

# **Thai Fathers' Self-Efficacy to Support Exclusive Breastfeeding**

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This dissertation is dedicated to my beloved family, my foundation and inspiration, who have supported me throughout my doctoral program, and to all the couple participants in my dissertation study who gave me their generous cooperation and shared their breastfeeding experiences. Without them, this dissertation would never have been accomplished.

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## **LIST OF ABBREVIATIONS**

|         |  |
|---------|--|
| ANC     | Antenatal Class  |
| BSES-SF | Breastfeeding Self-Efficacy Scale-Short Form               |
| CVI     | Content Validity Index                                     |
| FAEB    | Father's Attitude toward Exclusive Breastfeeding           |
| IHPP    | International Health Policy Program                        |
| IRB     | Institutional Review Board                                 |
| MOPH    | Ministry of Public Health                                  |
| NHSO    | National Health Security Office                            |
| PI      | Principle Investigator                                     |
| SD      | Standard Deviation   |
| THPF    | Thai Health Promotion Foundation                           |
| UNICEF  | The United Nations International Children's Emergency Fund |
| USD     | United States Dollar                                       |
| WHO     | World Health Organization                                  |

## SUMMARY

Thailand accepted the World Health Organization's recommendation that mothers engage in exclusive breastfeeding—feeding an infant only breastmilk without water or solid food—for at least 6 months and continue breastfeeding until the child is at least 2 years of age. Since that time, the country has been engaging in a national effort to promote exclusive breastfeeding. However, Thailand's exclusive breastfeeding rates (5.4% in 2007 and 12.3% in 2012) have remained lower than those of other Southeast Asian countries (National Statistical Office Thailand, UNICEF, MOPH, NHSO, THPF, IHPP, 2013; UNICEF, 2007). Although Thailand's exclusive breastfeeding rate reached 23.1% in 2016, the country failed to meet its exclusive breastfeeding goal of 30% for that year and is unlikely to meet its 2021 goal of 50% (National Statistical Office and United Nations Children's Fund, 2016).

Breastfeeding studies in Thailand have mostly focused on mothers' perspectives and behaviors, and their findings have made only a limited contribution to achieving the country's breastfeeding goals. Research in many other countries has shown that fathers' support can contribute to successful exclusive breastfeeding by influencing mothers' breastfeeding practices, including breastfeeding initiation and duration. Moreover, fathers' self-efficacy to support breastfeeding has been found to be an important mediator in infant feeding practices (Dennis et al., 2018); specifically, in a Canadian sample, paternal self-efficacy was positively correlated with exclusive breastfeeding. However, to date, no Thai studies have explored fathers' perspectives on breastfeeding support or their confidence in providing it. Thus, Thai fathers' breastfeeding-related experiences and perceptions, especially in terms of their self-efficacy to provide exclusive breastfeeding support, need to be explored in order to understand their influence on infant feeding practices. The objectives of this doctoral dissertation study were to examine Thai fathers' breastfeeding-related experiences and perceptions with respect to their self-efficacy in providing exclusive breastfeeding support and explore their perspectives regarding their self-confidence in offering such support.

This dissertation consists of two manuscripts. Manuscript 1 in Chapter I reports on a descriptive quantitative study conducted to determine whether Thai fathers' self-efficacy to



## SUMMARY (continued)

support exclusive breastfeeding is associated with breastfeeding duration. Manuscript 2 in Chapter II documents a descriptive qualitative study performed to further explore Thai fathers' perspectives toward providing exclusive breastfeeding support as well as their confidence in doing so.

In the first, quantitative study, a survey was conducted among 205 participant couples (410 individual participants) who completed study questionnaires in the well-baby clinics of two hospitals in Thailand's Chiang Mai province. The survey data were subjected to bivariate correlation and Tobit regression analyses. The results showed that paternal and maternal breastfeeding self-efficacy was positively associated with longer duration of exclusive breastfeeding (*Spearman's rho* [ $\rho$ ]=0.19 and 0.54, respectively). Paternal self-efficacy was also positively correlated with maternal self-efficacy ( $\rho=0.30$ ,  $p=.01$ ). However, in an evaluation of the possibility of paternal self-efficacy's moderating the relationship between maternal self-efficacy and exclusive breastfeeding duration, paternal self-efficacy did not moderate the relationship. Only maternal self-efficacy was significantly associated with duration of exclusive breastfeeding ( $B=.16$ ,  $p<.01$ ).

In the second study, under a descriptive qualitative design, semi-structured interviews were conducted with 30 Thai participant couples who had completed the survey in the first study and agreed to be interviewed. Each joint interview was conducted in the Thai language for 45 to 90 minutes using an online videoconferencing program. The open-ended questions posed in the semi-structured interview were based on the breastfeeding self-efficacy theory (Dennis, 1999). After the interviews were completed, audio-recordings of the interviews were transcribed verbatim in the Thai language by the principal investigator (PI), and then the transcriptions were verified by a Thai university professor with extensive experience in qualitative research. Subsequently, the PI translated the Thai transcripts into English, and the English transcripts were reviewed and approved by the PI's advisor, also an expert in qualitative research. Content analysis was then applied to all the transcripts by the

## **SUMMARY (continued)**

PI and the PI's advisor, and the descriptive coding was analyzed to identify patterns and themes.

During the qualitative data analysis, five major themes emerged from the interviews: (1) "my partner told me that she would like to breastfeed, so I totally agreed with her," (2) breastfeeding is women's business, (3) confidence is dynamic, (4) seeking knowledge and support, and (5) institutional support and obstacles for breastfeeding. The first theme represents fathers' involvement in breastfeeding discussions during the pregnancy period. As to the second theme, fathers viewed breastfeeding as women's business; fathers acknowledged women's breastfeeding role and their different perspectives toward breastfeeding. As the third theme, fathers described paternal confidence as dynamic in that it developed over time during the breastfeeding process. The fourth theme reflects how Thai fathers sought and received breastfeeding information that increased their confidence to support breastfeeding. The final theme involves institutional-level support and obstacles that impacted fathers' breastfeeding support.

Overall, this dissertation study's results indicate that fathers' supporting role should be given much more emphasis in Thailand's national initiatives to promote exclusive breastfeeding. On the whole, the study findings provide a new and rich set of data that healthcare providers and researchers can exploit to enhance Thai fathers' self-efficacy to support exclusive breastfeeding. As one example, the data can be used to prepare guidelines for nurses who are developing interventions to encourage Thai fathers to support their partner and infant in their breastfeeding efforts. In particular, co-parenting interventions should be developed to enhance fathers' self-efficacy for providing support for their partner's breastfeeding. Such interventions should include both antenatal and postpartum breastfeeding instruction for fathers and mothers as well as active practice in breastfeeding for individual couples. In addition, researchers can use the study data as foundational information for future investigation of Thai fathers' self-efficacy to support exclusive

### **SUMMARY (continued)**

breastfeeding. Future studies should examine the degree of consistency in paternal self-efficacy needed to provide successful breastfeeding support over time. Also, paternal self-efficacy should be studied among fathers of different ages and occupations; those whose partners experience postpartum complications; and couples whose children are premature, have low birth weight, or experience complications after birth. Ultimately, new interventions and research geared toward improving fathers' breastfeeding support may help to raise Thailand's exclusive breastfeeding rates to national target levels, thus improving the health of Thai mothers and infants.

# RELATIONSHIPS BETWEEN THAI FATHERS' SELF-EFFICACY TO SUPPORT BREASTFEEDING AND EXCLUSIVE BREASTFEEDING DURATION

## Introduction

Breastfeeding is an optimal feeding approach for infants and critical to improving public health (American Association of Pediatrics, 2012). The World Health Organization (WHO) recommends that infants be exclusively breastfed for their first 6 months of life and that breastfeeding, supplemented with appropriate foods, continue until at least age 2 (WHO, 2016). Among the health benefits of breastfeeding (Binns et al., 2016), infants have a reduced risk for diarrhea and respiratory infections as well as nutritional deficiency-related harm that negatively affects cognitive development (Horta et al., 2015; Victora et al., 2016), and women<sup>1</sup> are at less risk for postpartum hemorrhage and breast and ovarian cancers (Gartner et al., 2005; Stuebe, 2009; Victora et al., 2016).

In Thailand, several breastfeeding promotion interventions have been implemented since 1989, including the National Breastfeeding Strategy and Baby-Friendly Hospital, both of which encouraged exclusive breastfeeding for the first 6 months (Hangchaovanich & Voramongkol, 2006). In 2007, Thailand's exclusive breastfeeding rate was only 5.4%, the lowest in Southeast Asia and the third lowest globally (UNICEF, 2007). After 5 years of moderate improvement in the breastfeeding rate, Thailand's commitment to adopting WHO's recommendation (WHO, 2011) was re-emphasized in the 12th National Economic and Social Development Plan, which included 2016 and 2021 exclusive breastfeeding goals of 30% and 50%, respectively (National Economic and Social Development Board, 2012). While Thailand's exclusive breastfeeding rate did increase from 12.3% in 2012 to 23.1% in 2016, it is still below the goal and is lower than in other Southeast Asian countries (National Statistical Office and United Nations Children's Fund, 2016; National Statistical Office Thailand, UNICEF, MOPH, NHSO, THPF, IHPP, 2013;).

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<sup>1</sup> Although we use women and mothers in this manuscript, we do recognize that there is a diverse group of transgender and gender nonbinary people that may also experience breastfeeding/chestfeeding.

Successful breastfeeding depends on a confluence of factors ranging from national policy to sociocultural and individual factors. Fathers constitute one of these factors and can play a positive role in promoting breastfeeding (Abbass-Dick et al., 2015), partially because they are a source of social support for their partner's efforts (Meedya et al., 2010). In the Thai family context, fathers are increasingly expected to be involved in the child-rearing process (Department of Health, Ministry of Public Health, Thailand, 2016; Sansiriphun et al., 2010). However, there is little evidence available to show the role that Thai fathers play in supporting successful breastfeeding. Studies conducted outside of Thailand show that mothers with supportive partners feel more competent in making breastfeeding decisions and overcoming challenges (Abbass-Dick et al., 2015; Mannion et al., 2013).

Although fathers desire involvement in the breastfeeding process (Brown & Davies, 2014), studies show that they feel insufficiently prepared to support their partner's breastfeeding (de Montigny & Lacharité, 2004) and feel excluded from infant care (Mitchell-Box & Braun, 2012). Exclusion of fathers from breastfeeding preparation and infant care may reduce their parental self-efficacy and quality of life (Namir et al., 2017). Fathers also need assistance in understanding their breastfeeding support role (Datta et al, 2012). When fathers were prepared for and supported the breastfeeding experience, they showed increased self-efficacy that was positively associated with breastfeeding rates and duration (de Montigny et al., 2012).

In 1999, the breastfeeding self-efficacy theory was published to promote understanding of maternal confidence and breastfeeding behavior (Dennis, 1999). Recently, Dennis and colleagues (2018) asserted that the theory can be extended to conceptualize paternal self-efficacy for breastfeeding support. In other words, the father's perception of his ability to assist his partner in breastfeeding can be assessed. They describe paternal breastfeeding support self-efficacy as being determined by four main sources: (1) *performance accomplishments* (experiences assisting the mother and infant with successful breastfeeding), (2) *vicarious experiences* (observing others supporting their partners' breastfeeding), (3) *verbal persuasion* (receiving positive feedback), and (4) *physiologic*

*responses* (feelings of accomplishment while assisting the partner's breastfeeding as opposed to stress, anxiety, and helplessness) (Dennis et al., 2018).

Multiple studies in the United States, Canada, and Europe show that fathers' encouragement of their partner is associated with breastfeeding practices (Abbass-Dick et al., 2014; Swanson & Power, 2005; Wolfberg et al., 2004). Fathers' support clearly plays an important role in breastfeeding and promotion of infant health (Matos et al., 2015). In addition, paternal self-efficacy to support breastfeeding was shown to be an important mediator in infant feeding practices (Dennis et al., 2018). To date, however, no published studies have focused on the role of self-efficacy in supporting breastfeeding among Thai fathers. Results from western studies may not be transferable to the Thai context given the significant cultural and contextual differences. For these reasons, this study employed the breastfeeding self-efficacy theory as a framework to examine Thai fathers' breastfeeding-related experiences and perceptions regarding self-efficacy in providing breastfeeding support. The overall objective was to better understand Thai fathers' influence on infant feeding practices and exclusive breastfeeding.

## **Methods**

### **Sample and Setting**

Data for this descriptive survey study were collected in Thailand from January to March 2020. A purposive sample of 205 father-mother couples (410 total participants) with an infant who was 6-months-old were recruited at well-baby clinics of Maharaj Nakorn Chiang Mai Hospital and Chiang Mai Health Promotion Hospital in Thailand's Chiang Mai province. To be included, both partners had to agree to participate in the study. They also had to be aged 20 years or older, and participating mothers and their infants had to be healthy with no postpartum complications or breastfeeding contraindications.

### **Procedures**

Study approvals were obtained from institutional review boards (IRB) of the University of Illinois at Chicago (#2019-1309), Maharaj Nakorn Chiang Mai Hospital (#NONE-2562-06778), and Chiang Mai Health Promotion Hospital (#3/2563). Subsequently,

the principal investigator (PI) posted study flyers in the well-baby clinics of the hospitals. The study flyer stated the study purpose, inclusion criteria, benefits and risks of participation, and the PI's contact information, and it invited couples who were interested in participating to telephone the PI. In addition, at the well-baby clinics, the PI approached couples whose infants were receiving 6-month vaccinations and asked them to consider participating in the study.

