ปัจจัยที่มีอิทธิพลต่อการเลี้ยงลูกด้วยนมแม่อย่างเดียวขณะจำหน่ายออกจากโรงพยาบาลในมารดาหลังผ่าตัดคลอดบุตรคนแรก

Factors Inuencing Exclusive Breastfeeding at Discharge Among First-Time Mothers Undergoing Cesarean Section

อริสรา	สวัสดิ์พาณิชย์*	Arissara	Sawatpanich*
สุสัณหา	ยิ้มแย้ม**	Susanha	Yimyam**
นงลักษณ์	เฉลิมสุข***	Nonglak	Chaloumsuk***

บทคัดย่อ

การเลี้ยงลูกด้วยนมแม่มีประโยชน์ต่อทั้งทารก มารดา และสังคม อย่างไรก็ตามมารดาที่ผ่าตัดคลอดบุตรเป็นกลุ่มเสี่ยงที่มีอัตราในการเลี้ยงลูกด้วยนมแม่อย่างเดียวต่ำและมีระยะเวลาในการเลี้ยงลูกด้วยนมแม่สั้น การวิจัยเชิงพรรณนาแบบหาความสัมพันธ์ครั้งนี้มีวัตถุประสงค์เพื่อศึกษาการเลี้ยงลูกด้วยนมแม่ในมารดาหลังผ่าตัดคลอดบุตรคนแรก และศึกษาความสัมพันธ์ระหว่างการเลี้ยงลูกด้วยนมแม่อย่างเดียวกับปัจจัยที่คัดสรรได้แก่ การรับรู้ประโยชน์เกี่ยวกับการเลี้ยงลูกด้วยนมแม่ การรับรู้อุปสรรคที่มีต่อการเลี้ยงลูกด้วยนมแม่ สมรรถนะแห่งตนในการเลี้ยงลูกด้วยนมแม่ และการปฏิบัติการพยาบาลมารดา-ทารก กลุ่มตัวอย่างเป็นมารดาที่ผ่าตัดคลอดบุตรคนแรกในโรงพยาบาลตติยภูมิสองแห่งในจังหวัดกรุงเทพมหานคร ประเทศไทย จำนวน 144 ราย โดยเลือกกลุ่มตัวอย่างแบบเฉพาะเจาะจงตามคุณสมบัติที่กำหนดไว้และเก็บรวบรวมข้อมูลระหว่างเดือนกรกฎาคม 2560 ถึงเดือนมกราคม 2561 เครื่องมือที่ใช้ในการรวบรวมข้อมูลประกอบด้วยแบบบันทึกข้อมูลข้อมูลส่วนบุคคล แบบสอบการรับรู้ประโยชน์เกี่ยวกับการเลี้ยงลูกด้วยนมแม่ แบบสอบถามการรับรู้อุปสรรคที่มีต่อการเลี้ยงลูกด้วยนมแม่ แบบสอบถามสมรรถนะแห่งตนในการเลี้ยงลูกด้วยนมแม่ แบบสอบถามปฏิบัติการดูแลมารดา-ทารก และแบบสอบถามการเลี้ยงลูกด้วยนมแม่ ความเชื่อมั่นของเครื่องมือเท่ากับ .87, .95, .93, .80 และ 1 ตามลำดับ วิเคราะห์ข้อมูลโดยใช้สถิติพรรณนาและการวิเคราะห์ความสัมพันธ์พอยท์-ไบซีเรียล

ผลการวิจัยพบว่า อัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียวของมารดาหลังผ่าตัดคลอดบุตรคนแรกเท่ากับร้อยละ 33.3 ขณะจำหน่ายออกจากโรงพยาบาล และร้อยละ 39.1 ที่หนึ่งเดือนแรกหลังคลอด โดยเหตุผลหลักในการให้นมผสมแก่ทารกคือ น้ำนมไม่เพียงพอ และการรับรู้ปฏิบัติการพยาบาลมารดา-ทารกมีความสัมพันธ์เชิงบวกกับการเลี้ยงลูกด้วยนมแม่อย่างเดียวขณะจำหน่ายออกจากโรงพยาบาลอย่างมีนัยสำคัญทางสถิติที่ระดับ .01 (r_{pb}=.359, p<.01) จากผลการวิจัยครั้งนี้มีข้อเสนอแนะว่าพยาบาลผดุงครรภ์และผู้ประกอบวิชาชีพด้านสุขภาพควรปกป้อง ส่งเสริม และสนับสนุนการเลี้ยงลูกด้วยนมแม่อย่างเดียว โดยเฉพาะในมารดาหลังผ่าตัดคลอดบุตรคนแรก นอกจากนี้กิจกรรมและกลยุทธ์ควรจัดขึ้นโดยมุ่งเน้นการปฏิบัติการพยาบาลมารดา-ทารกตามบันได 10 ขั้นสู่ความสำเร็จในการเลี้ยงลูกด้วยนมแม่ในโครงการโรงพยาบาลสายสัมพันธ์แม่-ลูก เพื่อ

