feeding, the mother should begin with the breast used last, because the infant will receive hind milk that provide more nutrients and energy than foremilk, for example, when the mother used the right breast last during one feeding, she should begin with the right breast at the next feeding. However, in the case where the infant's hunger is satisfied on the one side, the other side should be used for the next feeding.

Certainly, breastfeeding is extremely beneficial to both mothers and infants, and breastfeeding procedures are not overly complicated. Therefore, successful promotion of breastfeeding among first-time mothers should be supported, so that they can learn about breastfeeding to understand appropriate breastfeeding techniques.

Common breastfeeding problems and its management

Most postpartum mothers can have problems with breastfeeding, which may start as early on during hospitalization or later on when the mothers and infants have returned home. When these problems are left unsolved, initiation and continuation of breastfeeding may be affected. Therefore, nurses should assess problems with breastfeeding beforehand and be prepared to provide assistance to mothers to prevent and solve these problems. Common breastfeeding problems and their management are described below.

1. Sore nipples

Although sore nipple occurs relatively frequently, the condition is an uncharacteristic breastfeeding aspect. Women often describe it as tenderness with the initial latch and first few sucks. The peak periods of nipple tenderness occur in the first week postpartum, particularly between the third and sixth days (Ziemer, Paone, Schupay, and Cole, 1990). Nipple pain requires investigation when it occurs beyond the transient soreness of the first week or lasts after the first few sucks following attachment. It can constitute a breastfeeding emergency and is a common reason for early weaning (Sheehan, Schmied, and Barclay, 2009). Untreated nipple pain can progress to the development of a crack. The crack offers a portal of entry for bacteria

and yeast that are present on the skin surface and may lead to infection. The increased severity of pain when untreated may decrease a woman's desire to put her infant to breast; thus, in turn, may lead to engorgement. The most common causes of nipple soreness are poor position and attachment at the breast. Therefore, the mother's body position is also important, if she does not adequately support her infant's head, he or she may bite down reflexively. If her arms tire during a feeding, the infant may not remain level with the breast and slip down. He or she may then exert more pressure on the nipple or slide to the nipple base.

Management of sore nipples

When positioning appears to cause nipple soreness, the mother should be helped to make the necessary adjustments. The infants should be level with and facing the breast and their bodies should be aligned with the head. The infant's mouth should open wide and optimally should be slightly off-center from the nipple. To encourage infants to open wide, mothers can hold them in a position that allows gravity to aid the process, such as football hold. When the mother has been using only one position and develops soreness, using another position could provide relief to the source area.

2. Engorgement

Engorgement is a serious condition and must be clearly distinguished from normal postpartum fullness. Engorgement is essentially over fullness occurring when the mother fails to remove milk adequately or frequently enough from the breast. When the duct system is insufficiently clear of milk before milk begins to accumulate after delivery, pressure produces breasts that feel firm, hard, tender and warm or hot to the touch. The skin may appear shiny and transparent. The nipples may flatten and, in extreme cases, can be indistinguishable from the rest of the breast. The most common time for engorgement to occur is during the early days, when breastfeeding is beginning and feeding patterns are irregular. Engorgement adversely affects the mother's let down mechanism. The flattened nipple of the engorge breast becomes difficult for the infant to grasp. Therefore, the infant may not stimulate the nerves within the nipple and areola sufficiently, and let down may not occur. Without let

down, the infant cannot remove milk from the breast efficiently. Pressure then increases in the ducts even more.

Management of engorgement

To prevent engorgement, mothers should be breastfeeding in response to infant cues for as long as the infant needs. Eight or more feedings in 24 hours, including night feedings, will keep milk flow paced with production. When breast fullness increases, the mother can be encouraged to wake her infant and put him to breast for relief. After the engorgement issue is resolved, mothers should be advised to breastfeed her infant 8 times in every 24-hour period. When breastfeeding alone does not reduce engorgement, mothers need to express milk between feedings. When engorgement has progressed to the degree that the infant is unable to latch onto the breast, the mother can express milk before a feeding to soften the areola.

3. Plugged ducts

The cause of a plugged duct is incomplete milk removal or outside pressure on specific areas of the breast. Any practice that inhibits free flow of milk in the ducts can create pressure. The source could be a tight or underwire bra, bunched-up clothing under the arm, or a infant sling. It may result from consistently holding, carrying or rocking the infant in the same position.

Management of plugged ducts

Plugs can be broken up and worked down the ducts by regular frequent feeding and hand massage in the direction of the plug toward the nipple. Plugs can also be encouraged to move by rotating the infant's position for feeding so that his tongue stimulates more milk flow in the area of the plug.

4. Mastitis

Mastitis is inflammation of the breast, usually from bacterial infection. Infection can develop from a crack in the nipple skin that provides a pathway into the breast. The inflamed area of the breast becomes red, hot and tender to the touch. More than just a localized soreness, a breast infection usually produces fever- and flu-like symptoms. When the mother has mastitis, she will need to begin treatment immediately to reduce the severity and protect her milk production.

Management of mastitis

Management of mastitis includes efficient milk removal, warm moist compression to the site of inflammation, anti-inflammation medication and antibiotics. When mastitis develops, an assessment of a feeding will ensure that the infant's latch provides adequate milk removal. Mothers should be advised to breastfeed as frequently as her infant desires and to express milk from the affected breast after every feeding. Soaking the affected breast in warm water for short periods facilitates blood flow and drainage. When it has been determined that a mother has a breast infection, she should be advised to contact her primary health care provider immediately.

5. Insufficient milk supply

Insufficient milk supply is one of the most common reasons women give for breastfeeding cessation. Most women can produce enough milk to meet their infant's demand. However, weak or insufficient milk is the most frequent argument for the introduction of complementary foods, which may result in weaning. Only about 5% of women actually have physiologic insufficient milk supply although up to 50% reported that they perceive insufficient milk for their infant (Gatti, 2008). Insufficient milk supply is generally considered to be more perceived than real suggesting that other factors cause the women to doubt their milk supply. Inaccurate perceptions often lead to the introduction of complementary feeding, which has negative effects on milk production, as infants tend to suckle less. When milk is insufficient, the infant does not feel satisfied after feeding, cries a lot, want to feed frequently, takes a very long feeding and does not gain weight properly. The number of wet diapers a day (less than six to eight) and infrequent bowel movements with a small amount of stool, which are dry and hard, indirectly indicate low intake of milk.

Management of insufficient milk supply

When milk production seems insufficient for the infant, the first step is to check whether the infant is properly positioned during breastfeeding and whether the latch-on position is appropriate. Nurses can help the mother increase milk production by offering some suggestions presented in the table below (Lauwers and Swisher, 2011).

Management to increase milk production	
Management for the mother	<ul style="list-style-type: none"> - Rest as much as possible, and relax during breastfeeding. - Spend 100% of her time with the infant for 48 hours, concentrating on increasing feedings and resting. - Take special precaution to prevent sore nipples. - Improve diet by eating more protein, fresh fruits and vegetables. - Encourage let down by relaxation techniques and follow a daily feeding routine. - Prepare the infant to be alert and ready to feeding by rousing or soothing him or her as needed.
Management of feeding	<ul style="list-style-type: none"> - Make sure the infant is attached for effective suckling. - Put the infant to both breasts at each feeding, several times each, to increase stimulation. - Encourage the infant to feed more frequently and longer, both day and night. - Breastfeed long enough for the infant to receive hind milk. Resume night feeding when it drops.

6. Leaking

Commonly, some mothers experience milk leaking from their breasts during the first few weeks of breastfeeding. In most cases, leaking results from fullness in the breast or the mother's milk letting down. Leaking is a normal part of the process of breastfeeding. It may occur during a feeding from the opposite breast, directly before feeding when the breasts are full or when the mothers miss a feeding entirely. Occasionally, a mother's leaking is excessive, or she may experience leaking past the early weeks of establishing breastfeeding. Excessive leaking may be a sign of an imbalance in other body functions.

Management of leaking

Suggestions to control leaking include (1) wear breast shells between feedings or on the opposite breast during feeding, (2) press the heel of the hand over the breast or across arms and press, (3) wear absorbent bra pads and change them often, (4) decrease pressure on the breast and elastic in the bra cup; loosen the

bar or wear a larger size and (5) express or pump milk when missing or delaying a feeding is needed (Lauwers and Swisher, 2011).

In conclusion, several studies have reported shorter breastfeeding durations among women may be due to experiencing early breastfeeding problems (Cernadas, Noceda, Barrera, Martinez, and Garsd, 2003; Scott, Landers, Hughes, and Binns, 2001; Taveras et al., 2003). Specifically, nipple problems (such as cracked or sore nipples) have been associated with early weaning. However, breast problems (such as pain, engorgement) have also been associated with shorter breastfeeding durations (Novotny et al., 2000). Although, breastfeeding problems significantly impact the exclusive breastfeeding practice, it can be minimized or avoided when a mother has accurate and consistent breastfeeding information and support (Lewallen et al., 2006). Hauck, Fenwick, Dhaliwal, Butt and Schmied (2011) suggested that mothers who perceived receiving inadequate support and inadequate breastfeeding information were twice or more likely to have breastfeeding problems than mothers who perceived it as adequate.

Interventions for promoting breastfeeding

The literature was reviewed to determine what kind of interventions for promoting and supporting breastfeeding has been found to be effective. Interventions using supportive and educational approaches significantly increased the duration of exclusive breastfeeding (Skouteris et al., 2014). Moreover, interventions, conducted over long periods, from pregnancy throughout the postnatal period were more effective than interventions focused on a shorter period (Hannula, Kaunonen, and Tarkka, 2008). Therefore, interventions to promote and support breastfeeding should be put in place both in ante- and postnatal stages with various combinations of intervention strategies. The details of intervention are described below.

1. Breastfeeding education

Fairbank et al. (2000) defined breastfeeding education as an intervention that provides factual or technical information about breastfeeding to a specific target group in a hospital or community setting. Similarly, the NSW Centre for Public Health

Nutrition (2004) reported that breastfeeding education involves initiatives seeking to improve mothers' knowledge, understanding and expectations about breastfeeding and providing factual information in the form of leaflets or educational sessions. The United States Preventive Services Task Force described the core content of breastfeeding education comprised breast milk as the ideal nutrition for infants, benefits of breastfeeding, physiology and anatomy (U. S. Preventive Services Task Force, 2008). Education can also include skills practices (such as breastfeeding positioning and latch-on techniques), equipment (such as pumps, and storage devices) and common problems (Chung, Raman, Trikalinos, Lau, and Ip, 2008). Therefore, the goal of educating mothers is not only to increase breastfeeding knowledge and skills, but also to create positive attitudes toward breastfeeding. Breastfeeding education occurs most often during the prenatal and postpartum periods and taught by someone with expertise or training in lactation management.

Systematic reviews of the available evidence suggest that breastfeeding education is effective in incremental both the rate of breastfeeding initiation and short-term breastfeeding duration (Dyson, McCormick, and Renfrew, 2005; Haroon, Das, Salam, Imdad, and Bhutta, 2013; Imdad, Yakoob, and Bhutta, 2011). A randomized controlled trial was conducted in Singapore to assess the effectiveness of an antenatal education program on breastfeeding practices. The study included three groups of mothers attending antenatal clinics; the first group was provided with breastfeeding education together with individual coaching from counselor. The second group only received breastfeeding education (without counseling) and the third group received only normal antenatal care. The study revealed that mothers from the first and second groups had higher rates of exclusive breastfeeding at three and six months than mothers in group three, receiving routine antenatal care alone. The study concluded that antenatal education significantly improved exclusive breastfeeding rates up to three months (Mattar et al., 2007). Another quasi-experimental study was conducted in Taiwan, to assess the efficacy of prenatal education program. The experimental group was provided with a 90-minute educational program on breastfeeding on a group basis from the second trimester to 36 weeks of pregnancy. The control group did not receive any education on breastfeeding. Results indicated at three days and one month after

delivery, the experimental group had higher exclusive breastfeeding rates than those in the control group (Lin, Chien, Tai, and Lee, 2008)

However, some studies have reported that antenatal breastfeeding education significantly increased breastfeeding initiation but without increasing duration. Foster et al. (2004) reported that antenatal education alone did not demonstrate a significant effect on breastfeeding duration at three or four months. Likewise, a randomized controlled trial conducted by Labarere et al. (2005) revealed no difference between the mothers who attended the structured in hospital educational class and the mothers who received the usual care in terms of the rate of exclusive breastfeeding during the four months postpartum period. Therefore, the effectiveness of antenatal breastfeeding education to increase breastfeeding duration is still inconclusive (Yi and Man, 2011). The mixed results may be have resulted from using different learning styles in education, different times (such as during the pre- or postnatal period) and/or different lengths and frequencies of sessions.

2. Breastfeeding support

Breastfeeding support differs from breastfeeding education. Breastfeeding support is usually aimed at individuals as the need arises. Breastfeeding support usually starts in the postnatal period, not the antenatal (Lumbiganon et al., 2012). Support has four main areas: emotional support, appraisal support, informational support and instrumental support. The first, emotional support refers to support which provides love, trust, respect and empathy to the person receiving the support. Appraisal support, on the other hand, is described as the way others help assess and/or perceive the communications and behaviors one acts out. Examples of appraisal support for mothers who experience breastfeeding difficulties, nurses can help them by giving praise, encouragement, providing positive and constructive feedback; that feedback helps mothers learn from their mistakes and be proud of their successes. Informational support is providing information or guidance. For instance, providing verbal guidance or physically showing a newly breastfeeding mother different positions she could use to feel more comfortable while breastfeeding. Instrumental support refers to tangible tasks, such as family members helping the new mother with household chores or child caring (such as bathing, feeding and playing). Evidence

suggests that breastfeeding support can help mothers breastfeed for a longer time and help them achieve success in exclusive of breastfeeding (Britton, McCormick, Renfrew, Wade, and King, 2007), while poor support may contribute to early cessation of breastfeeding (Hoddinott and Pill, 2000; Mozingo, Davis, Droppleman, and Merideth, 2000). These are the various sources of breastfeeding support; however, this review will only focus on two, i.e., professional and family support.

2.1 Professional support

Professional support is provided by health care professionals such as physicians, nurses and lactation consultants, to mothers both during pregnancy and after they return home from their hospital stay. The primary focus of support is counseling, encouragement and managing lactation crises: education is a secondary purpose. Professional support can be given in many different ways and settings such as in a group or individually, online, over the telephone, during home visits or in a breastfeeding clinic setting. Several studies reported that women expected to seek and receive professional support for breastfeeding in the early postpartum period (Shakespeare, Blake, and Garcia, 2004). Nelson (2006) conducted a metasynthesis of qualitative breastfeeding studies and found that mothers looked to health care professionals for information, technical and emotional support. Mothers described good support as individual, clear, believable, gracious, caring, compassionate, positive and friendly; that health professionals give them confidence in their ability to breastfeed is important (Sheehan, Schmied, and Barclay, 2009). Whereas, inadequate or inappropriate support and advice from health care professionals such as receiving conflicting advice about breastfeeding can have negative consequences on breastfeeding (Moore and Coty, 2006).

Professional support has the potential to influence the duration of breastfeeding by the early identification of problems, active intervention and continuous encouragement (Labarere et al., 2005). In contrast, lack of support from health care professionals has been identified as a major barrier to breastfeeding (Taveras et al., 2004). A Cochrane review of support for breastfeeding mothers found that professional support had a significant beneficial effect on exclusive breastfeeding in the first four months (Britton, McCormick, Renfrew, Wade, and King, 2007). Similarly, Bonuck, Trombley, Freeman and MzKee (2006) conducted a randomized

controlled trial; the intervention comprised a series of hospital and home visits by two lactation consultants to address issues specifically concerning breastfeeding. The study found that the breastfeeding rate at five months was higher in the intervention group (53%) when compared with the control group (39%). Therefore, support received from health care professionals as the single most important intervention (Taveras et al., 2003).

2.2 Family support

Family support is one source of social support that is obtained from family members, including husband, parents, mother-in-law, grandmother and other family members to maintain health practices. Pender, Murdaugh and Parsons (2011) described family support as an interpersonal transaction involving emotional concerns (expression of care, encouragement and empathy), aid (service, money or information), and affirmation (constructive feedback and acknowledgement). Families, in providing appropriate support, must recognize the needs of their members, establish effective communication, respect the unique needs of family members and establish expectations of mutual help and assistance (Pender, Murdaugh, and Parsons, 2011). The support from family members, particularly from the husband, mother of the lactating mother, mother-in-law, grandmother and other family members will influence the breastfeeding practice of mothers. Feeding decisions are strongly influenced by the views of the family and friends (Hauck and Irurita, 2003). The adult mothers cited their partners as the most important source of emotional, informational and instrumental support (McVeigh and Smith, 2000). The mother-in-law is also the key person and decision-maker in the early initiation of breastfeeding (Masvie, 2006).

In many studies, participants identified their husband as the main person most supportive of their decision about breastfeeding. The emotional support provided by the husband also encouraged them to breastfeed for a long time (Februhartanty, Bardosono, and Septiari, 2006; McVeigh and Smith, 2000; Moore and Coty, 2006). Februhartanty, Bardosono and Septiari (2006) described that the husband can support the mother during the lactation period by providing assistance with household chores and child caring (such as bathing, feeding and playing), and also comforting the mothers. Strong evidence indicates that husbands are either the key supporters or deterrent to breastfeeding; they can influence mothers to initiate and

continue breastfeeding, as well as encouraging maternal breastfeeding self-efficacy (Earle, 2002; Ekstrom, Widstrom, and Nissen, 2003; Hauck, 2004; Sherriff, Hall, and Pickin, 2009). Mothers who received support from their partners were more likely to continue exclusive breastfeeding than those who did not (Gage and Kirk, 2002; Mullany, Becker, and Hindin, 2007).

In summary, among the great number of studies from multiple settings reported in reviews of interventions to increase breastfeeding duration, breastfeeding duration was influenced by two main types of intervention, i.e., education and support. For education and support to be most effective, it must be consistent across these stages, helping mothers understand the importance of breastfeeding and providing assistance and resources from the prenatal visit until they meet their breastfeeding goals. Combined individual and group of education or support were found more effective than individual or group of education or support alone (Haroon, Das, Salam, Imdad, and Bhutta, 2013). In addition, education and support programs using various methods of instruction and support from well-trained professionals were more effective than interventions concentrating on a single method.

Learning

Breastfeeding does not come naturally, even though infants have innate reflexes for rooting and suckling; in many respects breastfeeding is a learned art, and mothers must be motivated to learn it. Learning involves basic materials, which are usually applied in all educational and training activities. Hilgard and Bower (1966) stated, "Learning is a process in which behavior changes as a result of practice and experience, but the changes do not result from natural responses such as instinct or maturity or from temporary physical changes". Driscoll (1994) stated that learning is a persisting change in human performance potential occurring as a result of learner's interaction with the environment. According to Smaldino, Russell, Heinich and Molenda (2005), "Learning is the development of new knowledge, skills or attitudes as an individual interacts with information and the environment".

Based on the aforementioned literature, learning is a process that results in behavioral changes considered permanent changes. The change is a result of an individual's response to a stimulus from training or experience; thus, learning involves behavioral changes in aspects of knowledge, attitudes and skills that are considered permanent after a person has some experiences or training. Therefore, the more understanding derived from the learning, the better the ability to make decisions and apply the effective learnings to achieve the objectives.

1. Learning behavior is divided in three domains as described below

Bloom, Engelhart, Furst, Hill and Krathwohol (1956) developed a framework for categorizing educational goals and objectives in a hierarchical structure representing different forms and levels of learning. This framework consists of the following three domains.

1) The cognitive domain (knowledge): the cognitive domain involves the knowledge and intellectual or thinking skills that a learner will develop. Knowledge is a behavioral change from not knowing to knowing. The behavior is expressed through an explanation or telling about the learned subject.

2) The affective domain (attitude): the affective domain deals with an individual's emotions, feelings and attitudes. Attitude is a behavioral change from dislike to like. The behavior is shown through facial expressions of willingness and being interested in the object.

3) The psychomotor domain (skill): the psychomotor domain involves physical movement, coordination and motor skill use. Developing skills involved with the psychomotor domain requires practice. Skill is the behavioral change expressed through action.

These three different types of behavior are closely related. They are not present independently, but are always together, relying on each other. The promotion of one behavior will lead indirectly to the other two at the same time. Therefore, when we need to develop all three domains of learning, especially the psychomotor domain, we should know about effective learning and learning styles and use them to construct a breastfeeding skills training programs.

2. Effective learning and instructional approaches

Effective learning occurs when learners are engaged in active learning, when they are conducting activities instead of sitting passively and listening. Characteristics of effective learning include 1) learners are involved in more than listening, 2) less emphasis is placed on transmitting information and more on developing learners' skills, 3) learners are involved in higher order thinking (analysis, synthesis, evaluation), 4) learners are engaged in activities (such as reading, discussing, observing, and practicing) and 5) greater emphasis is placed on learners' exploration of their attitudes and values (Harmin and Toth, 2006).

Research conducted by the National Training Laboratories in Betel, Marine, illustrated the percent of learner recall associated with various approaches, 24 hours later with an average retention of only 5% for information delivered in lecture form. Retention rates increased when the learning methods, such as demonstration, discussion, and practice doing, (30%, 50% and 75%, respectively) were used instead of lectures. Hermin and Toth (2006) reported that many learners learn best and become proficient in skills by practicing them rather than merely being a spectator to the skill, such as listening to teachers talk about the skill, reading about the skill or watching others perform the skill. Therefore, when we want our first-time mothers to develop breastfeeding skills, we must move beyond the image of the lecture. Several instructional approaches involving effective learning include presentation, demonstration, discussion, simulations, cooperative learning, practice, training etc. However, this review will only focus on three instructional approaches (discussion, demonstration and practice and training) that were used to construct the breastfeeding skills training programs. The instructional approaches that were used to construct the breastfeeding skills training programs are described below.

2.1 Discussion

Discussion is one of the most common learning methods. This dynamic method encourages classroom interaction and actively involves learners in learning. Discussion involves a group of individuals sharing information about a topic or problem. Learners talk together, share information and work toward a solution or consensus. They are given the opportunity to apply principles and information. This method introduces learners to different beliefs and options, encouraging them to

evaluate the logic of, and evidence for, their own and others' options (Boric, 2007). A major benefit of the discussion method is the amount of interaction that occurs and the learning that results from that interaction. Discussions teach content as well as processes such as group dynamics, interpersonal skills and oral communication. Discussion among learners or between learners and educators can make significant contributions throughout the learners' learning. Discussion groups can be effective among learners when a group with similar problems and at similar stage of adaptation can be gathered. The success of discussion sessions relies on the quality of the educator and/or learner relationship and requires an honest and open interaction between educator and learners.

Principles for using discussion:

1. Provide motivation before beginning a discussion using a common reading, a picture, an audio recording or short video to secure the interest and attention of the learners.
2. Encourage active participation from each group member. The exchange of idea among group members is a critical factor in learning from discussion.
3. Questions are needed to stimulate discussion and should be prepared beforehand. Either the educator or the learners may prepare the questions.
4. Summarize and/or synthesize the different viewpoints of various small groups discussing aspects of a specific topic (Petrina, 2006).

Advantages of discussion

1. Actively involves learners and stimulates peer group learning
2. Helps learners explore pre-existing knowledge and build on what they know
3. Facilitates exchange of ideas and awareness of mutual concerns
4. Promotes development of critical thinking skills
5. Develops leadership, teamwork, communication and collaboration skills

6. Promotes higher levels of thinking (application, synthesis and evaluation) versus simple memorization

7. Provides the educator with immediate feedback on the learners' understanding of course materials

Limitations of discussion

1. Can potentially degenerate into off-task or social conversations

2. Discussion method is not appropriate for all topics

3. It can be used only among learners who have some basic knowledge in the topic

4. Some of the learners may feel shy or reluctant to take part while others may try to dominate

5. Educators may lose control over the learners and they may end up quarrelling

6. Can be frustrating for learners when they are at significantly different levels of knowledge and skills.

2.2 Demonstration

Demonstration is a method of teaching in which knowledge, facts, principles, guidelines or correct processes are presented while using equipment and demonstrative tools. The educator explains the rationale of the performance to demonstrate the accurate process of performance; as a result, the learners will clearly learn content. Demonstration focuses on skills of manual use, including the use of audiovisual aids, movies and slide presentations. The learners act as an audience and learn from observation. The educator or the demonstrator demonstrates performance with an explanation in every step; important steps are emphasized and reviewed with questions to ensure correct performance of activities. Demonstration will help the learner to understand quickly and correctly and is not time consuming. Moreover, demonstrations make a lesson more interesting, reliable and impressive; the learner, therefore, will not forget the lesson and will be able to correctly apply it in practice.