When a father and mother expressed interest in participating in the study, the PI first confirmed their eligibility. The PI then reviewed the purpose and procedures of the study and the benefits and risks of participation. After answering any participant questions about the study, the PI obtained the participants' signed informed consent. Next, the PI administered a sociodemographic questionnaire, the Breastfeeding Self-Efficacy Scale–Short Form (BSES-SF) for fathers, and the Father's Attitude toward Exclusive Breastfeeding questionnaire (FAEB) to fathers; to mothers, the PI administered the sociodemographic questionnaire and BSES-SF for mothers. All the participants completed the survey in the well-baby clinics, taking 15 to 30 minutes to do so. After returning the completed survey to the PI, each participant was given the Thai equivalent of 3 USD (100 Thai Baht) in cash in appreciation of his or her cooperation.

## Measures

Participants completed the sociodemographic questionnaire, which addressed age, employment and occupation, income, number of living children, education, antenatal class (ANC) attendance, type of family, and marital status. The questionnaire also asked mothers about their delivery type and maternity leave duration.

Participants also completed the BSES-SF, which contains 14 items and a 5-point Likert-type scale with options ranging from *not at all confident* (1) to *always confident* (5). Total scores range from 14 to 70; higher scores indicate higher self-efficacy regarding either mothers' engagement in or fathers' support for breastfeeding. The 205 mothers completed the Thai version of the BSES-SF for mothers (Thussanasupap, 2006). In a previous study, this instrument's content validity index (CVI) for mothers was 1.00, and it had a Cronbach's

alpha of .87 (Thussanasupap, 2006); in the present study, the instrument had a Cronbach's alpha of .95, indicating good reliability. The BSES-SF for fathers (Dennis et al., 2018) was completed by 205 fathers. The original English-language questionnaire showed a Cronbach's alpha of .91 and .92 at two different timepoints (Dennis et al., 2018), indicating good reliability. The PI translated this instrument into Thai, and two bilingual research experts back-translated the Thai version into English to confirm its accuracy. The items were reviewed by Dennis, one of the original developers, and some were revised based on her suggestions. The PI then tested the comprehensibility and cultural appropriateness of the translated instrument. During the pilot test, 10 Thai fathers, who were not included among the 205 father participants, were individually asked whether the 14 items of the questionnaire were fully understandable; the PI and fathers also discussed items that some found difficult to answer and their confusion regarding those items. Based on the pilot test results, no modifications of the translated questionnaire were deemed necessary, and its Cronbach's alpha value in the pilot test was .88. After completion of the quantitative study, the Thai BSES-SF for fathers had a Cronbach's alpha of .93, indicating good reliability.

Father participants also completed the Thai-language the FAEB developed by Howkanta et al. (2016), which consists of 31 items and uses a 5-point Likert-type scale with options ranging from *strongly disagree* (1) to *strongly agree* (5). Total scores range from 31 to 155, with higher scores indicating more positive paternal attitude toward exclusive breastfeeding. In Howkanta et al.'s (2016) study, the instrument's CVI was 1.00, and it had a Cronbach's alpha of .93, indicating good reliability; in the present study, this instrument had a Cronbach's alpha of .86.

### **Data Analysis**

Statistical analyses were conducted using STATA version 15 (Stata Corp, 2017). Descriptive statistics (percentages, means, and standard deviations) were used to examine sociodemographic characteristics as well as scores for the BSES-SF for fathers and mothers and the FAEB.



Descriptive statistics and plots of study variables were evaluated to test assumptions of normality. For bivariate analysis, the non-normal distribution of data required use of nonparametric statistics. Spearman's rho, the Kruskal Wallis test, and the Mann Whitney-U test were used to identify significant bivariate associations between variables and exclusive breastfeeding duration as well as correlations among sociodemographic characteristics, paternal self-efficacy scores, and exclusive breastfeeding duration.

Data for variables in the regression models were tested for normality, and the homogeneity of variance assumptions was evaluated. Results indicated that no assumptions were violated. Because significant ceiling effects were observed for dependent variables, a Tobit regression analysis (Austin et al., 2000; McBee, 2010) was performed to estimate the coefficient for exclusive breastfeeding duration. Sociodemographic characteristics, paternal and maternal self-efficacy, and fathers' attitudes toward exclusive breastfeeding were all included in the regression models.

## **Results**

### **Demographic Characteristics and Breastfeeding Outcomes**

In total, 213 father-mother couples met the inclusion criteria for the study. Eight of these couples (3.90%) declined to participate due to limited availability. Thus 205 father-mother couples completed the survey. Table 1 summarizes the participants' demographic characteristics.

All the couples (100%) were married. Participants lived in nuclear or extended family households in nearly equal proportions. Fathers' age ranged from 20 to 60 years (mean=32.94). The largest proportion of fathers completed a bachelor's degree or higher. Most fathers were employed full-time, and 38.05% of fathers were self-employed. About half the fathers earned 10,000-19,999 Baht (300-600 USD) per month. Most were first-time fathers and attended at least one ANC.

Mothers' ages ranged from 20 to 44 years, with a mean of 30.57 years. Half the mothers had completed a bachelor's degree or higher, and more than half worked full-time. About 40% earned less than 10,000 Baht (300 USD) per month. One-fifth of the women

were formally employed, and about one-third of the working mothers took maternity leave for 3 to 5 months. Most women were first-time mothers, and 61.95% participated in at least one ANC. About two-thirds of mothers had vaginal delivery. Among all mothers, more than half exclusively breastfed their infant for 6 months; the mean duration of exclusive breastfeeding was 4.74 months.

Associations between demographic characteristics and exclusive breastfeeding duration are summarized in Tables 2 and 3. The results showed that paternal number of children positively correlated with exclusive breastfeeding duration (*Spearman's rho* [ $\rho$ ]=0.1582,  $p<.05$ ). ANC attendance for both fathers and mothers was positively correlated with exclusive breastfeeding duration. The Tobit regression analysis showed that the overall model was statistically significant (*chi-squared* [ $\chi^2$ ]=14.47,  $p<.01$ , and  $R^2=0.0235$ ). Paternal number of children was significantly associated with exclusive breastfeeding duration ( $B=1.33$ ,  $p<.01$ ).

### **Self-Efficacy**

To examine correlations between demographic characteristics of father participants and paternal self-efficacy, as measured by their scores on the BSES-SF for fathers, bivariate correlations were evaluated. The results indicated that paternal age and education level were associated with paternal self-efficacy (Table 4). The Tobit regression analysis showed that the overall model was statistically significant (Table 5). Paternal age was significantly correlated with paternal self-efficacy.

Descriptive statistics for self-efficacy and attitudes are in Table 6. The mean BSES-SF score for fathers was 54.65, with scores ranging from 25 to 70. On the BSES-SF for mothers, scores ranged from 18 to 70, with a mean of 58.27. Fathers' mean FAEB score was 121.94, with scores ranging from 87 to 155.

Bivariate correlations of the variables were used to examine relationships between self-efficacy and attitudes, and exclusive breastfeeding duration (Table 7). A moderate correlation was found between maternal BSES-SF score and exclusive breastfeeding duration. The correlation between paternal BSES-SF score and exclusive breastfeeding

duration was lower, but significantly positive ( $\rho=0.19$ ,  $p<.01$ ). The fathers' FAEB scores also positively correlated to exclusive breastfeeding duration. Moreover, paternal and maternal BSES-SF scores correlated with each other. Paternal BSES-SF and FAEB scores were correlated, and maternal BSES-SF scores were correlated to fathers' FAEB scores.

### **Moderation Effect of Paternal Self-Efficacy**

The results of Tobit regression without including paternal self-efficacy as a potential moderating variable showed the significant model ( $\chi^2=71.04$ ,  $p<.01$ , and  $R^2=0.1155$ ). From the regression model, only maternal self-efficacy significantly predicted exclusive breastfeeding duration ( $B=.16$ ,  $p<.01$ ). To evaluate the possibility of paternal self-efficacy moderating the relationship between maternal self-efficacy and exclusive breastfeeding duration, a hierarchical multiple linear regression modeling was used (paternal self-efficacy X maternal self-efficacy). The results of the Tobit regression analysis showed that the overall model was statistically significant ( $\chi^2=72.84$ ,  $p<.01$ , and  $R^2=0.1184$ ). However, there was no significant interaction effect of paternal self-efficacy, indicating that paternal self-efficacy did not moderate the relationship between maternal self-efficacy and exclusive breastfeeding duration (Table 8).

## **Discussion**

This is the first study to demonstrate that higher self-efficacy for breastfeeding support among Thai fathers had a significant impact on maternal breastfeeding self-efficacy. In addition, higher breastfeeding self-efficacy among Thai mothers resulted in improved exclusive breastfeeding rates. Although paternal self-efficacy for breastfeeding support did not moderate the effects of maternal breastfeeding self-efficacy on exclusive breastfeeding duration, paternal self-efficacy was positively related to exclusive breastfeeding duration. Additionally, fathers' self-efficacy for breastfeeding support was positively related to their own exclusive breastfeeding attitudes.

Almost 60% of mother participants reported exclusive breastfeeding of their child until it was 6 months old. This rate was much higher than the national and regional rates in 2016 (23.10% and 36.70%, respectively) (National Statistical Office and United Nations

Children's Fund, 2016). Also, the rate measured in this study surpassed the national goal of 50% set for 2021 (National Economic and Social Development Board, 2012).

This study found no significant associations between mothers' sociodemographic characteristics and exclusive breastfeeding duration. These results were similar to the findings of Alyousefi and colleagues (2017), who studied 322 Saudi mothers and reported no correlation of maternal age, education level, employment status, or delivery type to exclusive breastfeeding duration. However, in the present study, longer exclusive breastfeeding duration occurred among women whose partners were not first-time parents. This is the first study to show a significant relationship between paternal number of children, which may be a proxy for paternal parenting experience affecting exclusive breastfeeding duration. Previous studies have identified relationships between maternal parity and exclusive breastfeeding duration (Amin et al., 2011; Dashti et al., 2014). Amin and colleagues (2011) found that higher parity was a significant positive predictor for women's exclusive breastfeeding. The researchers suggested that multiparous mothers had learned about breastfeeding through their previous experience and thus had higher self-confidence to breastfeed their child; consequently, they were more likely to achieve 6 months of exclusive breastfeeding (Amin et al., 2011). Given the findings about the effect on maternal self-efficacy of breastfeeding experience, it follows that fathers with previous children may have enhanced self-efficacy to support their partner's exclusive breastfeeding, thus increasing the likelihood of longer exclusive breastfeeding duration.

Another potential explanation for the high exclusive breastfeeding rate found in this study is that more than half the participants attended ANC, which was significantly associated with longer exclusive breastfeeding duration. In attempting to identify predictors of exclusive breastfeeding duration, Semenic and colleagues (2008) found that ANC attendance of Canadian first-time mothers was significantly associated with longer duration. In a Chinese study of 72 expectant mothers, Su and Ouyang (2016) showed that fathers' attendance of ANC was also associated with higher exclusive breastfeeding rates.

With respect to paternal self-efficacy, results showed that paternal age and educational level were positively correlated with paternal self-efficacy. No such correlations between paternal sociodemographic characteristics and self-efficacy were observed in previous studies. For example, Dennis and colleagues (2018) found no association between paternal self-efficacy and fathers' demographic characteristics; however, their data were collected during postpartum hospitalization, which may have been too brief for fathers to accurately perceive their self-efficacy to support breastfeeding. Among mothers, correlations between age and educational level and breastfeeding self-efficacy are common. For instance, Gökçeoğlu and Küçükoğlu (2017) found that Turkish mothers who were older and had more education had higher BSES-SF scores. Thus, greater age and higher educational level in fathers may also be related to greater paternal self-efficacy, as the present study's findings indicate. That is, older fathers with more education may be better equipped to understand breastfeeding information that would enhance their self-efficacy for breastfeeding support.

Higher maternal breastfeeding self-efficacy was positively associated with longer exclusive breastfeeding duration. This finding is consistent with Glassman et al. (2014), who found that maternal self-efficacy was the only modifiable factor significantly related to the exclusive breastfeeding rate among postpartum mothers in New York City; higher maternal self-efficacy scores were correlated with longer exclusive breastfeeding duration. In the present study, maternal BSES-SF scores were also significantly correlated with paternal BSES-SF scores. Notably, only one previous study has examined the relationship between paternal and maternal breastfeeding self-efficacy. Specifically, in assessing the psychometric properties of the BSES-SF among Canadian fathers, Dennis and colleagues (2018) found that paternal BSES-SF scores were moderately and significantly associated with maternal BSES-SF scores. Thus, the present study's finding supports Dennis and colleagues' conclusion regarding the association between paternal and maternal breastfeeding self-efficacy.

Fathers' breastfeeding support self-efficacy was positively related to their attitude toward exclusive breastfeeding. Similarly, Dennis and colleagues (2018) found that BSES-SF scores of Canadian fathers were associated with their exclusive breastfeeding attitude both in hospital and 6 weeks postpartum. Moreover, the present study found that Thai fathers' attitude toward exclusive breastfeeding was positively related to mothers' BSES-SF scores. In a previous study of 201 expectant Chinese mothers, Zhu and colleagues (2014) reported that higher maternal breastfeeding self-efficacy was significantly correlated with a more positive attitude toward breastfeeding in their partners.

Finally, regression analysis indicated that only maternal self-efficacy predicted exclusive breastfeeding duration. Paternal BSES-SF score did not moderate the effects of the maternal BSES-SF score on exclusive breastfeeding duration. This result is similar to Dennis and colleagues' (2018) finding that paternal BSES-SF scores were significantly correlated with maternal BSES-SF scores and fathers' attitude toward breastfeeding, but that paternal BSES-SF scores did not predict exclusive breastfeeding at 6 or 12 weeks.