* *พยาบาลวิชาชีพ โรงเรียนพยาบาลรามาธิบดี คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล*

* *Registered Nurse, Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University*

** *ผู้เขียน,ศาสตราจารย์ คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่*

** *Correspondent author, Professor, Faculty of Nursing, Chiang Mai University, Thailand, syimyam@gmail.com*

*** *อาจารย์ คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่*

*** *Instructor, Faculty of Nursing, Chiang Mai University*

กระตุ้นให้มารดาประสบความสำเร็จในการเลี้ยงลูกด้วยนมแม่อย่างเดียว

คำสำคัญ: การเลี้ยงลูกด้วยนมแม่อย่างเดียว การปฏิบัติการพยาบาลมารดา-ทารก มารดาที่ผ่าตัดคลอดบุตร

Abstract

Breastfeeding is considerably beneficial to infants, mothers, and society. Nevertheless, mothers who have undergone cesarean section are a risk group for lower rates of exclusive breastfeeding as well as shortened breastfeeding duration. The purpose of this descriptive correlational research was to describe breastfeeding among first-time mothers who have undergone cesarean section, and to examine the relationships between exclusive breastfeeding and selected factors including perceived benefits of breastfeeding, perceived barriers to breastfeeding, breastfeeding self-efficacy, and maternity care practices. The participants were 144 first-time mothers who underwent cesarean section at two tertiary hospitals in Bangkok, Thailand. Purposive sampling was used to recruit the participants on the basis of inclusion criteria. Data were collected from July 2017 to January 2018 by using questionnaires consisting of the Demographic Data Recording Form; the Perceived Breastfeeding Benefits Questionnaire; the Perceived Breastfeeding Barriers Questionnaire; Dennis's Breastfeeding Self-Efficacy Short-Form Scale (BSES-SF); the Questionnaire of Maternity Care Practice, and the Breastfeeding Practices Questionnaire. The measures of reliability among the instruments were .87, .95, .93, .80 and 1, respectively. Data were collected by the researcher and analyzed using descriptive statistics and Point-Biserial correlation.

Results of the study revealed that exclusive breastfeeding rates were 33.3% at hospital discharge and 39.1% at the first month postpartum among first-time mothers who had undergone cesarean section. The primary reason for feeding formula to the infants was insufficient milk supply. Furthermore, there was a significantly positive relationship between maternity care practices and exclusive breastfeeding at hospital discharge (r_{pb}=.359, p<.01). The findings suggest that nurse-midwives and other health care professionals should protect, promote, and support exclusive breastfeeding, especially among new mothers who undergo cesarean sections. Intervention and strategies should be implemented focusing on maternity care practices aligned with the Ten Steps to Successful Breastfeeding of the BFHI and on the basis of the health care sphere across the perinatal continuum in order to encourage those mothers to successfully exclusive breastfeed.

Key words: exclusive breastfeeding, perceived benefits of breastfeeding, perceived barriers to breastfeeding, breastfeeding self-efficacy, maternity care practices, mothers undergoing cesarean section

Background and Significance

It has been universally accepted that breast milk is the best nourishing food for infants because it confers immunological benefits against illnesses and provides nutritional adequacy to promote health and well-being (American Academy of Pediatrics [AAP], 2012; Horta & Victora, 2013a; 2013b; Kramer & Kakuma, 2012; Yimyam, 2013). It is also considerably beneficial to mothers (AAP, 2012; Yimyam, 2013) and society (AAP, 2012; Bartick & Reinhold, 2010; Ma et al., 2013; Linnecar, Gupta, Dadhich, & Bidla, 2014; Walters et al., 2016; Yimyam, 2013). Exclusive breastfeeding, thus, is recommended for the first six months of an infants' age (WHO, 2009b). Nevertheless, the exclusive breastfeeding rate of Thai infants aged six months remained markedly low at 23.1% (National Statistical Office [NSO], & United Nations Children's Fund [UNICEF], 2016), reflecting that there are some influences that lead to failure in exclusive breastfeeding. Exclusive breastfeeding in the early postpartum period is crucial for increased and extended breastfeeding success. Previous studies showed that exclusive breastfeeding during the first few days after birth was positively associated with the continuation of exclusive breastfeeding up to six months postpartum (Henshaw, Fried, Siskind, Newhouse, & Cooper, 2015; Ip, Gao, Choi, Chau, & Xiao, 2016). However, cesarean delivery was found to be negatively associated with early breastfeeding by a recent systematic review and meta-analysis (Prior et al., 2012).