Principles for using demonstrations :

1. While planning, preparation and practice are importance for all instructional methods, they are especially critical for demonstration when you are going to be manipulating materials and equipment that you do not use regularly.
2. Ensure that all can see and hear.
3. Present the demonstration in small, sequential steps.
4. Allow the learners to practice. It is often motivational for learners to watch a demonstration and then attempt to complete it themselves (Boric, 2007).

Advantages of demonstration

1. The learner perceives real performance, resulting in clear understanding and long term memorizing.
2. Some demonstrations provide opportunities for learners to use all five sensory organs, which will effectively enhance the learning.
3. Demonstration provokes attention and motivates the learner to continuously follow the lesson, resulting in achieving the learning outcomes as planned.
4. Demonstration reduces time to explain essential content that the learners need to learn.

Limitations of demonstration

1. Some demonstrations need large equipment, which is not conveniently moved and causes difficulties in preparing the teaching area.
2. Demonstration is not appropriate for the teaching of an abstract issue or subjects that have many details.
3. In a large group of learners, demonstration may not be visible to some learners.
4. Some demonstrations require lengthy preparation time and may cost a great deal of money.

2.3 Practice and training

Practice and training are familiar to all educators. It promotes the acquisition of knowledge or skills through repetitive practice. In a practice and training session, learners are led to through a series of practice designed to increase

fluency in a new skill or to refresh an existing one. Use of this approach assumes that learners have previously received some instruction on the concept, principle or procedure that is to be practiced. To be effective, practice and training should include corrective feedback to remediate errors that learners might make along the way (Boric, 2007). Effective use of practice and training depends on the recognition of the types of skills being developed and the use of appropriate strategies to develop these competencies. Practice and training are mainly for the beginning learner. Its use; however, should be limited to situations where the educator is certain that it is the most appropriate form of instruction (Jacobsen, Eggen, and Kauchak, 2006).

Principles for using practice and training

1. Introduce connections before the practice and training session.
2. Use many short practice and training sessions instead of a few longer ones. Use both individual and group activities.
3. Use competition (against self or others) to make practice and training more interesting.
4. Make sure learners are practicing the correct information or procedures.
5. Provide opportunities for learners to apply what they master through practice and training.

Advantages of practice and training

1. Provides repetitive practice in basic skills to enhance learning, build competency and attain mastery.
2. Promotes psychomotor and low level cognitive skills.
3. Provides a foundation on which higher level cognitive skills can be built.

Limitations of practice and training

1. Learners can perceive it as boring.
2. Does not teach when and how to apply the facts learned.
3. Can easily become boring and monotonous.
4. Difficult to sustain motivation, interest or alertness among the learners because of the repetition involved.

Based on the literature review, breastfeeding is a learned behavior. Therefore, learning can change breastfeeding in aspects of knowledge, attitudes and skills. To change breastfeeding knowledge, attitudes and especially breastfeeding skills, effective learning and instructional approaches are important. This study was conducted with an interest in the effectiveness of breastfeeding skills training and supportive program in six months exclusive breastfeeding among first-time mothers to enhance the mother's knowledge, attitudes and skills in breastfeeding. The instructional approaches in the breastfeeding skills training program consisted of discussion, demonstration and skills practice. Discussion is a dynamic method that encourages classroom interaction and actively involves pregnant women in learning. Pregnant women are given the opportunity to talk together and share information; the result of interaction that occurs during the discussion is the learning. However, discussion is inappropriate for all topics in the breastfeeding skills training program. Another instructional approach used in this program was demonstration. Demonstration focuses on breastfeeding skills techniques including the use of audiovisual aids. Demonstration will help pregnant women to understand quickly and correctly. After watching the demonstration, the pregnant women are led through a series of practices designed to increase fluency in breastfeeding skills. Repetitive practice in breastfeeding skills can enhance learning, build competency and attain mastery



CHAPTER III

METHODOLOGY

This chapter described the research designs and methods used in conducting this study. It included descriptions of research design, population and sample, sample size, setting, instruments, protection of the rights of human subjects, data collection and procedures and data analysis

Research Design

The design of this study was a prospective, randomized controlled trial (RCT), with the aim to explore the efficacy of the breastfeeding skills training and supportive program on exclusive breastfeeding among first-time mothers. A randomized controlled trial was chosen to ensure that individual and environmental characteristics were able to affect the outcomes of interest, evenly distributed across conditions. Moreover, this design was the most powerful method for testing hypotheses of cause and effect relationships between independent and dependent variables (Polit & Beack, 2004). In this study, the subjects in the experimental group received the breastfeeding skills training and supportive program together with routine nursing care, while the control group received only routine nursing care.

Population and Sample

The target population for this study was first-time mothers aged 18 years old and higher, who sought prenatal care and child delivery services at Maharaj Nakorn Chiang Mai Hospital.

The sample for this study included all women who met the following inclusion criteria.

The inclusion criteria

- gestational age (GA) 36 to 37 weeks
- primigravida with a singleton pregnancy
- intending to breastfeed her baby
- normal breasts and nipples
- able to read, write, speak, and understand Thai language
- able to contact by phone

The exclusion criteria

- any conditions of mother or infant that was a contradiction to breastfeeding such as HIV infection, severe illness, psychosis, or medical limitation,
- planning to have cesarean section
- unable to attend the entire program
- undergoing a cesarean section,
- separating babies and mothers after birth
- developing health complications after birth, such as postpartum hemorrhage, postpartum depression,
- babies have complication or disability that obstructed the suckling such as cleft lip, cleft palate, severe tongue-tie.

Sample Size

An estimation of the sample size in this study was calculated by using the effect size of the difference between two proportion (Sullivan, 2011) with a level of a significance level of (α) =.05 and a power of .80. The formula for determining the sample sizes to ensure that the test has a specified performance was

$$2\left(\frac{Z_{1-\alpha/2} + Z_{1-\beta}}{ES}\right)^2$$

where n_i was the sample size required in each group (i=1,2)

α was the selected level of significance

$Z_{1-\alpha/2}$ was the value from the standard normal distribution holding $1-\alpha/2$

below it

$1-\beta$ was the selected power

$z_{1-\beta}$ was the value from the standard normal distribution holding $1-\beta$

below it.

ES was the effect size, defined as

$$ES = \frac{|p_1 - p_2|}{\sqrt{p(1-p)}}$$

Where $|p_1-p_2|$ was the absolute value of the difference between the two proportions under the alternative hypothesis, p was the overall proportion, based on pooling the data from the two comparison groups (Sullivan, 2011).

The sample used in this study was based on effect size of 0.67 which was derived from the study of the knowledge sharing practice with empowerment strategies in pregnant women to improve the rate of exclusive breastfeeding during the first six months after delivery (Kupratakul, Taneepanichskul, Voramongkol, & Phupong, 2011). The sample size in each group

$$n_i = 2 \left(\frac{z_{1-\alpha/2} + z_{1-\beta}}{ES} \right)^2$$

Where $z_{1-\alpha/2} = z_{0.975} = 1.96$; $z_{1-\beta} = z_{0.80} = 0.84$; $ES = 0.67$

$$n_i = 2 \left(\frac{1.96 + 0.84}{0.67} \right)^2$$

$$n_i = 35$$

Based on the effect size of .67, sample size would be at least 35 subjects for each group. Previous studies related to the interventions improve the rate of exclusive breastfeeding with a four-to-six-month follow-up, in Thailand, reported the attrition rate not exceed 10%. For this study the researcher had determined an attrition rate of 15% because this study followed up the mothers until six months; thus, the attrition rate might be higher. Therefore, the total number of subjects needed in this study was 84 mothers or 42 for each of the study groups.

Random Assignment

Each time a subject meeting the study criteria was recruited to the study, an antenatal registered nurse who did not know the study purpose and process selected an opaque and sealed envelopes with slips of paper inside marked with “E” (referred to the experimental group) or “C” (referred to the control group). The envelopes were shuffled so that the study group assigned to the subjects would be random. Subjects enrolled in the experimental group received a breastfeeding skills training and supportive program with routine nursing care, while the subjects in the control group received only routine nursing care.

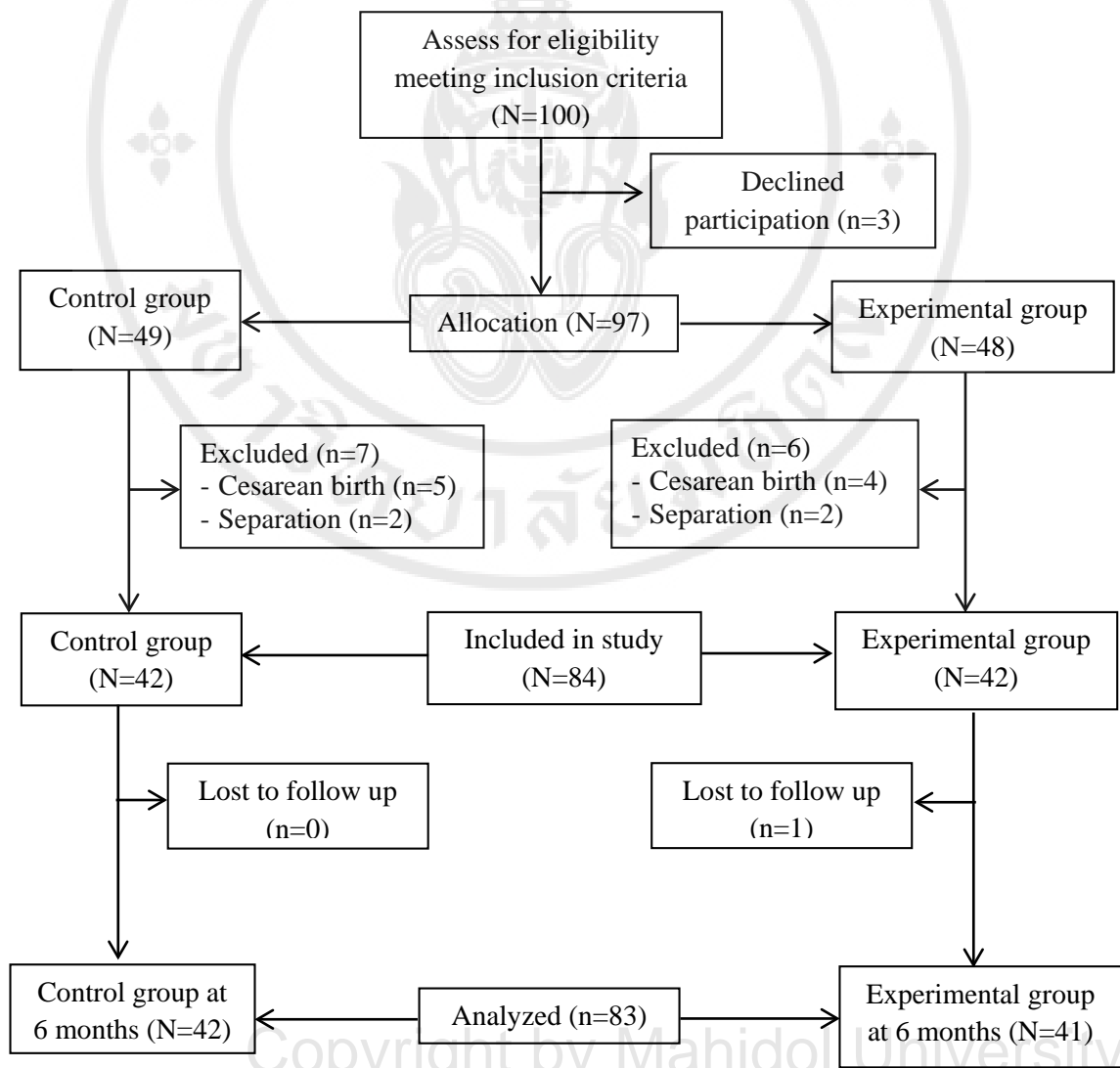


Figure 3.1: Flow chart the process of tracking the subjects through the study

Research Setting

The recruitment in this study was done at Maharaj Nakorn Chiang Mai Hospital, which is a university hospital and tertiary care setting in northern Thailand. The hospital contains 1,400 patient beds, and serves approximately 1,300,000 patients in the outpatient department and 48,000 in the inpatient department each year. In the Department of Obstetrics and Gynecology, an average of 1,800 to 1,900 cases of birth is recorded each year with range of age from 14 to 47 years old. The average number involving normal labor total 90 to 100 cases monthly, approximately one half of which comprises first-time mothers. This hospital is not a baby-friendly initiative hospital following the UNICEF and WHO guidelines in promoting breastfeeding. In this study, data collection and intervention will be conducted at the ANC, the postpartum unit and the family planning clinic.

The ANC of this hospital offered services to pregnant women with normal and high risk pregnancy. It opens Monday through Friday from 08.00 am to 04.00 pm. Routine care for pregnant women included a session to disseminate knowledge in groups of 8 to 10 mothers in which an instructional video presentation is used to illustrate the benefits of breastfeeding, breastfeeding initiation, and with a summarization of the content by nurses working in the ANC, but without demonstrations of appropriate postures for breastfeeding, other potential problems and appropriate solutions. This education is provided for women of all gestational ages and comprises only one session for teaching the details of self-care during pregnancy, preparation for delivery and breastfeeding.

At the labor and delivery unit, nurses promote mother-child bonding by placing the infant on the mother's chest for skin to skin contact. The mothers and infants are then helped to initiate breastfeeding within 30 to 60 minutes after normal delivery. Then, the mothers and the healthy infants are referred to the postpartum ward two hours after delivery.

The postpartum unit accommodates 30 postpartum mothers. During hospitalization, a postpartum mother is given information and suggestions how to care for herself and her infant, as well as how to breastfeed her infant. Rooming-in is provided to both mother and infant who stay together 24 hours a day; therefore, the newborn infant can suck the mother's breasts as often as needed. When problems

related to breastfeeding are encountered, the staff members provide assistance and guidance on an individual basis. When both mother and newborn show no complications, they will be discharged within two days after delivery. A follow-up appointment at the family planning clinic is made for check-up at six weeks after discharge.

Instruments

This study employed two types of instruments. The first type involved instruments for intervention and the second comprised instruments for data collection.

1. The instruments for intervention comprised the breastfeeding skills training and supportive program, which was developed by the researcher, based on the set of variables for behavior specific cognitive and affect, the Pender's HPM. However, the component, situational influence, was not used in this study because it was beyond the researcher's control and depended on each mother's individual context. The breastfeeding skills training and supportive program comprised a manual for breastfeeding skills training and manual for breastfeeding support with the details described below.

1.1 Manual for breastfeeding skill training: This manual was developed by the researcher based on extensive review of textbooks, documents, journals and research reports. The training was arranged through two sessions in the form of group discussion, demonstration and skills practicing (see Appendix A).

First session The skill training was carried out with discussion and exchange of knowledge and experience of participants where the content is centered on breastfeeding benefits, the importance of exclusive breastfeeding for the first six months, proper positioning of mother and infant and correct suckling and breastfeeding problems with the researcher summarizing each discussed issues using Power Point presentation. In addition, a 5-minute VCD on breastfeeding techniques produced by the Thai Breastfeeding Center Foundation was shown to the pregnant women. The VCD contents, produced by experts on breastfeeding, and distributed to

disseminate knowledge of breastfeeding among pregnant women, covered the correct breastfeeding techniques and positions. The researcher also summarizes the main point of the VCD to ensure understanding of breastfeeding. Then 30 minutes of demonstrations and skills practicing were provided with details on proper postures for holding infants (four common breastfeeding positions) and breast support while breastfeeding in which a life-size breast model and a baby doll were used. Participants require actual practice to increase skills and self-efficacy before encountering actual situations while reducing perceptions of the breastfeeding obstacles. Each participant was allowed to take time to practice how to correctly positioning the baby and discuss her concerns.

Second session (one week after the 1st session) The skills training was carried out with discussion and exchange of knowledge and experience of participants which content centered on method of hand expressing and storing breast milk with the researcher summarizing each discussed issues using Power Point presentation. In addition, a 5-minute VCDs on hand expression and breast milk storage produced by the Thai Breastfeeding Center Foundation was shown to the participants. Then 30 minutes of demonstrations and skills practice were provided with details on hand expression techniques in which a life-size breast model was used as participants require actual practice to increase skills and self-efficacy before encountering actual situations. The training improved perceptions concerning the obstacles of breastfeeding, and repeated the proper breastfeeding positioning of mother and baby using a life-size baby doll that they learned to handle. Each participant was allowed to take time to practice and discuss her concerns.

1.2 Manual for breastfeeding support The provision of breastfeeding support in this program comprised the following activities: (1) encouraging mothers to breastfeed every two to three hours to stimulate milk production, (2) assisting the mothers to breastfeed in both proper holding postures and suckling method. During the first 48 hours of the postpartum period, the researcher assist the mothers in breastfeeding until they can provide proper breastfeeding with no need of assistance, (3) helping the mothers recognize the baby's early feeding cues, and signs that the baby is satisfied at the end of feeding, (4) providing information about breastfeeding support to the husbands and/or the relatives and encouraging them

to practice assisting mothers to breastfeed, (5) advising the mothers about the risks of unnecessary supplementation and pacifier use, (6) identifying breastfeeding problems and assisting the mother with these problems, (7) managing environment for the mothers to stay with their infants promptly, frequently and continuously and (8) providing phone counseling (see Appendix B).

2. Instruments for data collection

Instrument for data collection consisted of demographic questionnaire, effective suckling checklist, breastfeeding self-efficacy scale short form, food record form and breastfeeding problems record form. They are explained in detail below.

2.1 Demographic questionnaire This questionnaire was developed by the researcher to elicit data regarding maternal age, marital status, education, occupation, type of family (nuclear or extend family), number of family members, monthly family income, sufficiency of income as well as data regarding childbirth including date and time of birth, type of birth, sex, birth weight and time of first breastfeeding (see questionnaire, Appendix C).

2.2 Effective suckling checklist This checklist was used to observe the proper latch-on and effective suckling. This instrument was developed by the researcher based on four key signs of good attachment (WHO, 2009) and literature review. It consisted of 10 items; scoring was marked 1 for correct behavior and 0 for incorrect behavior. The highest score was 10 and the lowest score was 0. The higher score (8 to 10 points) meant that the latch-on and suckling techniques were more effective, while a lower score meant that the suckling techniques were less effective (see questionnaire, Appendix D).

2.3 The breastfeeding self-efficacy scale short form (BSES-SF) This instrument was developed based on the self-efficacy theory to measure maternal breastfeeding confidence by Dennis (2003). The BSES-SF was considered ready for clinical use to (a) identify breastfeeding mothers at high risk, (b) assess breastfeeding behaviors and cognition to individualize confidence-building strategies and (c) evaluate the effectiveness of various interventions and guide program development. Dennis revised the BSES-SF from the original breastfeeding self-efficacy (BSES) which she developed in 1999 (Dennis, 1999) because the internal

consistency statistics with the original BSES suggested item redundancy. The original BSES comprised 33 items and then 18 items were deleted, using explicit reduction criteria. As a consequence, the BSES-SF is a 14-item self-administered survey. Each item was rated on 5-point Likert scale. The participants were required to respond to all of items by rating from 1 to 5 as revealed below.

1 = not at all confident

2 = not very confident

3 = sometimes confident

4 = confident

5 = very confident

Total scores ranged from 14 to 70, with higher scores indicating higher levels of breastfeeding self-efficacy.

Validity

Dennis (2003) conducted a study to refine the original BSES and psychometrically assess the revised BSES-SF with 491 breastfeeding mothers as study participants. Construct validity was assessed using components factors analysis, comparison of contrasted groups and correlations with measures of similar constructs. Finally, the result of the study demonstrated that all hypotheses between the BSES-SF and related constructs were supported. Furthermore, support for predictive validity was demonstrated through significant mean differences between breastfeeding and bottle-feeding mothers at four and eight weeks postpartum. The BSES-SF was translated to Thai by Thussanasupap (2006), then back-translation was used. After a bilingual linguistic expert translated the Thai version of BSES-SF to English, this scale was sent to Dennis who developed the original BSES-SF for consideration and suggestions. After that, the content validity of the Thai version BSES-SF was evaluated by six experts (see questionnaire, Appendix E).

Reliability

Regarding the reliability estimate of BSES-SF, Cronbach's alpha coefficient was 0.94, the mean inter-items correlation was 0.55, ranging from 0.41 to 0.73 and the BSES-SF scores correlated significantly with the respective original BSES scores at one ($r=0.99$), four ($r=0.99$) and eight ($r=0.99$) weeks postpartum; thereby, demonstrating excellent internal consistency (Dennis, 2003). The

Thai version of the BSES-SF, translated by Thussanasupap, was evaluated for reliability using Cronbach's alpha coefficient. The result revealed a Cronbach's alpha coefficient of 0.84.

2.4 Food record form This instrument was developed by the researcher to record the kinds of food the infants received after hospital discharge including breast milk, water, formula milk, solid food, and others. Data regarding the age when other foods were introduced, maintained or discontinued and reasons for introducing. (see questionnaire, Appendix F).

2.5 Breastfeeding problems record form this instrument was developed by the researcher to record breastfeeding problems reported by the mothers. Data regarding the age of infants when breastfeeding problems started and how the mothers solve such problems were recorded (see questionnaire, Appendix G).

Content validity and reliability for instruments in this study

Steps in checking for instrument quality are described below.

1. The content validity of intervention and data collection instruments were examined by a panel of five experts comprising: one nurse expert in the lactation clinic, one pediatric nursing instructor and three obstetrical nursing instructors. The manual was revised according to the five experts' recommendations. The instruments for intervention were then pilot tested with ten mothers whose characteristics met the inclusive criteria to test the objectivity of the manuals. Finally, the researcher developed the instruments for intervention according to the comments and suggestions received. The list of expert is presented in Appendix H.

In this study, content validity index of the effective suckling checklist was also assessed by a panel of five experts: one nurse expert in the lactation clinic, one pediatric nursing instructor and three obstetrical nursing instructors to confirm the representativeness of the domain. The experts were asked to rate the relevance of each items. The rating scale was arranged on Likert scale of 1 to 4 (1=not relevant; 2=somewhat relevant; 3=quite relevant; 4=high relevant). Only the items that received a rating of 3 or 4 and met the proportion of experts to establish content validity were accepted. The rating score given by five experts were used to calculate a content validity index (CVI). In this study, the CVI overall of the effective suckling checklist

scores was 1.00, it mean the items on the effective suckling checklist was adequately address the thematic domains being explored.

2. The reliability of instruments for data collection was verified with thirty mothers whose characteristics met the inclusive criteria and then calculated for reliability.

2.1 The effective suckling checklist was tested for inter-rater reliability by the researcher and research assistant. The reliability was calculated using the formula below (Polit & Beack, 2004).

$$\text{Percent agreement} = \frac{\text{Number of agreement}}{\text{Number of agreement} + \text{Number of disagreement}}$$

When number of agreement = Number of items that two observe in the same ways.

When number of disagreement = Number of items that two observe indifferent ways.

The reliability value of the effective suckling checklist was .98.

2.2 The BSES-SF was tested for reliability with Cronbach's alpha coefficient in a trial of thirty first-time mothers. The results indicated a Cronbach' alpha coefficient of .90.

Data Collection and Procedures

Data collection was conducted after the research proposal is approved from Mahidol University and Maharaj Nakorn Chiang Mai Hospital. The researcher was responsible for recruiting subjects, implementing the intervention, collecting the data, monitoring the exclusive breastfeeding, identifying potential problems and appropriate solutions and recording the kinds of food that the infants receive. The research assistant collected the data of effective suckling checklist before discharge using blind technique. Data were collected about ten months starting October 2015.

Preparation stage

1. The researcher prepared for the intervention program by receiving training from experts in breastfeeding at the Lactation Clinic, Health Promotion Hospital, First Regional Health Promotion Center. Ability and skills in helping mothers in breastfeeding were developed until the experts confirmed that the researcher was able to assist postpartum mother in breastfeeding. In addition, the researcher attended a workshop for professional nurses to promote, protect and support breastfeeding, organized by the Thailand Nursing and Midwifery Council, Faculty of Nursing Mahidol University and UNICEF to ensure sufficient knowledge and skills in assisting and guiding mothers concerning breastfeeding.

2. The researcher used one research assistant. The research assistant was trained to create better understanding of each item between the research and assistant. Regarding data collection, the researcher provided the breastfeeding skills training and supportive program including telephone support for both groups. The research assistant assessed the effective suckling checklist before discharge using blind technique.