Although paternal self-efficacy did not moderate the effects of maternal self-efficacy on exclusive breastfeeding duration in this study, paternal self-efficacy was positively related to duration ( $\rho=0.19$ ,  $p=.01$ ). Paternal self-efficacy was also positively correlated with maternal self-efficacy, which influenced breastfeeding duration. In Abbass-Dick and colleagues' (2015) randomized controlled trial with Canadian couples, fathers in a co-parenting intervention showed a significant increase in breastfeeding support self-efficacy from baseline to 6 weeks postpartum ( $p=.03$ ). They concluded that mothers' perception of fathers' breastfeeding support positively influenced maternal breastfeeding self-efficacy and thus exclusive breastfeeding duration (Abbass-Dick et al 2015). Also, Hinic's (2016) study of American postpartum mothers found that breastfeeding self-efficacy was positively associated with partner support of exclusive breastfeeding as measured by the BSES-SF.

Associations between paternal self-efficacy for supporting exclusive breastfeeding and duration must be understood to develop more inclusive interventions that heighten fathers' self-efficacy. Our study expands the literature by providing additional empirical

evidence from Thailand regarding relationships among paternal and maternal breastfeeding self-efficacy and exclusive breastfeeding duration. These relationships indicate that fathers should be fully engaged in the exclusive breastfeeding process and that interventions should promote paternal breastfeeding support self-efficacy. Mitchell-Box and Braun's (2012) study showed that exploring fathers' self-efficacy for providing breastfeeding support can generate ideas for father-focused interventions. Expanding the breastfeeding dyad to a triad is crucial for fathers to become more involved in the breastfeeding process and thus to increase maternal breastfeeding initiation and duration (Mitchell-Box & Braun, 2012). The literature and this study's results suggest that co-parenting interventions could enhance both parents' self-efficacy with respect to breastfeeding.

### **Limitations**

Because this study employed purposive sampling of couples in only two Chiang Mai hospitals, its results may not be generalizable to other regions of Thailand or to other countries. Moreover, under the study's cross-sectional design, study measurements were conducted only at the 6-month point of the postpartum period, and thus the full dynamic of paternal self-efficacy may not have been captured. Questions remain about the periods in which paternal self-efficacy exerts its greatest influence on exclusive breastfeeding; one such period may be the time of breastfeeding initiation immediately after birth.

### **Implications**

This is the first Thai study to assess the relationship between fathers' breastfeeding support self-efficacy and exclusive breastfeeding duration. In future, paternal self-efficacy and related factors should be investigated not only at 6 months postpartum, but also during the antenatal and early postpartum periods to determine whether fathers' confidence in their ability to support exclusive breastfeeding changes over time. The results may increase our understanding of paternal factors that impact exclusive breastfeeding duration, which in turn would facilitate design of interventions to increase paternal breastfeeding support self-efficacy. Moreover, self-efficacy for breastfeeding support should be examined within particular populations of fathers, such as adolescent fathers and fathers whose partner or

infant experience postpartum complications after birth. The findings would provide insight into paternal self-efficacy for providing breastfeeding support under a variety of circumstances.

### **Conclusion**

This study concludes that to increase exclusive breastfeeding duration in Thailand, paternal breastfeeding support self-efficacy should be promoted in both future interventions and current programs that support exclusive breastfeeding. In addition, given the significant association observed between paternal and maternal self-efficacy, nurses should implement co-parenting interventions in both antenatal and postpartum unit settings. These strategies promise to be effective in promoting exclusive breastfeeding and increasing the overall breastfeeding rates in Thailand.



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**Table 1***Participant Demographic Characteristics (N= 410)*

| Characteristic                      | Fathers (n=205) | Mothers (n=205) |
|-------------------------------------|-----------------|-----------------|
|                                     | N (%)           | N (%)           |
| Age (years)                         |                 |                 |
| 20-29                               | 63 (30.73)      | 87 (42.44)      |
| 30-39                               | 115 (56.10)     | 108 (52.68)     |
| 40-49                               | 24 (11.70)      | 10 (4.88)       |
| 50-59                               | 2 (0.98)        |                 |
| ≥60                                 | 1 (0.49)        |                 |
| Educational level completed         |                 |                 |
| <High school                        | 14 (6.83)       | 28 (13.66)      |
| High school                         | 53 (25.85)      | 49 (23.90)      |
| Vocational                          | 61 (29.76)      | 25 (12.20)      |
| Bachelor's degree and higher        | 77 (37.56)      | 103 (50.24)     |
| Marital status                      |                 |                 |
| Married                             | 205 (100)       | 205 (100)       |
| Type of family                      |                 |                 |
| Nuclear                             | 102 (49.76)     | 102 (49.76)     |
| Extended                            | 103 (50.24)     | 103 (50.24)     |
| Income (Baht/Month)                 |                 |                 |
| <10,000                             | 34 (16.58)      | 83 (40.49)      |
| 10,000-19,999                       | 105 (51.21)     | 76 (37.07)      |
| 20,000-29,999                       | 41 (20)         | 33 (16.10)      |
| 30,000-39,999                       | 15 (7.32)       | 12 (5.85)       |
| ≥40,000                             | 10 (4.89)       | 1 (0.49)        |
| Number of children                  |                 |                 |
| 1                                   | 125 (60.98)     | 114 (55.61)     |
| 2                                   | 70 (34.14)      | 76 (37.07)      |
| 3                                   | 8 (3.90)        | 15 (7.32)       |
| 4                                   | 2 (0.98)        | 0 (0)           |
| Antenatal class attendance (number) |                 |                 |
| 0                                   | 97 (47.32)      | 78 (38.05)      |
| 1                                   | 40 (19.51)      | 46 (22.44)      |
| 2                                   | 42 (20.49)      | 49 (23.90)      |
| 3                                   | 24 (11.70)      | 27 (13.17)      |
| 4                                   | 2 (0.98)        | 5 (2.44)        |

**Table 1***Participant Demographic Characteristics (continued) (N=410)*

| Characteristic                               | Fathers (n=205) | Mothers (n=205) |
|--|-----------------|-----------------|
|  | N (%)           | N (%)           |
| Employment                                   |                 |                 |
| Unemployed                                   | 7 (3.41)        | 77 (37.56)      |
| Part-time                                    | 25 (12.20)      | 15 (7.32)       |
| Full-time                                    | 173 (84.39)     | 113 (55.12)     |
| Occupation                                   |                 |                 |
| Merchant                                     | 44 (21.46)      | 23 (11.22)      |
| Self-employee                                | 78 (38.05)      | 30 (14.63)      |
| Company employee                             | 37 (18.05)      | 42 (20.49)      |
| Government officer                           | 32 (15.61)      | 31 (15.12)      |
| Farmer                                       | 2 (0.98)        | 0 (0)           |
| Freelance                                    | 2 (0.98)        | 2 (0.98)        |
| Guide  | 3 (1.46)        | 0 (0)           |
| Unemployed                                   | 7 (3.41)        | 77 (37.56)      |
| Durations of maternity leave (months)        |                 |                 |
| <3   |                 | 53 (25.85)      |
| 3-5  |                 | 71 (34.64)      |
| ≥6   |                 | 4 (1.95)        |
| Unemployed                                   |                 | 77 (37.56)      |
| Type of delivery                             |                 |                 |
| Normal vaginal delivery                      |                 | 133 (64.88)     |
| Forceps-assisted delivery                    |                 | 6 (2.93)        |
| Vacuum-assisted delivery                     |                 | 2 (0.98)        |
| Cesarean section                             |                 | 64 (31.22)      |
| Duration of exclusive breastfeeding (months) |                 |                 |
| 0.5  |                 | 6 (2.93)        |
| 1  |                 | 9 (4.39)        |
| 1.5  |                 | 1 (0.49)        |
| 2  |                 | 12 (5.85)       |
| 2.5  |                 | 0 (0)           |
| 3  |                 | 25 (12.20)      |
| 3.5  |                 | 1 (0.49)        |
| 4  |                 | 18 (8.78)       |
| 4.5  |                 | 0 (0)           |
| 5  |                 | 13 (6.34)       |
| 5.5  |                 | 2 (0.98)        |
| 6  |                 | 118 (57.56)     |

**Table 2**

*Bivariate Correlations Between Exclusive Breastfeeding Duration and Participant Demographic Characteristics (N= 410)*

| Characteristic              | Father (n=205)   |         | Mother (n=205)   |         |
|-----------------------------|------------------|---------|------------------|---------|
|                             | Test-value       | p-value | Test-value       | p-value |
| Age                         | $\rho = -0.0139$ | 0.8427  | $\rho = -0.0867$ | 0.2166  |
| Educational level completed | $\chi^2 = 1.507$ | 0.6807  | $\chi^2 = 3.635$ | 0.2116  |
| Income                      | $\rho = 0.0295$  | 0.6750  | $\rho = -0.1038$ | 0.1386  |
| Number of children          | $\rho = 0.1582$  | 0.0235* | $\rho = 0.0734$  | 0.2653  |
| Antenatal class attendance  | $\rho = 0.1691$  | 0.0154* | $\rho = 0.1580$  | 0.0237* |
| Employment                  | $\chi^2 = 4.825$ | 0.0896  | $\chi^2 = 3.470$ | 0.1764  |
| Type of family              | $z = 0.312$      | 0.7550  |                  |         |
| Type of delivery            |                  |         | $\chi^2 = 2.140$ | 0.5439  |

\* $p < .05$



**Table 3**

*Summary of Tobit Regression Analysis of Breastfeeding Duration on Participant Demographic Characteristics Variables (N= 410)*

| Variable                            | Coef.  | Std.Error | t-statistic | p-value |
|-------------------------------------|--------|-----------|-------------|---------|
| Paternal number of children         | 1.3346 | .4840     | 2.7600      | 0.006** |
| Paternal antenatal class attendance | .4582  | .3469     | 1.3200      | 0.188   |
| Maternal antenatal class attendance | .2395  | .3336     | 0.7200      | 0.474   |
| LR chi2 (2)                         | 14.47  |           |             |         |
| Prob>chi2                           | 0.0023 |           |             |         |
| Pseudo R2                           | 0.0235 |           |             |         |

\*\* $p < .01$

**Table 4**

*Bivariate Correlations between Demographic Characteristics of Fathers and Paternal Self-Efficacy (N= 205)*

| Characteristic              | Test-value       | p-value |
|-----------------------------|------------------|---------|
| Age                         | $\rho = 0.1681$  | 0.0160* |
| Educational level completed | $\chi^2 = 8.893$ | 0.0307* |
| Income                      | $\rho = -0.287$  | 0.6825  |
| Number of children          | $\rho = 0.0719$  | 0.3056  |
| Antenatal class attendance  | $\rho = 0.0964$  | 0.1689  |
| Employment                  | $\chi^2 = 0.149$ | 0.9282  |
| Type of family              | $z = 1.811$      | 0.0701  |

\* $p < .05$

**Table 5**

*Summary of Tobit Regression Analysis of Paternal Self-Efficacy on Participant Demographic Characteristic Variables (N= 205)*

| Variable                             | Coef.   | Std.Error | t-statistic | p-value |
|--------------------------------------|---------|-----------|-------------|---------|
| Paternal age                         | .3404   | .1118     | 3.0400      | 0.003** |
| Paternal educational level completed | -1.3407 | .7377     | -1.8200     | 0.071   |
| LR chi2 (2)                          | 11.14   |           |             |         |
| Prob>chi2                            | 0.0038  |           |             |         |
| Pseudo R2                            | 0.0075  |           |             |         |

\*\* $p < .01$

**Table 6***Scores for BSES-SF for Fathers, BSES-SF for Mothers, and FAEB (N= 410)*

| Scores              | Mean   | SD    | Range  |
|---------------------|--------|-------|--------|
| BSES-SF for Fathers | 54.65  | 9.80  | 25-70  |
| BSES-SF for Mothers | 58.27  | 11.43 | 18-70  |
| FAEB                | 121.94 | 13.07 | 87-155 |

*Notes.* BSES-SF=Breastfeeding Self-Efficacy Scale-Short Form; FAEB=Father's Attitude toward Exclusive Breastfeeding

**Table 7**

*Bivariate Correlations Between Exclusive Breastfeeding Duration, Paternal Breastfeeding Self-Efficacy (BSES-SF for Fathers), Maternal Breastfeeding Self-Efficacy (BSES-SF for Mothers), and Father's Attitude Toward Exclusive Breastfeeding (FAEB; N= 410)*

| Variable                               | 1        | 2        | 3       | 4     |
|--|----------|----------|---------|-------|
| 1. Duration of exclusive breastfeeding | 1.000    |          |         |       |
| 2. BSES-SF for Fathers                 | 0.1949** | 1.000    |         |       |
| 3. BSES-SF for Mothers                 | 0.5384** | 0.3048** | 1.000   |       |
| 4. FAEB                                | 0.1542*  | 0.3483** | 0.1589* | 1.000 |

\* $p < 0.05$ , \*\* $p < 0.01$

**Table 8**

*Summary of Tobit Regression Analysis for Variables Predicting Exclusive Breastfeeding Duration (N= 410)*

| Variable                                     | Model 1 |            |             |         | Model 2 |            |             |         |
|--|---------|------------|-------------|---------|---------|------------|-------------|---------|
|  | Coef.   | Std. Error | t-statistic | p-value | Coef.   | Std. Error | t-statistic | p-value |
| BSES-SF for Fathers                          | -.0129  | .0248      | -0.5200     | 0.603   | -.1422  | .0997      | -1.4300     | 0.155   |
| BSES-SF for Mothers                          | .1611   | .0206      | 7.8300      | <.001** | .0453   | .0880      | 0.5100      | 0.607   |
| FAEB   | .0093   | .0183      | 0.5100      | 0.610   | .0080   | .0182      | 0.4400      | 0.659   |
| BSES-SF for Fathers<br>X BSES-SF for Mothers |         |            |             |         | .0023   | .0017      | 1.34        | .0.182  |
| LR chi2                                      | 71.04   |            |             |         | 72.84   |            |             |         |
| Prob>chi2                                    | <.0001  |            |             |         | <.0001  |            |             |         |
| Pseudo R2                                    | 0.1155  |            |             |         | 0.1184  |            |             |         |

*Notes.* BSES-SF for Fathers X BSES-SF for Mothers= a hierarchical multiple linear regression modeling

\*\* $p < .01$

## THAI FATHERS' SELF-EFFICACY TO SUPPORT EXCLUSIVE BREASTFEEDING

### Introduction

To optimize infant and maternal health, Thailand has adopted the World Health Organization (WHO) recommendation that mothers<sup>1</sup> engage in exclusive breastfeeding—feeding an infant only breastmilk without water or food for at least 6 months and continuing breastfeeding until the child is at least 2 years of age (WHO, 2016). Breastmilk contains all the nutrients required to foster infant health and also boosts infants' immune systems (Durand et al., 2003). In addition, breastfeeding benefits mothers by reducing postpartum hemorrhage (Gartner et al., 2005) and protecting against breast and ovarian cancer (Danforth et al., 2007; Stuebe, 2009; Victora et al., 2016).

