

## Reasons for non-exclusive breastfeeding during the first six months: a five-year study of exclusive breastfeeding promotion in a tertiary care center in Thailand

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### Abstract

**Objective:** To identify the rate of exclusivebreastfeeding in the Srinagarind Hospital during the five years from 2011-2015and detail the reasons for non-exclusive breastfeeding during the first six months after birth.

**Methodology:** A retrospective descriptive study involving 9165 mother-infant pairs attending a breastfeeding clinic between January 1, 2011 and December 31, 2015. The relevant data were collected from the breastfeeding records including the main reasons for non-exclusive breastfeeding, types of feeding after discontinuation of breastfeeding, and feeding status at the first two weeks, two, four and six months postpartum.

**Results:** The rates of exclusive breastfeeding at the six months were 44.89%, 47.55%, 51.34%, 45.34% and 52.49% from 2011-2015, respectively. The three most common reasons in the first two-week period were low milk quantity (55.67%), tried for breastfeeding (26.57%), and alternate methods of feeding (milk or water; 15.91%). At two months. Infant feeding difficulty and mother-infant separation were the two most common reasons at two months (37.96% and 36.67%, retrospectively). At six months, mother-infant separation was the most common reason (36.98%) and alternate feeding methods was the second most common reason 30%. Breastfeeding with infant formula was the most common type of non-exclusive breastfeeding at two weeks, two months, and four months (80%, 70%, and 39.9%, respectively).

**Conclusion:** During the first twomonths postpartum, attention should be focused on infant feeding and mother-infant separation. From twoto six months postpartum, we should focus on low milk quantity, mother-infant separation, and alternate feeding methods.

**Keywords:** exclusive breastfeeding, breastfeeding promotion, pregnancy, breastfeeding.

### 1. Introduction

Breastfeeding is a valuable keystone for promoting children's health, as it provides essential, irreplaceable nutrition, which aids in a child's growth and development during the first two to three years of life. It also serves as the child's first immunization - providing protection from common diseases such as diarrhea, respiratory infection, and allergies. In addition, breastfeeding minimizes the chances of obesity, which affects long-term health as it can lead to chronic diseases in adulthood, diabetes, and arteriosclerotic diseases [1-3]. Exclusive breastfeeding is defined as giving an infant breast milk within the first hour after birth for the first six months of life without other foods or water. At present, the World Health Organization and UNICEF have set the target exclusive breastfeeding rate to be at least 50% by 2025.[4]

In Thailand, the national breastfeeding project under the Ministry of Health has been working to support breastfeeding mothers since 1989. According to data collected in 2005, the rate of exclusive breastfeeding was only 20.7% at four months and 14.5 % at six months. Likewise, a statistical survey conducted by the World Health Organization in 2015 showed that the rate of exclusive breastfeeding at six months was only 12 % during the period from 2007 to 2014,[5] which is considered very low.

The Breastfeeding Clinic in Khon Kaen University's Srinagarind Hospital currently promotes exclusive breastfeeding through projects such as antenatal breastfeeding education, initiation of breastfeeding within first

hour after birth, early rooming-in (mother and infant being together all the time), skin-to-skin contact, encouragement by specialized nurses in the postpartum ward, and close follow-up either by phone or through home visits.

Although these kinds of promotions have been implemented over a long period of time, their affectivity has not been evaluated, nor have data been collected in a systematic way. The objective of this research is to identify the rate of exclusive breastfeeding in the Srinagarind Hospital during the five years from 2011-2015 and the detail the reasons for non-exclusive breastfeeding during the first six months after birth.

## 2. Materials and Methods

This was a retrospective descriptive study involving 9165 mother-infant pairs attending a breastfeeding clinic at Srinagarind Hospital in Khon Kaen University's Faculty of Medicine (Thailand). Data were collected from the breastfeeding records of postpartum women who gave birth between January 1, 2011 and December 31, 2015 and who had registered at the breastfeeding clinic in order to evaluate and support their breastfeeding practices. We excluded pregnant women with HIV infection, fetal anomalies, and any conditions that would preclude breastfeeding in the first three days after birth, as well as any case in which the newborn was transferred to the NICU. The relevant data were collected from the breastfeeding records including the main reasons for non-exclusive breastfeeding, types of feeding after discontinuation of breastfeeding, and feeding status at the first two weeks, as well as two, four and six months after birth. All postpartum women were evaluated and data were collected at every visit by a specialized nurse at the breastfeeding clinic or by phone if the patient had not visited within one week after their appointment.