3. The researcher sought permission from the Ethics Committee of Mahidol University and the Maharaj Nakorn Chiang Mai Hospital to conduct a study involving human subjects. After permission was granted, the researcher asked for an introduction letter from the Faculty of Graduate Studies, Mahidol University and presented to the Director of Maharaj Nakorn Chiang Mai Hospital for permission to collect data.

4. After receiving permission, the researcher met with the heads of the nursing department, the ANC, the postpartum unit and family planning clinic to introduce herself, explain the research objectives and data collection procedures and ask for cooperation in data collecting.

5. The researcher cooperates with the antenatal registered nurse to get information about the characteristics of the first-time mothers and their antenatal appointment. Then, the researcher met the first-time mothers at the ANC and introduced the research and asked for their cooperation to participate in the study. When they agree to participate in this study the researcher ensure human right protection. After that, they were selected and assigned to experimental and control

groups based on randomly selecting one sealed envelopes by the antenatal registered nurse who did not know the study purpose. They were then asked to sign the consent form.

6. After the mothers agreed to participate in the study, the researcher informed them about the demographic data records and pretest questionnaires concerning BSES-SF before the investigation. Firstly, the subjects were informed about how to respond to the questionnaire. Then the subjects answered all the questions in ten minutes. After the subjects returned the questionnaire, the researcher checked to see the completeness of the answers. Finally, the researcher made an appointment with the subjects in the experimental group to schedule the breastfeeding skills training program based on the following antenatal appointment. The subjects in the experimental group were assigned to smaller subgroups with no more than five subjects each.

The study procedure

The experimental group

At ANC

The researcher met the mothers in the experimental group when they came to their antenatal appointment. For the intervention, the sample was divided in subgroup. Each subgroup contained no more than five mothers each session. The intervention was implemented in each subgroup separately at different times. The first sessions were held Monday to Friday from 10.00 to 10.45 am after the subjects completed ANC services. The second sessions were conducted the following week, 40 to 45 minutes each session. The mother classroom at the ANC was used to run the program. The program was provided once a day with only one subgroup. Details of activities are described below.

First session

1) The subjects were asked to introduce themselves to group members for around 3 minutes.

2) Open ended questions were asked by the researcher to stimulate the discussion among subjects about the benefits of breastfeeding, importance of exclusive breastfeeding for the first six months, proper positioning of mother and infant and

correct suckling techniques and breastfeeding problems and solutions. Positive reinforcement using praise was given to the subjects. Group discussion lasted approximately ten minutes.

3) The VCD entitled, “Getting Started Breastfeeding Correctly” produced by the Thai Breastfeeding Center Foundation was shown to the subjects. The 5-minute VCD illustrated how to provide breastfeeding, positioning, and suckling correctly and properly, as well as how infants communicate their needs.

4) Demonstrations and skill practices were provided to the subjects with details on proper holding posture while breastfeeding (during the first time the researcher advised mothers to practice in the cross cradle position because it was the easiest position for the new mother to control the infant’s head to her nipple and clearly see the infant’s mouth) using a life-size baby doll and a life-size breast model to ensure proper understanding and help them to develop confidence to breastfeed their infants. Demonstration and skill practices lasted approximately 30 minutes.

5) At the end of the first session, the subjects were allowed to ask if they had any question. The researcher wrapped-up the overall contents and answered the questions. An appointment for the second class was made at next week’s follow-up of prenatal visit.

Second session (*one week after 1st session*)

1) Open ended questions were asked by the researcher to stimulate discussion among the subjects about hand expression technique and breast milk storage. Positive reinforcement using praise was given to the subjects. Group discussion lasted approximately ten minutes.

2) The VCD entitled, “Expressing Breast Milk by Hand and Storing Breast Milk” produced by the Thai Breastfeeding Center Foundation was shown to the subjects. The 5-minute VCD illustrated hand expression technique and breast milk storage.

3) Demonstrations and skills practice were provided to the subjects with details on hand expression using the life-size breast model, as well as proper positioning of mother and infant that they had learned to ensure their understanding and help them develop their breastfeeding confidence. Demonstration and skills practice lasted approximately 30 minutes.

4) At the end of the session, the subjects were allowed to ask if they had any question. The researcher wrapped-up the overall contents and answered the questions.

At postpartum unit

The researcher checked the subjects name list at the labor unit every Monday to Sunday from 08.00 am to 16.00 pm by asking the staff in the delivery room to notify the researcher when the subjects came to give birth. The researcher recorded data of birth and of infants on personal data forms. Then the researcher provided support according to the manual for breastfeeding helping subjects in the postpartum phase. Details of the activities are described below.

After subjects were moved to the postpartum unit, the researcher carried out the followings procedures.

1) Day 1, the researcher evaluated the readiness of the subjects, then encouraged the subjects to breastfeed their infants every two to three hours with providing assistance, helping them adjust their positions, giving advice and encouragement to ensure correct practice and creating a supportive environment for breastfeeding. The researcher provided the subjects relevant information about the importance of frequent feeding, the baby's early feeding cues and signs that the baby was satisfied at the end of feeding, how breast milk will come in, and how to burp the baby. During this period, the researcher also provided the opportunity to significant persons in the mothers' life such as husband or grandmother to learn the benefits of breastfeeding to develop positive attitudes toward breastfeeding, provided information about breastfeeding support and encouraged them to participate in practice at assisting mothers to breastfeed and take care of the infants. This activity started within two to three hours after delivery when the subjects gave birth from 7:00 am to 7:00 pm. When subjects gave birth at night or early in the morning, the researcher asked the on-duty staff to provide assistance to the subjects on the researcher's behalf and the researcher came to assist the subjects within 12 hours after childbirth. Within the first 24 hours after childbirth, the researcher provided breastfeeding support until the subjects could perform themselves without assistance. For subjects unable to correctly breastfeed their infants, the researcher helped them by explaining and assisting to adjust the posture of holding both infant and breast until they were able to perform proper

breastfeeding. To subjects who could correctly breastfeed, the researcher showed her appreciation.

2) Day 2, the researcher visited and observed the subjects when they were feeding their baby. When the baby's position and latch-on techniques were good, she praised the subject how well she and the baby were doing. When the subject was having difficulty, or her baby was not well latched-on, the researcher provided her appropriate help until the subject was able to do the breastfeeding herself and was confident to breastfeed their infants. After the subjects finish feeding, the researcher reviewed the relevant information about hand expressions of breast milk technique and encouraged the subjects to begin expressing their milk, providing assistance and giving advice and encouragement them to ensure correct practice.

3) Day 3, the researcher visited and observed the subjects when they were feeding their baby. When the baby's position and latch-on techniques were good, the researcher showed appreciation to the subjects. This helped the subjects gain confidence. In contrast, when the subjects still had no confidence in providing breastfeeding on their own, or even when the ability to do so was evident, the researcher planned to provide assistance after discharge using the telephone to monitor potential problems and provide counseling. Before discharge, the subjects evaluated the efficacy of suckling using the effective suckling checklist provided by the research assistant, and the researcher asked the subjects to complete the breastfeeding self-efficacy questionnaire. After that, a breastfeeding handbook entitled, "20 Questions-Answers about breastfeeding" produced by the Thai Breastfeeding Center Foundation was distributed to the subjects to refresh breastfeeding knowledge at home.

After discharge

1. In the evening of the discharge day, the researcher telephoned call to subjects to obtain information about the kinds of food that the infants received after hospital discharge and potential problems encountered. Counseling and problem solving were also provided.

2. At six weeks postpartum, the subjects were routinely followed-up at the Family Planning Clinic. The subjects were asked to complete the breastfeeding self-efficacy questionnaires. Then the researcher spent time talking with each subject individually about whatever breastfeeding problems they need to solve or discuss. In

addition, the researcher checked whether the subjects continued exclusive breastfeeding or not, using the food record form. At this time, the information about expressing breast milk and storing breast milk was refreshed because some subjects may have resumed their employment over those few months.

3. Day 7, in months 1, 3, 4, 5 and 6 telephone follow-up was performed to monitor whether the subjects still continued exclusive breastfeeding, the kinds of food that the infants received, breastfeeding problems and solutions, as well as provide counseling to solve any existing problems. The outcomes of telephone monitoring and counseling were recorded and the subjects were informed that they could call the researcher any time for breastfeeding assistance. In cases where telephone counseling failed, follow-up appointments with the researcher at the hospital were provided for further assistance.

Control group

At the ANC

The subjects assigned to the control group received the antenatal education provided by the registers nurses at the ANC clinic.

At the postpartum unit

1. The researcher checked the subjects name list at the labor unit every Monday to Sunday at 08.00 am to 16.00 pm by asking the staff in the delivery room to notify the researcher when the subjects came to give birth. The researcher recorded data of birth and of infants on the personal data form.

2. The researcher asked the subjects to complete the breastfeeding self-efficacy questionnaire and the research assistant assessed the efficacy of suckling using the effective suckling checklist before hospital discharge to determine whether the control subjects were able to effectively breastfeed their infants.

3. In the evening of the day of discharge, the researcher telephoned the subjects to obtain information about the kinds of food that the infants received after hospital discharge and potential problems.

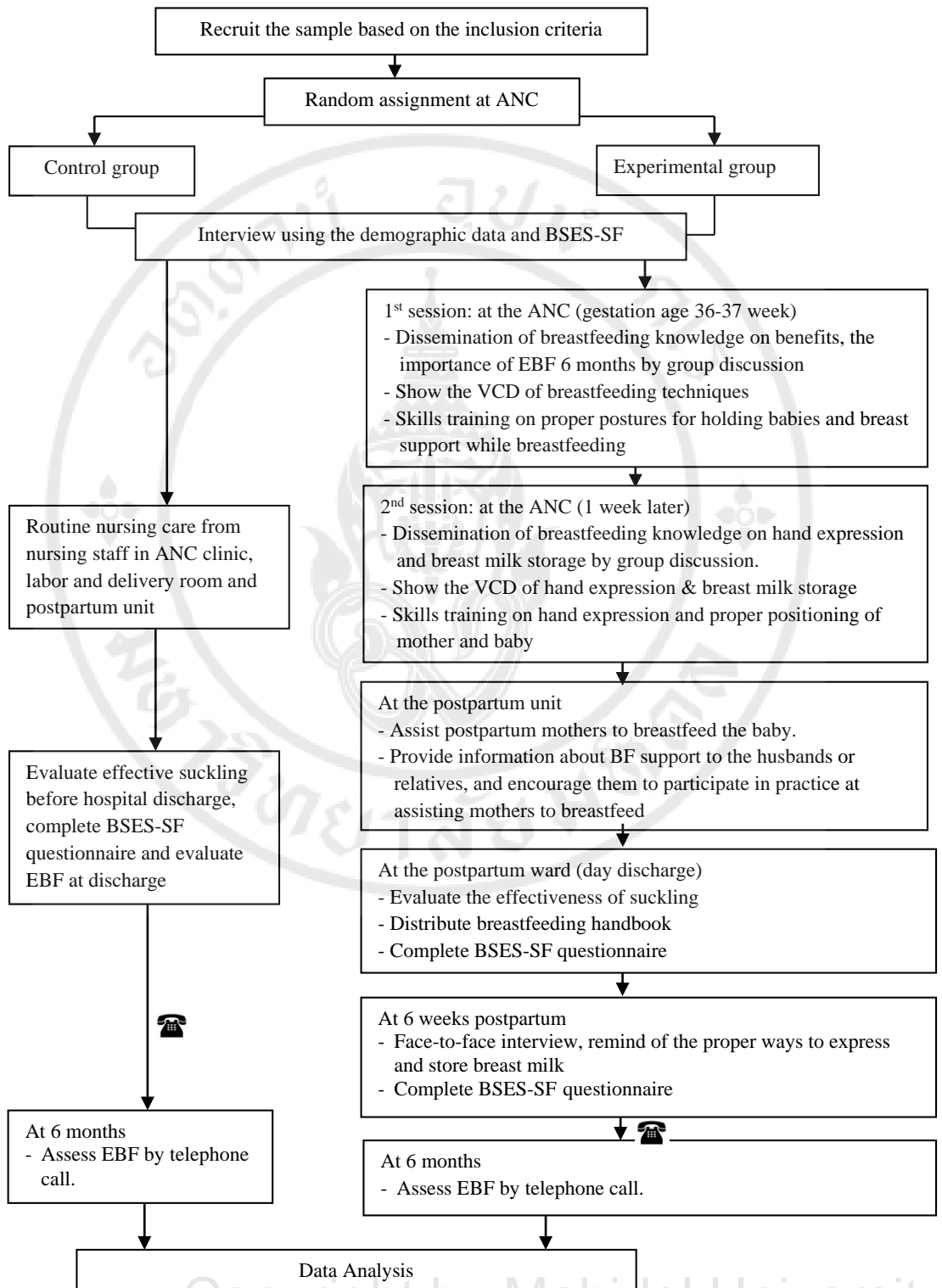
4. At six weeks postpartum, the subjects were routinely followed-up at the Family Planning Clinic. The subjects were asked to complete the breastfeeding self-efficacy questionnaire. Then the researcher spent time to talk with each subject individually about whatever breastfeeding problems they needed to solve or discuss. In

addition, the researcher checked whether the subjects continued exclusive breastfeeding or not, using the food record form.

5. Day 7, months 1, 3, 4, 5 and 6 telephone follow-up was performed to monitor whether the subjects still continued exclusive breastfeeding, record the kinds of food that infants received and breastfeeding problems and solutions.



The Process of Data Collection




 : Telephone follow-ups after the mothers returned home for one day, one week, and every month after birth until the infants were six months old

Figure 3.2: Summary on Research Procedure and Data Collection

Protection of Rights of Human Subject

The study proposal was submitted to the Human Subjects Committee of Mahidol University and Maharaj Nakorn Chiang Mai Hospital for approval before data collection. The permission letter for data collection from the Faculty of Graduate Studies was sent to the director of Maharaj Nakorn Chiang Mai Hospital to ask for permission to collect the data. The potential subjects who met the study criteria were informed of the purpose of the study, process of data collection, confidentiality, anonymity and risks and benefits of the participating in the program. When the subjects agreed to participate, they were informed of their rights to refuse to participate in the study or withdraw at any time, even though they had previously agreed to participate. Their decision to discontinue participating in the study did not affect their relationship with health care providers or their access to any services available at the hospital. When the subjects agreed to participate in the study, they were asked for written consents form (See Appendix I).

Data Analysis

The data were analyzed with SPSS/PC statistical package are described below.

1. The demographic data of mothers and infants is presented by frequency and percentage. The Chi-square test, independent t-test and Fisher's exact test were used to examine the difference of sample characteristics between the control and experimental group.
2. Comparing the difference in rates of exclusive breastfeeding for six months between the experimental and control groups was performed by the Chi-square test.
3. Comparing the duration of exclusive breastfeeding between the experimental and control groups was performed by the Mann-Whitney U-test.
4. Comparing the median scores of breastfeeding self-efficacy at baseline, discharge, and 6 weeks postpartum between the experimental and control groups was performed by the Mann-Whitney U-test.

5. Comparing the differences in mean of breastfeeding self-efficacy scores over time within and between groups was performed by repeated measure ANOVA.

The Shapiro-Wilk test was used to determine the normality of the numerical variables. The level of significance for all statistical tests was set at .05.



CHAPTER IV

RESULTS

This randomized control trial research study was conducted to determine the effect of breastfeeding skills training and supportive program on exclusive breastfeeding six months among first-time mothers. The subjects included 84 first-time mothers receiving antenatal care, giving birth and attending postpartum follow-up at Maharaj Nakorn Chiang Mai Hospital. One mother in experimental group was lost of follow-up due to change of telephone number. Therefore, 83 first-time mothers, 41 in experimental group and 42 in the control group, were completed of the program.

The results of this study are presented in tables accompanied by descriptions in the four topics listed below

Part 1: Demographic characteristics of the subjects

Part 2: Rate of exclusive breastfeeding for the first six months

Part 3: Duration of exclusive breastfeeding

Part 4: Comparison of the mean scores breastfeeding self-efficacy between the experimental and the control groups

Part 1: Demographic characteristics of the subjects

Eighty-four subjects agreed to join the study, 42 were randomized in the breastfeeding skill training and supportive program and 42 were in the control group. Only one subject (2.39%) in the experimental group dropped out from the study because loss of contact at one month after birth. Finally, 81 subjects, 41 in the experimental group and 42 in the control group were further analyzed.

Demographic characteristics of the first-time mothers within each group are described in Table 4.1.

Nearly one half of the mothers in the experimental group and in the control group were between 25 to 29 years of age (46.5% and 47.6%, respectively). The mean age of the mothers in the experimental group was 27.9 years (SD=4.6), while in the control group was 27.1 years (SD=4.7). All mothers in the experimental group (100%) and almost of the control group (97.6%) were married.

More than one half (58.5%) of the mothers in the experimental and one half (50.0%) in the control group had obtained bachelor's degree or higher level. Most mothers in both groups were employees (48.8% in the experimental group, 59.5% in the control group).

In terms of family income, the mean family income of the mothers in the experimental group was 26,024.0 baht (SD=10,607), while the average family income of the mothers in the control group was 22,268.0 baht (SD=8,230.7). Most mothers in both groups had sufficient income (56.1% in the experimental group, 47.6% in the control group).

Most mothers in the experimental group lived in extended family (53.7%), while most mothers in the control group lived in a nuclear family (61.9%). About individuals supporting breastfeeding, 75.6% of the mothers in the experimental group and 59.5% in the control group had their own mother and husband as breastfeeding supporters.

In terms of mode of delivery, most mothers in the experimental and the control groups experienced normal delivery (95.1%, and 78.6%, respectively). The mean weight of infant in the experimental group was 3,099.4 gram (SD=361.4), while in the control group was 2,985.4 gram (SD=360.2).

These baseline characteristics did not differ across the experimental and control groups.

Table 4.1: Comparison of demographic characteristics of the first-time mothers in the experimental and control groups

Characteristics	Experimental group (N=41)		Control group (N=42)		p-value
	n	%	n	%	
Age (years)					
20-24	8	19.5	11	26.2	.466 ^a
25-29	19	46.5	20	47.6	
30-34	10	24.4	5	11.9	
≥35	4	9.8	6	14.3	
Mean (SD)	27.9 (4.6)		27.1 (4.7)		.436 ^c
Min-Max	20-41		20-37		
Marital status					
Married	41	100.0	41	97.6	.988 ^b
Separated/Widowed	-	-	1	2.4	
Divorced					
Education					
≤High school	7	17.1	12	28.6	.459 ^a
Diploma	10	24.4	9	21.4	
≥Bachelor's degree	24	58.5	21	50.0	
Occupation					
Employee	20	48.8	25	59.5	.222 ^b
Government Official	6	14.6	3	7.1	
Vendor	3	7.3	7	16.7	
Housewives	12	29.3	7	16.7	

a= Using Chi-square test (to compare the relative frequency between experimental and control groups)

b= Using Fisher's exact test (to compare the relative frequency between experimental and control groups)

c= Using t-test (to compare two means from experimental and control groups)

Table 4.1 : Comparison of demographic characteristics of the first-time mothers in the experimental and control groups (continued)

Characteristics	Experimental group (N=41)		Control group (N=42)		p-value
	n	%	n	%	
Income family (baht per month)					
<20,000	10	24.4	17	40.5	.232 ^a
20,000-29,999	14	34.1	9	21.4	
≥30,000	17	41.5	16	38.1	
Mean (SD)	26,024.4 (10,607.0)		22,268.8 (8,230.7)		.075 ^c
Min-Max	10,000-50,000		10,000-40,000		
Sufficiency of income					
Sufficient	23	56.1	20	47.6	.469 ^b
Sufficient with no savings	17	41.5	18	42.9	
Insufficient	1	2.4	4	9.5	
Family Type					
Nuclear family	19	46.3	26	61.9	.155 ^a
Extended family	22	53.7	16	38.1	
Personal support					
Husband	4	9.8	8	19.0	.277 ^a
Own mother and husband	31	75.6	25	59.5	
Husband's mother and husband	6	14.6	9	21.5	

a= Using Chi-square test (to compare the relative frequency between experimental and control groups)

b= Using Fisher's exact test (to compare the relative frequency between experimental and control groups)

c= Using t-test (to compare two means from experimental and control group)

Table 4.1 : Comparison of demographic characteristics of the first-time mothers in the experimental and control groups (continued)

Characteristics	Experimental group (N=41)		Control group (N=42)		p-value
	n	%	n	%	
Mode of delivery					
Normal delivery	39	95.1	33	78.6	.078 ^b
Forceps extraction	-	-	3	7.1	
Vacuum extraction	2	4.9	6	14.3	
Sex of infant					
Male	17	41.5	23	54.8	.470 ^a
Female	24	58.5	19	45.2	
Weight of infant (gram)					
2000-2499	2	4.9	5	11.9	.506 ^b
2500-2999	16	39.0	18	42.9	
3000-3499	17	41.5	16	38.1	
≥3500	6	14.6	3	7.1	
Mean (SD)	3,099.4 (361.4)		2,985.4 (360.2)		.154 ^c
Min-Max	2,360-3,810		2,290-3,670		

a= Using Chi-square test (to compare the relative frequency between experimental and control groups)

b= Using Fisher's exact test (to compare the relative frequency between experimental and control groups)

c= Using t-test (to compare two means from experimental and control groups)

Part 2: Rate of exclusive breastfeeding for the first six months

After follow-ups first-time mothers until six months postpartum, it was found that the number of mothers who exclusively breastfed for the first six months in the experimental group was 15 (36.6%), while in the control group was 6 (14.3%). It was revealed that the rate of exclusive breastfeeding for the first six months in the experimental group was significantly higher than that of mothers in the control group ($p=.011$). The detail is illustrated in Table 4.2.

Table 4.2: Comparison of the rate of exclusive breastfeeding for the first six months between the experimental and the control groups

Breastfeeding at six months	Experimental group (N=41)		Control group (N=42)		χ^2	p-value
	n	%	n	%		
Exclusive breastfeeding	15	36.6	6	14.3	6.52	.011
Breastfeeding with other food	26	63.4	36	85.7		

Part 3: Duration of exclusive breastfeeding

The Shapiro-Wilk test was firstly used to determine the normality of the duration of exclusive breastfeeding and indicated that the duration of exclusive breastfeeding was not normally distributed ($p < .001$ for both groups). Therefore, the comparison of the duration of exclusive breastfeeding between the experimental and the control groups was tested using the Mann-Whitney U test.

Table 4.3 shows the median duration of exclusive breastfeeding in the experimental group was 150 days (IQR= 84), while in the control group was 72.5 days (IQR=110). The results of the Mann-Whitney U test revealed that the average duration of exclusive breastfeeding of the mothers in the experimental group was significantly longer than the mothers in the control group ($p < .001$).

Table 4.3: Comparison of the exclusive breastfeeding (EBF) duration between the experimental and the control groups

Variable	Experimental group (N=41)			Control group (N=42)			Mann-Whitney U-test	
	Min- Max	Mean (SD)	Median (IQR)	Min- Max	Mean (SD)	Median (IQR)	Z value	p- value
Duration of EBF (days)	7-180	134.37 (53.81)	150 (84)	3-180	73.31 (63.87)	72.50 (110)	4.12	<.001

Part 4: Comparison the median of the breastfeeding self-efficacy scores (BSES) between the experimental and the control groups

The Shapiro-Wilk test was firstly used to determine the normality of the breastfeeding self-efficacy scores at baseline, discharge and six weeks, revealing that the breastfeeding self-efficacy scores at baseline ($p=.049$ in the experimental group and $p=.014$ in the control group), at discharge ($p=.018$ in the experimental group and $p=.112$ in the control group), and at six weeks postpartum ($p=.005$ in the experimental group and $p=.034$ in the control group) was not normally distributed. Therefore, the comparison of the scores of breastfeeding self-efficacy at baseline, discharge and six weeks between the experimental and the control groups was tested using the Mann-Whitney U test.

Table 4.4 shows no significant difference of median breastfeeding self-efficacy scores at baseline between the experimental and control groups ($p=.609$). However, at discharge and at six weeks, the median scores of breastfeeding self-efficacy in the experimental group were significantly higher than those in the control group ($p=.011$ and $p=.001$, respectively).

Table 4.4: Comparison the median of BSES at baseline, discharge and six weeks between the experimental and the control groups

BSES	Experimental group (N=41)			Control group (N=42)			Mann-Whitney U test	
	Min- Max	Mean (SD)	Median (IQR)	Min- Max	Mean (SD)	Median (IQR)	Z value	p-value
At baseline	35-66	51.54 (8.46)	52 (11.50)	34-64	52.64 (6.86)	53.5 (7.50)	.511	.609
At discharge	37-64	52.22 (8.19)	54 (12.50)	32-62	47.97 (5.68)	48 (6.00)	2.54	.011
At 6 weeks	34-69	58.73 (8.56)	60 (12.00)	20-68	51.21 (11.25)	53 (14.00)	3.25	.001

With regards to each point of evaluation, it was found that the changes of median BSES scores from baseline to six weeks postpartum. The BSES increased with time in the experimental group, whereas, the median BSES decreased at discharge and increased at 6 weeks in the control group. The increase was larger in the experimental group than in the control group, as illustrated in Figure 4.1.