Although many breastfeeding promotion interventions have been implemented in Thailand, programs such as the National Breastfeeding Strategy and the Baby-Friendly Hospital, which encourage exclusive breastfeeding for 6 months (Hangchaovanich & Voramongkol, 2006), have had limited success. In 2007, Thailand's exclusive breastfeeding rate of 5.4% was the lowest in Southeast Asia and the third lowest globally, just ahead of the Dominican Republic and Surinam (4.1% and 1.7%, respectively) (UNICEF, 2007). As a result of the Thai government's efforts, the exclusive breastfeeding rate in Thailand more than doubled to 12.3% in 2012 (National Statistical Office Thailand, UNICEF, MOPH, NHSO, THPF, IHPP, 2013). In 2016, the rate was 23.1% but remained lower than the rates of other Southeast Asian countries. Thailand did not meet its exclusive breastfeeding goal of 30% by 2016 and will not meet its 2021 goal of 50% (National Statistical Office and United Nations Children's Fund, 2016).

One approach to improving this situation involves promoting paternal support for mothers' exclusive breastfeeding. Fathers' support plays a significant role in breastfeeding success and influences mothers' breastfeeding practices, including breastfeeding initiation

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<sup>1</sup> We recognize that a diverse group of transgender and gender nonbinary people breastfeed/chestfeed and have feeding experiences that can be similar to those of cisgender women but can also be unique.

and duration and decisions about substituting formula feeding (Abbass-Dick et al., 2015; Wolfberg et al., 2004). The results of studies carried out in many countries show that fathers are interested in supporting their partners' breastfeeding and want to be involved in the breastfeeding experience (Sherriff & Hall, 2011; Sherriff et al., 2009; Tohotoa et al., 2009). However, fathers report feeling unprepared to support breastfeeding and that they lack knowledge to do so (Sherriff et al., 2009; Tohotoa et al., 2009). Furthermore, they frequently report feeling helpless, excluded, embarrassed, anxious, and unsure about whether to help when their partner breastfeeds (Sherriff et al., 2009; Tohotoa et al., 2009). Fathers frequently lack confidence in their ability to support their partner's breastfeeding (Brown & Davies, 2014; Goodman, 2005). When fathers lack confidence in their ability to assist in overcoming breastfeeding problems, it is more likely that their partner will discontinue breastfeeding and transition to the more convenient option of bottle-feeding (Datta et al., 2012). There is growing evidence that paternal confidence in their ability to support breastfeeding influences breastfeeding outcomes.

In 1999, Dennis developed the breastfeeding self-efficacy theory to explain maternal confidence in breastfeeding. Breastfeeding self-efficacy in women is known to be one of the fundamental requirements for breastfeeding success, as it has been positively correlated with successful breastfeeding (Dennis, 1999). Recognizing that breastfeeding support self-efficacy among fathers is also related to successful breastfeeding outcomes, in 2018, Dennis et al. employed the theory to conceptualize paternal breastfeeding support self-efficacy, which refers to a father's perceived ability to assist his partner in breastfeeding their infant. In assessing the psychometric properties of their theory-based Breastfeeding Self-Efficacy Scale-Short Form (BSEF-SF) among fathers in Canada, Dennis et al. (2018) found that paternal BSES-SF scores were positively correlated with fathers' breastfeeding attitude, the importance fathers placed on breastfeeding, maternal BSES-SF scores, breastfeeding level and exclusivity, and perceptions of breastfeeding progress. Dennis et al.'s (2018) study added to the expanding body of literature supporting a relationship between paternal self-efficacy to support breastfeeding and breastfeeding outcomes. Therefore, fathers'



breastfeeding-related experiences and perceptions, especially their confidence to provide exclusive breastfeeding support, merit further exploration to better understand infant feeding practices.

By extension, because relatively few Thai infants are breastfed and Thailand's exclusive breastfeeding rates are below targets, understanding fathers' perceptions of their breastfeeding support roles in Thailand is critical. From a societal perspective, Thai fathers are now expected not only to play the role of provider for their family but also to be more involved in the child-rearing process (Department of Health, Ministry of Public Health, Thailand, 2016; Sansiriphun et al., 2010). Western research findings may not be directly transferable to Thai society because of cultural and contextual differences. To date, no Thai studies have explored fathers' self-efficacy to provide breastfeeding support. Context-specific information on Thai fathers' perspectives toward providing breastfeeding support is needed to understand their influence on mothers' breastfeeding practices. This study fills that gap by providing deeper insights by exploring couples' perspectives on Thai fathers' confidence to provide exclusive breastfeeding support.

## **Methods**

### **Sample and Setting**

In this qualitative study, a series of semi-structured interviews were performed with Thai father-mother couples. This study was the second phase of a mixed-method study conducted in well-baby clinics of Maharaj Nakorn Chiang Mai Hospital and Chiang Mai Health Promotion Hospital in the province of Chiang Mai, Thailand. In the first phase, 205 father-mother couples completed a survey. During the second phase, a purposeful sample of 30 couples agreed to participate in joint interviews, which were completed from March to July 2020. The intent of the interviews was to explore Thai fathers' confidence in providing breastfeeding support to their infants' mothers during the first 6 months after birth while also obtaining mothers' perspectives on that support. During each interview, the principal investigator (PI) followed a semi-structured interview guide containing open-ended questions

based on the breastfeeding self-efficacy theory (Dennis, 1999). All 30 participating couples were remotely interviewed in their homes using an online videoconferencing program.

### **Procedures**

The PI obtained study approvals from the institutional review boards (IRB) of the University of Illinois at Chicago (#2019-1309), Maharaj Nakorn Chiang Mai Hospital (#NONE-2562-06778), and Chiang Mai Health Promotion Hospital (#3/2563). To recruit couples for study participation, the PI posted study flyers in the hospitals' well-baby clinics. This flyer included the study's purpose, inclusion criteria, benefits and risks of participation, and the PI's contact information; it also requested that couples telephone the PI if they were interested in participating. As another means of recruitment, the PI approached couples in the well-baby clinics, where their infants were receiving 6-month vaccinations, and asked them whether they were interested in participating in the study.

After the 30 recruited couples had completed the survey in the first phase of the study, an interview appointment was scheduled with each couple at a mutually convenient time. At each scheduled interview, which was remotely completed using an online videoconferencing program, the PI first reviewed the purpose and procedures of the study and the benefits and risks of participation. Then the PI confirmed the interviewees' eligibility to participate. After answering any participant questions about the study, the PI obtained the couple's informed consent. Then the joint interview was conducted by the PI in the Thai language for 45 to 90 minutes. With the permission of the participating couple, each interview was audio-recorded; in addition, the PI recorded detailed field notes on the interview. After completing the interview, each couple was given the Thai equivalent of 10 USD (300 Thai Baht) in appreciation of their cooperation.

### **Measures**

In the first phase of the study, all 30 participating couples completed a survey. The questionnaires for fathers consisted of a sociodemographic questionnaire, the BSES-SF for fathers, and the Father's Attitude toward Exclusive Breastfeeding questionnaire (Howkanta et al., 2016), and mothers completed the sociodemographic questionnaire and BSES-SF for

mothers. Before the second phase began, the PI conducted a set of pilot interviews with three Thai couples meeting the inclusion criteria (but not included among the 30 participating couples) to evaluate the comprehensibility and cultural appropriateness of the interview guide. Based on the pilot interview results, the interview guide was revised by rephrasing a few questions in Thai to be more clearly understood by participants. The revision of the interview guide was reviewed by the PI's advisor and a Thai university professor of nursing, both of whom have expertise in qualitative research. The data for the three pilot test interviews were then discarded.

During the interviews, the PI posed the open-ended questions in the semi-structured interview guide based on the breastfeeding self-efficacy theory (Dennis, 1999). For fathers, the interview guide included questions corresponding to four main experiential sources of information (performance accomplishments, vicarious experiences, verbal persuasion, and physiological responses) as well as questions on fathers' earlier intention to support exclusive breastfeeding during their partners' pregnancy. For mothers, the interview guide contained questions exploring mothers' antenatal intention to perform exclusive breastfeeding and current perceptions regarding their partners' support of their exclusive breastfeeding.

In addition to audio-recording the interviews, the PI completed field notes for each interview. The field notes recorded nonverbal behaviors of participants and features of their surroundings before, during, and after the interviews. The format of the field notes included sections to record the time of day, interview space and environment, noise level, body language, facial expressions, eye contact, participants' reactions to what their partners said, and the PI's overall impression of the interview and the couple's relationship.

### **Data Analysis**

To examine the demographic characteristics of the interview participants, descriptive analysis of their sociodemographic questionnaire data was performed using STATA version 15 (Stata Corp, 2017). The qualitative data obtained during the interviews were analyzed using content analysis (Sandelowski, 2000). The audio-recordings of the interviews were

transcribed verbatim in the Thai language by the PI, and then the transcriptions were verified by the aforementioned Thai university professor. Next the PI translated the Thai transcripts into English, and the English transcripts were reviewed by the PI's advisor.

### ***Content Analysis***

During content analysis (Elo et al., 2014; Sandelowski, 2000), the PI and the PI's advisor served as independent coders. The content analysis process began with coding guided by the concepts of the breastfeeding self-efficacy theory. Furthermore, the field notes were used as a source of additional information for synthesis of the interview data. Each coder developed a preliminary codebook based on the topic domains in the interview guide and the concepts of the theory. To refine the codes, the two coders met to discuss and resolve coding inconsistencies, and code definitions were revised after each meeting. The PI then systematically coded all the transcripts. During the analysis, if relevant transcript text did not correspond with initial codes, a new code was added. Finally, the descriptive coding was analyzed to isolate patterns and relationships and identify themes.

Moreover, the aforementioned Thai university professor, who served as the PI's local advisor in Thailand, oversaw the entire process of transcript translation, coding scheme development, and scheme application. This individual ensured that Thai cultural elements were accurately captured during transcript translation and performed a peer debriefing with the two coders. The interview themes generated were based on the final coding scheme, and these themes were confirmed by three additional nursing experts serving on the PI's dissertation committee.

### ***Trustworthiness of the Study***

To achieve the trustworthiness required for this study, strategies were employed in four areas: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). Credibility was achieved through peer debriefings during every part of the data collection and analysis processes as well as through ongoing discussions with the PI's advisor and dissertation committee members. Moreover, the aforementioned Thai professor oversaw the process of interview transcription, translation, and content analysis.

Transferability was accomplished by transcribing interview audio-recordings, completing translations, and conducting coding with careful attention to the terms, meanings, and concepts that participants used in the interviews. In addition, in completing detailed field notes for each interview, the PI included participant speech patterns, expressions of emotion, and nonverbal behavior. Dependability was achieved by following the approved data collection and analysis process, including providing thick descriptions of the participants, their situations, and their surroundings. Finally, confirmability was achieved by adhering to the approved data collection and analysis process; conducting extensive peer reviews; maintaining an audit trail; and documenting all transcription, translation, and coding activities performed.

### **Results**

Demographic characteristics of the 30 couples interviewed are summarized in Table 9. Fathers' age ranged from 23 to 60 years, with a mean of 35.63 years (standard deviation [SD]=6.28). Over half of fathers had completed a bachelor's degree or higher. Most father participants were employed full-time. About 43% of fathers had a monthly income between 10,000 Baht (300 USD) and 19,999 Baht (600 USD). Fathers having one child and fathers who did not attend antenatal classes participated in the study in the same proportion (56.67%).

For mother participants, the mean age was 31.13 years (range: 20 to 42 years, SD=5.18). More than half the mothers had completed a bachelor's degree or higher, and 66.67% worked full-time job. About 40% of mothers earned an income between 10,000 Baht (300 USD) and 19,999 Baht (600 USD) per month. One-third of the women took less than 3 months of maternity leave. Most of the women were first-time mothers, and 46.67% did not attend antenatal classes. Over half the mothers delivered their child vaginally. Most of the mothers provided only breast milk to their child for the first 6 months postpartum. All participants were married, and 63.33% of the participants lived with an extended family.

From content analysis, five major themes emerged: (1) "my partner told me that she would like to breastfeed, so I totally agreed with her," (2) breastfeeding is women's business,

(3) confidence is dynamic, (4) seeking knowledge and support, and (5) institutional support and obstacles for breastfeeding.