Cesarean section is a mode of delivery done by surgical procedure, which has increased in recent years. The proportion of births by cesarean section in Thailand drastically increased from 17.4% during 2000-2008 (WHO, 2009a) to 32.0% during 2007-2014 (WHO, 2015). These tremendously rising trends of cesarean birth are detrimental to exclusive breastfeeding. The adverse effects of cesarean delivery on early breastfeeding are mediated by postoperative effects, including the need for prolonged recovery period, pain, fatigue, and limited mobilization to carry out activities because of catheterization and intravenous lines (Childbirth Connection, 2012; Qiu, Zhao, Binns, Lee, & Xie, 2010). These problems lead to delayed breastfeeding initiation (Pérez-Ríos, Ramos-Valencia, & Ortiz, 2008; Prior et al., 2012), and with difficulties in breastfeeding (Hobbs, Mannion, McDonald, Brockway, & Tough, 2016). Consequently, these mothers start formula supplementation in response to these effects (Tully & Ball, 2014). In other words, most of the mothers did not breastfeed their infants exclusively during the early postpartum period, which may have resulted in a shortened duration of breastfeeding.

Successful breastfeeding exclusivity is influenced by an array of factors related to the mother-infant dyad, sociocultural influences, and supportive environment (Jager, Skouteris, Broadbent, Amir, & Mellor, 2013; Vieira et al., 2010; Uchendu et al., 2009). In a review of literature, guided by Health Promotion Model, factors including perceived benefits of breastfeeding, perceived barriers to breastfeeding, breastfeeding self-efficacy, and maternity care practices have been found to be associated with breastfeeding. Nonetheless, limited numbers of studies have investigated the influence of those factors on exclusive breastfeeding during the postpartum period and were specifically targeted to the first-time mothers who gave birth by cesarean section. Moreover, a majority of the

studies were conducted in Western countries and the findings may not be applicable to Asian countries, including Thailand.

Research Objectives

This study aimed to describe exclusive breastfeeding at discharge and the first month postpartum, and to examine the relationships between exclusive breastfeeding and four selected factors including perceived benefits of breastfeeding, perceived barriers to breastfeeding, breastfeeding self-efficacy, and maternity care practice among first-time mothers who had undergone cesarean section

Conceptual framework

The conceptual framework used in this study was based on literature review, guided by the Health Promotion Model. The four factors in this study included perceived benefits of breastfeeding; perceived barriers to breastfeeding; breastfeeding self-efficacy; and maternity care practices. These were examined for their correlation with breastfeeding among the first-time mothers who had undergone cesarean section. These four factors were expected to explain that breastfeeding that mothers who perceived that breastfeeding was beneficial perceived less/no barrier to breastfeeding, believed in her ability to successfully breastfeed (high self-efficacy), and experienced more positive maternity care practices would decide to breastfeed exclusively. Similarly, it was expected that counterparts who perceived breastfeeding as less beneficial perceived more barriers to breastfeeding, believed less in her ability to successfully breastfeed (low self-efficacy), and experienced fewer positive maternity care practices would decide not to breastfeed exclusively.

Methodology

This study was a descriptive correlational research design.

Population and Sample

The target population of this study were the first-time mothers who underwent cesarean section. The samples of the study were the first-time mothers who underwent cesarean section at tertiary hospitals in Bangkok, Thailand, and met the following inclusion criteria: 1) Healthy mothers-infant dyads with no severe complications (such as hypertension and severe heart disease) that affect breastfeeding, 2) Mothers and infants with no contradiction to breastfeed or breastfeeding problems (such as abnormal nipple, cleft clip, and/or cleft palate), 3) Mothers aged 20 years old and above, 4) Mothers with ability to read, understand and communicate effectively in Thai language, 5) Mothers with willingness to participate in the study.

The sample size of the study was determined using sample size estimation as a recommendation of 30 participants for each study variable measured, plus 20% of the sample size as considering the likelihood of drop-out (Grove, Burns, & Gray, 2013). The sample size in total was 144 participants. Proportional stratified random sampling method was used to select the sample from each hospital 48 and 96 participants were recruited from Ramathibodi Hospital and Police General Hospital, respectively. Then, the researcher followed-up with participant breastfeeding at one month postpartum via telephone calls. There were 128 participants in the first month

postpartum in the study. 16 mothers were inaccessible, as they might have changed their phone numbers (11.1% of drop-out rate).

Research Instrument

The research instrument consisted of a set of questionnaires composed of six main parts as follows:

1. Demographic Data Recording Form was developed by the researcher. It included maternal age, marital status, educational level, estimated monthly family income, date and time of delivery, gestational age at delivery, type of cesarean delivery, indication for cesarean delivery, type of anesthesia, infant's birth weight, Apgar scores, time of first breastfeeding, plan of breastfeeding duration, and contact number.