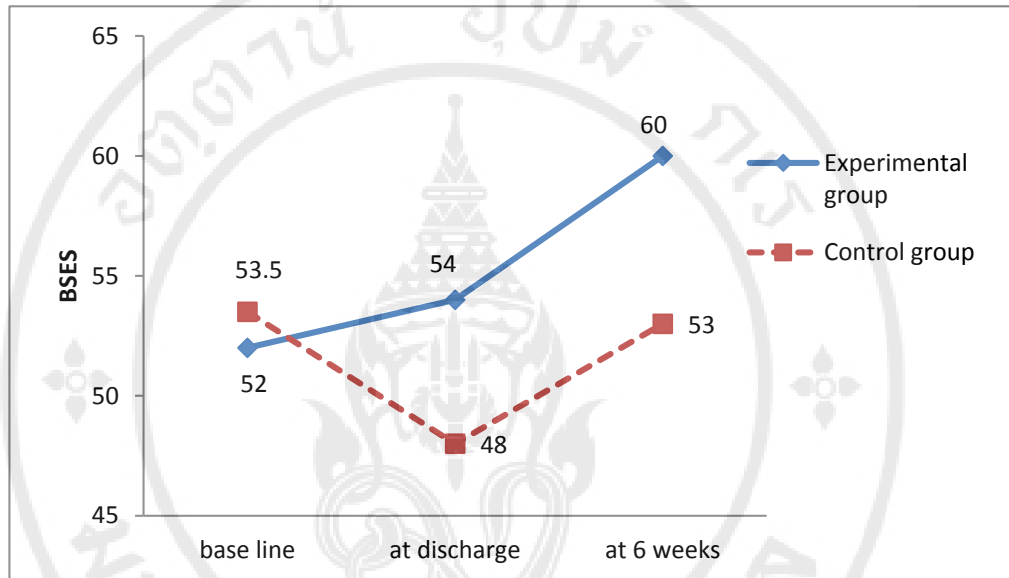


Figure 4.1: Change of median BSES from baseline to 6 weeks postpartum in the experimental and control groups

The results of repeated measure ANOVA to assess the differences in mean BSES over time within and between groups were presented in Table 4.5. These results demonstrated that breastfeeding self-efficacy scores in both groups changed over time determined by the quadratic model ($p < .001$) with a decrease of breastfeeding self-efficacy scores from baseline to at discharge and an increase of BSES scores from discharge to six weeks postpartum. However, no significant interaction effects were found between time and study groups ($p = .534$). Moreover, the results confirmed that the higher average breastfeeding self-efficacy scores in the experimental group as compared with the control group ($p = .006$).

Table 4.5: Changes in BSES over time within and between groups

Variables	Marginal mean of BSES	F	p-value
Within subjects effects			
Time (with quadratic model)		17.048	<.001
- at baseline vs. at discharge ^a	-2.024		
- at discharge vs. at six weeks ^b	4.856		
Time×Group interaction ^c		0.389	.534
Experimental group			
- at baseline vs. at discharge	.683		
- at discharge vs. at six weeks	6.512		
Control group			
- at baseline vs. at discharge	-4.667		
- at discharge vs. at six weeks	3.238		
Between subjects effects			
Group (Experimental vs. Control) ^d	2.553	7.829	.006

a= Represents the average improvement (BSES at discharge minus score at baseline) within subjects over time, for both study groups combined

b= Represents the average improvement (BSES at 6 weeks postpartum minus score at discharge) within subjects over time, for both study groups combined

c= Determines whether the change within subjects over time varied significantly by study group

d= Represents the average difference between groups, for both time periods (at baseline, at discharge and at 6 weeks postpartum) combined

CHAPTER V

DISCUSSION

The research aimed to study the effect of breastfeeding skill training and supportive program on six months exclusive breastfeeding among first-time mothers. In this chapter, the research results are discussed related to the research questions.

Research question I. Does the breastfeeding skills training and supportive program affect the exclusive breastfeeding rate at six months among first-time mothers?

The first-time mothers participating in the breastfeeding skill training and supportive program combined with routine nursing care achieved significantly higher rates of six months exclusive breastfeeding than those receiving only routine nursing care ($p=.011$) (See table 4.2). Therefore, the results of this study demonstrated that breastfeeding skills training and supportive program affect the exclusive breastfeeding rate at six months among first-time mothers.

The breastfeeding skill training and supportive program, based on Pender's HPM, can help the mothers increase perceived benefits of breastfeeding, decreased perceived barriers to breastfeeding, caused positive attitudes toward breastfeeding, increased breastfeeding self-efficacy and received sufficient and appropriate support. First-time mothers participating in this program obtained knowledge regarding the benefits of breastfeeding, obstacles that may occur during breastfeeding, guidelines for solving those problems and proper positioning and correct suckling techniques. They obtained this knowledge by group discussions, watching VCDs about breastfeeding techniques and receiving breastfeeding handbooks, which can support the decision to exclusively breastfeed their infants.

Group discussion is an instructional approach which motivates extensive learning and involves a group of individuals sharing information about a topic or problem. In this study, the researcher organized a group in which mothers could talk together, exchange information, shared their experiences, beliefs, feelings with others.

The researchers summarized information and correct some wrong ideas, led to accurate perceptions of breastfeeding benefits, how to solve the barriers, then increased their self-efficacy to exclusive breastfeeding for a longer period than their expectation. Moreover, they would determine their goal of exclusive breastfeeding and can cope effectively with the problems and obstacles of breastfeeding. According to Surdej (2016) study, he found that mothers who perceived benefits of breastfeeding would breastfeed longer than those who did not. Brand, Kothari and Stark (2011) suggested that educating mothers regarding the benefits of breastfeeding and assisting them to understand potential breastfeeding problems and problem-solving skills can help them to expand the duration of breastfeeding. Moreover, when these mothers had a chance to exchange comments within the group, fully and freely expressing their opinions and listening to positive ideas or experiences regarding breastfeeding from other mothers, it helped the mothers to be aware of individual inappropriate beliefs or thoughts. They developed their own positive attitudes toward exclusive breastfeeding inducing them to exclusively breastfeed their babies for a long period.

In this program, first-time mothers were also offered an opportunity to watch VCDs on breastfeeding. It enhanced mothers' learning and understanding because mothers could easily follow and understand what was taught in the VCDs with moving pictures that were interesting. After the video presentation, the researcher also summarized the content of the VCDs and gave opportunities for mothers to ask questions and express their opinions as an information exchange technique, to clarify the mothers' comprehension. According to Seitz and Dinse (2007), learning and teaching are more effective when the learner perceived the contents through more than one sensory organs. This is in accordance with Metcaft (1997) who reported that people cannot remember all information. They could remember 90% of what they do, 75% of what they see and only 20% of what they hear. Therefore, these mothers were able to remember the contents for a long time, leading to effective learning and applicable to practice use of knowledge for permanent behavior change (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010).

According to Pongprasobchai's study (2004), it was found that providing education combined with the breastfeeding handbook to postpartum mothers was more enhancing maternal knowledge and reducing maternal anxiety and breastfeeding

problems than providing education alone. In this study, the first-time mothers were received the breastfeeding handbook which included content related to breastfeeding positioning and latch-on technique. Thus, mothers could more easily follow the guidance after giving birth. Moreover, the content of the handbook also consisted of 20 answers to breastfeeding questions to help mothers solve common problems for example, how to assess whether they have sufficient milk for their babies. Therefore, the breastfeeding handbook would be helpful because mothers could review it anytime they wanted. When they actually breastfed their babies, they were able to breastfeed correctly and gain confidence in breastfeeding, resulting in exclusively breastfeeding their babies for a long time.

In addition, the researcher demonstrated the proper positioning and correct suckling techniques. The mothers were assisted and supported by the researcher. They were taught how to hold the baby, how to handle the breast, and how to let the baby latch-on. These activities empowered the mothers to develop breastfeeding skills before facing the actual situation. Practicing proper positioning and correct suckling techniques can enhance their breastfeeding self-efficacy through mastery these experiences. According to Bandura (1986), enactive mastery experiences are the most influential source of self-efficacy. This is congruent with Sakha (2009) who found that training mothers for proper lactation was the strongest and most effective factor toward successful and sustained exclusive breastfeeding for first-time mothers. Moreover, this program provided opportunities for the mothers to use multiple sensory organs, enhancing the learning and helping mothers to understand quickly and correctly leading to effective breastfeeding. Effective learning occurs when the learners are engaged in active learning, when they are doing things instead of sitting passively and listening (Bonwell & Eison, 1991). The learners can learn best and become proficient in skills by practicing rather than merely being a spectator to the skill. (Hermin & Toth, 2006). Therefore, the more mothers practice, the more learning and skills they acquire; as a result, their breastfeeding performance improves.

Providing support and assistance to the mothers after giving birth could help them to initiate breastfeeding early and to breastfeed effectively. The researcher provided assistance to help mothers to breastfeed their babies as soon as possible based on the principle of early, frequent and correct suckling. This early suckling can

stimulate prolactin and oxytocin hormones which produce and release breast milk. It would help to ensure the mother that they have enough milk for their babies. The researcher also encouraged the mothers to breastfeed their babies as often as they want or every two or three hours to promote consistent and sufficient lactation. When the babies had a chance to suckle their mother's breast every two to three hours as often as they needed, the production of prolactin hormone would be stimulated and breast milk would be continuously produced. Providing support and assistance to help the mothers to breastfeed effectively would help them to develop a positive attitude toward breastfeeding simultaneously, it can reduce perceived barrier to breastfeeding and can enhance self-efficacy. The high level of breastfeeding self-efficacy can motivate them to continue exclusive breastfeeding. Likewise, the study of Hinic (2016) explored factors related to breastfeeding self-efficacy in the early postpartum period. The result revealed that breastfeeding self-efficacy was positively correlated with support of breastfeeding. Many studies have revealed that assisting mothers after delivery to have a positive initial breastfeeding experience was significantly associated with the maternal perception of the early onset of lactation, a sufficient milk supply, and high scores of maternal breastfeeding self-efficacy leading to a greater incidence of exclusive breastfeeding (Andrew & Harvey, 2011; DiGirolamo, Thompson, Martorell, Fein, & Grummer-Strawn, 2005).

In addition to the assistance from nurses, the support from significant family members is also very important for increasing exclusive breastfeeding rates. The significant family members play a vital role in supporting the mother during breastfeeding. When the significant family members are more supportive and have a favorable opinion in breastfeeding the mother more likely to choose to breastfeed. The significant family members are especially important during the coping period after birth. The informational and emotional support that the mother received from the significant family members during the first six weeks after birth often resulted in the exclusive breastfeeding for a long period of time (Mueffelmann, Racine, Warren-Findlow, & Coffman, 2015). Therefore, the informational and emotional support from the significant family members is crucial in breastfeeding. The mother is likely to ask for advice from her partner first, followed by advice from her mother, family, and friends (McKinney, James, Murray, Nelson, & Ashwill, 2018). The mother with little

support or with advice discouragement from her significant family members will probably have more difficult in breastfeeding.

In this study, two mothers in the control group received advice from their relatives to feed the babies with supplementary foods; hence, exclusive breastfeeding of these babies was unsuccessful. However, no mothers in the experimental group received advice from any significant person in their life to feed the babies with supplementary foods (see Appendix K). In this program, when any significant individual in the mothers' life such as husband, grandmother or relative were present, they were allowed to take part in the program. Because of receiving advice while the researcher provided assistance to the mothers, they were able to develop positive attitudes toward breastfeeding and understand benefits of breastfeeding. They were able to help mothers in different ways such as contributing moral support and encouragement, assisting with childcare and providing tangible support. Therefore, receiving support from family members enabled mothers to feel encouraged, warm and cared for. As a result, they had more confidence to breastfeed their babies and were able to exclusively breastfeed for a long time. This finding was consistent with a study conducted by Susin and Giugliani (2008), reporting that an exclusive breastfeeding promotion program including the husbands' participation resulted in prolonged duration of exclusive breastfeeding significantly differing from the program without husbands' participation.

In addition, mothers in the experimental group received telephone follow-ups periodically starting from one day after hospital discharge, one week after birth, four weeks after birth, six weeks after birth and once a month until the babies were six months old. The content in telephone follow-ups consisted of maternal breastfeeding and related problems. At one day, seven days, four weeks, three months, four months, five months, and six months, the follow-up was conducted through telephone calls providing advice for current problems. At the six weeks postpartum, the researcher arranged an appointment to meet mothers at their routine postpartum follow-up at the hospital. At these follow-up appointments, the information about expressing and storing breast milk was refreshed to the mothers in the experimental group because some subjects would resume their employment over the next few months. During the entire process, all mothers in the intervention group were free to contact the researcher

using telephone calls anytime in case of any question concerning breastfeeding or experiencing problems in breastfeeding. Consequently, consulting was provided continuously. Telephone follow-ups continually provided the mothers with emotional and informational support, while helping them to solve problems and enhancing their confidence. The mothers reported that the telephone support was convenient and provided them with instructional support when they had problems, especially when they had insufficient milk supply. They felt telephone support constituted an available supporting resource which increased self-confidence (Fallon et al., 2005). Likewise, the study by Tahir and Al-Sadat (2013) explored the effectiveness of telephone lactation counseling on breastfeeding practices. The result showed that telephone lactation counseling helped mothers gain confidence in breastfeeding. Increasing the rate of exclusive breastfeeding for the first postpartum months was achieved but not during four and six month postpartum intervals.

Research question II: Does the breastfeeding skills training and supportive program affect the breastfeeding self-efficacy scores at discharge and six weeks among first-time mothers?

The results of this study demonstrated first-time mothers participating in the breastfeeding skill training and supportive program combined with routine nursing care had significantly higher breastfeeding self-efficacy scores at discharge and six weeks than those receiving only routine nursing care ($P=.011$ and $p=.001$, respectively) (Table 4.4). Therefore, breastfeeding skills training and supportive program affected the breastfeeding self-efficacy scores at discharge and six weeks among first-time mothers. .

This finding was supported by the study of Dennis (1999). She stated that breastfeeding self-efficacy was a dynamic construct that can be modified as a result of intervening events and that successful breastfeeding programs should have interventions to promote breastfeeding in hospitals and at home. Therefore, in this study, the researcher highlighted breastfeeding self-efficacy as a factor that could be manipulated and precisely measured in task and action. The result found that prenatal breastfeeding self-efficacy did not significantly differ between the experimental (median= 52, IQR=11.50) and the control groups (median= 53.5, IQR=7.50), but

significant differences were identified at hospital discharge (median= 54, IQR=12.50 in the experimental group, median= 48, IQR=6 in control group) and at six weeks postpartum between the experimental (median= 60, IQR=12) and control groups (median= 53, IQR=14). Hence, the increment in maternal breastfeeding self-efficacy scores resulted from the intervention activities of the breastfeeding skill training and supportive program. The results of this study could be explained by the multidimensional and comprehensive design of the breastfeeding skill training and supportive program. This program was successful in enhancing participants' breastfeeding self-efficacy, determining breastfeeding behavior by addressing three influential sources of self-efficacy, namely, performance accomplishments, verbal persuasion and emotional or physical arousal. All three influential sources in this program could help mothers have a positive initial breastfeeding experience leading to higher breastfeeding self-efficacy, resulting in a greater incidence of exclusive breastfeeding, as described below.

Performance accomplishments (enactive mastery experiences) were enhanced by practicing the common breastfeeding positions and attachments with a life-size baby model during the prenatal period and providing support and assisting postpartum mothers to breastfeed their infants correctly. According to Bandura (1986), enactive mastery experiences are the most influential source of self-efficacy. He recommends using aids to mastery such as modeling the activity, breaking the activities down into easily managed smaller steps and performing the activities with an experienced guide. In this program, enactive mastery experiences was acquired prenatally by practicing proper positions, correct latch-on and hand expressing breast milk. There were done with a life-size breast model and a life-size baby doll. Moreover, mothers participating in the program were assisted during the initiation of breastfeeding on the basics of early, frequent and correct suckling, rather than waiting until they encountered difficulties. By receiving assistance and accurate information regarding breastfeeding from the researcher and hospital staff, mothers were directed to correct breastfeeding practices. The mothers were then complimented for their actions leading to increased self-efficacy. Therefore, they were more likely to have positive experience, contributing to their breastfeeding self-efficacy and their ability to continue six months exclusive breastfeeding. In contrast, mothers whose initial

breastfeeding experience proved difficult may be more likely to have low breastfeeding self-efficacy.

According to Bandura (1994), verbal persuasion entails convincing an individual that she has the ability to be successful at an activity. Verbal persuasion includes encouraging and providing additional verbal information that is relevant, comes from a source the mother finds credible and clearly contributes to improved success. In this study, verbal persuasion was provided during the prenatal class by the researcher; mothers in the experimental group received encouragement and comments while they practiced the common breastfeeding positions and attachments with a life-size baby model. During the postpartum period, verbal persuasion was provided from the researcher and significant individuals in the mothers' life. These mothers received moral support, encouragement and comments to build the mother's confidence such as performing breastfeeding correctly, baby gaining weight, and baby contented after the mother's perseverance with feeding. Therefore, mothers in the experimental group were able to develop positive attitudes toward breastfeeding and had more confidence to breastfeed their babies, resulting in exclusive breastfeeding for a long time. In contrast, negative verbal persuasion can have a harmful effect on a mother's intent to breastfeed and decrease positive attitudes toward breastfeeding, resulting in lower breastfeeding self-efficacy.

Psychological and affective states can enhance self-efficacy by reducing people's stress reactions and alter their negative emotional proclivities and interpretation of their physical states (Bandura, 1994). How the emotions are perceived, rather than the sheer intensity of emotional and physical reactions is important. People with a high sense of self-efficacy are likely to view their state of affective arousal as an energizing facilitator of performance, whereas those who are plagued by self-doubt regard their arousal as a debilitation. In this study, emotional or physical arousal was enhanced prenatally by providing anticipatory guidance to mothers using the following information: normal physiological changes to expect in themselves, how to interpret baby cues and coping strategies to decrease anxiety. After delivery, assisting the mother in acquiring specific skills necessary for breastfeeding such as evaluation of her milk supply and infant cues, also may have increased her perception of her ability to breastfeed. Moreover, in the early postpartum stage,

mothers routinely felt tired and exhausted having just undergone delivery and perineum stitches. The researcher assisted mothers to provide breastfeeding in a lying down position, which helped to reduce fatigue and perineum pain. According to Milligan, Flenniken and Puge (1996), mothers who breastfed their baby in a lying down position demonstrated less fatigue than in the sitting position. Thus, these strategies could help shape the perceptions of the mothers' breastfeeding experience, develop positive attitudes toward breastfeeding and led to higher confidence to breastfeed their babies, particularly when they had physical discomfort related to birth and initiation of breastfeeding. In contrast, when mothers were discouraged, frustrated, or dejected, they would be distracted and less likely to achieve successful six-month exclusive breastfeeding.

Therefore, this program was successful in enhancing maternal breastfeeding self-efficacy scores. This finding was consistent with related studies by Noel-Weiss, Rupp, Cragg, Bassett & Woodend (2006) shown that mothers who attended a prenatal breastfeeding education workshop had higher maternal breastfeeding self-efficacy scores at four weeks postpartum when compared with mothers who did not attend the workshop. Likewise, the study was done by Hatamleh (2012) to test the efficacy of the breastfeeding self-efficacy intervention program to increase breastfeeding duration. His results showed that an antenatal breastfeeding self-efficacy intervention program and postpartum telephone follow-up improved breastfeeding self-efficacy and duration of exclusive breastfeeding at 2 weeks postpartum. Mothers who received the intervention sensed more breastfeeding self-efficacy than those who did not receive the intervention program. Moreover, the mothers participating in this program had significantly higher breastfeeding self-efficacy scores and significantly higher exclusively breastfed rate at six months postpartum than those did not receive the program. Research findings were consistent with those of related studies, reporting significant effects of breastfeeding self-efficacy on the outcome of exclusive breastfeeding. For example, Dennis (2003) found that breastfeeding self-efficacy scores during the first week postpartum have consistently predicted breastfeeding rates at 4, 6, 8 and 16 weeks. Similarly, a study by Loke and Chan (2003) showed that women with higher scores of breastfeeding self-efficacy were more likely to perform exclusive breastfeeding six months after birth. Blyth,

Creedy, Dennis, Moyle, Pratt and DeVries (2002) found that first-time mothers with high scores of breastfeeding self-efficacy were significantly more likely to continue to breastfeed to four months postpartum and do so exclusively breastfeed when compared with mothers with lower scores. However, low scores of breastfeeding self-efficacy were related to bottle feeding at one week postpartum.

The results of this study congruent with a study by Ansari, Abedi, Hasanpoor and Bani (2014) that determined the effect of educational programs on breastfeeding self-efficacy and duration of exclusive breastfeeding among pregnant women. The subjects were randomly divided in intervention and control groups. The control group only received routine prenatal care. However, participants in the intervention group received an educational program (two training sessions, each lasting two hours) consisting of providing knowledge by a midwife and furnishing a training manual feeding guide of breastfeeding. The training included benefits of breastfeeding, the correct position of the mother and baby in breastfeeding, how to properly breastfeed and methods that increased the mother success in breastfeeding. During the process, participants in the intervention group contacted the researchers when experiencing problems in breastfeeding. After discharge from the hospital, the researchers telephoned to persuade and encourage mothers to breastfeed. The results showed that the mothers in the experimental group had higher breastfeeding self-efficacy scores than those in the control group with a statistical significance at the .001 level. Moreover, their duration of exclusive breastfeeding was significantly longer with a statistical significance at the .001 level.

Note that breastfeeding self-efficacy scores at discharge among mothers in the control group were dropped compared to the baseline scores, which those of mothers in the experimental group were increasing (see Figure 4.1). This finding supports that the program did work effectively to increase and maintain the mothers' self-efficacy. It was very possible that the control mothers felt less capable in breastfeeding when they were discharged from hospital and would hardly receive help from nurses. In contrast, the experimental mothers who were equipped with sufficient information a skills would feel more capable to independently breastfeed their infants. It also noteworthy that the mothers' self-efficacy in the control group become increasing at six weeks because they could gain mastery experience during practicing

breastfeeding by their own. However, breastfeeding self-efficacy at six weeks in the control group was still significantly less than that in the experimental group.

When considering the breastfeeding problems experienced among first-time mothers in the both groups of the study, it was found that on the first day after discharge the main breastfeeding problems in experimental and control groups were inadequate breast milk and sore nipple. At one week after birth, inadequate breast milk and breast engorgement were the major breastfeeding problems in the experimental group, whereas in the control group were inadequate breast milk and crack nipple. After that, one month to six months, the main breastfeeding problem encountered by the mother in experimental and control groups were similar; consisted of inadequate breast milk, breast engorgement, and sore nipple. The frequency of breastfeeding problems encountered by the mothers in the control group was higher than the mothers in the experimental group, especially problem with inadequate breast milk (see Appendix L).

The concept of perceived insufficient milk supply could be actual or perceived. Majority of mothers with sufficient milk supply but think that they do not have enough milk. Very few mothers with real insufficient milk supply because of abnormal breast anatomy (Yeung, 2014). Perceived insufficient milk supply was defined as a state in which the mother has or perceives that she has an inadequate supply of breast milk to meet her baby's need (Hill & Humenick, 1989). Unfortunately, the cause of perceived insufficient milk supply remains unclear. Many researchers have suggested that perceived insufficient milk supply may reflect a lack of breastfeeding confidence (Amir & Cwikel, 2005; Dykes, 2003; Li, Fein, Chen, & Grummer-Strawn, 2008). There are differences between mothers who perceived they have insufficient milk and those who are confident in their ability to produce milk for their infant. This study identified 46 mothers who were encountered with perceived insufficient milk supply. They had a lower mean score of breastfeeding self-efficacy at six weeks postpartum (median= 53.0, IQR=13.25) than mothers who were not encountered with perceived insufficient milk supply (median=61, IQR=13.50) (see Appendix N).