**“My partner told me that she would like to breastfeed, so I totally agreed with her”**

When couples described discussions about breastfeeding that occurred prior to birth, they talked about planning and assumptions. Prior to the birth of the infant, most couples had discussed infant feeding, and had decided that breastfeeding was the first choice for them. One first-time father aged 37 years described how he and his partner developed a breastfeeding plan:

*We had discussed that we would feed our child with breast milk. I did not want to feed formula milk to my child. From my previous knowledge, I have learned that formula milk affects an infant's health, such as giving diarrhea and allergy. Thus, I think that breast milk is the best for an infant because it will give him immunity. When we discussed feeding our child, my partner told me that she would like to breastfeed, so I totally agreed with her.*

Others did not feel the need to discuss this as a plan because they did not see breastfeeding as a choice to make, but rather assumed it was the only option. There were seven couples who did not specifically discuss infant feeding during the pregnancy period. A 34-year-old father with two children explained this when he stated:

*She [my partner] did not tell me in a direct statement that she would breastfeed, but we had already known by ourselves that we would definitely feed breast milk to our child after the delivery. It was alright because I knew that breast milk is good in term of nutrients, and [I knew about] the bonding that a child will experience from breastfeeding....*

### **Breastfeeding is Women's Business**

Another theme that arose related to gender roles and responsibility for breastfeeding. Often fathers would label breastfeeding as a role to be fulfilled by their partner and one that was not discussed much outside of the family. Fathers viewed their partner as the expert in breastfeeding and acknowledged their partner owns this responsibility. Fathers deferred to their partner's decisions about breastfeeding. An experienced father who was 42 years old and had three children provided an example when he said:

*For all of our children, I agreed with [my partner] about breastfeeding; it completely depended on her in this matter. I let my partner perform it fully, and she did not do other tasks in the house; she only breastfed the child because I could be responsible for other duties. I was also the moneymaker*

*so that she could take care of our children exclusively [laughing]; I let her do this by herself, and I always supported her in other matters such as family income. I give authority to my partner, so she can decide how to raise and breastfeed our children. I totally agree with her opinion because she is mature, and I believe that she can make a suitable decision and choose the best thing for our children. Moreover, the breast milk belongs to her, so she has the right to decide about this matter. I am confident that my partner will be able to make a decision correctly. We must help each other, and we have conversations about our children all the time.*

Several fathers not only saw breastfeeding as the women's business, but also felt it was a private issue that men rarely discussed. When they did discuss it however, the discussions were generic and not about the intimate aspects of the experience. One father aged 29 years said:

*Most of the male may view that breastfeeding is women's business; females may more understand it than males so that breastfeeding is not the topic of males' conversations. Men prefer to talk or discuss about how to take care of a child, how the child's well-being is, preparing stuff that I had to buy before delivery. My friends suggested to me about purchase with a bottle of milk and a pumping machine for breast milk storage. We also discussed about supplement food for a child; what kind of food I should feed to a child....*

### **Confidence is Dynamic**

A theme that emerged from these data was that experience (i.e., having raised an infant) and time (i.e., the growing child) related to variation in and changes over time to confidence levels. The fathers described having low confidence when their partner faced breastfeeding difficulties such as breast engorgement, nipple pain, and cracked nipples as well as when the fathers worried about breast milk insufficiency. One first-time, 34-year-old father said:

*I might have had some [low confidence] in the early postpartum period, when my partner did not have breast milk and my child could not suckle well. At that time, I was worried that my child would receive insufficient milk. So I tried to massage my partner's breasts. I wanted her to have a lot of breast milk. I felt no confidence when my partner had little milk....*

Paternal confidence to provide support for their partner's breastfeeding developed over time. In the early postpartum period, most fathers lacked the confidence to hold their child or to perform some basic care such as bathing or burping the child because of the infant's small size. However, as the child grew, fathers' confidence increased because they recognized that their child was bigger and that its neck muscles had become stronger. Thus,

fathers felt more comfortable in performing basic care procedures. A father aged 29 years who had two children and whose partner provided 6 months of exclusive breastfeeding to their children said:

*For this child, I did not have the confidence to hold the child and bring the child to latch on for breastfeeding at first. I was nervous and worried about everything. Although I have had a child before, it was 7 years ago. I have not done it for so long, so I felt nervous when I held a tiny child. However, I felt more confident as the child became bigger. Moreover, [I saw that] my partner had more experience [breastfeeding on her own] and that the child's neck muscles became stronger. I held a child more often. Thus, I can do it smoothly and confidently.*

Seventeen first-time fathers described their confidence as lower. A 28-year old father said:

*It was more difficult with the first child because my child needed breast milk a lot at night and I could not adjust myself [to helping with breastfeeding] at that time. Therefore, I felt that it was hard. Sometimes, I was tired and exhausted. I took a long time to adjust.... Moreover, I had no experience before having my first child. I took about 4 to 5 months to build up my confidence....*

While experienced fathers viewed their confidence increased in providing breastfeeding support for their newest child. They perceived their success in doing so for their previous child. One 39-year-old father of two children said:

*I had more confidence to provide assistance to my partner because I had experienced before.... if she needs anything, I felt confident to do it immediately such as holding a child to latch on or providing bottle feeding. For this child, I could do it since we were in the hospital and a nurse did not advise me much....*

All types of social support were evident in the data collected from all the father participants, including informational, emotional, instrumental, appraisal, and physical support. For example, one father aged 29 years explained how he provided physical support to his partner:

*I did everything in the house, and my partner did nothing except breastfeeding. When my child was small, I helped to place the child at my partner's breast or brought pillows to support her breastfeeding position. At that time, my partner could not breastfeed comfortably. I used to help her with breast massage and breast milk expression as well....At that time, I felt like I had to try every way to make my partner's milk flow out....I tried everything to stimulate her breast milk production.*



All fathers reflected on their positive feelings while providing breastfeeding support to their partner. Although fathers might feel exhausted at the beginning of the breastfeeding process, they were gratified when their child received breast milk. For example, a 41-year old father whose partner exclusively breastfed their infant for 6 months, expressed his feeling when he supported his partner's breastfeeding:

*I felt good that I could share my partner's burden. [For that reason,] she would not be too tired when she had to wake up at night for breastfeeding, particularly in the early postpartum period when the child woke up frequently at night and my partner needed to breastfeed the child. It made my partner feel restless....I am so proud that my children got breast milk and that we took care of them by ourselves. We are so full of pride that we did not ask others to take care of our children. Our tiredness was gone when we saw that our children were healthy and were in a good mood; it was the happiness of exhaustion.... I am so proud of myself for being responsible in my parental duties.*

Moreover, all the mother participants discussed how much they appreciated the fathers' support. One 39-year-old mother said:

*I felt happy and relieved that my partner was beside me and provided his support.... My partner could manage all tasks very well. I saw his effort to encourage my breastfeeding, and he reminded me to do breast massage and pumping because he wanted me to have milk for our children.... He gave me good support, and I was relieved when I went to work because he could look after the child very well. I trusted him to be able to do everything.*

### **Seeking Knowledge and Support**

When asked about where they gained knowledge and support, more than half of the fathers had learned about and sought out advice about breastfeeding from their own mother and mother-in-law. Couples acknowledged how important grandmothers were to support them as parents and offering breastfeeding and child rearing advice. A 37-year-old father said:

*My mother told me that she used to provide breast milk to me when I was young. Although she fed formula milk to me when I began to grow up, breast milk was the main of my feeding. From her breastfeeding experience, I had never gotten sick or admitted to the hospital. So, I thought that if I have a child, I would like my child to receive breast milk as well.*

Many grandmothers directly helped couples to take care of their infant and bottle-fed the infant with breast milk. This support was especially evident when the mothers had to return to work. One 38-year old father with two children said:

*A grandmother helped to take care of our children when my partner returned to work after the third month postpartum. On my day off and when I did not go to work, I would take care of this task.... When I went to work, my children stayed with their grandmother; she would help us to bottle-feed our children breast milk...*

Moreover, most fathers reporting seeking breastfeeding information from social media such as Facebook and YouTube and from either asking or observing friends, colleagues, and neighbors. For example, a first-time father aged 33 years whose partner exclusively breastfed their child for 6 months explained his experience:

*I watched a YouTube about how to adjust the breastfeeding position and read information on the Facebook page of Dr. A [name of a pediatrician]. I searched for pages about children, and many pages showed up. The Facebook page of this pediatrician appeared on the first line. I chose her page because it was created by a physician who should be reliable, and it had many followers.... On that Facebook page, I found information stating that breast milk is the best and that nutrients contained in breast milk help a child become healthy....*

### **Institutional Support and Obstacles for Breastfeeding**

There were two levels of institutional policy that were presented as barriers to providing breastfeeding support. The first was national policy focused on paternity leave, as fathers viewed their work and employment as a barrier to providing breastfeeding support. The second involved health system practices and focused on the inclusion of fathers in breastfeeding education.

Of 29 working fathers, only one was able to take 15 days of leave after his partner's delivery. The other employed fathers had either less or no leave. Thus, most fathers indicated that their job and lack of paternity leave were obstacles to providing breastfeeding support to their partner, particularly in the early postpartum period. Moreover, 11 fathers expressed a need for longer leave duration. A 31-year-old, first-time father summarized these issues when he said:

*I could take leave for only 1 week after my partner delivered the child. It was just a short moment, and I could not be away from my work anymore. Therefore, I had to go back to work after that. I was still not able to do anything for my partner at that time, and I also could not hold my child. During that period, I just watched while my partner provided breastfeeding and stayed beside her sometimes. Honestly, I wanted to take a longer leave than that, but I was unable to do it because it was an obligation to my workplace. If I could have leave for a longer duration, I would like to do it for 2 weeks so*

*that I could help my partner to take care of our child. At least during that period, I would be able to stay beside her and help with some stuff because she still had pain in the early postpartum period.*

Fathers often described feeling left out of the educational aspects of breastfeeding offered by health providers, even if they were present. Most fathers received breastfeeding training in the hospital after their partner's delivery, and 13 fathers attended at least one antenatal care class. However, fathers mentioned having limited access to breastfeeding information from health providers: issues involving providers included focusing their breastfeeding training only on the mothers, providing ineffective education for fathers, and not offering feedback to fathers when they provided breastfeeding support to their partner. Based on their experience with breastfeeding training, five fathers expressed a need to be more involved in such training. For example, one 33-year-old, first-time father explained:

*I think I would like nurses to teach me more about breastfeeding and breast issues. Nurses taught me about very few of these topics; they taught me only how to bath and burp the child. I prefer to learn about breasts as well because when I saw my partner feel pain and suffer from her breast engorgement, I would like to have helped her. I would like to have known how to solve her problem at the beginning of the condition. Moreover, there is no breast massage video on YouTube; it might be considered inappropriate for broadcasting. Therefore, I prefer that nurses teach me about this topic as well.... In fact, I want to learn everything about breastfeeding. I waited for a nurse to call me to participate while she was teaching my partner. However, the nurse called only my partner to attend when she demonstrated and provided suggestions....*

## **Discussion**

The purpose of this study was to explore couples' perspectives on Thai fathers' confidence to provide exclusive breastfeeding support. All mother participants described receiving breastfeeding support from their partner, and about 63% of the mothers were able to exclusively breastfeed for 6 months. This exclusive breastfeeding rate is well above the national goal of 50% set for 2021 (National Statistical Office and United Nations Children's Fund, 2016). The findings are consistent with other studies that took place in Canada, the United States, and China, indicating that fathers' support can influence breastfeeding choices and practices, including initiation and duration (Abbass-Dick et al., 2015; Hunter & Cattelona, 2014; Namir et al., 2017; Su & Ouyang, 2016).

Most fathers were involved in breastfeeding discussions and decision-making with their partner beginning in pregnancy; but seven couples did not discuss breastfeeding plans as both had assumed breastfeeding was intended. Similar to studies conducted in England, Sweden, Canada, Jordan, and Japan, most fathers accepted and respected their partner's breastfeeding opinions and decisions (Abu-Abbas et al., 2016; Brown & Davies, 2014; Datta et al., 2012; de Montigny et al., 2018; Hounscome & Dowling, 2018; Ito & Barr, 2013; Mitchell-Box & Braun, 2012). British fathers explained that since breastfeeding requires their partner's physical effort and consumes her time and energy that the authority should lie with her (Datta et al., 2012). Swedish fathers expressed that there was a "natural" division of labor since "men" could not physiologically breastfeed so the responsibility for breastfeeding naturally belonged to women (Palmqvist et al., 2015).

Johnston and LeRoy (2018) described paternal confidence as enhancing fathers' support for their partner. This present study supports this observation, but also shows that confidence is not static, but rather was dynamic and changed over time. Like men in the United Kingdom, Thai fathers expressed having lower confidence in the early postpartum period and when their partner was most likely to encounter difficulties or breast milk insufficiency (Brown & Davies, 2004). Fathers' concerns influence confidence levels which may translate into an effect on their ability to provide adequate breastfeeding support to their partner (Mitchell-Box & Braun, 2012). Moreover, compared to experienced fathers in the present study, first-time fathers described their confidence as lower.

In another qualitative study about parenting, first-time fathers from northern region were stressed, and felt uneasy and tired in the early postpartum period and attributed the challenges to a lack of knowledge and experience (Sansiriphun et al., 2015). Since mothers' breastfeeding experience is associated with her self-efficacy (Amin et al., 2011; Dashti et al., 2014; Ngo et al., 2019), it is possible that such a relationship will hold true for fathers as well. First-time fathers with little to no previous breastfeeding support experience may have low confidence (Dennis, 1999). However, given that our study showing that fathers' confidence changes over time as the infant grew and they gained experience is consistent with other

studies that took place in Canada (Thomas et al., 2008) and Singapore (Leng et al., 2019), the starting point for confidence in the early postpartum is likely modifiable.

It appears that as Thai fathers' confidence increased, so did their ability to provide breastfeeding support; they were able to offer their partner informational, emotional, instrumental, appraisal, and physical support as well as breastfeeding support at home and in public spaces. Importantly, Thai mothers in this study expressed appreciation for their partner's breastfeeding support, which was similar to what was reported in a U.S.-based qualitative study (Nickerson et al., 2012) in which mothers also appreciated their partner's support during breastfeeding. In that study, mothers also wanted their partner to be involved and provide support throughout the breastfeeding process (Nickerson et al., 2012). In the northern region of Thailand, specific social support activities on the part of fathers included taking on household work (e.g., cooking and washing dishes and clothes) and parenting (e.g., bathing the infant and changing and washing diapers), and their partners felt that these activities supported their breastfeeding capability (Sansiriphun et al., 2014). Both the support activities and the women's perception of the support helped them to breastfeed comfortably.