2. The Perceived Breastfeeding Benefits Questionnaire was developed by Yimyam (personal communication, April 28, 2017) based on literature review and health belief model. The questionnaire consists of 16 items which cover the benefits of breastfeeding for both infants and mothers. The responses to the questions are categorized as agreement or disagreement. Higher scores indicate a higher perception of breastfeeding benefits.

3. The Perceived Breastfeeding Barriers Questionnaire was developed by Yimyam (personal communication, April 28, 2017) based on literature review and health belief model. The questionnaire consists of 19 items which cover breastfeeding barriers including maternal, infant, and sociocultural barriers. The responses are categorized as agreement or disagreement. Higher scores indicate a higher perception of barriers to breastfeeding.

4. Dennis's Breastfeeding Self-Efficacy Short-Form Scale (BSES-SF) was developed in English by Dennis (Dennis, 2003), which was translated to Thai by Jintrawet (personal communication, March 3, 2017). The BSES-SF with 14 items is a self-report instrument to measure a mother's confidence in her ability to breastfeed her baby. All items of BSES-SF are anchored with a 5-point Likert-type scale, where 1 indicates "not at all confident" and 5 indicates "always confident". The higher scores indicate higher levels of breastfeeding self-efficacy.

5. The Questionnaire of Maternity Care Practice is originally in English and is an indicator from the Pregnancy Risk Assessment Monitoring System (PRAMS) maternity practices module. The questionnaire was translated to the Thai language by Yimyam, Khonsung, and Sawatpanich. This questionnaire consisted of 9 questions and assessed breastfeeding supportive (BFHI-aligned) maternity care practices corresponding to the Ten Steps to Successful Breastfeeding. The other assessed distribution of hospital gift packs with formula. The responses are categorized as "yes" or "no". A score of 1 point is given for positive maternity care practices. The higher scores indicate more experience of maternity care practice.

6. The Breastfeeding Practices Questionnaire was developed by Yimyam (2013). It was used to indicate the types of feeding within 24 hours prior to data collection. The questionnaire includes two main questions. The first question is a check-list asking breastfeeding practices (exclusive breastfeeding, formula feeding only, or breastfeeding combined formula milk). Then, the second question is open-end questions asking the types of other foods, liquids or supplements; duration they were given; and the reason.

Quality of Research Instrument

Content validity

All above instruments had already been tested for validity at a satisfactory result by the developers. These instruments were used in this study after obtaining permission without any modification, the validity was not retested. In addition, the Questionnaire of Maternity Care Practice was translated into Thai by using the steps of translation process. After obtaining the agreement regarding meaning, Thai culture appropriateness, and wording in daily life; this instrument was used in this study.

Reliability

The reliability of each instrument was tested by conducting a pilot study among 10 first-time mothers with cesarean delivery who had characteristics similar to the study sample, and these mothers were not included for data analysis in the study. The reliability of the Perceived Breastfeeding Benefits Questionnaire, the Perceived Breastfeeding Barriers Questionnaire, and the Questionnaire of Maternity Care Practice Corresponding Indicator from PRAMS were evaluated by Kuder–Richardson Formula 20 (KR-20), and the results showed .87, .95, and .80 respectively. The Cronbach's alpha coefficient of Dennis's Breastfeeding Self-Efficacy Short-Form Scale (BSES-SF) was reported as .93. The reliability of Breastfeeding Practices Questionnaire was used test-retest method and the value equaled to 1.0.

Human Right Protection

The study was approved by the Research Ethics Review Committee of Faculty of Nursing, Chiang Mai University, Faculty of Medicine Ramathibodi Hospital, Mahidol University, and Police General Hospital. Permissions for data collection were obtained from the directors of nursing department in each hospital. Before collecting data, all participants were informed about the purpose and procedures of the study, and consent forms were signed by those participants who were willing to participate in this study. This study was conducted on a voluntary basis and with strict confidentiality. The participants were given the option to withdraw at any time. Their refusal to participate did not affect their right to health care services in the future.

Data Collection Procedure

After receiving ethical approval and permission, the researcher selected the eligible samples who met the inclusion criteria from the medical records at postpartum, and then approached them on the second day postpartum; to explain the objectives, the method of data collection, confidentiality, anonymity preservation,and other information about the study; and gave them at least 24-hour duration to make a decision on participation. On the third day postpartum of hospital discharge, the first-time mothers who had undergone cesarean section and agreed to participate in the study were requested to sign the written informed consent. Then, the researcher administered the self-reported questionnaires to the participants. After all the participants completed the questionnaires, the researcher reviewed and checked for completion and clarity of each question for data analysis. At the first month postpartum, data on their breastfeeding were collected by telephone follow-up according to the available time of participants.