Likewise, a study conducted by Mannion and Mansell (2012) to explore the association of breastfeeding self-efficacy, perceived of milk supply, and

breastfeeding mother's use of medication prescribed to increase breast milk. Their results showed that mothers who had high breastfeeding self-efficacy scores also had high perceived sufficient milk supply. This corroborates a study measuring parental self-efficacy, which also found a significant correlation between levels of maternal self-efficacy and perceived insufficient milk (McCarter-Spaulding & Kearney, 2001). A qualitative study of Mexican mothers also found that they viewed crying as the primary symptom of insufficient milk production, and the most common coping strategy was to supplement with formula (Sacco, Caulfield, Gittelsohn, & Martinez, 2006).

The perceived insufficient milk supply is the top ranked reason for early weaning of breastfeeding before the recommended duration. The results of this study showed that the three most frequently given reasons to provide formula or supplementary foods were "perception of insufficient breast milk", "return to work" and "the advice from physician and relative". Of the various rationales mothers cited, more than half reported perceived insufficient milk supply. This corroborates a study conducted by Otsuka et al. (2008) found that 73% of mothers using formula cited perceived insufficient milk as the primary reason for supplementation or completely discontinuing breastfeeding. Likewise, a study by Hill and Humenick (1996), using the H & H Lactation Scale to measure perceived insufficient milk supply, and found that mothers who had lower scores on breastfeeding self-efficacy also had lower breastfeeding levels at six weeks postpartum. Low breastfeeding self-efficacy increases the risk that mothers perceive normal patterns of breastfeeding as wrong, increasing their concerns about milk supply. They might offer formula or supplementary foods. Moreover, low breastfeeding self-efficacy might create a more difficult breastfeeding experience. They might feel more exhausted or need someone else to care for their infants leading to increased formula use.

Mothers in the experimental group encountered with perceived insufficient milk supply less than the control group (see Appendix L). When considering the median score of effective suckling at discharge in the experimental group was 10 (IQR=1), whereas that of the control group was 7 (IQR=2). The median score of effective suckling at discharge of mothers in the experimental group was significantly higher than that of mothers in the control group (see Appendix M). This is because

they received sufficient assistance and support from this program leading them to overcome obstacles in breastfeeding, especially insufficient breast milk problems. As a result, mothers gained confidence in breastfeeding and increased the rate of six months exclusive breastfeeding.

On the other hand, mothers in the control group received education and routine nursing care from the hospital by nursing staff in the ANC and postpartum unit. The breastfeeding knowledge provided as a part of this antenatal education involved self-care during pregnancy and preparation for delivery, while the breastfeeding knowledge provided as part of postpartum education, consisted of self-care during postpartum and baby care. These education methods routinely consisted of one-way communication. Although mothers attending the class were allowed to inquire when they have any questions, most did not have the courage to ask. Moreover, hospital staff usually brought the newborns to their mothers and told them to breastfeed the babies at the early postpartum stage. However, they did not offer sufficient help to initiate breastfeeding due to lack of staff and heavy workload. Thus, the mothers initiated breastfeeding on their own when they were still exhausted and not yet ready, caused of having difficulty with breastfeeding, such as poor positioning and incorrect latch-on. The result in this study found that the median score of effective suckling at discharge in the control group was only 7 (IQR=2). Incorrect latch was the primary cause of nipple soreness. In turn, the pain when the infants latch-on might inhibit the mother's milk ejection reflex and prevented sufficient milk from reaching the infant. Because a poorly latched infant was unable to remove milk from the mother's breast adequately, the mother was at risk for engorgement, plugged duct, and mastitis. Milk production would diminish, and lactation failure. Consequences of a poor latch were inevitable for the infant as well. Because of the mother's decreased milk ejection reflex, the infant received primarily foremilk. This results in increased hunger, fussiness, and perhaps colic like symptoms. Resulting, the mother was more likely to have negatives attitude toward breastfeeding and more likely to experience unsuccessful breastfeeding (Mozingo, Davis, Droppleman, & Merideth, 2000).

When these mothers returned home, no healthcare staffs provide assistance. They had to face many breastfeeding problems (such as sore and cracked nipples, breast engorgement, inadequate breastmilk and baby refusing to suckle) and

endeavored to solve these problems by themselves. When mothers did not have a source of support and assistance, they may decide incorrectly or inappropriately. This finding was consistent with a study by Mazingo, Davis, Droppleman and Merideth (2000) which stated that first-time mothers experienced breastfeeding problems such as cracked nipples and breast engorgement obstructing them from effectively breastfeeding. These problems led to anxiety and lack of confidence regarding breastfeeding. Therefore, when these mothers are discharge from the hospital they tended to greatest decrease of exclusive breastfeeding within the first few weeks of age while it occurred within the 4 to 5 months of age in the experimental group (see Appendix J).

Some mothers in the control group offered water to their babies at first week of age because their relatives told them to do for reasons such as cleaning the baby's mouth, preventing a white film on the tongue and preventing dehydration (see Appendix K). These findings support the study conducted by Ongtrakulkij (2003), which explored maternal perceptions regarding water consumption among babies aged 0 to 4 months. The results showed most mothers knew the benefits of breastfeeding, but all of them believed that feeding water to their infants was essential. The reasons for feeding water were preventing thirst, dry throat, dehydration, fungus on the baby's tongue and improving skin complexion. Moreover, they believed that water would help to prevent jaundice and constipation. However, mothers intended to breastfeed their babies usually by providing water as well. In addition, support from their senior family members and relatives also encouraged water and supplementary foods consumption because they believed that exclusive breastfeeding was insufficient for babies as they grew up and supplementary foods could help enhance their baby's growth. On the other hand, the water was never given to the infants in the experimental group for the entire six months (see Appendix J). The mothers in the experimental group did not have a husband or relatives to advise them to give water, formula or other foods to their babies before six months (see Appendix L). Probably because during the postpartum mothers' hospitalization, the researcher invited the husband or relatives of postpartum mothers participated in the conversation and discussions, they were also trained to assist the mothers. Thus, when the mothers were discharged from the hospital, these individuals provided appropriate advice and helped

the mothers in caring for the babies, encouraging and supporting the mother that babies should be exclusively breastfed for the first six months.

In conclusion, demographic data concerning the subjects in the experimental and the control groups are shown in Table 4.1. No significant differences were found in the characteristics of the subjects in both groups based on the aforementioned reasons. Hence, first-time mothers who participated in the breastfeeding skill training and supportive program had a significantly higher rate of six months exclusive breastfeeding and significantly higher breastfeeding self-efficacy scores compared with mothers receiving only routine nursing care, this resulted from the intervention activities of the breastfeeding skill training and supportive program. Therefore, it could be concluded that the breastfeeding skill training and supportive program of this study was effective in promoting exclusive breastfeeding.

CHAPTER VI

CONCLUSION

This chapter presents a summary of the study and is divided in two sections. The first section is the summary while the second section focuses on the implications and applications of the research findings as well as recommendations for future research.

Summary of the Study

This research was a randomized controlled trial (RCT) aimed to test the effects of a breastfeeding skills training and supportive program on exclusive breastfeeding six months among first-time mothers. Pender's HPM constituted the theoretical framework for this study. Data was collected at Maharaj Nakorn Chiang Mai Hospital. The samples were recruited to the study using the following inclusion criteria: having gestational age 36 to 37 weeks, having primigravida with a singleton pregnancy, intending to breastfeed her baby, having normal breasts and nipples, able to contact by phone and able to read, write, speak, and understand Thai. The exclusion criteria were having any conditions of mother or infant that would interfere with breastfeeding, unable to attend the entire program and planning to have cesarean section. Eighty-four subjects were randomly assigned to the experimental or the control groups by sealed envelope technique. One group of 42 mothers comprised the experimental group, receiving breastfeeding skills training and supportive program from the researcher in combination with routine nursing care from hospital staff. The second was the control group, receiving routine nursing care from hospital staff. The attrition rate was low; only one subject in the experimental group lost contact. Finally, 41 subjects were left in the experimental group and 42 subjects in the control group.

Mothers in the experimental group participated in the breastfeeding skills training and supportive program at gestational age 36 to 37 weeks. During the prenatal period, they participated in two sessions, 40 to 45 minutes each session. The first session consisted of: (1) group discussion on topics related to the benefits of breastfeeding, importance of exclusive breastfeeding for the first six months, proper positioning of mother and baby and correct suckling, breastfeeding problems and solutions, (2) watching a VCD on the topic, "Getting Started Breastfeeding Correctly" and (3) demonstration and skills training in proper postures for holding babies and breast while breastfeeding using a life-size baby doll and life-size breast model. The second session consisted of (1) group discussion on topics related to hand expression technique and breast milk storage, (2) watching a VCD on the topic, "Expressing Breast Milk by Hand and Storing Breast Milk" and (3) demonstration and skills training in hand expression technique using the life-size breast model and proper postures for holding babies and breast while breastfeeding.

During the postpartum period, these mothers received support and assistance to initiate breastfeeding. These mothers were then assisted and stimulated to breastfeed their infants every two to three hours and help them adjust the proper breastfeeding positions and correct suckling by giving advice and encouragement to ensure correct practice until they were able to breastfeed correctly by themselves. During assisted breastfeeding sessions, husbands and/or their relatives were invited to participate in conversations and discussions and in helping mothers during the hospital stay. The effectiveness of breastfeeding performance was assessed before hospital discharge using the effective suckling checklist. Then the mothers were asked to complete the breastfeeding self-efficacy questionnaire. After that, a breastfeeding handbook entitled, "20 Questions-Answers about Breastfeeding" was distributed to the mothers to review the breastfeeding information at home.

The first day after hospital discharge, 7 days, 1 month, 3 months, 4 months, 5 months and 6 months postpartum, the mothers received follow-up phone calls to monitor the exclusive breastfeeding, kinds of food that the infants received, breastfeeding problems and solutions as well as the consultations. The mothers were informed that they could call the researcher any time for breastfeeding assistance. At six weeks postpartum, the mothers made appointments with the researcher when

they attended the routine postpartum check-up at the family planning clinic. During these appointments, the mothers were asked to complete the breastfeeding self-efficacy questionnaire. Then the researcher talked with each mother individually to monitor exclusive breastfeeding, kinds of food that the infants received, breastfeeding problems and solutions as well as consulted.

The researcher collected data through the demographic questionnaire, effective suckling checklist, BSES-SF, food record form and breastfeeding problems record form. After that, the researcher analyzed the data by Chi-square test, Fisher's exact test and t-test to examine the difference between the characteristics of the sample in the experimental and control groups. Chi-square test and Mann-Whitney U-test were performed to compare the rate of exclusive breastfeeding at six months and the duration of exclusive breastfeeding, respectively. The Mann-Whitney U-test was used to compare the breastfeeding self-efficacy scores at discharge and six weeks between first-time mothers who received the breastfeeding skills training and supportive program together with routine nursing and those who received only routine nursing care from the hospital.

Research Findings

The breastfeeding skill training and supportive program, based on Pender's HPM, to help the mothers increase perceived benefits of breastfeeding, decreased perceived barriers of breastfeeding, improved attitudes toward breastfeeding, increased breastfeeding self-efficacy and ensured mothers received sufficient and appropriate support. The activities in this program included 1) disseminating knowledge on breastfeeding by group discussion, watching VCDs on breastfeeding and providing a breastfeeding handbook, 2) demonstrating and skills training and 3) providing support and assistance to mothers after giving birth, as well as telephone follow-ups to assess and solve problems. The instructional approaches in each activities of this program could promote maternal learning leading mothers to achieve six months exclusive breastfeeding and increase the breastfeeding self-efficacy scores at discharge and six weeks postpartum, as shown below:

1. First-time mothers participating in the breastfeeding skill training and supportive program combined with routine nursing care achieved a significantly higher rate of six months exclusive breastfeeding than those receiving only routine nursing care ($p=.011$).

2. First-time mothers participating in the breastfeeding skill training and supportive program combined with routine nursing care achieved significantly higher breastfeeding self-efficacy scores at discharge and six weeks than those receiving only routine nursing care ($p=.011$ and $p=.001$ respectively).

In summary, this study could conclude the breastfeeding skill training and supportive program was able to achieve high rates exclusive breastfeeding at six months and high breastfeeding self-efficacy scores among first-time mothers.

Implications of Findings

From the finding, after the first-time mothers participated in the breastfeeding skill training and supportive program, they had a significant increase rate of six months exclusive breastfeeding and increase in breastfeeding self-efficacy scores at discharge and six weeks. According to the findings of this study, the implication of finding would be as follows:

Implications for nursing practice

Nurses involved in breastfeeding promotion should be incorporated the various strategies that used in this program into the regular services in hospitals and should be continuously conducted at every stage from pregnancy to the postpartum period and after hospital discharge for the first-time mothers to promote successful exclusive breastfeeding and improve maternal breastfeeding self-efficacy, as recommended below.

1. Providing breastfeeding information using the various instructional approaches involve the mothers more than listening such as group discussion and mothers should have the chance to repetitive practice breastfeeding before birth with an explanation in every step until they can actually perform breastfeeding correctly

will help first-time mother to understand quickly and correctly. In addition, use of media together will make learning more interesting to enhance mothers' understanding and to ensure better retention of the contents for a longer time, leading to more effective learning applicable to breastfeeding practices of first-time mothers.

2. Providing support and assistance to help mothers to breastfeed their infants as soon as possible to promote consistent and sufficient lactation. The mothers should be trained to be able to comfortably breastfeed their infants in both sitting and lying-down positions, especially suggesting mothers to practice in the cross cradle position because it is the easiest position for new mothers to control the baby's head to her nipple and clearly see the baby's mouth, as well as help mothers recognize the baby's early feeding cues, and signs that the baby is satisfied at the end of feeding to prevent maternal perceive insufficient milk supply. And before hospital discharge, nurses should make sure mothers understand the signs of adequate milk production to prevent their perceived insufficient milk supply and to build up their confidence.

3. Recognizing that family support, especially their husbands and their own mothers, is a key factor for exclusive breastfeeding. Nurses should allow them to participate while the nurse provides assistance to the mothers, they will be able to develop positive attitudes toward breastfeeding and be better able to support mothers, encourage and assist with childcare.

4. Continuously providing support and assistance by conducting periodic telephone follow-up calls to monitor problems and provide phone counseling as a part of routine care. Telephone follow-ups should be made within the first few days after hospital discharge to help mothers solve problems and enhance their confidence because during this period, most mothers may experience insufficient breast milk. Thus, arranging telephone follow-ups and providing phone counseling during this period is important. Moreover, at one to six months postpartum, most mothers face with breastfeeding problems such as sore and cracked nipples, insufficient breast milk, and breast engorgement, etc. These problems lead to anxiety and lack of confidence in breastfeeding and affect the ability to maintain exclusive breastfeeding.

Implications for nursing administration

The results of this study can be used as guidelines for administrators to create more awareness of the importance of breastfeeding and to support the promotion program of holistic nursing in the childbirth plan, from pregnancy through to the postnatal period. Administrators should develop efficient nursing interventions to give breastfeeding knowledge using a variety of educational approaches, especially skills training, as well as provide appropriate support from well-trained professionals to mothers during the postnatal period. Nurse administrators need to reconsider integrating the breastfeeding skill training and supportive program in the regular nursing system and services. They should also consider the knowledge and skill in breastfeeding of nurses responsible for breastfeeding promotion in terms of encouraging, educating, empowering with problem-solving techniques and advising effectively to help mothers exclusively breastfeed their infants successfully. Nurses responsible for breastfeeding promotion should be trained to be skillful in promoting breastfeeding strategies and self-efficacy enhancing strategies in taking care of mothers who breastfeed well. Nurse administrators should also consider the cost-effectiveness of this program.

Implications for nursing education

The breastfeeding skills training and supportive program based on Pender's HPM concept should be addressed in nursing curriculum because they were proved to be significant factors for behavior change, especially in breastfeeding promotion. The benefits of this study could help nursing students and the health care providers understand the importance of providing knowledge of breastfeeding, especially the proper positioning of mother and baby, correct suckling techniques as well as the appropriate support for postpartum mothers. Nursing students and the health care providers should learn and obtain more knowledge about how to help mothers to properly position and help the baby to correctly suckle. The process helps fulfill the mother's needs, increases positive attitudes toward breastfeeding and increases breastfeeding self-efficacy. The faculty of nursing should take responsibility to initiate or strengthen nurses' capacities in educating as well as counseling about breastfeeding knowledge and skills. Because the breastfeeding skills training and

supportive program required some specific advanced skills such as self-efficacy enhancement and consultation; thus, advanced nursing education is needed to prepare nurses to work with breastfeeding mothers.

Limitations and Recommendations for Further Studies

1. Although the breastfeeding skill training and supportive program was effective in promoting exclusive breastfeeding, this program took a long time to implement and required the cooperation of nurses at ANC, postpartum unit, and the family planning. Nurses who involved in breastfeeding promotion would like to apply this program to the regular services in hospitals, they should modify this program to fit with the routine nursing care. Moreover, the cost-effectiveness of this intervention program should be analyzed, it will be useful for management implications in clinical practice.

2. The breastfeeding skill training and supportive program was implemented only in the university hospital which was the tertiary care setting in northern Thailand, so the result of this study might not be representative the entire population. Therefore, replicating the study in diverse settings is needed to assess the effectiveness of the intervention on sustained exclusive breastfeeding until six months among first-time mothers

3. In this study before implementing the program, the participants were not assessed their previous knowledge about breastfeeding. It could not indicated that the participant in the experimental and the control groups was equivalent breastfeeding knowledge before starting the program. Consequently, the participants who did not exclusively breastfeed their infants until six-month and/or had the low breastfeeding self-efficacy scores might be caused by the lack of breastfeeding knowledge. Therefore, the future study should be assess breastfeeding knowledge of the participants before implementation the program to confirm a cause-effect relationship exists between the program and breastfeeding outcome.

4. Although the mother in the experimental group had a higher rate of six-month exclusive breastfeeding than the control group, these mothers still faced with the high breastfeeding problems. These problems were identified by the mothers via a

telephone interview in the "Breastfeeding problems record form". Therefore, breastfeeding problems which recorded were the perception of the mothers on breastfeeding problems, it might not be the actual breastfeeding problems which the mothers faced. The future study should be use strategies to assess breastfeeding problems which can access more accurately actual breastfeeding problems.

5. The breastfeeding problems experienced between the experimental and the control groups in this study were proposed in term of frequency and percentage. Therefore, it was impossible to understand the details of the breastfeeding problems that mothers experienced. The future study should be combined with qualitative studies to address the perceived barriers to breastfeeding, and identify reasons to stop exclusive breastfeeding in detail. Results from qualitative studies may provide a deeper insight in understanding more appropriate intervention to maintain exclusive breastfeeding until six months.

6. Integrating the breastfeeding skills training and supportive program in routine nursing services should be considered. The exclusive breastfeeding may not achieve a rate as in this study because this study comprised an experimental design to control independent variables and remove extraneous and unwanted variables. However, in the real situation, breastfeeding is a complex practice involving many factors contributing to the mother's desire to breastfeed and to successfully reaching the six months of exclusive breastfeeding. Therefore, a rational study to evaluate the influence of others factors on the exclusive breastfeeding rate at six months is meaningful to develop effective interventions to promote and support exclusive breastfeeding. However, an appropriate sample size should be determined to make conclusions of sufficient accuracy with sufficient confidence.

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APPENDICES

APPENDIX A
MANUAL FOR BREASTFEEDING SKILL TRAINING

(คู่มือฝึกทักษะการเลี้ยงลูกด้วยนมแม่)

กลุ่มเป้าหมาย สตรีตั้งครรภ์ลูกคนแรกที่หน่วยฝากครรภ์ โรงพยาบาลมหาราชนครเชียงใหม่

วัตถุประสงค์ เพื่อให้สตรีตั้งครรภ์ลูกคนแรก

1. มีทักษะในการจัดทำอุ้มลูกดูนม เพื่อให้ลูกอมหัวนมได้ลึกและดูนมได้อย่างมีประสิทธิภาพ
2. มีทักษะในการบีบเก็บน้ำนมด้วยมือ
3.

วัตถุประสงค์เฉพาะ เมื่อสิ้นสุดการฝึกทักษะและให้ความรู้ สตรีตั้งครรภ์ลูกคนแรกสามารถ

1. อุ้มลูกดูนมได้
2. บีบเก็บน้ำนมด้วยมือได้
3.

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อุปกรณ์และสื่อ

1. หุ่นจำลองเต้านม
2. หุ่นจำลองทวาร
3. หมอน
4.
5.
6. วิดีทัศน์ เรื่อง นมผงเท่ากับเสียง, การอุ้มลูกคุณนมที่ถูกต้อง และการบีบเก็บน้ำนมด้วยมือ

การประเมินผล

1. สังเกตจากการซักถาม การตอบคำถาม และการแสดงความคิดเห็น
2. สังเกตจากการฝึกอุ้มหุ่นจำลองทารกคุณนม
3. สังเกตจากการฝึกบีบน้ำนมด้วยมือ

รูปแบบของกิจกรรม ระยะเวลา และสถานที่ดำเนินการ

ประกอบด้วยการสอนและการฝึกทักษะการอุ้มลูกคุณนม การนำลูกเข้าเต้า การบีบเก็บน้ำนมด้วยมือ โดยการสอนและการฝึกทักษะ
ในระยะตั้งครรภ์.....รายละเอียดของการจัดกิจกรรมมีดังต่อไปนี้

วัตถุประสงค์เชิงพฤติกรรม	เนื้อหา	กิจกรรม	สื่อที่ใช้	การประเมินผล
<p>1. เพื่อสร้างสัมพันธภาพระหว่างสตรีตั้งครรภ์กับผู้วิจัยและระหว่างสตรีตั้งครรภ์</p> <p>2. เพื่อชี้แจงวัตถุประสงค์ของการสอนและฝึกทักษะเรื่องการเลี้ยงลูกด้วยนมแม่</p> <p>3. เพื่อให้แม่มีความรู้ความเข้าใจเกี่ยวกับการเลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือน</p>	<p>ครั้งที่ 1</p> <p>ทำไมต้องให้ลูกกินนมแม่อย่างเดียวก่อน 6 เดือนแรก</p> <p>นมแม่เป็นอาหารธรรมชาติที่สร้างขึ้นมาเพื่อลูกโดยเฉพาะ ซึ่งในปัจจุบันยังไม่มีนมผสมชนิดใดที่สามารถเลียนแบบให้เหมือนนมแม่ได้ การให้ลูกดื่มนมแม่มีประโยชน์ต่อลูกดังนี้</p> <p>1. นมแม่มีสารอาหารที่จำเป็นต่อการเจริญเติบโตของร่างกายและสมองของลูกมากที่สุด สามารถย่อยและดูดซึม นำไปใช้ได้ง่าย จึงช่วยในการเจริญเติบโตและพัฒนาการของลูก ทำให้ลูกเจริญเติบโตอย่างแข็งแรงฉลาดสติปัญญาดี</p> <p>2. นมแม่มีสารที่ช่วยการเจริญของจอประสาทตา ช่วยให้การมองเห็นของลูก</p> <p>3. การดื่มนมจากเต้าจะทำให้ทารกไทรอยด์มากกว่าการดื่มนมจากขวดที่ใช้แต่เหงือก ทำให้กล้ามเนื้อแข็งแรง และมีฟันที่ขึ้นขึ้นอย่างเป็นระเบียบ</p>	<p>ขั้นที่ 1 สร้างสัมพันธภาพ</p> <p>1. ผู้วิจัยแนะนำตนเองและขอให้แม่ทุกคนในกลุ่มแนะนำตนเอง</p> <p>2. ผู้วิจัยบอกถึงวัตถุประสงค์ของการให้ความรู้และฝึกทักษะการอุ้มลูก ดูนม และการฝึกบีบเก็บน้ำนมด้วยมือ</p> <p>ขั้นที่ 2 ฝึกทักษะร่วมกับให้ความรู้</p> <p>3. ผู้วิจัยให้แม่ดูรูปภาพแม่อุ้มลูกกินนมจากเต้า กับแม่ที่ให้ลูกกินนมผสมจากขวด (จากใน power point) จากนั้นถามแม่ว่า “คุณแม่เคยได้ยินเรื่องการเลี้ยงลูกด้วยนมแม่กับการเลี้ยงลูกด้วยนมผสมมาบ้างไหม”</p> <p>“ได้ยินมาว่าอย่างไร และคุณแม่คิดอย่างไร” เพื่อกระตุ้นให้แม่ได้แสดงความคิดเห็นและทัศนคติต่อการเลี้ยงลูกด้วยนมแม่</p>	<ul style="list-style-type: none"> - Power point แสดงรูปภาพการกินนมจากเต้า และจากขวด - คลิปวิดีโอเรื่อง “นมผงเท่ากับเลี้ยง” - รูปภาพข้างกระป๋องนมผสมที่เขียนว่า “นมแม่ดีที่สุดสำหรับใช้เลี้ยงทารก” 	<ul style="list-style-type: none"> - แม่บอกประโยชน์ของการให้ลูกกินนมแม่ได้