Similar to South African fathers (Mgolozeli et al., 2018), Thai fathers also provided emotional and instrumental support for their partners like findings reported by in that South African fathers provided emotional and financial support to their partners, including motivating and assisting them to seek healthcare during the breastfeeding period (Mgolozeli et al., 2018). This study expands the literature showing that that receiving all types of support from fathers increases mothers' confidence in breastfeeding (Mannion et al., 2013).

Moreover, all fathers reported their positive feelings in providing breastfeeding support for their partner. In de Montigny and colleagues' (2018) qualitative study, 43 French fathers described their ability to be involved in their child's feeding as a positive experience; they also reported that they felt personal satisfaction from their involvement in the infant feeding experience. In another study, fathers' perceptions of their own satisfaction in supporting their partner's breastfeeding also enhanced their confidence in providing this support (Dennis et al., 2018).

The role of family members, social networks, and other sources affected Thai fathers' experiences in this study. Consistent with other literature (Bootsri & Taneepanichskul, 2017; Buakhum et al., 2007; Gharaei et al., 2020; Srisawat et al., 2014), grandmothers' experience, advice, and support were highly valued. Outside the family, Thai fathers also regarded friends, colleagues, neighbors, and community members as a source of support, and these have been identified as crucial for fathers wanting to learn about breastfeeding (Sihota et al., 2019). Finally, like northern-region Thai fathers in another study (Sansiriphun et al., 2015) and fathers in Canada (Rempel & Rempel, 2011), Thai fathers in the present study consulted the internet and other sources to expand their understanding of breastfeeding.

Even though ANC attendance by fathers increases their involvement in breastfeeding (Nickerson et al., 2012), less than half of Thai fathers interviewed attended ANC with their partner. Most fathers received breastfeeding training in the intrapartum or the postpartum unit. However, they felt excluded from the hospital breastfeeding education even though they wanted to be involved, which was similar to results of studies conducted in England (Brown & Davies, 2014) and the United States (Mitchell-Box & Braun, 2012). Excluding fathers from in-hospital breastfeeding support may result in decreased self-efficacy (Namir, 2017). Given that Thai fathers recommended that health providers be more inclusive, a modifiable point along the pregnancy continuum has been identified as a way to improve breastfeeding education, increase self-efficacy, and ultimately improve breastfeeding practices (Abbass-Dick et al., 2015; Brown & Davies, 2014; de Montigny et al., 2012; Mitchell-Box & Braun, 2012; Ngo et al., 2019; Ozlüses & Celebioglu., 2014; Sherriff et al., 2014). Overall, paternal involvement in breastfeeding and breastfeeding education is clearly beneficial to breastfeeding success; therefore, interventions that improve ANC and hospital providers engagement with fathers at ANC and the hospital can be impactful.

Thai fathers noted that work put limitations on their time; this was considered as a barrier to providing breastfeeding support. Another institutional and modifiable policy that they mentioned was paternity leave. In fact, most working Thai fathers in the private sector

cannot take time off; others felt that 15 days was not enough time to spend with their infant and provide breastfeeding support (Ministry of Labour, 2017). A study conducted in Sweden showed a negative correlation between paternity leave and rates of breastfeeding were reported at 2, 4, and 6 months postpartum with those with no paternity leave having the lowest rates (Flacking et al., 2010). Of course, the obstacles faced by fathers who work for a living are not limited to Thailand; fathers from Canada (Thomas et al., 2009) reported that working was a major obstacle to bonding with their infant. Another possible alternative for policy change is flexible working time; in Japan partners with flexible working time reported higher initial breastfeeding rates and longer breastfeeding duration (Kobayashi & Usui, 2017). To conclude, it appears that the Thai government could institute innovative policy changes to paternity leave in both the public and private sector will increase fathers' opportunities to bond and provide effective breastfeeding support and thereby increase breastfeeding rates and duration to improve population health.

### **Limitations**

The findings of this study may not be generalizable throughout Thailand because participants were recruited from only two hospitals located in Chiang Mai in the northern region of the country. In addition, given that some participants were unwilling to be interviewed online, we cannot assess how those individuals' responses might have differed from the responses of those interviewed. Finally, the particular benefits of in-person interviewing—including full observation of participants' body language and the physical environment—were lost due to the need to perform online interviewing during the coronavirus pandemic.

### **Implications**

One of the most important revelations of this study is that fathers felt excluded from breastfeeding education, which in turn may have reduced their confidence to support their partner's breastfeeding. Therefore, healthcare providers and researchers should consider developing inclusive co-parenting breastfeeding interventions that will enhance fathers' confidence and involvement in their partner's breastfeeding. In addition, inadequate paternity

leave was a barrier for working fathers in that it affected their ability to provide breastfeeding support to their partner and infant. Thus, policy makers of Thailand's Ministry of Labor should strive to make adequate paternity leave available to all working fathers.

In future research, first-time fathers, who in this study perceived their breastfeeding support confidence to be low, should be targeted for more detailed exploration of their experiences and perspectives. This population merits additional research attention because first-time fathers may face difficulties in their transition to fatherhood due to lack of experience, and thus their needs and opinions may differ from those of experienced fathers. Moreover, paternal confidence should be explored in more diverse groups of fathers, such as adolescent fathers and fathers whose partner or child experienced postpartum complications. Understanding fathers' breastfeeding-related experiences in various situations would help healthcare providers to develop breastfeeding education strategies that enhance fathers' confidence in supporting their partner's breastfeeding.

## **Conclusion**

This is the first study to explore Thai couples' perspectives on fathers' confidence in providing exclusive breastfeeding support. The study findings contribute to a clearer understanding of Thai fathers' perceptions of breastfeeding support for their partners and infant children. The information and insights provided by the study can be used by Thai healthcare providers to enhance fathers' participation in breastfeeding education programs. The findings may also encourage policy makers to establish an equitable paternity leave system for all Thai fathers in order to help increase exclusive breastfeeding in Thailand.



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**Table 9***Participant Demographic Characteristics (N= 60)*

| Characteristic                      | Fathers (n=30) | Mothers (n=30) |
|-------------------------------------|----------------|----------------|
|                                     | N (%)          | N (%)          |
| Age (years)                         |                |                |
| 20-29                               | 7 (23.33)      | 12 (40.00)     |
| 30-39                               | 16 (53.33)     | 17 (56.67)     |
| 40-49                               | 5 (16.67)      | 1 (3.33)       |
| 50-59                               | 1 (3.33)       |                |
| ≥60                                 | 1 (3.33)       |                |
| Educational level completed         |                |                |
| <High school                        | 0 (0)          | 2 (6.67)       |
| High school                         | 4 (13.33)      | 4 (13.33)      |
| Vocational                          | 7 (23.33)      | 6 (20.00)      |
| Bachelor's degree and higher        | 19 (63.33)     | 18 (60.00)     |
| Marital status                      |                |                |
| Married                             | 30 (100)       | 30 (100)       |
| Type of family                      |                |                |
| Nuclear                             | 11 (36.67)     | 11 (36.67)     |
| Extended                            | 19 (63.33)     | 19 (63.33)     |
| Income (Baht/Month)                 |                |                |
| <10,000                             | 3 (10.00)      | 6 (20.00)      |
| 10,000-19,999                       | 13 (43.33)     | 12 (40.00)     |
| 20,000-29,999                       | 7 (23.33)      | 9 (30.00)      |
| 30,000-39,999                       | 4 (13.33)      | 3 (10.00)      |
| ≥40,000                             | 3 (10.00)      | 6 (20.00)      |
| Number of children                  |                |                |
| 1                                   | 17 (56.67)     | 18 (60.00)     |
| 2                                   | 9 (30.00)      | 8 (26.67)      |
| 3                                   | 2 (6.67)       | 4 (13.33)      |
| 4                                   | 2 (6.67)       | 0 (0)          |
| Antenatal class attendance (number) |                |                |
| 0                                   | 17 (56.67)     | 14 (46.67)     |
| 1                                   | 1 (3.33)       | 3 (10.00)      |
| 2                                   | 5 (16.67)      | 8 (26.67)      |
| 3                                   | 7 (23.33)      | 5 (16.67)      |
| Employment                          |                |                |
| Unemployed                          | 1 (3.33)       | 7 (23.33)      |
| Part-time                           | 5 (16.67)      | 3 (10.00)      |
| Full-time                           | 24 (80.00)     | 20 (66.67)     |



**Table 9***Participant Demographic Characteristics (continued) (N=60)*

| Characteristic                               | Fathers (n=30) | Mothers (n=30) |
|--|----------------|----------------|
|  | N (%)          | N (%)          |
| Occupation                                   |                |                |
| Merchant                                     | 8 (26.67)      | 5 (16.67)      |
| Self-employee                                | 8 (26.67)      | 3 (10.00)      |
| Company employee                             | 7 (23.33)      | 8 (26.67)      |
| Government officer                           | 6 (20.00)      | 7 (23.33)      |
| Unemployed                                   | 1 (3.33)       | 7 (23.33)      |
| Durations of maternity leave (months)        |                |                |
| <3   |                | 11 (36.67)     |
| 3-5  |                | 10 (33.33)     |
| ≥6   |                | 2 (6.67)       |
| Unemployed                                   |                | 7 (23.33)      |
| Type of delivery                             |                |                |
| Normal vaginal delivery                      |                | 17 (56.67)     |
| Cesarean section                             |                | 13 (43.33)     |
| Duration of exclusive breastfeeding (months) |                |                |
| 0.5  |                | 1 (3.33)       |
| 1  |                | 1 (3.33)       |
| 2  |                | 1 (3.33)       |
| 3  |                | 4 (13.33)      |
| 4  |                | 2 (6.67)       |
| 5  |                | 2 (6.67)       |
| 6  |                | 19 (63.33)     |

## APPENDICES

## APPENDIX A

Participant Code: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

### Part 1: Paternal Characteristic Information

|     |                               |  |
|-----|-------------------------------|--|
| 1.1 | Age                           | _____ years  |
| 1.2 | Educational level completed   | <input type="checkbox"/> < High school<br><input type="checkbox"/> High school<br><input type="checkbox"/> Vocational<br><input type="checkbox"/> Bachelor's degree and higher<br><br>Number of years of education completed:<br>_____ years |
| 1.3 | Marital status                | <input type="checkbox"/> Single<br><input type="checkbox"/> Married<br><input type="checkbox"/> Separated/Divorced<br><input type="checkbox"/> Widowed   |
| 1.4 | Type of family                | <input type="checkbox"/> Nuclear family (only you, your partner, and your child/children live together)<br><input type="checkbox"/> Extended family (your parents, in-laws, grandparents, or other relatives live with you)                  |
| 1.5 | Income                        | _____ baht/month   |
| 1.6 | Number of children            | _____ child/children   |
| 1.7 | Antenatal class participation | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><br>If Yes, please identify the total number of sessions: attended: _____ times   |
| 1.8 | Employment                    | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><br>If Yes, please identify your occupation<br>_____<br><input type="checkbox"/> Full-time<br><input type="checkbox"/> Part-time  |

Participant Code: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

**Part 1: Maternal Characteristic Information**

|     |                               |   |
|-----|-------------------------------|---|
| 1.1 | Age                           | _____ years   |
| 1.2 | Educational level completed   | <input type="checkbox"/> < High school<br><input type="checkbox"/> High school<br><input type="checkbox"/> Vocational<br><input type="checkbox"/> Bachelor's degree and higher<br><br>Number of years the education completed:<br>_____ years                                   |
| 1.3 | Marital status                | <input type="checkbox"/> Single<br><input type="checkbox"/> Married<br><input type="checkbox"/> Separated/Divorced<br><input type="checkbox"/> Widowed  |
| 1.4 | Type of family                | <input type="checkbox"/> Nuclear family (only you, your partner, and your child/children live together)<br><input type="checkbox"/> Extended family (your parents, in-laws, grandparents, or other relatives live with you)   |
| 1.5 | Income                        | _____ baht/month  |
| 1.6 | Number of children            | _____ child/children  |
| 1.7 | Antenatal class participation | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><br>If Yes, please identify the total number of sessions: attended: _____ times  |
| 1.8 | Type of delivery              | <input type="checkbox"/> Normal vaginal delivery<br><input type="checkbox"/> Forceps-assisted delivery<br><input type="checkbox"/> Vacuum-assisted delivery<br><input type="checkbox"/> Cesarean section<br><br>Date of delivery of most recent child<br>_____ (day/month/year) |

|      |  |   |
|------|--|---|
| 1.9  | Employment   | <input type="checkbox"/> Yes (If Yes, please complete items 1.10 and 1.11)<br><input type="checkbox"/> No (If No, you are done with this questionnaire)<br>If Yes, please identify your occupation<br>_____<br><input type="checkbox"/> Full-time<br><input type="checkbox"/> Part-time |
| 1.10 | What date did you begin maternity leave?               | _____ (day/month/year)  |
| 1.11 | What date did you return to work from maternity leave? | _____ (day/month/year)  |

### APPENDIX B

Below are statements that describe breastfeeding support activities. Please circle the number that best describes the level of confidence you would feel in making each statement. There is no right or wrong answer for each statement.