Data Analysis

The researcher analyzed the data by computer using Statistical Package for Social

Science (SPSS) version 13 software for Windows. The significant level alpha was set at 0.05. Data of maternal demographic characteristics, breastfeeding, and scores of study variables were analyzed by descriptive statistical analysis with frequency, percentage, mean, rank and standard deviation. Point Biserial Correlation was used to examine the relationships between breastfeeding and each independent variable.

Results

1. Demographic findings

One hundred and forty-four first-time mothers who underwent cesarean section participated in this study. Their age ranged between 20-42 years old, with an average of 29 years old. About 92% of them were married, 60% hold bachelor's or higher degree, and 80% were employed with private employment as the most frequent (43.05%) among occupations. The greatest numbers of them earned during 20,001–50,000 Baht per month and 73% had maternity leave, of which 92% of had maternity leave for three months. The majority of them had emergency cesarean section (75.7%), with 84% of them receiving epidural/spinal anesthesia. The common indication for Cesarean Section in this population was Cephalo-pelvic disproportion (CPD) with 44.4 percent.

2. Breastfeeding findings

The prevalence of exclusive breastfeeding in the first-time mothers who underwent cesarean section was slightly increased from 33.3% at hospital discharge to 39.1% at one month postpartum (Table 1).

Table 1 Frequency and percentage of samples regarding breastfeeding at hospital discharge (N=144) and one month postpartum (N=128)

Infant Feeding Methods	AtHospitalDischarge (n=144)		AtOneMonthPostpartum (128)	
	Frequency	Percentage	Frequency	Percentage
Exclusive breastfeeding	48	33.3	50	39.1
Non-exclusive breastfeeding	96	66.7	78	60.9
Partial breastfeeding	90	62.5	74	57.8
Breastfeeding and water	1	1.1	24	32.4
Breastfeeding and formula	85	94.5	32	43.3
Breastfeeding, formula, and water	4	4.4	18	24.3
Formula feeding	6	4.17	4	3.1
Formula only	6	100.0	3	75.0
Formula and water	0	0.0	1	25.0

Additional findings regarding breastfeeding included the reasons for non-exclusive breastfeeding, which were divided into two parts:reasons for feeding formula milk and reasons for giving water to infants. The primary cited reason for feeding formula was concern

about breast milk supply, while the main cited reason for giving water was to rinse infants' mouth at both the time of hospital discharge and one month postpartum.

3. The Relationship between Influencing Factors and Breastfeeding at Hospital Discharge among the First-Time Mothers Undergoing Cesarean Section

The overall average score for perceived benefits of breastfeeding was 14.06 (SD=1.52) and ranged from 10 to 16. A mean of perceived barriers to breastfeeding was 7.26 (SD=4.34), with a width range of 0 to 19. For the breastfeeding self-efficacy, the overall average score was 49.38 (SD=9.09), the minimum to maximum scores were 21-70. Finally, maternity care practices had an average score of 6.26 (SD=1.04) and ranged from 3 to 8. As Table 2, shows, only maternity care practices were positively correlated to exclusive breastfeeding at discharge from hospital with statistical significance at hospital discharge (r_{pb}=.359, p<.01).

Table 2 Correlations between influencing factors and exclusive breastfeeding at one month postpartum (N=144)

Factors	1	2	3	4	5
1 Exclusive breastfeeding	1				
2 Perceived benefits of breastfeeding	.023	1			
3 Perceived barriers to breastfeeding	.042	-.254**	1		
4 Breastfeeding self-efficacy	.135	.170*	-.231**	1	
5 Maternity care practices	.359**	.026	-.201*	.249**	1

** Correlation is significant at the .01 level.

* Correlation is significant at the .05 level.

Discussion

The discussion includes two sections in accordance with the objectives of the study.

1. Breastfeeding the First-Time among Mothers Undergoing Cesarean Section

The study findings revealed that two-thirds of first-time mothers who underwent cesarean section exclusively breastfed their infants (Table 1), indicating a relatively low rate. It could be explained, at least in part, by the characteristics of samples in this study that were the first-time mothers. They possibly lacked skills in breastfeeding during the immediate postpartum period. Moreover, first-time mothers that have no experience with breastfeeding are less likely to exclusively breastfeed at hospital discharge (Cordero et al., 2016; Nuampa, Sinsuksai, Phahuwatanakorn, & Chanprapaph, 2013). Furthermore, the deleterious effects of cesarean delivery on low rates of exclusive breastfeeding might be mediated through physical suffering (Childbirth Connection, 2012; Qiu et al., 2009). As such, it is difficult for those mothers to establish breastfeeding timely (Albokhary & James, 2014; Chalmers et al., 2010; Childbirth Connection, 2012) and it contributes to

lactogenesis problems (Sakha; Behbahan, 2005; Scott et al., 2007). In lights of these, many mothers in this study cited breast milk inadequacy (perhaps this showed the maternal perception of insufficient breast milk) as the leading reason for feeding formula milk to their infants. The finding suggests that additional assistance, guidance, and support in developing skills and technique are required in order to prevent or manage common breastfeeding problems in breastfeeding exclusivity.