The main reasons found for non-exclusive breast feeding and their definitions are as follows: (1) *infant feeding difficulty* is defined as problems with latch, infant drowsiness, or going too long between breastfeeds: the infant refusing to breastfeed/nipple confusion; the infant being fussy or frustrated at the frequency or length of breastfeeding; the infant not feeding well; and other difficulties feeding at the breast; (2) *low milk quantity* is defined as inadequate maternal production or milk supply, the infant not getting enough milk or unsure if it is getting enough milk, and the infant showing signs of hunger; (3) *nipple problems and pain* is defined as painful nipples; general or unspecified breastfeeding pain; sore breasts: engorgement: breast pain, mastitis or other breast infection; and biting; (4) *tired for breastfeeding* is defined as the breastfeeding technique, positioning, or adjusting to breastfeeding being too difficult or time-consuming; wanting someone else to feed the infant; being tired or exhausted; being uncomfortable with the act or connotations of breastfeeding; and other uncertainty regarding breastfeeding ability.

The protocol of this study has been reviewed and approved by the Ethics Committee of Khon Kaen University, based on the Declaration of Helsinki and written informed consent was obtained for each patient.

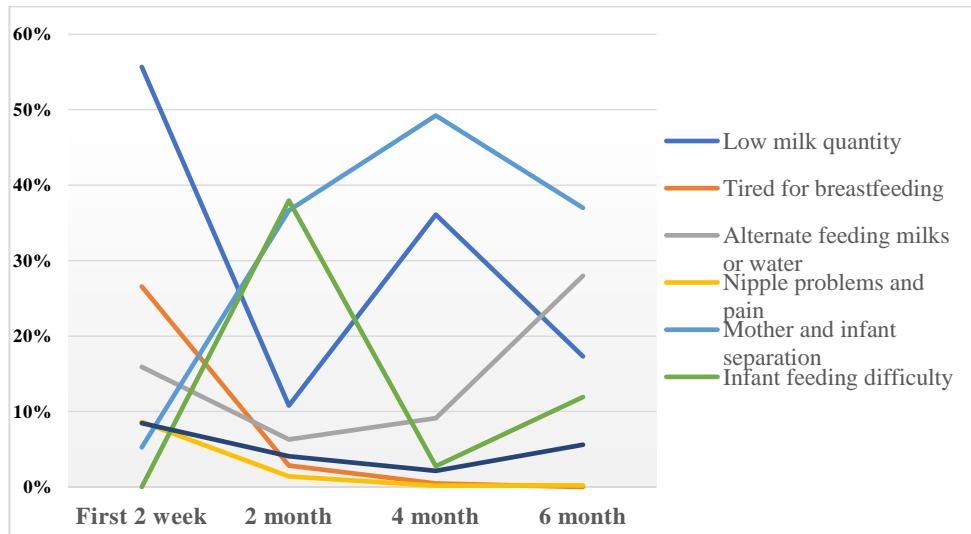
## 3. Results

The rate of exclusive breastfeeding at the first two weeks, two, four, and six months from 2011-2015 is shown in Table 1. During the first two-week period, the rates of exclusive breastfeeding were fairly constant over the course of the five years studied at around 92-95%. However, the rates at two months showed an increase from 81% in 2011 to 92% in 2014 and a subsequent decrease to 87% in 2015. At four months, the rate was 66% in 2011, peaked at 73% in 2012, and then declined to 60% in 2013, 59% in 2014, and 58% in 2015. At six months, the rates were below 50% in 2011, 2012, and 2014 and above 50% in 2013 and 2015.