APPENDIX B

MANUAL FOR BREASTFEEDING SUPPORT

(คู่มือการสนับสนุนการเลี้ยงลูกด้วยนมแม่)

กลุ่มเป้าหมาย แม่หลังคลอดที่เคยได้รับการฝึกทักษะในการอุ้มลูกคุณนม การบีบเก็บน้ำนมด้วยมือตั้งแต่ในระยะตั้งครรภ์ และภายหลังคลอด

วัตถุประสงค์ เพื่อให้แม่ที่มีลูกคนแรกมีความรู้และทักษะในการเลี้ยงลูกด้วยนมแม่ และสามารถเลี้ยงลูกด้วยนมแม่ได้อย่างเดียว 6 เดือน

วัตถุประสงค์เฉพาะ

4. แม่สามารถอุ้มลูกคุณนมแม่ได้อย่างมีประสิทธิภาพก่อนจำหน่ายออกจากโรงพยาบาล
5. แม่มีความมั่นใจในการเลี้ยงลูกด้วยนมแม่
6. แม่สามารถให้ลูกกินนมแม่อย่างเดียว 6 เดือนหลังคลอด

อุปกรณ์และสื่อ

7. แบบจำลองเต้านม
8. หุ่นจำลองทารก
9. รูปภาพแสดงการอมหัวนมที่ถูกต้อง, สื่อสัญญาณแสดงว่าทารกหิว, วิธีการถอนหัวนมออกจากปากทารก

การประเมินผล

4. การควบคุมของลูกโดยใช้แบบประเมินประสิทธิภาพการควบคุมของทารก
5. ลูกควบคุมแม่อย่างเดียว 24 ชั่วโมงก่อนจำหน่ายออกจากโรงพยาบาล
6. คะแนนการรับรู้สมรรถนะของตนเองในการเลี้ยงลูกด้วยนมแม่เพิ่มขึ้น
7. แม่เลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือน

รูปแบบของกิจกรรม ระยะเวลา และสถานที่ดำเนินการ

กิจกรรมสนับสนุนการเลี้ยงลูกด้วยนมสำหรับแม่หลังคลอดที่มีลูกคนแรก จำนวน 6 ครั้ง ประกอบด้วย

1. ให้ข้อมูลเกี่ยวกับการเลี้ยงลูกด้วยนมแม่
2. ให้คำแนะนำและให้การช่วยเหลือในการอุ้มลูกควบคุม
3. สมาชิกในครอบครัวมีส่วนร่วมในการรับฟัง และฝึกทักษะ
4. ให้กำลังใจในการเลี้ยงลูกด้วยนมแม่ แก่แม่และบุคคลในครอบครัว
5. โทรศัพท์ติดตามภายหลังแม่ออกจากโรงพยาบาล
6. ให้คำแนะนำการเตรียมตัวเลี้ยงลูกด้วยนมแม่เมื่อแม่ต้องกลับไปทำงาน

โดยผู้วิจัยจะให้การสนับสนุนช่วยเหลือแม่เป็นรายบุคคล ประมาณ 30 นาที หากแม่ปฏิบัติได้ถูกต้องผู้วิจัยแสดงความชื่นชม แต่หากแม่ปฏิบัติยังไม่ถูกต้อง ผู้วิจัยจะช่วยเหลือแก้ไขในจุดที่ปฏิบัติไม่ถูกต้อง จนกว่าแม่จะปฏิบัติได้ถูกต้อง

วัตถุประสงค์เชิงพฤติกรรม	กิจกรรมและเนื้อหาในการให้คำแนะนำ	สื่อที่ใช้	การประเมินผล
<p>1. แม่สามารถอุ้มลูกคูดนมได้ถูกต้อง</p> <p>2. แม่สามารถเลี้ยงลูกด้วยนมแม่อย่างเดียวใน 24 ชั่วโมงก่อนจำหน่ายออกจากโรงพยาบาล</p> <p>3. แม่มีความมั่นใจในการเลี้ยงลูกด้วยนมแม่</p>	<p>ครั้งที่ 1</p> <p>วันแรกหลังคลอด (ภายใน 2-3 ชั่วโมงหลังคลอด) เมื่อแม่ย้ายมาที่หน่วยหลังคลอดพร้อมกับลูก ผู้วิจัยประเมินความพร้อมในการเลี้ยงลูกด้วยนมแม่ (หากแม่ย้ายมาหลัง 18.00 น ผู้วิจัยจะมาประเมินในเวลา 08.00 น ของวันรุ่งขึ้น)</p> <p>1. หากแม่พร้อมที่จะให้ลูกคูดนม ผู้วิจัยจะให้แม่อุ้มลูกคูดนมด้วยตนเอง แนะนำให้แม่เริ่มจากท่าวางตักประชิดเนื่องจากทำนี้แม่จะสามารถควบคุมการเคลื่อนไหวของศีรษะลูกได้ดีกว่าท่าอื่นๆและจะช่วยให้ลูกอมหัวนมได้ง่าย แต่หากแม่ยังอ่อนเพลีย ไม่สามารถคูดนมได้ ผู้วิจัยจะแนะนำให้แม่ให้นมลูกในท่านอน โดยผู้วิจัยจะช่วยจัดท่าอุ้มให้ (ผู้วิจัยชมเชยเมื่อแม่ปฏิบัติได้ถูกต้อง แต่หากยังไม่ถูกต้อง ผู้วิจัยจะให้คำแนะนำเพิ่มเติมจนกว่าแม่จะปฏิบัติได้ถูกต้อง)</p> <p>2. ขณะที่ลูกคูดนมแม่ ผู้วิจัยพูดคุยกับแม่เพื่อทบทวนความรู้เกี่ยวกับการอุ้มลูกคูดนมที่มีประสิทธิภาพ (ที่ได้ฝึกปฏิบัติไปตั้งแต่ในระยะตั้งครรภ) พร้อมทั้งแนะนำ และสาธิตวิธีการเลี้ยงลูกด้วยนมแม่ในเรื่องต่อไปนี้</p> <p>2.1 แม่ควรให้ลูกคูดนมทุก 2-3 ชั่วโมง หรือบ่อยตามที่คุณต้องการ ในระยะแรกหลังคลอด ลูกอาจจะยังง่วงและหลับนาน ไม่ค่อยยอมคูดนม ถ้าลูกหลับนานเกิน 3 ชั่วโมง แม่ควรปลุกลูกให้คูดนม โดยให้คลี่ผ้าห่มออก จับลูกนั่งอุ้งหลัง หรือเขี้ยวที่เท้าลูกเบาๆ (ผู้วิจัยสาธิตวิธีการปลุกลูกให้แม่ดู โดยใช้หุ่นจำลองทารก)</p> <p>2.2 ในระยะแรกที่น้ำนมยังมาน้อย แม่ควรให้ลูกคูดนมทั้งสองเต้า คูดแต่ละเต้าไม่น้อยกว่า 10-20 นาที เพื่อกระตุ้นการสร้างและการหลั่งน้ำนม เมื่อน้ำนมมามากให้คูดตามความต้องการของลูก โดยให้คูดทีละข้างจนเกลี้ยงเต้า ถ้าลูกคูดนมข้างหนึ่งจนเกลี้ยงเต้าแล้วแต่ยังไม่อิ่ม ให้ลูกคูดนมอีกข้างเพิ่มจนลูกอิ่ม และในมือต่อไปให้ลูกเริ่มคูดจากเต้าที่คูดค้างไว้ครั้งหลังสุด</p>	<ul style="list-style-type: none"> - หุ่นจำลองทารก - หุ่นจำลองเต้านม - รูปภาพการอมหัวนม และคูดนมที่ถูกต้อง - รูปภาพสื่อสัญญาณแสดงความหิวของทารก - รูปภาพแสดงวิธีการถอนหัวนมออกจากปากทารก 	<ul style="list-style-type: none"> - แม่อุ้มลูกคูดนมได้อย่างมีประสิทธิภาพ - สังเกตจากความสนใจ การซักถาม และ การมีส่วนร่วมและแสดงความคิดเห็นของแม่

APPENDIX C

PERSONNSAL DATA QUESTIONNAIRE

ID number.....
Date.....

Personal data questionnaire

Direction: Please fill the answer in the blank and check✓ in the as the first-time mothers answer

1. Personal data

1.1 Age.....year

1.2 Occupation

- | | |
|--|--|
| <input type="checkbox"/> Employee | <input type="checkbox"/> Government Official |
| <input type="checkbox"/> Vendor | <input type="checkbox"/> Housewives |
| <input type="checkbox"/> Agriculturist | <input type="checkbox"/> Student |
| <input type="checkbox"/> Other (please specify | |

1.3 Marital status

- Married Single Separated/Widowed

1.4 Highest level of education

1.5 Income family.....(baht per month)

1.6 Sufficiency of income

- Sufficient Sufficient with no savings Insufficient

1.7 Family Type

- Nuclear family Extended family with.....

1.8 When you return home the person who will help you to care your baby is

.....

2. Birth data

2.1 Date of birth.....time.....

2.2 Mode of delivery.....

2.3 Weight of infant..... gram Sex of infant.....

2.4 Duration of first breastfeedinghour.....min

เลขที่แบบสอบถาม.....

วัน/เดือน/ปี.....

แบบสัมภาษณ์ข้อมูลส่วนบุคคล

คำชี้แจง ให้ผู้สัมภาษณ์เติมข้อความที่ได้จากการสัมภาษณ์มารดาตั้งครรภ์บุตรคนแรกลงในช่องว่าง และทำเครื่องหมาย✓ ลงใน ตามที่มารดาตอบ

1. ข้อมูลส่วนบุคคล

1.1 ท่านอายุ.....ปี

1.2 อาชีพ

รับจ้าง

รับราชการ/ รัฐวิสาหกิจ

ค้าขาย

แม่บ้าน

ชวนา/ ชาวสวน/ ชาวไร่

นักเรียน /นักศึกษา

อื่นๆ โปรดระบุ.....

1.3 สถานภาพสมรส

คู่/ อยู่กับสามี

โสด

หม้าย/หย่า/ แยก

1.4 ระดับการศึกษาขั้นสูงสุด.....

1.5 รายได้ครอบครัว (ของสตรีมีครรภ์และสามี).....บาท/เดือน

1.6 ความเพียงพอของรายได้

เพียงพอ มีเหลือเก็บ

เพียงพอ แต่ไม่เหลือเก็บ

ไม่เพียงพอ

1.7 ลักษณะครอบครัว

ครอบครัวเดี่ยว

ครอบครัวขยาย อาศัยอยู่กับ.....

1.8 บุคคลที่จะช่วยท่านดูแลลูกเมื่อกลับไปอยู่บ้านคือ.....

2. ประวัติการคลอด

2.1 วัน เวลา ที่คลอด.....

2.2 ชนิดของการคลอด.....

2.3 น้ำหนักทารกแรกเกิด.....กรัม เพศของทารก.....

2.4 ระยะเวลาที่ลูกได้ดูดนมแม่ครั้งแรกหลังคลอด.....ชั่วโมง.....นาที

APPENDIX D

EFFEECTIVE SUCKLING CHECKLIST

ID number.....

Date.....

Direction: the evaluator interviews the mother and observes infant's suckling before discharge from the hospital and check ✓ in the as observed and interviewed.

Observe infant's suckling

Yes No

- | | | |
|---|--------------------------|--------------------------|
| 1. Infant's mouth wide open until the nipple deep. | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Lower lip has turned out | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Infant's chin touch mother' breast | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. During suckling, infant's lower lip covers more of the areola than the upper lip | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Regular and deep sucks | <input type="checkbox"/> | <input type="checkbox"/> |

Ask postpartum mothers

1. During suckling, infant use tongue or gums. tongue gums
2. During suckling, infant's tongue touches at nipple or areola
Areola nipple
3. During suckling, do you feel sore nipples? No Yes
4. After suckling, your breast feels soft. Yes NO
5. After suckling, how long your infants sleep?
1-3 hour less than 1 hour

เลขที่แบบสอบถาม.....
วัน/เดือน/ปี.....

แบบประเมินประสิทธิภาพการดูแลของทารก

คำชี้แจง ให้ผู้ประเมินสังเกตลักษณะการดูแลของทารกก่อนจำหน่าย ร่วมกับสัมภาษณ์มารดาหลังคลอด และทำ
เครื่องหมาย ลงใน ตามที่ได้จากการสังเกตและสัมภาษณ์

- | สังเกตลักษณะการดูแลของลูก | ใช่ | ไม่ใช่ |
|---|--------------------------------------|---|
| 1. ปากลูกอ้ากว้างจนอมหัวนมได้ลึก | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. ริมฝีปากล่างบานออก | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. คางแบนชิดเต้านม | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. ขณะลูกดูดนมมองเห็นลานนมเหนือริมฝีปากบนมากกว่าด้านล่าง | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. ลูกดูดนมแรง เป็นจังหวะสม่ำเสมอ | <input type="checkbox"/> | <input type="checkbox"/> |
| สัมภาษณ์มารดาหลังคลอดก่อนจำหน่าย | | |
| 6. ขณะลูกดูดนมลูกใช้ลิ้นหรือเหงือก | ลิ้น <input type="checkbox"/> | เหงือก <input type="checkbox"/> |
| 7. ขณะลูกดูดนมลิ้นลูกแตะที่ลานนมหรือหัวนม | ลานนม <input type="checkbox"/> | หัวนม <input type="checkbox"/> |
| 8. ขณะลูกดูดนม แม่รู้สึกเจ็บหัวนมหรือไม่ | ไม่เจ็บ <input type="checkbox"/> | เจ็บ <input type="checkbox"/> |
| 9. เมื่อให้ลูกดูดนมเสร็จแล้ว แม่รู้สึกว่าเต้านมเบาและนุ่มขึ้น | ใช่ <input type="checkbox"/> | ไม่ใช่ <input type="checkbox"/> |
| 10. หลังลูกกินนมอิ่มแล้ว ลูกนอนได้นานเท่าไร | 1-3 ชั่วโมง <input type="checkbox"/> | น้อยกว่า 1 ชั่วโมง <input type="checkbox"/> |

APPENDIX E**BREASTFEEDING SELF-EFFICACY SCALE: BSES-SF**

For each of the following statements, please choose the answer that best describes how confident you are with breastfeeding your new baby. Please mark your answer by circling the number that is closest to how you feel. There is no right or wrong answer.

1 = not at all confident

2 = not very confident

3 = sometimes confident

4 = confident

5 = very confident

Example

Item	Level of confident				
	1	2	3	4	5
1. I can always determine that my baby is getting enough milk	√				

Item	Level of confident				
	1	2	3	4	5
1. I can always determine that my baby is getting enough milk					
2. I can always					
3. I can always					
4. I can always					
5. I can always					
6. I can always					
7. I can always					
8. I can always					
9. I can always be					
10. I can always					
11. I can always					
12. I can always					
13. I can always					
14. I can always tell when my baby is finished breastfeeding					

แบบสอบถามสมรรถนะแห่งตนในการให้นมบุตร

(The Breastfeeding Self-Efficacy Scale: BSES-SF)

คำชี้แจง จากระดับคะแนนข้างล่างนี้ กรุณาเลือกระดับคะแนนที่สามารถอธิบายถึงความมั่นใจในการให้นมลูกของท่านได้ดีที่สุด กรุณาทำเครื่องหมายวงกลมล้อมรอบหมายเลขที่ใกล้เคียงความรู้สึกของท่านมากที่สุด ซึ่งในแต่ละข้อคำถามนี้ไม่มีคำตอบที่ถูกหรือผิด

คะแนน 1 เท่ากับ ไม่มีความมั่นใจเลย

คะแนน 2 เท่ากับ ไม่ค่อยมั่นใจ

คะแนน 3 เท่ากับ มั่นใจเป็นบางครั้ง

คะแนน 4 เท่ากับ มั่นใจ

คะแนน 5 เท่ากับ มั่นใจมาก

ตัวอย่าง

ข้อความ	ระดับความมั่นใจ				
	1	2	3	4	5
ฉันมีความมั่นใจที่สามารถกระทำตามข้อความต่อไปนี้ได้เสมอ					
1. ฉันสามารถบอกได้เสมอว่าลูกของฉันได้รับน้ำนมแม่อย่างเพียงพอ	√				

ข้อความ ฉันมีความมั่นใจว่าสามารถกระทำตามข้อความต่อไปนี้ได้เสมอ	ระดับความมั่นใจ				
	1	2	3	4	5
1. ฉันสามารถบอกได้เสมอว่าลูกของฉันได้รับน้ำนมแม่อย่างเพียงพอ					
2. ฉันสามารถแก้ไขปัญหาเกี่ยวกับการเลี้ยงลูกด้วยนมแม่ได้สำเร็จ.....					
3. ฉันสามารถให้ลูกกินนม.....					
4. ฉันมั่นใจเสมอว่า.....					
5. ฉันสามารถทำให้.....					
6. ฉันสามารถทำให้.....					
7. ฉันสามารถทำให้.....					
8. ฉันสามารถให้.....					
9. ฉันมีความพึงพอใจ.....					
10. ฉันสามารถรับมือ.....					
11. ฉันสามารถให้ลูกดูนม.....					
12. ฉันสามารถให้ลูกดูนม.....					
13. ฉันสามารถจัดการให้ลูก.....					
14. ฉันสามารถบอกได้เสมอว่าลูกของฉันดูคนมอ้มเมื่อไร					

APPENDIX F FOOD RECORD FORM

ID number.....
Date.....

Direction: Please fill the answer in the table as the mothers answer (ask about type of food that the mother offers to her infant, age of infant when start of feeding other foods, the reason that introduce other foods, frequency of feeding other foods, do mother still offer other foods for the infant?, age of infant when stop to offer other foods)

Age of infant.....

type of food that the mother offers to her infant	age of infant when start to offer other foods (day/month)	Does mother still offer other foods for the infant?				Reasons introduce other foods to infant
		YES	Frequency	No	age of infant when stop to offer other foods (day/month)	
breastfeeding						
water						
Formula milk						
Other foods Specify.....						

เลขที่แบบสอบถาม.....
วัน/เดือน/ปี.....

แบบติดตามการให้อาหารทารก

คำชี้แจง กรุณาเติมข้อความที่ได้จากการสัมภาษณ์ลงในตารางติดตามการให้อาหารลูก ตามความเป็นจริงที่แม่ตอบ (โดยสอบถามแม่ถึงชนิดของอาหารที่ให้แก่ลูกว่ามีอะไรบ้าง เริ่มให้ (อาหารชนิดนั้น) เมื่อลูกอายุเท่าใด เหตุผลที่ให้ ให้บ่อยแค่ไหน ขณะนี้ยังให้อยู่หรือไม่ ถ้าไม่ได้ให้แล้วหยุดให้เมื่อลูกอายุเท่าใด)

ทารกอายุ.....เดือน.....วัน

ชนิดของอาหารที่แม่ให้แก่ลูกในปัจจุบัน	เริ่มให้ตั้งแต่ลูกอายุ (วัน/เดือน)	ปัจจุบันยังให้อยู่หรือไม่				เหตุผลที่ให้อาหารชนิดนั้นแก่ลูก
		ให้	ให้บ่อยแค่ไหน	ไม่ให้	หยุดให้เมื่อลูกอายุ (วัน/เดือน)	
นมแม่						
น้ำ						
นมผสม						
อาหารอื่นๆ ระบุ..... (เช่น ก๋วยเตี๋ยว ข้าวบด โจ๊ก ซีลีแลค น้ำส้ม น้ำหวาน หรือ อาหารอื่นๆ)						

APPENDIX G

BREASSTFEEDING PROBLEMS RECORD FORM

ID number.....
Date.....

Breastfeeding problems record form

Direction Please fill the answer in the blank as the mothers' answer (ask about breastfeeding problems, these problems still remain or have been resolved, how do mother resolve these problems, if these problems still remain, the researcher provide the initial advice to solve these problems. If these problems cannot solve, it will be forwarded to lactation consultants or medicals)

Infant's age.....

breastfeeding problems	Problem-solving		
	Solved	Not solve	how do mother resolve the problem

Advice (In case the mother has breastfeeding problems and has not been solved)

.....
.....

เลขที่แบบสอบถาม.....

วัน/เดือน/ปี.....

แบบสัมภาษณ์ติดตามปัญหาการเลี้ยงลูกด้วยนมแม่

คำชี้แจง เติมข้อความที่ได้จากการสัมภาษณ์ลงในช่องว่าง ตามความเป็นจริงที่แม่ตอบ (โดยสอบถามปัญหาในการเลี้ยงลูกด้วยนมแม่ว่ามีอะไรบ้าง ขณะนี้ปัญหายังมีอยู่หรือได้รับการแก้ไขแล้ว หากได้รับการแก้ไขแล้ว แก้ไขอย่างไร หากปัญหายังคงมีอยู่ ผู้วิจัยให้คำแนะนำเพื่อช่วยเหลือในขั้นต้น หากแก้ไขไม่ได้จะส่งต่อให้ผู้เชี่ยวชาญดูแล)

ทารกอายุ.....เดือน.....วัน

ปัญหาการเลี้ยงลูกด้วยนมแม่	การแก้ไขปัญหา		
	แก้ไขแล้ว	ยังไม่ได้แก้ไข	วิธีการแก้ไข

คำแนะนำที่ให้แม่ (ในกรณีที่แม่มีปัญหาการเลี้ยงลูกด้วยนมแม่และยังไม่ได้รับการแก้ไข)


.....