Interestingly, the rate of exclusive breastfeeding slightly increased from 33.3% at hospital discharge to 39.1% at one month postpartum. This improved rate might be partly explained in several ways. Firstly, it seemed that postoperative effects experienced after cesarean delivery, which hindered breastfeeding exclusivity at hospital discharge, including pain from surgical wounds and latching difficulty, disappeared. During the first month postpartum after discharge, mothers also tended to gain greater breastfeeding skills and techniques, as it could be seen that latching difficulty was not cited as an issue at this particular time. As other studies suggest, after discharge, the mothers are more likely to spend most of time with their infants along with receiving more support from family in a familiar environment, which enables mothers and their infants to learn and acquire better breastfeeding skills (Yimyam 2013). However, the rate of exclusive breastfeeding remained low possibly because a majority of mothers still encountered unexpected breastfeeding obstacles. Breast milk insufficiency was cited as the principle reason that those mothers fed formula milk to their infants. This issue was consistent with the evidence finding that inadequate breast milk was the most common reason for formula supplementation (Battersby, 2016; Gatti, 2008; Sinsuksai, Nuampa, & Chanprapaph, 2017). The rate at one month postpartum, which was found in this study, was consistent with prior research (Sinsuksai et al., 2017) that revealed a rate of 37.3% of exclusive breastfeeding among Thai mothers after cesarean delivery. These reflect significant findings in which targeting Thai mothers who have undergone cesarean section are at a greater risk of low exclusive breastfeeding rates in early the postpartum period and possibly for a longer duration.

2. The Relationships between exclusive breastfeeding and influencing factors among the first-time mothers undergoing cesarean section

The findings of this study showed that there was a moderately positive relationship between maternity care practices and exclusive breastfeeding at hospital discharge (r_{pb}=.359, $p<0.01$). It indicates that a higher number of positive maternity care practices experienced by mothers was significantly correlated with exclusive breastfeeding at discharge from hospital among mothers who underwent cesarean section. It can be explained that these practices are a multifaceted approach to promote, protect, and support breastfeeding focusing on establishing an institutional environment for facilitating mother-baby interaction, together with effective breastfeeding practices, and eventually exclusive breastfeeding in clinical facilities. Hence, maternity care practices adherent to the BFHI Ten Steps, which is an influential contributing factor for exclusive

breastfeeding success, are needed in maternity and newborn services. This finding was fairly congruent with extensive previous evidence that showed the greater exposure to implementation of the Baby-Friendly maternity care practices and the likelihood of improved exclusive breastfeeding at hospital discharge and beyond (Asole, Spinelli, Antinucci, & Di Lallo, 2009; Pérez Escamilla, Martinez, & Segura Pérez, 2016; Tarrant et al., 2011). Therefore, this is a clinically important finding that implementation of those practices is beneficial to all groups of mothers, especially in high-risk groups of suboptimal breastfeeding, such as new mothers following cesarean delivery.

However, it was not surprising that breastfeeding self-efficacy, perception of breastfeeding benefits and perception of breastfeeding barriers did not have an effect on exclusive breastfeeding in this study. The possible explanation was that first-time mothers lacked experience and skills, so they struggled with breastfeeding difficulties, discomfort, and inconvenience in the early postpartum period (Leeming et al, 2015). It is possible that mothers viewed postoperative effects as indicators of inabilities to breastfeed. Good maternity care practices from health personnel are the most necessary during the early postpartum period. This is in support of the study conducted by Kingston, Dennis and Sword (2007) which found that physical state, especially pain during the immediate postpartum period played a negatively significant role in maternal perception ability to breastfeed. Therefore, there was no association between perceived self-efficacy in breastfeeding and exclusive breastfeeding at hospital discharge in this study. This finding was confirmed by another study (Nuampa, 2013). Furthermore, it is noted that only perception of breastfeeding benefits and perception of breastfeeding barriers may not contribute the acquisition of skills needed to succeed in exclusive breastfeeding, particularly for new mothers.