**Table 1** The rate of exclusive breastfeeding during in each period from 2011-2015

	2011			2012			2013			2014			2015		
Exclusive BF	total	case	%												
First 2 week	1701	1626	95.59%	1936	1788	92.36%	1946	1810	93.01%	1912	1795	93.88%	1670	1555	93.11%
2 month	1385	1123	81.08%	1729	1434	82.94%	1895	1598	84.33%	1596	1470	92.11%	1466	1287	87.79%
4 month	996	666	66.87%	1299	960	73.90%	1420	856	60.28%	1425	846	59.37%	1260	738	58.57%
6 month	704	316	44.89%	940	447	47.55%	820	421	51.34%	827	375	45.34%	663	348	52.49%

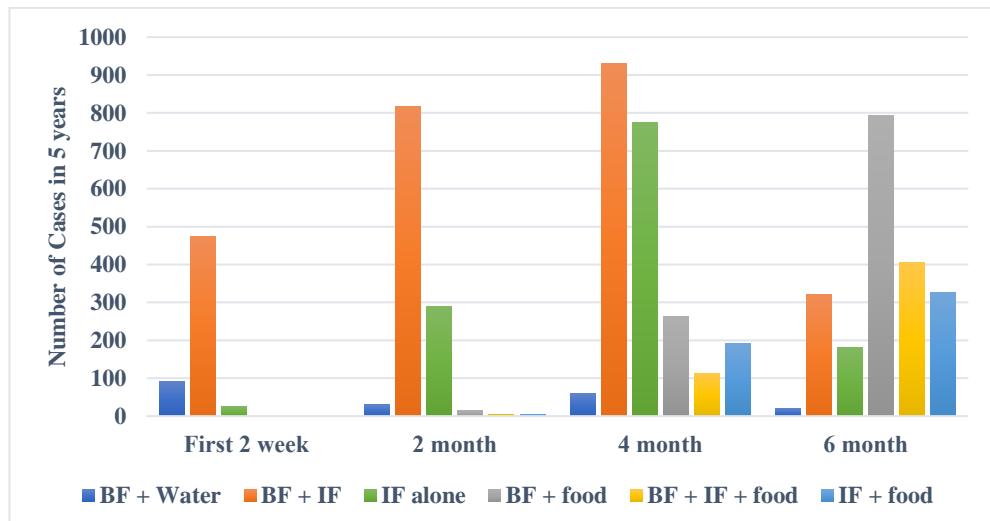
Figure 1 demonstrates the reasons for and trends regarding the discontinuation of breastfeeding for the first six months after birth during each period. The three most common reasons in the first two-week period were low milk quantity (55.67%), tried for breastfeeding (26.57%), and alternate methods of feeding (milk or water; 15.91%). These three reasons were less common at two months. Infant feeding difficulty and mother-infant separation were a small proportion of the total during the first two-week period (less than 1% and 5.25%, retrospectively), but were the two most common reasons at two months (37.96% and 36.67%, retrospectively).



**Figure 1** The main reasons for non-exclusive breastfeeding during each postpartum period from 2011-2015

At four months, mother-infant separation was the most common reason at 49.23% and low milk quantity was the second most common at 36.12%, a dramatic decreased from 10.79% at two months. At six months, mother-infant separation was still the most common reason (36.98%) alternate feeding methods were second, showing a constant increase from 6.3% at two months to 30% at six months. Low milk quantity was the third most common reason (17.29%) having decreased slightly from 36.12% at four months.

The types of feeding implemented after discontinuing breastfeeding at the first two weeks, two, four, and six months during the five-year period are shown in Figure 2. There were 591 cases of non-exclusive breastfeeding at two weeks, 1159 cases at two months, 2334 at four months, and 2047 at six months. Breastfeeding (BF) with infant formula (IF) was the most common type of non-exclusive breastfeeding at two weeks, two months, and four months (80%, 70%, and 39.9%, respectively). Infant formula alone was the second most common type of non-exclusive breastfeeding at two and four months (25% and 33.2%, respectively). At six months, BF with other food was most common at 38.8%, followed by IF and other food at 19.8%.