APPENDIX H
LIST OF EXPERTS FOR CONTENT VALIDITY

1. Assoc. Prof. Dr. Kannika Kantaruksa
Department of Obstetrics and Gynecology Nursing, Chiang Mai University
2. Prof. Dr. Susanha Yimyam
Department of Obstetrics and Gynecology Nursing, Chiang Mai University
3. Assoc. Prof. Dr. Piyanut Xuto
Department of Obstetrics and Gynecology Nursing, Chiang Mai University
4. Assist Prof. Dr. Sudaporn. Payakkaraung
Department of Pediatric Nursing, Mahidol University
5. Mrs. Poonsri Tongsuradej
Clinical Nurse Specialist, Lactation Clinic, Health Promotion Hospital,
1st Regional Health Promotion Center, Department of Health

APPENDIX I

HUMAN SUBJECT APPROVAL



CERTIFICATE OF APPROVAL
From
Institutional Review Board Faculty of Nursing Mahidol University

COA No.IRB-NS2015/307.2109

Title of Project: EFFECT OF A BREASTFEEDING SKILL TRAINING AND SUPPORTIVE PROGRAM ON 6-MONTH-EXCLUSIVE BREASTFEEDING AMONG FIRST-TIME MOTHERS

Project Number: IRB-NS2015/38.1906

Principle Investigator: Mrs. Piyaporn Prasitwattanaseree

Name of Institution: Faculty of Nursing Mahidol University

Approval includes

- 1) IRB-NS Submission form version received date 11 September 2015
- 2) Participant Information sheet version date 11 September 2015
- 3) Consent form version date 11 September 2015
- 4) Questionnaire version received date 11 September 2015

Institutional Review Board Faculty of Nursing Mahidol University is in full compliance with International Guidelines for Human Research Protection such as Declaration of Helsinki, The Belmont Report, CIOMS Guidelines and the International Conference on Harmonization in Good Clinical Practice (ICH-GCP)

Date of Approval: 21 September 2015

Date of Expiration: 20 September 2016

Signature of Chair: *Pornsri Sriussadaporn.*
(Associate Professor Pornsri Sriussadaporn)
Chair

Signature of Dean, Faculty of Nursing *Yajai Sitthimongkol*
(Associate Professor Dr. Yajai Sitthimongkol)
Dean, Faculty of Nursing

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Office of Institutional Review Board Faculty of Nursing Mahidol University Room 503 Faculty of Nursing, Mahidol University
999 Phuttamonthon 4 Road, Salaya, Nakhon Pathom 73170, THAILAND Tel: (662)-441-5333 Ext. 2531, 2532



Research Ethics Committee
Faculty of Medicine Chiang Mai University

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AF/04-010/04.0

No. 315/2015



Certificate of Approval

Name of Ethics Committee : Research Ethics Committee 4, Faculty of Medicine, Chiang Mai University Address of Ethics Committee : 110 Intavaroros Rd., Amphoe Muang, Chiang Mai, Thailand 50200	
Principal Investigator: Piyaporn Prasitwattanaseree. Faculty of Nursing, Mahidol University.	
Protocol title: EFFECT OF A BREASTFEEDING SKILL TRAINING AND SUPPORTIVE PROGRAM ON 6-MONTH-EXCLUSIVE BREASTFEEDING AMONG FIRST-TIME MOTHERS. STUDY CODE: NONE-2558-03199/ Research ID : 3199 Sponsor:-	
Documents filed	Document reference
Research protocol	Version date 29 July 2015
Patient Information Sheet (Control group)	Version 4.0 date 4 September 2013
Patient Information Sheet (Experimental group)	Version date 29 July 2015
Inform Consent Form	Version date 29 July 2015
Case Record Form	Version date 29 July 2015
Principal Investigator Curriculum vitae	Version date 29 July 2015

DECISION : [] By expedited review

[] By full committee meetingDate :

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Research Ethics Committee
Faculty of Medicine Chiang Mai University

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AF/04-010/04.0

Opinion of the Ethics Committee/Institutional Review Board : PLS. CHECK ONE	
<input checked="" type="checkbox"/> Approval	

Progress report submit every	<input type="checkbox"/> 3 months <input type="checkbox"/> 6 months <input checked="" type="checkbox"/> 1 year <input type="checkbox"/> Other.....
<p>Date of Approval: 29 July 2015 Expiration Date: 28 April 2016</p> <p>This Ethics Committee is organized and operates according to GCPs and relevant international ethical guidelines, the applicable laws and regulations.</p> <p>Signed : <i>P. Kulapongs</i></p> <p>(Emeritus Professor Panja Kulapongs, M.D.) Chairperson, Faculty of Medicine</p>	

GENERAL CONDITION OF APPROVAL:

- Please submit the progress report at least once a year except where required more frequent by the REC.
- In particular, approval of this study must be renewed at least three months before the expiration date if work is to continue.
- Prior Research Ethics Committee approval is required before implementing any changes in the consent documents or protocol unless those changes are required urgently for the safety of subjects.
- Any event or new information that may affect the benefit/risk ratio of the study must be reported to the REC promptly
- Any protocol deviation/violation must be reported to the REC

CONTENT TO PARTICIPATE IN RESEARCH STUDY

เอกสารคำอธิบายโครงการวิจัยสำหรับผู้ยินยอมตน (กลุ่มควบคุม)

ในเอกสารนี้อาจมีข้อความที่ท่านอ่านแล้วยังไม่เข้าใจ โปรดสอบถามหัวหน้าโครงการวิจัย หรือผู้แทนให้ช่วยอธิบายจนกว่าจะเข้าใจดี ท่านจะได้รับเอกสารนี้ 1 ฉบับ นำกลับไปอ่านที่บ้านเพื่อปรึกษาหารือกับญาติพี่น้อง เพื่อนสนิท แพทย์ประจำตัวของท่าน หรือผู้อื่นที่ท่านต้องการปรึกษา เพื่อช่วยในการตัดสินใจเข้าร่วมการวิจัย

ชื่อโครงการ ผลของโปรแกรมฝึกทักษะการเลี้ยงบุตรด้วยนมมารดา ร่วมกับการสนับสนุน ต่อการเลี้ยงบุตรด้วยนมมารดาอย่างเดียว 6 เดือน ในมารดาที่มีบุตรคนแรก

ชื่อผู้วิจัย นางปิยะภรณ์ ประสิทธิ์วัฒนเสรี นักศึกษาปริญญาโท สาขาการพยาบาล คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล

สถานที่วิจัย หน่วยฝากครรภ์ ดิگสุติกรรม และห้องวางแผนครอบครัว โรงพยาบาลมหาราชนครเชียงใหม่

สถานที่ทำงาน หมายเลขโทรศัพท์เคลื่อนที่ และโทรศัพท์บ้าน/ ที่ทำงานของผู้วิจัย คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่ โทรศัพท์ 081-7465699, 053-380721, 053-945019

ผู้ให้ทุน –

โครงการวิจัยนี้ทำขึ้นเพื่อเปรียบเทียบอัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือนระหว่างกลุ่มที่ได้รับ โปรแกรมฝึกทักษะการเลี้ยงบุตรด้วยนมมารดา ร่วมกับการสนับสนุน กับกลุ่มที่ไม่ได้รับการพยาบาลตามปกติ การวิจัยครั้งนี้จะก่อให้เกิดประโยชน์ต่อท่านโดยตรงคือ ท่านจะได้รับความรู้เรื่องการเลี้ยงบุตรด้วยนมมารดา และยังจะได้รับข้อมูลเพิ่มเติม รวมทั้งสามารถสอบถามข้อสงสัยในเรื่องการเลี้ยงบุตรด้วยนมมารดาในขณะตั้งครรภ์ หลังคลอด หรือหลังจำหน่ายออกจากโรงพยาบาลไปแล้วจากพยาบาลที่หน่วยฝากครรภ์ หรือหน่วยหลังคลอดของโรงพยาบาลมหาราชนครเชียงใหม่ นอกจากนี้ผลสรุปจากการศึกษาครั้งนี้จะเป็นประโยชน์ต่อมารดาท่านอื่นที่เลี้ยงบุตรด้วยนมมารดา เพราะผลของการศึกษาที่ได้มาจากการเข้าร่วมวิจัยของท่านจะเป็นสิ่งสำคัญที่จะเป็นแนวทางให้พยาบาลนำไปใช้ประโยชน์ในการช่วยเหลือ สนับสนุน และส่งเสริมการเลี้ยงบุตรด้วยนมมารดา เพื่อให้สามารถช่วยเหลือมารดาในการเลี้ยงบุตรด้วยนมมารดาให้ประสบผลสำเร็จต่อไป

ท่านได้รับเชิญให้เข้าร่วมการวิจัยนี้เพราะท่านเป็นบุคคลสำคัญที่จะเป็นตัวแทนของหญิงตั้งครรภ์ที่กำลังจะให้กำเนิดบุตรคนแรก และมารับบริการฝากครรภ์ที่หน่วยฝากครรภ์โรงพยาบาลมหาราชนครเชียงใหม่ ในช่วงที่มีการนำโปรแกรมฝึกทักษะการเลี้ยงบุตรด้วยนมมารดา ร่วมกับการสนับสนุนมาใช้ในโรงพยาบาลมหาราชนครเชียงใหม่ ซึ่งในการวิจัยครั้งนี้จะมีผู้เข้าร่วม

โครงการวิจัย จำนวน 84 คน แบ่งเป็นกลุ่มทดลอง 42 คน กลุ่มควบคุม 42 คน ระยะเวลาดำเนินการของโครงการนี้ทั้งสิ้น ประมาณ 7 เดือน นับตั้งแต่วันแรกที่ท่านยินยอมเข้าร่วมการวิจัยเมื่ออายุครรภ์ 36-37 สัปดาห์ไปจนถึง 6 เดือนหลังคลอด แต่ทั้งนี้ระยะเวลาที่ท่านใช้ในการเข้าร่วมโครงการวิจัย จะใช้เวลาในการสัมภาษณ์ข้อมูลส่วนบุคคล และตอบแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดาในครั้งแรกที่เข้าร่วมการวิจัยประมาณ 10 นาที และหลังคลอดก่อนที่ท่านจะออกจากโรงพยาบาล ท่านจะได้รับการประเมินประสิทธิภาพการดูแลนมของบุตรและตอบแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดา โดยใช้เวลาประมาณ 5-10 นาที หลังจากจำหน่ายออกจากโรงพยาบาล 1 วัน 7 วัน 4 สัปดาห์ 6 สัปดาห์ 3 เดือน 4 เดือน 5 เดือน และ 6 เดือน ท่านจะได้รับการโทรศัพท์ติดตามปัญหาการเลี้ยงบุตรด้วยนมมารดา รวมทั้งสัมภาษณ์การเลี้ยงบุตรด้วยนมมารดาโดยใช้เวลาในแต่ละครั้งประมาณ 10 นาที

หากท่านตัดสินใจเข้าร่วมการศึกษานี้ท่านจะถูกขอร้องให้เซ็นชื่อลงในใบยินยอม และผู้วิจัยจะขอชี้แจงขั้นตอนการเข้าร่วมโครงการวิจัยของท่านดังต่อไปนี้

1. ผู้วิจัยจะขอให้ท่านตอบแบบสัมภาษณ์ข้อมูลส่วนบุคคล และแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดาอย่างเดียว
2. ในช่วงอายุครรภ์ 36-40 สัปดาห์และระยะหลังคลอดท่านจะได้รับกิจกรรมการพยาบาล รวมทั้งความรู้ และคำแนะนำต่างๆ ในขณะตั้งครรภ์ ขณะคลอด และหลังคลอดตามวิธีที่ปฏิบัติเป็นประจำของโรงพยาบาลมหาราชนครเชียงใหม่
3. หลังคลอดในวันที่แพทย์อนุญาตให้ท่านกลับบ้านได้ ท่านจะได้รับการประเมินการดูแลนมของบุตรก่อนจำหน่ายออกจาก โรงพยาบาล และผู้วิจัยจะขอให้ท่านตอบแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดา ก่อนกลับบ้าน
4. ผู้วิจัยจะเข้าพบท่านในสัปดาห์ที่ 6 หลังคลอดที่ห้องวางแผนครอบครัว โรงพยาบาลมหาราชนครเชียงใหม่ เพื่อติดตามการเลี้ยงบุตรด้วยนมมารดาอย่างเดี่ยวและปัญหาที่เกิดจากการเลี้ยงบุตรด้วยนมมารดา และผู้วิจัยจะขอให้ท่านตอบแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดา พร้อมกับมอบหนังสือ 20 ถาม ตอบ เพื่อการเลี้ยงลูกด้วย “นมแม่” ที่ผลิตโดยมูลนิธินมแม่แห่งประเทศไทยให้แก่ท่าน
5. เมื่อท่านกลับไปอยู่บ้านท่านจะได้รับการโทรศัพท์ติดตามปัญหาการเลี้ยงบุตรด้วยนมมารดา และการสัมภาษณ์เกี่ยวกับการเลี้ยงบุตรด้วยนมมารดาในวันที่ 1 วันที่ 7 สัปดาห์ที่ 4 เดือนที่ 3, 4, 5 และ 6 ตามลำดับ เมื่อครบ 6 เดือนถือเป็นการสิ้นสุดการเข้าร่วมโครงการวิจัย

ในการศึกษาวิจัยครั้งนี้ ไม่มีการใช้ผลิตภัณฑ์หรือการรักษาใดๆ ให้กับท่านเพิ่มเติม นอกเหนือจากการตรวจรักษาตามปกติจากทางโรงพยาบาล ดังนั้นตลอดการเข้าร่วมวิจัยครั้งนี้จะไม่

มีความเสี่ยงที่จะก่อให้เกิดอันตรายแต่อย่างใด เป็นเพียงการสัมภาษณ์ไม่มีการปฏิบัติใดๆ แต่ท่านอาจเสียเวลา อึดอัด หรือรู้สึกรำคาญ ท่านสามารถบอกยกเลิกไม่ให้อัปเดตสัมภาษณ์ต่อโดยไม่ต้องบอกเหตุผล ผู้วิจัยจะไม่สัมภาษณ์ต่อ ให้เป็นไปตามความสมัครใจของท่าน และท่านจะยังคงได้รับการดูแลจากโรงพยาบาลต่อไปตามปกติ นอกจากนี้ท่านจะยังคงสิทธิ์ที่จะเลือกการตรวจเพื่อรักษาโรค หรือการตรวจครรภ์และการพยาบาลอื่นๆ ที่เป็นประโยชน์แก่ท่านต่อไป และการมาตรวจหรือฝากครรภ์นี้ท่านสามารถตัดสินใจในการที่จะเลือกสถานที่ในการฝากครรภ์ที่ใดก็ได้ตามความต้องการของท่าน โดยไม่มีผลกระทบต่อการให้บริการที่ท่านควรจะได้รับจากทางโรงพยาบาลแต่อย่างใด ในกรณีที่เกิดอันตรายหรือผลอันไม่พึงประสงค์จากการวิจัยครั้งนี้ ผู้วิจัยจะหยุดการวิจัยทันที และให้การดูแลรักษาพยาบาลจนกระทั่งอาการดีขึ้นจึงจะดำเนินการวิจัยต่อ แต่ถ้าอาการไม่ดีขึ้นและแพทย์ผู้เชี่ยวชาญพิสูจน์ได้ว่าเป็นผลมาจากการเข้าร่วมวิจัย ท่านจะได้รับการรักษาเต็มที่จนกว่าจะหาย และหากต้องการหยุดการวิจัย ท่านสามารถถอนตัวออกจากการวิจัยได้

ในการให้ข้อมูลครั้งนี้จะเป็นไปตามความสมัครใจของท่าน โดยข้อมูลที่ได้จากท่านทั้งหมดจะถูกเก็บรักษาไว้เป็นความลับและผู้วิจัยจะเก็บรักษาไว้เป็นอย่างดี ไม่มีการเปิดเผยชื่อ-นามสกุล และไม่เปิดเผยข้อมูลเป็นรายบุคคล แต่จะสรุปรายงานผลการวิจัยเป็นข้อมูลในภาพรวม ซึ่งข้อมูลเป็นรายบุคคลนั้นอาจมีคณะกลุ่มบุคคลที่มีหน้าที่ในการตรวจสอบมาศึกษาข้อมูลของผู้เข้าร่วมวิจัย เช่น สถาบันหรือองค์การของรัฐที่มีหน้าที่ตรวจสอบ คณะกรรมการจริยธรรม เป็นต้น ท่านมีสิทธิ์ถอนตัวออกจากโครงการวิจัยเมื่อใดก็ได้ โดยไม่ต้องแจ้งให้ทราบล่วงหน้า และการไม่เข้าร่วมการวิจัยหรือถอนตัวออกจากโครงการวิจัยนี้จะไม่มีผลกระทบต่อค่าบริการและการรักษาที่สมควรจะได้รับแต่ประการใด

การเข้าร่วมโครงการวิจัยครั้งนี้ขึ้นอยู่กับความสมัครใจของท่าน และจะไม่มีการสูญเสียประโยชน์ใดๆ ที่ควรได้รับหากท่านไม่สมัครใจเข้าร่วมโครงการ หากท่านยินยอมเข้าร่วมโครงการวิจัย ขอความร่วมมือให้ท่านลงมือชื่อในเอกสารแสดงความยินยอมของผู้เข้าร่วมโครงการวิจัย ซึ่งในการวิจัยครั้งนี้จะไม่มีการเปิดเผยชื่อ-นามสกุล และไม่เปิดเผยข้อมูลเป็นรายบุคคล แต่จะใช้รหัสแทน ข้อมูลของท่านจะถูกเก็บเป็นความลับ และการนำข้อมูลไปอภิปรายหรือพิมพ์เผยแพร่จะนำเสนอในภาพรวมของผลการวิจัยเท่านั้น ซึ่งข้อมูลเป็นรายบุคคลนั้นอาจมีคณะกลุ่มบุคคลที่มีหน้าที่ในการตรวจสอบมาศึกษาข้อมูลของผู้เข้าร่วมวิจัยเช่น สถาบันหรือองค์การของรัฐที่มีหน้าที่ตรวจสอบ คณะกรรมการจริยธรรม เป็นต้น และท่านมีสิทธิ์ถอนตัวออกจากโครงการวิจัยเมื่อใดก็ได้ โดยไม่ต้องอธิบายเหตุผลและไม่ต้องแจ้งให้ทราบล่วงหน้า และการไม่เข้าร่วมการวิจัยหรือถอนตัวออกจากโครงการวิจัยนี้ จะไม่มีผลกระทบต่อค่าบริการและการรักษาที่สมควรจะได้รับแต่ประการใด

โครงการวิจัยนี้ได้รับการพิจารณารับรองจากคณะกรรมการจริยธรรมการวิจัยในคน คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล ซึ่งมีสำนักงานอยู่ที่ ห้อง 503 ชั้น 5 คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล เลขที่ 999 ถนนพุทธมณฑล สาย 4 ตำบลศาลายา อำเภอพุทธมณฑล จังหวัดนครปฐม 73170 หมายเลขโทรศัพท์ 0-2441-5333 ต่อ 2531,2532 E-mail: nsirbnursing@mahidol.ac.th, ns.irbnursing@gmail.com หากท่านได้รับการปฏิบัติไม่ตรงตามที่ระบุไว้ท่านสามารถติดต่อกับประธานคณะกรรมการฯ หรือผู้แทน ได้ตามสถานที่และหมายเลขโทรศัพท์ข้างต้น

ข้าพเจ้าได้อ่านรายละเอียดในเอกสารนี้ครบถ้วนแล้ว

ผู้เข้าร่วมวิจัย

ลงชื่อ.....

(.....)

วันที่.....

CONTENT TO PARTICIPATE IN RESEARCH STUDY

เอกสารคำอธิบายโครงการวิจัยสำหรับผู้ยินยอมตน (กลุ่มทดลอง)

ในเอกสารนี้อาจมีข้อความที่ท่านอ่านแล้วยังไม่เข้าใจ โปรดสอบถามหัวหน้าโครงการวิจัย หรือผู้แทนให้ช่วยอธิบายจนกว่าจะเข้าใจดี ท่านจะได้รับเอกสารนี้ 1 ฉบับ นำกลับไปอ่านที่บ้านเพื่อปรึกษาหารือกับญาติพี่น้อง เพื่อนสนิท แพทย์ประจำตัว ของท่าน หรือผู้อื่นที่ท่านต้องการปรึกษา เพื่อช่วยในการตัดสินใจเข้าร่วมการวิจัย

ชื่อโครงการ ผลของโปรแกรมฝึกทักษะการเลี้ยงบุตรด้วยนมมารดา ร่วมกับการสนับสนุน ต่อการเลี้ยงบุตรด้วยนมมารดาอย่างเดียว 6 เดือน ในมารดาที่มีบุตรคนแรก

ชื่อผู้วิจัย นางปิยะภรณ์ ประสิทธิ์วัฒน์เสรี นักศึกษาเอก สาขาการพยาบาล คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล

สถานที่วิจัย หน่วยฝากครรภ์ ดิถีสูติกรรม และห้องวางแผนครอบครัว โรงพยาบาลมหาราชนคร เชียงใหม่

สถานที่ทำงาน หมายเลขโทรศัพท์เคลื่อนที่ และ โทรศัพท์บ้าน/ ที่ทำงานของผู้วิจัย คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่ โทรศัพท์ 081-7465699, 053-380721, 053-945019

ผู้ให้ทุน –

โครงการวิจัยนี้ทำขึ้นเพื่อเปรียบเทียบอัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียว 6 เดือน ระหว่างกลุ่มที่ได้รับ โปรแกรมฝึกทักษะการเลี้ยงบุตรด้วยนมมารดา ร่วมกับการสนับสนุน กับกลุ่มที่ได้รับการพยาบาลตามปกติ การวิจัยครั้งนี้จะก่อให้เกิดประโยชน์ต่อท่านโดยตรงคือ ท่านจะได้รับความรู้และการเตรียมความพร้อมสำหรับการเลี้ยงบุตรด้วยนมมารดา โดยได้รับความรู้เกี่ยวกับประโยชน์ของการเลี้ยงบุตรด้วยนมมารดา ได้ทราบเหตุการณ์ที่ต้องเผชิญหลังคลอดที่อาจจะเป็นอุปสรรคในการเลี้ยงบุตรด้วยนมมารดาล่วงหน้า และคิดเตรียมการแก้ไขปัญหาเหล่านั้น และได้ทดลองฝึกทักษะเกี่ยวกับการอุ้มบุตรคนมอย่างถูกต้อง ได้รับคู่มือการเลี้ยงบุตรด้วยนมมารดาไปอ่านทบทวนที่บ้าน ซึ่งสิ่งต่างๆเหล่านี้จะช่วยทำให้ท่านมีความพร้อมและความมั่นใจในการเลี้ยงบุตรด้วยนมมารดา และในระยะหลังคลอดในขณะที่ท่านต้องให้นมแก่บุตรเอง ท่านก็จะได้รับการช่วยเหลือในทุกมือของการให้นม จนกระทั่งท่านสามารถให้นมแก่บุตรได้เองด้วยความมั่นใจและทำได้ถูกต้อง และหลังจากที่ท่านออกจากโรงพยาบาลกลับไปอยู่ที่บ้านแล้วท่านก็จะได้รับการติดตามปัญหาและให้คำแนะนำอย่างต่อเนื่องตลอดระยะเวลาหลังคลอด 6 เดือน เพื่อช่วยให้ท่านสามารถเลี้ยงบุตรด้วยนมมารดาอย่างเดียว 6 เดือนได้สำเร็จ นอกจากนี้ผลการศึกษาครั้งนี้สามารถ

เป็นประโยชน์ต่อมารดาท่านอื่นที่เลี้ยงบุตรด้วยนมมารดา เพราะผลของการศึกษาที่ได้มาจากการเข้าร่วมการวิจัยของท่านจะเป็นสิ่งสำคัญที่จะเป็นแนวทางให้พยาบาลนำไปใช้ประโยชน์ในการช่วยเหลือ สนับสนุน และส่งเสริมการเลี้ยงบุตรด้วยนมมารดาเพื่อให้สามารถช่วยเหลือมารดาในการเลี้ยงบุตรด้วยนมมารดาให้ประสบผลสำเร็จต่อไป

ท่านได้รับเชิญให้เข้าร่วมการวิจัยนี้เพราะท่านเป็นบุคคลสำคัญที่จะเป็นตัวแทนของหญิงตั้งครรภ์ที่กำลังจะให้กำเนิดบุตรคนแรก และมารับบริการฝากครรภ์ที่หน่วยฝากครรภ์โรงพยาบาลมหาราชนครเชียงใหม่ ในช่วงที่มีการนำโปรแกรมฝึกทักษะการเลี้ยงบุตรด้วยนมมารดา ร่วมกับการสนับสนุนมาใช้ในโรงพยาบาลมหาราชนครเชียงใหม่ ซึ่งในการวิจัยครั้งนี้จะมีผู้เข้าร่วมโครงการวิจัย จำนวน 84 คน แบ่งเป็นกลุ่มทดลอง 42 คน กลุ่มควบคุม 42 คน ระยะเวลาดำเนินการของโครงการนี้ทั้งสิ้น ประมาณ 7 เดือน นับตั้งแต่วันแรกที่ท่านยินยอมเข้าร่วมการวิจัยเมื่ออายุครรภ์ 36-37 สัปดาห์ไปจนถึง 6 เดือนหลังคลอด แต่ทั้งนี้ระยะเวลาที่ท่านใช้ในการเข้าร่วมโครงการวิจัย จะใช้เวลาในการสัมภาษณ์ข้อมูลส่วนบุคคล และตอบแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดาในครั้งแรกที่เข้าร่วมการวิจัยประมาณ 10 นาที ในขณะที่ท่านมีอายุครรภ์ 36-37 สัปดาห์และมาฝากครรภ์ตามนัดปกติ ท่านจะได้รับการฝึกทักษะการเลี้ยงบุตรด้วยนมมารดา และได้รับความรู้เรื่องการเลี้ยงบุตรด้วยนมมารดาจำนวน 2 ครั้งๆละประมาณ 40-45 นาที ในระยะหลังคลอดวันแรกท่านจะได้รับการสนับสนุนในการให้นมบุตรกินนมมารดาทุกๆ 2-3 ชั่วโมง ซึ่งเป็นเวลาปกติที่ท่านจะต้องให้นมบุตรกินนมหลังคลอด ในแต่ละครั้งจะใช้เวลาประมาณ 20 นาที และการจัดให้ท่านได้พูดคุยอภิปรายร่วมกับสามี และ/หรือญาติที่มาเยี่ยมท่านในช่วงหลังคลอดร่วมกับผู้วิจัยใช้เวลาประมาณ 20 นาที และก่อนที่ท่านจะออกจากโรงพยาบาล ท่านจะได้รับการประเมินประสิทธิภาพการดูแลตนเองของบุตรและตอบแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดา โดยใช้เวลาประมาณ 5-10 นาที หลังจากจำหน่ายออกจากโรงพยาบาล 1 วัน 7 วัน 4 สัปดาห์ 6 สัปดาห์ 3 เดือน 4 เดือน 5 เดือน และ 6 เดือน ท่านจะได้รับการโทรศัพท์ติดตามปัญหาการเลี้ยงบุตรด้วยนมมารดา รวมทั้งสัมภาษณ์การเลี้ยงบุตรด้วยนมมารดาโดยใช้เวลาในแต่ละครั้งประมาณ 10 นาที