Conclusion

Exclusive Breastfeeding rates at both hospital and one month postpartum were disappointingly low. Protection, promotion, and support are necessary for mothers who undergo cesarean section. Addressing the key finding of maternity care practices aligned with Ten Steps to Successful Breastfeeding of the BFHI, it is essential that those practices should be implemented in order to increase exclusive breastfeeding.

Implications

The implication of this study to nursing practice shows that nurses should increase their efforts to encourage the mothers to breastfeed exclusively by essentially implementing maternity care practices on the basis of health care spheres across the perinatal continuum to new mothers. Furthermore, nurse-midwives and educators in nursing and midwifery should emphasize the importance of exclusive breastfeeding and address certain maternity care practices as the best practice in the health care system to future nurses for strengthening maternity care practices, increasing breastfeeding knowledge and skills about breast milk assessment, recognizing infant cues and

maternal beliefs about breastfeeding insufficiency, and adding water during early postpartum. Moreover, they should increase their awareness and effort in the promotion, protection, and support of breastfeeding.

Recommendation for future research

Further studies need to explore breastfeeding and the influencing factors in various groups of mothers, over a longer postpartum period, and in other settings or areas in Thailand. In addition, nursing intervention programs focusing on promoting exclusive breastfeeding duration in first-time mothers who have undergone cesarean section should be developed and implemented to improve maternity care practices, and then examine the effectiveness of the intervention program.

Reference

Albokhary, A. A., & James, J. P. (2014). Does cesarean section have an impact on the successful initiation of breastfeeding in Saudi Arabia?. *Saudi Medical Journal, 35*(11), 1400-1403.

Asole, S., Spinelli, A., Antinucci, L. E., & Di Lallo, D. (2009). Effect of hospital practices on breastfeeding: a survey in the Italian Region of Lazio. *Journal of Human Lactation, 25*(3), 333-340.

Bai, Y, Middlestadt, S. E., Peng, C.-Y. P., & Fly, A. D. (2010). Predictors of continuation of exclusive breastfeeding for the first six months of life. Journal of Human Lactation, 26(1), 26-34.

Bartick, M., & Reinhold, A. (2010). The burden of suboptimal breastfeeding in the United States: A pediatric cost analysis. *Pediatrics,* e1048-e1056.

Battersby, S. (2016). Supporting mothers to sustain breastfeeding. *British Journal of Midwifery, 24*(Sup1), 1-7.

Chalmers, B., Kaczorowski, J., Darling, E., Heaman, M., Fell, D. B., O'Brien, B., & Lee, L. (2010). Cesarean and vaginal birth in Canadian women: A comparison of experiences. *Birth, 37*(1), 44-49.

Childbirth Connection (2012). *Vaginal or cesarean birth: What is at stake for women and babies? New York: Childbirth Connection.* Retrieved from http://transform.childbirthconnection.org/reports/ cesarean/.

Cordero, L., Bajwa, A., Prasad, M., Oza-Frank, R., Landon, M., & Nankervis, C. (2016). Breastfeeding at hospital discharge among high risk obstetrical patients. *International Journal of Women'S Health and Wellness, 2*(4), 2-6.

Dennis, C. L. (2003). The breastfeeding self-efficacy scale: Psychometric assessment of the short form. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 32*(6), 734-744.

American Academy of Pediatrics. (2012). Breastfeeding and the use of human milk. *Pediatrics, 129*(3), e827-e841.

Gatti, L. (2008). Maternal perceptions of insufficient milk supply in breastfeeding. Journal of Nursing Scholarship, 40(4): 355–363.

Grove, S. K., Burns, N., & Gray, J. R. (2013). The practice of nursing research: Appraisal, synthesis, and generation of evidence (7th ed.). St. Louise, MO: Saunders Elsevier.

Hobbs, A. J., Mannion, C. A., McDonald, S. W., Brockway, M., & Tough, S. C. (2016). The impact of caesarean section on breastfeeding initiation, duration and difficulties in the first four months postpartum. *BMC Pregnancy and Childbirth, 16*, 90.

Horta, B. L., & Victora, C. G. (2013a). *Long-term effects of breastfeeding: a systematic review.* Retrieved from World Health Organization: http://apps.who.int/iris/bitstream/10665/79198/1/9789241505307_eng.pdf.

Horta, B. L., & Victora, C. G. (2013b). *Short-term effects of breastfeeding: a systematic review on the benefits of breastfeeding on diarrhoea and pneumonia mortality.* Retrieved from World Health Organization: http://apps.who.int/iris/bitstream/10665/95585/1/9789241506120_eng.pdf

Ip, W. Y., Gao, L. L., Choi, K. C., Chau, J. P. C., & Xiao, Y. (2016). The Short Form of the Breastfeeding Self-Efficacy Scale as a prognostic factor of exclusive breastfeeding among Mandarin-Speaking Chinese mothers. *Journal of Human Lactation, 32*(4), 711-720.