**Figure 2** Types of feeding after discontinuation of breastfeeding during each postpartum period from 2011-2015. BF: breast feeding; IF: infant formula milk

#### 4. Discussion

The WHO recommends mothers all over the world exclusively breastfeed infants for the first six months in order to achieve optimal growth, development, and health, as well as to provide better health for both infants and mothers, as breastfeeding can prevent diseases and promote health in both the short and long term [4, 6]. The rates of exclusive breastfeeding around the world depend on the regions' levels of health-related development, national policies, and promotion of breastfeeding.

According to the CDC Breastfeeding Report Card, breastfeeding rates in the US in 2013 were 51.8% at six months and 30.7% at 12 months [7]. The prevalence of exclusive breastfeeding at six months was 31.4% in Saudi Arabia in 2015 [8], 48.6% in India during the period between 1992–2006, and 56.8% in Japan at three months in 2010 (however, there were no data available for breastfeeding rates at six months) [9]. In Thailand, the rate of exclusive breastfeeding was only 20.7% at four months and 14.5% at six months in 2005 [10].

According to our data, the rates of exclusive breastfeeding during the first two-month period after delivery were higher than 80%, a figure that has increased slightly every year. On the other hand, the rates at four months after delivery have decreased, being less than 60% in 2014. Similarly, the rates at six months under 50% (with the exception of 2013). From this, it becomes evident that the important time for addressing this problem is around two months after delivery. In order to succeed in our goal of exclusive breastfeeding, we should emphasize and support mothers, as well as attempt to identify and solve problems related to breastfeeding during this period.

The main issues to consider during the first two weeks are low milk quantity, breastfeeding fatigue, and alternate feeding methods (milk or water). These three reasons account for about 90% of non-exclusive breastfeeding. Initiating breastfeeding during the first three days and encouraging breastfeeding combined with promoting knowledge regarding correct feeding techniques are the most important practices in order to achieve exclusive breastfeeding.

The first two months postpartum are critical. Problems encountered during this period being left unresolved are the main causes of non-exclusive breastfeeding. Mother-infant separation, which was substantially higher than in the first two weeks, is one of the most important causes of non-exclusive breastfeeding at four months and six months. One reason for this might be that the mother is being required to return to work, and breastfeeding not being fully supported at some workplaces. The government should promote policies to support and facilitate breastfeeding for mothers in the workplace. Infant feeding difficulties are the main cause of non-exclusive breastfeeding at two months. This is usually due to problems related to improper feeding posture and the mother being uncomfortable during feeding. Thus, follow-ups should be scheduled at four to six weeks of neonatal life that focus on this point. Lastly, although rates of non-exclusive breastfeeding due to low milk quantity is lower at two months, it is a major problem during the last four to six months. There may be other factors involved in this, such as the mother needing to return to work leading to irregular feeding, insufficient diet or nutrition, and anxiety or other concerns that substantially affect the amount of milk being produced.

The problems that lead to non-exclusive breastfeeding that were found in this study were similar to those found in a previous study [11]. The major problems during the first three days postpartum were infant feeding difficulty, breastfeeding pain, and low milk quality (52%, 44%, and 40%, respectively). All of these problems were significantly associated with a nine-times increased risk of stopping breastfeeding. The most important reason for stopping breastfeeding during the first week postpartum was infant feeding difficulty. In the second week, the most common reason was low milk quantity.

There were several limitations to this study. First, data used in this study came from a single tertiary care center, and may not be comparable with those from other centers. Secondly, the short duration of the study period was insufficient to show long-term improvement or achievement of the stated goals. Finally, the types of promotion used in our centers might be different in other centers.

#### 5. Conclusion

The goal of exclusive breastfeeding may be achieved by focusing and supporting the specific breastfeeding problems that arise during each period. During the first two months postpartum, attention should be focused on infant feeding and mother-infant separation. From two to six months postpartum, we should focus on low milk quantity, mother-infant separation, and alternate feeding methods.

#### 6. Acknowledgement

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