เมื่อท่านตกลงใจที่จะเข้าร่วมโครงการแล้วท่านจะถูกขอร้องให้เซ็นชื่อลงในใบยินยอม จากนั้นท่านจะได้รับการดูแลเพิ่มเติมจากปกติตั้งแต่ในระยะตั้งครรภ์ ระยะหลังคลอด และระยะหลังจำหน่ายออกจากโรงพยาบาล ตามลำดับขั้นของโครงการวิจัยคือ

1. ผู้วิจัยจะขอให้ท่านตอบแบบสัมภาษณ์ข้อมูลส่วนบุคคล และแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดาอย่างเดียว

2. ในช่วงอายุครรภ์ 36-40 สัปดาห์ท่านจะได้เข้าร่วมกิจกรรมฝึกทักษะการเลี้ยงบุตรด้วยนมมารดา ร่วมกับหญิงตั้งครรภ์คนอื่นๆ ซึ่งกิจกรรมประกอบด้วย การพูดคุย อภิปรายเกี่ยวกับประโยชน์ของการเลี้ยงบุตรด้วยนมมารดา ปัญหาและวิธีการแก้ไขปัญหานั้น การสาธิตและฝึกทักษะเกี่ยวกับการอุ้มบุตรคุณนมมารดาอย่างถูกวิธี การบีบเก็บน้ำนมด้วยมือ

3. ในระยะหลังคลอดท่านจะได้รับการช่วยเหลือในการให้นุตรกินนมมารดาตั้งแต่เมื่อแรกและเมื่อต่อไปทุก 2-3 ชั่วโมงอย่างต่อเนื่องตลอดระยะเวลาที่ท่านอยู่โรงพยาบาลจนท่านสามารถให้นมบุตรได้เองอย่างถูกต้องและมั่นใจ ในเวลาที่สามีและ/หรือญาติมาเยี่ยมท่านก็จะได้รับการพูดคุยเกี่ยวกับการเลี้ยงลูกด้วยนมแม่ร่วมกับสามีและหรือญาติร่วมกับผู้วิจัย

4. หลังคลอดในวันที่แพทย์อนุญาตให้ท่านกลับบ้านได้ ท่านจะได้รับการประเมินการดูแลของบุตรก่อนจำหน่ายออกจากโรงพยาบาล และผู้วิจัยจะขอให้ท่านตอบแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดาก่อนกลับบ้าน

5. ผู้วิจัยจะเข้าพบท่านในสัปดาห์ที่ 6 หลังคลอดที่ห้องวางแผนครอบครัว โรงพยาบาลมหาสารคามศรีเชียงใหม่ เพื่อติดตามการเลี้ยงบุตรด้วยนมมารดาอย่างเฉียวและปัญหาที่เกิดจากการเลี้ยงบุตรด้วยนมมารดา

และผู้วิจัยจะขอให้ท่านตอบแบบสอบถามการรับรู้สมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดา พร้อมทั้งให้คำแนะนำการแก้ไขปัญหาค่าการเลี้ยงบุตรด้วยนมมารดาที่เกิดขึ้น คำแนะนำเกี่ยวกับวิธีการเปลี่ยนถ่ายจากการดูแลนมจากเต้ามารดา ไปเป็นการป้อนนมมารดาด้วยถ้วยหรือป้อนด้วยขวดนม จากนั้นกล่าวขอขอบคุณกลุ่มตัวอย่างที่ให้ความร่วมมือ

6. เมื่อท่านกลับไปอยู่บ้านในวันที่ 1 วันที่ 7 สัปดาห์ที่ 4 เดือนที่ 3, 4, 5 และ 6 ท่านจะได้รับการโทรศัพท์ติดตามปัญหาการเลี้ยงบุตรด้วยนมมารดา และการสัมภาษณ์ติดตามการเลี้ยงบุตรด้วยนมมารดา หากพบผู้วิจัยพบว่าท่านมีปัญหาปัญหาการเลี้ยงบุตรด้วยนมมารดา ผู้วิจัยจะให้คำแนะนำการแก้ไขปัญหานั้นเกิดขึ้น เมื่อครบ 6 เดือนถือเป็นการสิ้นสุดการเข้าร่วมโครงการวิจัย

ในการศึกษาวิจัยครั้งนี้ไม่มีการใช้ผลิตภัณฑ์หรือการรักษาใดๆ ให้กับท่านเพิ่มเติม นอกเหนือจากการตรวจรักษาตามปกติจากทางโรงพยาบาล ดังนั้นตลอดการเข้าร่วมวิจัยครั้งนี้จะไม่มีความเสี่ยงที่จะก่อให้เกิดอันตรายแต่อย่างใด เป็นเพียงการสัมภาษณ์ไม่มีการปฏิบัติใดๆ แต่ท่านอาจเสียเวลา อึดอัด หรือรู้สึกรำคาญ ท่านสามารถบอกยกเลิกไม่ให้สัมภาษณ์ต่อโดยไม่ต้องบอกเหตุผล ผู้วิจัยจะไม่สัมภาษณ์ต่อ ให้เป็นไปตามความสมัครใจของท่าน และท่านจะยังคงได้รับการดูแลจากโรงพยาบาลต่อไปตามปกติ นอกจากนี้ท่านจะยังคงสิทธิ์ที่จะเลือกการตรวจเพื่อรักษาโรคหรือการตรวจครรภ์และการพยาบาลอื่นๆ ที่เป็นประโยชน์แก่ท่านต่อไป และการมาตรวจหรือฝากครรภ์นี้ท่านสามารถตัดสินใจในการที่จะเลือกสถานที่ในการฝากครรภ์ที่ใดก็ได้ตามความต้องการ

ของท่าน โดยไม่มีผลกระทบต่อการใช้บริการที่ท่านควรจะได้รับจากทางโรงพยาบาลแต่อย่างใด ในกรณีที่เกิดอันตรายหรือผลอันไม่พึงประสงค์จากการวิจัยครั้งนี้ ผู้วิจัยจะหยุดการวิจัยทันที และให้การดูแลรักษาพยาบาลจนกระทั่งอาการดีขึ้นจึงจะดำเนินการวิจัยต่อ แต่ถ้าอาการไม่ดีขึ้นและแพทย์ผู้เชี่ยวชาญพิสูจน์ได้ว่าเป็นผลมาจากการเข้าร่วมวิจัย ท่านจะได้รับการรักษาเต็มที่จนกว่าจะหาย และหากต้องการหยุดการวิจัย ท่านสามารถถอนตัวออกจากการวิจัยได้

การเข้าร่วมโครงการวิจัยครั้งนี้ขึ้นอยู่กับความสมัครใจของท่าน และจะไม่มีผลเสียประโยชน์ใดๆ ที่ควรได้รับหากท่านไม่สมัครใจเข้าร่วมโครงการ หากท่านยินยอมเข้าร่วมโครงการวิจัย ขอความร่วมมือให้ท่านลงมือชื่อในเอกสารแสดงความยินยอมของผู้เข้าร่วมโครงการวิจัย ซึ่งในการวิจัยครั้งนี้จะไม่มีเปิดเผยชื่อ-นามสกุล และไม่เปิดเผยข้อมูลเป็นรายบุคคล แต่จะใช้รหัสแทน ข้อมูลของท่านจะถูกเก็บเป็นความลับ และการนำข้อมูลไปอภิปรายหรือพิมพ์เผยแพร่จะนำเสนอในภาพรวมของผลการวิจัยเท่านั้น ซึ่งข้อมูลเป็นรายบุคคลนั้นอาจมีคณะกลุ่มบุคคลที่มีหน้าที่ในการตรวจสอบมาศึกษาข้อมูลของผู้เข้าร่วมวิจัยเช่น สถาบันหรือองค์กรของรัฐที่มีหน้าที่ตรวจสอบ คณะกรรมการจริยธรรม เป็นต้น และท่านมีสิทธิ์ถอนตัวออกจากโครงการวิจัยเมื่อใดก็ได้ โดยไม่ต้องอธิบายเหตุผลและไม่ต้องแจ้งให้ทราบล่วงหน้า และการไม่เข้าร่วมการวิจัยหรือถอนตัวออกจากโครงการวิจัยนี้ จะไม่มีผลกระทบต่อการใช้บริการและการรักษาที่สมควรจะได้รับแต่ประการใด

โครงการวิจัยนี้ได้รับการพิจารณารับรองจากคณะกรรมการจริยธรรมการวิจัยในคน คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล ซึ่งมีสำนักงานอยู่ที่ ห้อง 503 ชั้น 5 คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล เลขที่ 999 ถนนพุทธมณฑล สาย 4 ตำบลศาลายา อำเภอพุทธมณฑล จังหวัดนครปฐม 73170 หมายเลขโทรศัพท์ 0-2441-5333 ต่อ 2531, 2532 E-mail : nsirbnursing@mahidol.ac.th, ns.irbnursing@gmail.com หากท่านได้รับการปฏิบัติไม่ตรงตามที่ระบุไว้ท่านสามารถติดต่อกับประธานคณะกรรมการฯ หรือผู้แทน ได้ตามสถานที่และหมายเลขโทรศัพท์ข้างต้น

ข้าพเจ้าได้อ่านรายละเอียดในเอกสารนี้ครบถ้วนแล้ว

ลงชื่อ.....

ผู้เข้าร่วมวิจัย

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(.....)

วันที่.....



คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล
หลักสูตรปรัชญาดุษฎีบัณฑิต (นานาชาติ)
๒ ถนนวิภาวดีรังสิต เขตบางเขน กรุงเทพมหานคร ๑๐๗๐๐
โทร. ๐-๒๕๔๑-๕๓๓๓ ต่อ ๒๕๕๒, ๒๕๕๓
โทรสาร ๐-๒๕๑๒-๘๕๑๕

ที่ ศธ ๐๕๑๗.๐๕๗/๓๗๓
วันที่ ๕ กรกฎาคม ๒๕๕๘
เรื่อง ขออนุญาตดำเนินการวิจัย/เก็บข้อมูลในคณะพยาบาลศาสตร์
เรียน คณบดีคณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่

ข้าพเจ้า นางปิยะภรณ์ ประสิทธิ์วิวัฒน์เสรี นักศึกษาหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาการพยาบาล (หลักสูตรนานาชาติ และหลักสูตรร่วมกับมหาวิทยาลัยในต่างประเทศ) โครงการร่วมระหว่าง คณะพยาบาลศาสตร์ และโรงเรียนพยาบาลรามาธิบดี คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล หัวหน้าโครงการวิจัย เรื่อง "ผลของโปรแกรมฝึกทักษะการเลี้ยงลูกด้วยนมแม่ร่วมกับ การสนับสนุนต่อการเลี้ยงลูกด้วยนมแม่อย่างเดียวย ๖ เดือน ในมารดาที่มีบุตรคนแรก" (EFFECT OF A BREASTFEEDING SKILL TRAINING AND SUPPORTIVE PROGRAM ON SIX MONTHS EXCLUSIVE BREASTFEEDING AMONG FIRST-TIME MOTHERS) Research ID: NONE-2558 03199/Study Code : NONE-2558 03199 ประสงค์ขออนุญาตดำเนินการวิจัยที่ (ห้องตรวจครรภ์ / ห้องผู้ป่วยสูติกรรม และห้องวางแผนครอบครัว) ระหว่างวันที่ ๑ สิงหาคม ๒๕๕๘ ถึงวันที่ ๓๑ มีนาคม ๒๕๕๙

จึงเรียนมาเพื่อโปรดพิจารณาต่อไปด้วย จักเป็นพระคุณยิ่ง

(นาง ปิยะภรณ์ ประสิทธิ์วิวัฒน์เสรี)

หัวหน้าโครงการวิจัย

(รองศาสตราจารย์ ดร.ยาใจ สิทธิมงคล)

ประธานคณะกรรมการบริหารหลักสูตรปรัชญาดุษฎีบัณฑิตฯ

คำสั่ง คณบดี

อนุญาตให้ทำวิจัยตามที่เสนอมาได้ ทั้งนี้ กรณีที่โครงการวิจัยเกี่ยวข้องกับมนุษย์ / หรือสัตว์ทดลอง ผู้วิจัยจะเริ่มดำเนินการวิจัยได้ต่อเมื่อผ่านความเห็นชอบจากคณะกรรมการจริยธรรมการวิจัยในมนุษย์ หรือคณะกรรมการจรรยาบรรณการใช้สัตว์ทดลอง คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่แล้ว

(รองศาสตราจารย์ นายแพทย์วิวัฒนา นาวาเจริญ)

คณบดีคณะพยาบาลศาสตร์

วันที่ ๒๑ / ก.ค. ๒๕๕๘

APPENDIX J

TYPE OF FEEDING BY INFANT'S AGE

Table J: Type of feeding by infant's age in the experimental and control groups

Infant age	Type of feeding				
	EBF n (%)	BF+W n (%)	BF+F n (%)	BF+S n (%)	F n (%)
Experimental group					
One day	41 (100)	-	-	-	-
One week	40 (97.6)	-	1 (2.4)	-	-
Four weeks	37 (90.2)	-	4 (9.8)	-	-
Six weeks	36 (87.8)	-	5 (12.2)	-	-
Three months	31 (75.6)	-	10 (24.4)	-	-
Four months	26 (63.4)	-	15 (36.6)	-	-
Five months	15 (36.6)	-	21 (51.2)	4 (9.8)	1 (2.4)
Six months	15 (36.6)	-	21 (51.2)	4 (9.8)	1 (2.4)
Control group					
One day	42 (100)	-	-	-	-
One week	30 (71.4)	2 (4.8)	10 (23.8)	-	-
Four weeks	24 (51.1)	5 (11.9)	13 (31.0)	-	-
Six weeks	20 (47.6)	5 (11.9)	17 (40.5)	-	-
Three months	11 (26.2)	5 (11.9)	25 (59.5)	-	1 (2.4)
Four months	7 (16.7)	5 (11.9)	25 (59.5)	2 (4.8)	3 (7.1)
Five months	6 (14.3)	5 (11.9)	25 (59.5)	2 (4.8)	4 (9.5)
Six months	6 (14.3)	5 (11.9)	25 (59.5)	2 (4.8)	4 (9.5)

EBF=Exclusive breastfeeding

BF+W= Breastfeeding with water

BF+F= Breastfeeding with formula

BF+S= Breastfeeding with supplementary foods

F= Formula feeding

APPENDIX K
REASONS FOR INTRODUCING OTHER FOODS
BEFORE SIX MONTHS OF AGE

Table K: Number of mothers in the experimental and control groups, classified by type of food and reasons for introducing other foods before six months of age.

Reason ^a	Experimental group	Control group
	(N=41)	(N=42)
	n	n
Breastfeeding +water	0	5
Cleaning mouth	-	2
Preventing white film on tongue	-	2
Preventing dehydration	-	1
Preventing hiccups	-	2
Breastfeeding + formula	21	27
Having insufficient breast milk	14	29
Having breast engorgement	-	1
Returning to work	10	4
Preventing dehydration	-	1
Cleaning mouth	2	-
Breastfeeding +supplementary foods	4	2
Returning to work	-	1
Having insufficient breast milk	3	2
Following physicians' advice	2	-
Following relatives' advice	-	2
Formula	1	2
Returning to work	1	1
Having insufficient breast milk	-	2
Having maternal health problems	-	1

^a more than one answer could be checked

APPENDIX L

PROBLEMS RELATED TO BREASTFEEDING

Table L: Frequency of mothers facing with problems related to breastfeeding

Problems related to breastfeeding ^a	Number of mothers							
	1 Day after D/C	7 Day	4 Wks	6 Wks	3 M	4 M	5 M	6 M
Experimental group	N=41	N=40	N=37	N=36	N=31	N=26	N=15	N=15
- Sore nipple	14	5	4	3	-	-	-	-
- Cracked nipple	4	4	-	-	-	-	-	-
- Breast engorgement	4	13	2	3	4	-	-	-
- Inadequate breast milk	13	11	6	9	2	8	4	-
- Exhaustion or stress	-	-	-	1	1	-	-	-
Control group	N=42	N=30	N=24	N=20	N=11	N=7	N=6	N=6
- Sore nipple	14	3	5	3	-	-	-	-
- Cracked nipple	1	8	-	-	-	-	-	-
- Breast engorgement	1	4	1	5	2	1	-	-
- Inadequate breast milk	29	30	9	11	8	6	1	-
- Infant refuses to suckle	8	1	-	2	-	-	-	-
- Overflow of milk	-	-	-	-	1	-	-	-
- Exhaustion or stress	-	-	-	-	-	-	-	-

^a more than one answer could be checked

APPENDIX M

EFFECTIVE SUCKLING

Table M: Comparison of effective suckling scores at discharge between the experimental and the control groups

Variable	Experimental group (N=41)			Control group (N=42)			Mann-Whitney U-test	
	Min- Max	Mean (SD)	Median (IQR)	Min- Max	Mean (SD)	Median (IQR)	Z value	p- value
Effective suckling score	9-10	9.66 (0.48)	10 (1)	5-10	7.26 (1.23)	7 (2)	7.25	<.001

APPENDIX N
THE BSES AT 6 WEEKS BETWEEN THE MOTHERS
PERCEIVED INSUFFICIENT MILK (PIM) AND THE MOTHERS
WHO WERE NOT

Table N: Comparison the median of BSES at six weeks between the mothers who perceived insufficient milk (PIM) supply and the mothers who were not.

BSES	perceived insufficient milk (PIM)						Mann-Whitney	
	Yes (N=46)			No (N=37)			U test	
	Min- Max	Mean (SD)	Median (IQR)	Min- Max	Mean (SD)	Median (IQR)	Z value	p-value
At 6 weeks	30-69	59.59 (9.29)	61 (13.50)	20-66	51.17 (10.25)	53 (13.25)	3.92	<.001

APPENDIX O

PERMISSION TO USE INSTRUMENTS



บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล

๒๕/๒๕ ถ.พุทธมนทลสาย ๔ ศาลายา นครปฐม ๗๓๑๗๐

โทร. ๐-๒๕๔๑-๕๑๒๕ ต่อ ๑๐๙-๑๑๑ โทรสาร ๐-๒๕๔๑-๙๘๓๔

ที่ ศธ ๐๕๑๗.๐๒ / ๐๕๐๙๗

วันที่ ๑๗ พฤษภาคม ๒๕๕๘

เรื่อง อนุญาตให้ใช้เครื่องมือวิจัย

เรียน คณะบดีคณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล

อ้างถึงหนังสือที่ ศธ ๐๕๑๗.๐๕๙ (ปร.ด.) / ๑๙๑ ลงวันที่ ๙ เมษายน ๒๕๕๘

ตามหนังสือที่อ้างถึง หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาการพยาบาล คณะพยาบาลศาสตร์ แจ้งว่า
ผู้ขอใช้เครื่องมือวิจัย : นางปิยะภรณ์ ประสิทธิ์วัฒนเสรี นักศึกษาหลักสูตรปรัชญาดุษฎีบัณฑิต
 สาขาวิชาการพยาบาล (หลักสูตรนานาชาติ และหลักสูตรร่วมกับมหาวิทยาลัยในต่างประเทศ) โครงการร่วม
 ระหว่างคณะพยาบาลศาสตร์ และโรงเรียนพยาบาลรามาธิบดี คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี

งานวิจัยของผู้ขอใช้เครื่องมือ : “EFFECT OF BREASTFEEDING SKILL TRAINING AND
 SUPPORTIVE PROGRAM ON SIX MONTHS EXCLUSIVE BREASTFEEDING IN THE FIRST TIME
 MOTHERS” โดยมี ผศ.ดร.นิตยา ลินสุกใส เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์หลัก

เครื่องมือวิจัยที่ขอใช้: แบบสอบถามสมรรถนะแห่งตนในการให้นมบุตร (THE BREASTFEEDING
 SELF-EFFICACY SCALE: BSES-SF)

เครื่องมือวิจัยนี้พัฒนาโดย : นางสาวเบญจมาศ ทศนะสุภาพ ซึ่งเป็นส่วนหนึ่งของวิทยานิพนธ์ตาม
 หลักสูตรพยาบาลศาสตรมหาบัณฑิต สาขาวิชาการพยาบาลมารดาและทารกแรกเกิด คณะแพทยศาสตร์ โรงพยาบาล
 รามาธิบดี พ.ศ. ๒๕๔๙ เรื่อง “THE EFFECTS OF SYSTEMATIC INSTRUCTIONAL PROGRAM ON
 BREASTFEEDING SELF-EFFICACY, NIPPLE PAIN, NIPPLE SKIN CHANGES AND INCISION PAIN
 OF CESAREAN MOTHERS” ซึ่งมี ผศ.ดร.ศรีสมร ภูমনสกุล ทำหน้าที่อาจารย์ที่ปรึกษาวิทยานิพนธ์หลัก

บัณฑิตวิทยาลัย และโรงเรียนพยาบาลรามาธิบดี คณะแพทยศาสตร์โรงพยาบาลรามาธิบดีได้
 พิจารณาแล้วไม่ขัดข้องอนุญาตให้ นางปิยะภรณ์ ประสิทธิ์วัฒนเสรี ใช้เครื่องมือวิจัยดังกล่าวได้ เนื่องจากเป็น
 การศึกษาวิจัยทางด้านวิชาการ แต่ทั้งนี้ขอได้โปรดระบุให้ชัดเจน ด้วยว่าเครื่องมือวิจัยดังกล่าวมาจาก
 วิทยานิพนธ์ของนักศึกษาบัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล และมีอาจารย์ท่านใด ทำหน้าที่อาจารย์
 ที่ปรึกษาวิทยานิพนธ์หลัก และต้องปฏิบัติตามระเบียบของหลักสูตรพยาบาลศาสตรมหาบัณฑิต
 คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี ซึ่งกำหนดให้ผู้ขออนุญาตใช้เครื่องมือวิจัยต้องดำเนินการ

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ตามระเบียบการขอใช้เครื่องมือวิจัย (ตามแบบฟอร์มที่แนบมาพร้อมนี้) และต้องชำระค่าบริการ การขอใช้เครื่องมือ จำนวน ๒๐๐ บาท (สองร้อยบาทถ้วน) ต่อเครื่องมือวิจัย ๑ ฉบับ โดยโอนเงินเข้าบัญชีธนาคารไทยพาณิชย์ จำกัด (มหาชน) สาขารามาธิบดี ชื่อบัญชี “หลักสูตรการศึกษาพยาบาลปริญญาโทรามธิบดี” เลขที่บัญชี ๐๒๖-๔๓๕๑๘๓-๗ ประเภทออมทรัพย์ และแนบหลักฐานการโอนเงินมาพร้อมกับการกรอกแบบ บพร. ๑๕, บพร.๑๖ ส่งมาที่.....

หลักสูตรพยาบาลศาสตรมหาบัณฑิต โรงเรียนพยาบาลรามธิบดี(NS-)

คณะแพทยศาสตร์โรงพยาบาลรามธิบดี มหาวิทยาลัยมหิดล

๒๗๐ ถนนพระรามที่ ๖ เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

โทร. ๐-๒๔๔๑-๔๒๓๔ โทรสาร ๐-๒๔๔๑-๔๒๔๗

จึงเรียนมาเพื่อโปรดทราบ และดำเนินการต่อไปด้วย จักขอบพระคุณยิ่ง



(รองศาสตราจารย์ ดร. วรากรณ์ อัครปฐมวงศ์)

รองคณบดีฝ่ายวิชาการ

ปฏิบัติงานแทน คณบดีบัณฑิตวิทยาลัย

ที่ ศนท. ศว๒ / ๒๕๕๘



มูลนิธิศูนย์นมแม่แห่งประเทศไทย
๔๒๐/๘ อาคารสถาบันฯ ชั้น ๑๑
ถนนราชวิถี เขตราชเทวี
กรุงเทพมหานคร ๑๐๔๐๐

๑๗ สิงหาคม ๒๕๕๘

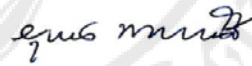
เรื่อง การใช้สื่อการเลี้ยงลูกด้วยนมแม่ของมูลนิธิศูนย์นมแม่แห่งประเทศไทย
เรียน นางปิยะภรณ์ ประสิทธิ์วัฒนเสรี

ตามที่ท่านแจ้งความประสงค์จะขออนุญาตใช้สื่อการเลี้ยงลูกด้วยนมแม่ของมูลนิธิศูนย์นมแม่แห่งประเทศไทยที่เผยแพร่บน web site ตามที่แจ้งมานั้น

ในการนี้ มูลนิธิศูนย์นมแม่แห่งประเทศไทย เห็นควรอนุญาตการใช้สื่อดังกล่าวของท่านประกอบการทำวิทยานิพนธ์

จึงเรียนมาเพื่อทราบ


ขอแสดงความนับถือ



(แพทย์หญิงยุพยง แห่งชวานิช)

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