Jager, E., Skouteris, H., Broadbent, J., Amir, L., & Mellor, K. (2013). Psychosocial correlates of exclusive breastfeeding: A systematic review. *Midwifery, 29*, 506–518.

Kramer, M. S., & Kakuma, R. (2012). *Optimal duration of exclusive breastfeeding.* The Cochrane Database of Systematic Reviews, 8(Art. No. CD003517).

Linnecar, A., Gupta, A., Dadhich, J., & Bidla, N. (2014). *Formula for disaster: weighing the impact of formula feeding vs. breastfeeding on environment.* Retrieved from http://ibfan.org/docs/Formula ForDisaster.pdf.

Ma, P., Brewer-Asling, M., & Magnus, J. H. (2013). A case study on the economic impact of optimal breastfeeding. *Maternal and Child Health Journal, 17*(1), 9-13.

National Statistical Office, & United Nations Children's Fund. (2016). Thailand Multiple Indicator Cluster Survey 2015-2016. Retrieved from https://www.unicef.org/thailand/Thailand_MICS_Full_Report_EN.pdf.

Nuampa, S., Sinsuksai, N., Phahuwatanakorn, W., & Chanprapaph, P. (2013). Personal Factors, First Feeding Time and Nurse Support in Predicting Successful Exclusive Breastfeeding at Discharge in Mothers with Cesarean Section. *Journal of Nursing Science, 31*(2):49-59.

Pérez-Escamilla, R., Martinez, J. L., & Segura-Pérez, S. (2016). Impact of the Baby-Friendly Hospital Initiative on breastfeeding and child health outcomes: A systematic review. *Maternal & Child Nutrition, 12*, 402–417.

Pérez-Ríos, N., Ramos-Valencia, G., & Ortiz, A. P. (2008). Cesarean delivery as a barrier for breastfeeding initiation: The Puerto Rican experience. *Journal of Human Lactation, 24*(3), 293-302.

Prior, E., Santhakumaran, S., Gale, C., Philipps, L. H., Modi, N., & Hyde, M. J. (2012). Breastfeeding after cesarean delivery: a systematic review and meta-analysis of world literature. *The American journal of Clinical Nutrition, 95,* 1113–1135.

Qiu, L., Zhao, Y., Binns, C. W., Lee, A. H., & Xie, X. (2009). Initiation of breastfeeding and prevalence of exclusive breastfeeding at hospital discharge in urban, suburban and rural areas of Zhejiang China. *International Breastfeeding Journal, 4*(1), 1-7. DOI:10.1186/1746-4358-4-1

Sakha, K., & Behbahan, A. G. G. (2005). The onset time of lactation after delivery. *Medical Journal of the Islamic Republic of Iran, 19*(2), 135-139.

Scott, J. A., Binns, C. W., & Oddy, W. H. (2007). Predictors of delayed onset of lactation. *Maternal & Child Nutrition, 3*(3), 186-193.

Sinsuksai, N., Nuampa, S., & Chanprapaph, P. (2017). Factors predicting 6-month-exclusive breastfeeding in mothers with cesarean section. *Journal of Nursing science, 35*(1), 14-22.

Tarrant, M., Wu, K. M., Fong, D. Y., Lee, I. L., Wong, E. M., Sham, A., . . . & Dodgson, J. E. (2011). Impact of Baby-Friendly hospital practices on breastfeeding in Hong Kong. *Birth, 38*(3), 238-245.

Tully, K. P., & Ball, H. L. (2014). Maternal accounts of their breast-feeding intent and early challenges after caesarean childbirth. *Midwifery, 30*(6), 712-719.

Uchendu, U. O., Ikefuna, A. N., & Emodi, I. J. (2009). Exclusive breastfeeding-the relationship between maternal perception and practice. *Nigerian Journal of Clinical Practice, 12*(4).

Vieira, G. O., Martins, C. C., Vieira, T. O., Oliveira, N. F., & Silva, L. R. (2010). Factors predicting early discontinuation of exclusive breastfeeding in the first month of life. *Jornal De Pediatria, 86*(5), 441-444.

Walker, M. (2007). Breast-feeding: Good start, good outcomes. *Journal of perinatal & neonatal nursing, 21*(3), 191-197.

World Health Organization. (2009b). *Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals.* Retrieved from http://apps.who.int/iris/bitstream/ 10665/44117/1/9789241597494_eng.pdf?ua=1.

Yimyam, S. (2013). Breastfeeding experiences among employed mothers. In Tanya M. Cassidy (Editor). Breastfeeding: Global Practices, Challenges, Maternal and Infant Health Outcomes (pp. 181-200). New York: Nova Science.