|     |   | 1   | 2                           | 3                          | 4                | 5                       |
|-----|---|---|-----------------------------|----------------------------|------------------|-------------------------|
|     |   | <b>Not at all confident</b>   | <b>Not really confident</b> | <b>Sometimes confident</b> | <b>Confident</b> | <b>Always confident</b> |
| No. | Statement   | <div style="display: flex; justify-content: space-between; align-items: center;"> <div>Not at all confident</div> <div>→</div> <div>Always confident</div> </div> |                             |                            |                  |                         |
| Q1  | Determine that our baby is getting enough milk                                      | 1   | 2                           | 3                          | 4                | 5                       |
| Q2  | Successfully cope with breastfeeding like I have with other challenging tasks       | 1   | 2                           | 3                          | 4                | 5                       |
| Q3  | Help mom breastfeeding our baby without using formula as a supplement               | 1   | 2                           | 3                          | 4                | 5                       |
| Q4  | Help mom ensure our baby is properly latched on for the whole feeding               | 1   | 2                           | 3                          | 4                | 5                       |
| Q5  | Help mom manage the breastfeeding situation to my satisfaction                      | 1   | 2                           | 3                          | 4                | 5                       |
| Q6  | Help mom manage to breastfeed even if our baby is crying                            | 1   | 2                           | 3                          | 4                | 5                       |
| Q7  | Keep wanting the mother to breastfeed our baby                                      | 1   | 2                           | 3                          | 4                | 5                       |
| Q8  | Help mom comfortably breastfeed with our family members present                     | 1   | 2                           | 3                          | 4                | 5                       |
| Q9  | Be satisfied with our breastfeeding experience                                      | 1   | 2                           | 3                          | 4                | 5                       |
| Q10 | Deal with the fact that breastfeeding can be time consuming                         | 1   | 2                           | 3                          | 4                | 5                       |
| Q11 | Help mom finish feeding our baby on one breast before switching to the other breast | 1   | 2                           | 3                          | 4                | 5                       |
| Q12 | Help mom continue to breastfeed our baby for every feeding                          | 1   | 2                           | 3                          | 4                | 5                       |
| Q13 | Help mom manage to keep up with our baby's breastfeeding demands                    | 1   | 2                           | 3                          | 4                | 5                       |
| Q14 | Tell when our baby is finished breastfeeding  | 1   | 2                           | 3                          | 4                | 5                       |

Below are statements that describe breastfeeding activities. Please circle the number that best describes the level of confidence you would feel in making each statement. There is no right or wrong answer for each statement.

|            |   | 1   | 2                           | 3                          | 4                | 5                       |
|------------|---|---|-----------------------------|----------------------------|------------------|-------------------------|
|            |   | <b>Not at all confident</b>   | <b>Not really confident</b> | <b>Sometimes confident</b> | <b>Confident</b> | <b>Always confident</b> |
| <b>No.</b> | <b>Statement</b>  | <div> <div>Not at all confident</div> <div>→</div> <div>Always confident</div> </div> |                             |                            |                  |                         |
| Q1         | Determine that my baby is getting enough milk                                 | 1   | 2                           | 3                          | 4                | 5                       |
| Q2         | Successfully cope with breastfeeding like I have with other challenging tasks | 1   | 2                           | 3                          | 4                | 5                       |
| Q3         | Breastfeeding my baby without using formula as a supplement                   | 1   | 2                           | 3                          | 4                | 5                       |
| Q4         | Ensure our baby is properly latched on for the whole feeding                  | 1   | 2                           | 3                          | 4                | 5                       |
| Q5         | Manage the breastfeeding situation to my satisfaction                         | 1   | 2                           | 3                          | 4                | 5                       |
| Q6         | Manage to breastfeed even if my baby is crying                                | 1   | 2                           | 3                          | 4                | 5                       |
| Q7         | Keep wanting to breastfeed  | 1   | 2                           | 3                          | 4                | 5                       |
| Q8         | Comfortably breastfeed with my family members present                         | 1   | 2                           | 3                          | 4                | 5                       |
| Q9         | Be satisfied with my breastfeeding experience                                 | 1   | 2                           | 3                          | 4                | 5                       |
| Q10        | Deal with the fact that breastfeeding can be time consuming                   | 1   | 2                           | 3                          | 4                | 5                       |
| Q11        | Finish feeding my baby on one breast before switching to the other breast     | 1   | 2                           | 3                          | 4                | 5                       |
| Q12        | Continue to breastfeed my baby for every feeding                              | 1   | 2                           | 3                          | 4                | 5                       |
| Q13        | Manage to keep up with my baby's breastfeeding demands                        | 1   | 2                           | 3                          | 4                | 5                       |
| Q14        | Tell when my baby is finished breastfeeding                                   | 1   | 2                           | 3                          | 4                | 5                       |

### APPENDIX C

Please place "✓" in the box that best describes your opinion. The options have the following meanings:

|                   |  |
|-------------------|--|
| Strongly agree    | You strongly agree with the statement                      |
| Agree             | You agree with the statement                               |
| Neutral           | You hesitate or cannot make a decision about the statement |
| Disagree          | You disagree with the statement                            |
| Strongly disagree | You strongly disagree with the statement                   |

| No. | Statement   | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|-----|---|----------------|-------|---------|----------|-------------------|
| Q1  | Breastfeeding makes the breasts of a woman unattractive   |                |       |         |          |                   |
| Q2  | A mother will not be able to breastfeed when working outside the home   |                |       |         |          |                   |
| Q3  | Breastfeeding causes a mother to have less free time  |                |       |         |          |                   |
| Q4  | Exclusive breastfeeding interferes with a mother's social life  |                |       |         |          |                   |
| Q5  | I was embarrassed when an unknown woman breastfed in front of me  |                |       |         |          |                   |
| Q6  | A mother should only breastfeed in the home   |                |       |         |          |                   |
| Q7  | Visualization of women while breastfeeding on magazine covers, labels, and advertising posters is appropriate           |                |       |         |          |                   |
| Q8  | Visualization of breastfeeding women on television is normal  |                |       |         |          |                   |
| Q9  | Workplaces should provide a flexible schedule for mothers to breastfeed their infants or express breastmilk for storage |                |       |         |          |                   |
| Q10 | Workplaces should provide a private room such as a staff room for breastmilk expression by breastfeeding mothers        |                |       |         |          |                   |
| Q11 | I helped my wife do housework so that she would be able to comfortably breastfeed                                       |                |       |         |          |                   |



| No. | Statement   | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|-----|---|----------------|-------|---------|----------|-------------------|
| Q12 | I feel awkward or embarrassed if my wife breastfeeds in public areas (workplace, bus, taxi, and park) |                |       |         |          |                   |
| Q13 | Women lack attractiveness when they are in the breastfeeding period                                   |                |       |         |          |                   |
| Q14 | Breastfeeding negatively affects sexuality  |                |       |         |          |                   |
| Q15 | I feel like an outsider when my wife breastfeeds  |                |       |         |          |                   |
| Q16 | Breastfeeding is embarrassing   |                |       |         |          |                   |
| Q17 | Breastfeeding is old-fashioned  |                |       |         |          |                   |
| Q18 | Breastfeeding leads to wasted time  |                |       |         |          |                   |
| Q19 | Artificial milk has more benefit than breast milk   |                |       |         |          |                   |
| Q20 | Breastfeeding women are more feminine   |                |       |         |          |                   |
| Q21 | I feel intimacy when I look at my wife breastfeeding  |                |       |         |          |                   |
| Q22 | I was proud when I looked at my wife breastfeeding  |                |       |         |          |                   |
| Q23 | All women are able to breastfeed  |                |       |         |          |                   |
| Q24 | Breastfeeding is a burden and difficult task for a mother   |                |       |         |          |                   |
| Q25 | Breastfeeding leads infants to feel that they were touched, so they feel safe                         |                |       |         |          |                   |
| Q26 | Parents should jointly decide about exclusive breastfeeding   |                |       |         |          |                   |
| Q27 | I admire mothers who exclusively breastfeed   |                |       |         |          |                   |
| Q28 | Artificial milk feeding is a good choice when a mother goes to her workplace                          |                |       |         |          |                   |
| Q29 | Breastfeeding reflects an appropriately maternal role   |                |       |         |          |                   |
| Q30 | I can talk with my wife about exclusive breastfeeding   |                |       |         |          |                   |
| Q31 | If I could buy artificial milk, I would feed my infant only artificial milk                           |                |       |         |          |                   |

## APPENDIX D

Participant ID Code: \_\_\_\_\_  
 Interview Location: \_\_\_\_\_  
 Interview Date: \_\_\_\_\_

### **Begin recording**

Hello, today is \_\_\_\_\_, and it is \_\_\_\_\_ o'clock. Thanks so much for agreeing to speak with me about (for a father) your experience of supporting your partner's exclusive breastfeeding and (for a mother) your perceptions of your partner's support for your exclusive breastfeeding. This interview should take 1 to 1.5 hours and is being recorded to ensure that your comments are accurately documented.

As you know, I am a doctoral student at the University of Illinois at Chicago, where I am studying Thai fathers' self-efficacy to support exclusive breastfeeding. You have been invited to participate in this interview because your responses will provide insight into fathers' exclusive breastfeeding support experiences and mothers' perspectives on those experiences.

During this process, there are no right or wrong answers, so please just respond based on your own understanding and experience. I am here to learn from you. Your participation is entirely voluntary, so you may ask to skip any questions that you don't want to answer. No personal identifying information is being collected. Your answers will be combined with other couples' responses when I report on this research.

Do I have your permission to audio-record our conversation?

(If yes) Thank you! Please let me know if at any point you want me to turn off the recorder or keep something you said off the record. I will de-identify the transcript of this interview, and the recording will be deleted after transcription is complete.

(If no) Thank you for letting me know. I will only take notes of our conversation without recording it.

Before we begin the interview, do you have any questions about the study? If any questions arise at any point during this interview, you can feel free to ask me at any time. I would be more than happy to answer your questions.

### **Father Questions**

#### **General Experiences of Supporting Exclusive Breastfeeding**

First, I am interested in your experience in supporting exclusive breastfeeding.

1. During pregnancy, what conversations about infant feeding did you have with your partner?
2. What does breastfeeding support mean to you?
3. Please describe your levels of confidence in providing support for breastfeeding.
  - a. When/under what circumstances do you feel most confident in providing support for breastfeeding?
  - b. Can you tell me a specific incident, example, or story in which you felt confident?
  - c. When/under what circumstances do you feel least confident in providing support for breastfeeding?
  - d. Can you tell me a specific incident, example, or story in which you lacked confidence?

#### **Experiential Sources**

4. Performance Accomplishments

As you know, I'm interested in understanding how confident you are in supporting your partner as she breastfeeds. I want you to think back to your past experience in supporting breastfeeding.

- a. In what ways did you support your partner/relative/friend in breastfeeding?
- b. How do you evaluate your ability to provide breastfeeding support?
5. Vicarious Experiences
  - a. Please describe how you learned about supporting breastfeeding.
  - b. Have you ever seen other fathers support their partners' breastfeeding?
    - i. What did those fathers do?
    - ii. What did you learn from their behaviors?
6. Verbal Persuasion
  - a. Please describe how you and your partner discuss breastfeeding support.
  - b. What kind of feedback does your partner give you about your breastfeeding support?
  - c. What are other people's opinions of your support for your partner's breastfeeding? (e.g., healthcare providers or family members)
  - d. How do you feel when they evaluate your ability to support your partner's breastfeeding?
7. Physiologic Responses
  - a. Please explain your positive or negative physical experiences in supporting breastfeeding.
  - b. What positive or negative physical experiences have you had in supporting your partner's breastfeeding?
  - c. How do you feel when you support your partner's breastfeeding?
  - d. If you are not sure about your ability or skill to support your partner's breastfeeding, what do you do?
  - e. What problems do you think reduce your confidence in supporting your partner's breastfeeding? And what do you do to solve these problems?

### **Mother Questions**

8. Before having your baby/during pregnancy, how did you plan to feed your baby?
9. Describe ways that your partner does and does not support your breastfeeding.
  - a. Can you tell me a specific incident, example, or story in which your partner supports your breastfeeding?
  - b. How do you feel when your partner supports your breastfeeding?
  - c. Can you tell me a specific incident, example, or story in which your partner does not support your breastfeeding?
  - d. How do you feel when your partner does not support your breastfeeding?

### **Conclusion**

As you know, I'm trying to understand how confident fathers are in supporting their partners' breastfeeding. Did I miss anything important? What else do you think I should know about this matter?

Thank you very much for your time and for the information you shared.

**End time:**

## APPENDIX E

Participant Code: \_\_\_\_\_

Interview Date: \_\_\_\_\_ Time \_\_\_\_\_ Place \_\_\_\_\_

| Observed issues  | Activities, Impressions, and/or Comments |
|--|--|
| 1. Before the interview<br>Noise level<br>Privacy<br>Researcher's impression   |  |
| 2. During the interview<br>Space<br>Tone of voice<br>Facial expressions<br>Eye contact<br>Noise level<br>Privacy<br>Response time<br>Researcher's impression<br>Reactions to what the other partner said |  |
| 3. Closing<br>Participant reactions<br>Eye contact<br>Other body language<br>Researcher's impression   |  |

Other Comments:

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## APPENDIX F

### Approval Notice Initial Review – Expedited Review

December 11, 2019  
Preeyakamon Krikirat  
Women, Child, & Family Health Science

RE: **Protocol # 2019-1309**  
**“Thai Fathers' Self-Efficacy to Support Exclusive Breastfeeding”**

Dear Mx. Krikirat:

Members of Institutional Review Board (IRB) #2 reviewed and approved your research protocol under expedited review procedures [45 CFR 46.110(b)(1)] on December 11, 2019. You may now begin your research.

Your research meets the criteria for approval under expedited review procedures [45 CFR 46.110] Categories: 6, 7

Please note the following information about your approved research protocol:

**Please remember to submit Thai translations of approved English-language recruitment and consent documents prior to recruiting/enrolling subjects whose primary language is Thai. Translations must be accompanied by an Amendment form when submitted to the UIC IRB.**

|  |   |
|--|---|
| <b><u>Protocol Approval Date:</u></b>        | December 11, 2019   |
| <b><u>Approved Subject Enrollment #:</u></b> | 410   |
| <b><u>Performance Sites:</u></b>             | UIC, Chiang Mai Health Promotion Hospital,<br>Faculty of Nursing, Chiang Mai University<br>Chiang Mai, Thaila |
| <b><u>Sponsor:</u></b>                       | None  |
| <b><u>Research Protocol:</u></b>             | a) Thai Fathers' Self-Efficacy to Support Exclusive Breastfeeding;12/10/2019                                  |

**Documents that require an approval stamp or separate signature can be accessed via OPRS Live. The documents will be located in the specific protocol workspace. You must access and use only the approved documents to recruit and enroll subjects into this research project.**

***Please note that minor edits have been made to the consent documents and only the approved and stamped documents available via OPRSLive may be used to consent subjects.***

**Recruitment Materials:**

- a) Flyer (English); Version 1; 11/18/2019
- b) Flyer (Thai); Version 1; 11/18/2019
- c) Eligibility Screening Tool; Version 1; 11/18/2019
- d) Recruitment Script Survey (English); Version 2; 12/10/2019
- e) Recruitment Script Interview (English); Version 2; 12/10/2019

**Informed Consents:**

- a) Informed Consent Survey (English); Version 2; 12/10/2019
- b) Informed Consent Interview (English); Version 2; 12/10/2019
- c) An alteration of consent document, which will be translated into Thai, has been granted for this minimal risk research under 45 CFR 46.116(f)
- d) Exceptions to informed consent for the identification, screening, and determining eligibility of prospective subjects has been noted under 45 CFR 46.116(g)

**Additional Determinations for Research Involving Minors:** not approved the inclusion of minor subjects or their data.

Please remember to:

→ **Use only the IRB-approved and stamped consent documents when enrolling new subjects.**

→ Use your **research protocol number** (2019-1309) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with the policies of the UIC Human Subjects Protection Program (HSPP) and the guidance **Investigator Responsibilities**.

**Please note that the UIC IRB has the right to ask further questions, seek additional information, or monitor the conduct of your research and the consent process.**

**Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.**

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS office at (312) 996-1711 or me at (312) 996-2014. Please send any correspondence about this protocol to OPRS via OPRS Live.

Sincerely,

Sandra Costello  
Assistant Director, IRB # 2  
Office for the Protection of Research  
Subjects

cc: Crystal Patil (faculty advisor), Women, Child, & Family Health Science, M/C 802

**Approval Notice  
Amendment – Expedited Review  
UIC Amendment # 1**

January 8, 2020

Preeyakamon Krikirat  
Women, Child, & Family Health Science

RE: **Protocol # 2019-1309**  
**“Thai Fathers' Self-Efficacy to Support Exclusive Breastfeeding”**

Dear Mx. Krikirat:

Your application was reviewed and approved on January 8, 2020. The amendment to your research may now be implemented.

Please note the following information about your approved amendment:

**Amendment Approval Date:** January 8, 2020

**Amendment:**

Summary: UIC Amendment #1, dated, submitted and accepted 8 January 2020, is an investigator-initiated amendment submitting Thai translations of previously approved English-language recruitment/consent documents (Recruitment Script Survey, Thai, v2; Recruitment Script Interview, Thai, v2; Informed Consent Survey, Thai, v2; Informed Consent Interview, Thai, v2).

**Approved Subject Enrollment #:**

410

**Performance Sites:**

UIC, Chiang Mai Health Promotion Hospital,  
Faculty of Nursing, Chiang Mai University  
Chiang Mai, Thailand

**Sponsor:**

None

**Documents that require an approval stamp or separate signature can be accessed via OPRS Live. The documents will be located in the specific protocol workspace. You must access and use only the approved documents to recruit and enroll subjects into this research project.**

**Recruiting Materials:**

- a) Recruitment Script Interview (Thai); Version 2
- b) Recruitment Script Survey (Thai); Version 2

**Informed Consents:**

- a) Informed Consent Interview (Thai); Version 2
- b) Informed Consent Survey (Thai); Version 2

Please be sure to:

- **Use only the IRB-approved and stamped consent documents when enrolling subjects.**
- Use your research protocol number (2019-1309) on any documents or correspondence with the IRB concerning your research protocol.
- Review and comply with the policies of the UIC Human Subjects Protection Program (HSPP) and the guidance **Investigator Responsibilities**.

**Please note that the IRB has the right to ask further questions, seek additional information, or monitor the conduct of your research and the consent process.**

**Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.**

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS at (312) 996-1711 or me at (312) 996-2014. Please send any correspondence about this protocol to OPRS via OPRS Live.

Sincerely,

Sandra Costello  
Assistant Director, IRB # 2  
Office for the Protection of Research Subjects

cc: Crystal Patil (faculty advisor), Women, Child, & Family Health Science, M/C 802





Research Ethics Committee  
Faculty of Medicine Chiang Mai University

Page - 1 - of 2 pages

AF/04-010/04.0

No. 424/2019



### Certificate of Approval

| Name of Ethics Committee : Research Ethics Committee 4,<br>Faculty of Medicine, Chiang Mai University<br>Address of Ethics Committee : 110 Intavaroros Rd., Amphoe Muang, Chiang Mai, Thailand<br>50200 |                                 |
|---|---------------------------------|
| Principal Investigator: Preeyakamon Kriktrat<br>University of Illinois at Chicago .   |                                 |
| Protocol title: Thai fathers' self-efficacy to support exclusive breastfeeding.<br>STUDY CODE: NONE-2562-06778/ Research ID : 6778<br>Sponsor: -  |                                 |
| Documents filed   | Document reference              |
| Research Proposal   | Version date 6 December 2019    |
| Subject information Sheet   | Version 3 date 2 December 2019  |
| Inform Consent Form   | Version 1 date 30 October 2019  |
| Case Record Form  | Version 2 date 22 November 2019 |
| Poster  | Version 1 date 30 October 2019  |
| Principal Investigator Curriculum vitae   | Version date 6 December 2019    |

DECISION : [ ☒ ] By expedited review  
 [ ☐ ] By full committee meeting .....Date : .....

|  |  |
|--|--|
| 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<br><input checked="" type="checkbox"/> 1 year <input type="checkbox"/> Other..... |  |



Date of Approval: 6 December 2019 Expiration Date: 5 July 2020

This Ethics Committee is organized and operates according to GCPs and relevant international ethical guidelines, the applicable laws and regulations.

Signed :

*P. Kulapongs*  
(Emeritus Professor Panja Kulapongs, M.D.)  
Chairperson, Faculty of Medicine

#### 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

## The Ethics Committee Certification for Research in Human Subjects

### Health Promotion Center Region 1 Chiang Mai

|                         |   |
|-------------------------|---|
| Research Project No:    | 3/2563  |
| Title of Project:       | Thai Fathers' Self-Efficacy to Support Exclusive Breastfeeding  |
| Principal Investigator: | Ms. Preeyakamon Krikirat  |
| Department :            | Women, Children, and Family Health Science Department, University of Illinois at Chicago, The United States (PhD student) |

|  |
|--|
| <b>Result of Ethics Committee</b>  |
| <p>We also confirmed an Ethics Committee constituted in agreement and in accordance with the ICH-GCP.</p> <p>The committee has reviewed and approved for implementation of the research study as above mention, therefore the Thai protocol will be mainly conduct. The protocol must be approved by continuation review for the duration of one year until date of expired.</p> |

|                      |                                   |                                   |  |                                    |
|----------------------|-----------------------------------|-----------------------------------|--|------------------------------------|
| progress report: ๗๐๗ | <input type="checkbox"/> 3 months | <input type="checkbox"/> 6 months | <input checked="" type="checkbox"/> 1 year | <input type="checkbox"/> Etc. .... |
| Date of Approval     | 13 <sup>th</sup> November 2019    | Date of Expired                   | 13 <sup>th</sup> November 2020             |                                    |

Sign.....

(Miss Chotiros Phanpong)

Chairman of The Ethics Committee, Department of Health  
Health Promotion Center Region 1 Chiang Mai

#### Remarks

Researchers should submit Continuing review report (RF13-01) to the Ethics Committee every 6 months until the expired date and notify them:

- 1) When an adverse event in the research project will occur or it will be a serious adverse event, please inform and report in adverse event report form (RF18-01) or Serious adverse event report form (RF18-02) to the committee as soon as possible.
- 2) When there will be a change in the research project, it must be clearly state what change has been made with the reasons for the change in Protocol amendment form (RF12-01) to request the approval from the Ethics Committee.
- 3) When the research project leader will change or add someone to be the researcher. The research team must send the curriculum vitae of the additional person to the Ethics Committee for consideration and approval.
- 4) When the research project will be terminated, it may be incomplete research or may not be able to continue. The research team must to declare the indication and reason in Termination protocol report form (RF14-01) to the Ethics Committee.

## VITA

### Preeyakamon Kriktrat, MNS, RN

#### **EDUCATION**

|                 |   |
|-----------------|---|
| 08/2017-current | PhD, Nursing (doctoral candidate)<br>University of Illinois at Chicago, Chicago, IL |
| 06/2012-06/2014 | MNS, Midwifery<br>Chiang Mai University, Chiang Mai, Thailand                       |
| 06/2005-03/2009 | BNS, Nursing<br>Chiang Mai University, Chiang Mai, Thailand                         |

#### **POSITIONS AND EMPLOYMENT**

|              |   |
|--------------|---|
| 2017-present | Ph.D. Student, University of Illinois at Chicago  |
| 2014-2017    | Instructor, Department of Obstetrics and Gynecology, Faculty of Nursing, Chiang Mai University, Chiang Mai, Thailand          |
| 2010-2014    | Clinical Instructor, Department of Obstetrics and Gynecology, Faculty of Nursing, Chiang Mai University, Chiang Mai, Thailand |
| 2009-2010    | Registered Nurse, Cardio Critical Care Unit (CCU), Maharaj Nakorn Chiang Mai Hospital, Chiang Mai, Thailand                   |

#### **OTHER EXPERIENCE AND PROFESSIONAL MEMBERSHIPS**

|           |   |
|-----------|---|
| 2016      | Author of handbook <i>Nursing and Midwifery: Intrapartum Period and Postpartum Period</i> , Faculty of Nursing, Chiang Mai University   |
| 2016      | Member of Committee of Student Development and Affairs for the undergraduate nursing program, Faculty of Nursing, Chiang Mai University |
| 2015-2016 | Member of Graduate Committee for the Midwifery major, Faculty of Nursing, Chiang Mai University   |
| 2015-2016 | Managing Editor of Nursing Journal, Faculty of Nursing, Chiang Mai University   |
| 2014-2016 | Member of Committee for Comprehensive Examinations for Nursing Students, Faculty of Nursing, Chiang Mai University                      |

#### **ACADEMIC AND PROFESSIONAL HONORS**

|      |  |
|------|--|
| 2021 | The 2020-2021 College of Nursing PhD Student Research Award  |
| 2020 | The 2019-2020 College of Nursing Seth and Denise Rosen Memorial Research Award   |
| 2016 | Oral Presentation, International Conference: Optimizing Healthcare Quality Teamwork in Education, Research, and Practice, Chiang Mai, Thailand |

- 2015-2016      Invited Speaker on “Promoting Breastfeeding During Pregnancy,” Practical (evidence-based) Training in Breastfeeding Promotion for Nurses, Chiang Mai, Thailand
- 2015            Invited Speaker on “Promoting Breastfeeding During Pregnancy” in Developing Quality of Breastfeeding Promotion (Routine to Research), Sriphat Hospital, Chiang Mai, Thailand
- 2014-2015      Invited Speaker on “Promoting Breastfeeding During Pregnancy,” Practical Training for Nurses in Supporting, Encouraging, and Maintaining Breastfeeding for Nurses in Northern Region sponsored by UNICEF and Faculty of Nursing, Chiang Mai, Thailand
- 2009            First Class Honors, Gold Medal, Chiang Mai University
- 2006-2009      Certificate of Academic Excellence Award, Faculty of Nursing, Chiang Mai University
- 2005-2008      Academic Excellence Scholarship, Faculty of Nursing, Chiang Mai University

#### **TRAINEESHIPS AND PROFESSIONAL DEVELOPMENT**

- 2016            Good Clinical Practice: GCP, Faculty of Medicine, Chiang Mai University
- 2015            Breastfeeding and Work--Let's Make it Work sponsored by WHO, UNICEF, and Thai Breastfeeding Center Foundation, Bangkok, Thailand
- 2015            Pre-Congress Workshop: Learn and Share the Art of Therapeutic Breast Massage During Breastfeeding sponsored by WHO, UNICEF, and Thai Breastfeeding Center Foundation, Bangkok, Thailand
- 2014            Development of a Facilitator Network for Supporting, Encouraging, and Maintaining Breastfeeding, Faculty of Nursing, Mahidol University
- 2012            Nursing Specialty Program on Training Science and Art of Teaching in Nursing, Faculty of Nursing, Chiang Mai University

#### **PUBLICATIONS**

- Krikitrat, P., Kantaruksa, K., Liamtritrat, S., & Janjornmanit, B. (2020). Factors Predicting Readiness for Hospital Discharge Among Hospitalized Mothers. *Nursing Journal*, 47 (1), 13-24. (In Thai)
- Lerttrakannon, P., Kantaruksa, K., & Sansiriphun, N. (2016). Attitudes, subjective norm, perceived behavioral control and intention of fathers to encourage breastfeeding. *Nursing Journal*, 43 (1), 45-55. (In Thai)
- Kantaruksa, K., & Lerttrakannon, P. (2015). A theory of planned behavior and breastfeeding promotion. *Nursing Journal*, 42 (2), 169-176. (In Thai)
- Kantaruksa, K., Yimyam, S., Sansiriphun, N., Supavithitpattana, B., Chalermasuk, N., & Lerttrakannon, P. (2015). Effects of a breastfeeding promotion, support, and protection program for registered nurses in the Northern Thailand. *Nursing Journal*, 42 (4), 156-168. (In Thai)

**ABSTRACTS**

Lerttrakannon, P., Kantaruksa, K., & and Sansiriphun, N. (2016). Attitudes, subjective norm, perceived behavioral control and intention of fathers to encourage breastfeeding. *International Journal of Evidence-Based Healthcare*, 14, S15.  
doi: 10.1097/01.XEB.0000511638.20938.3d