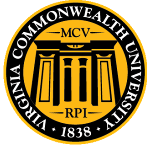

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Breastfeeding Influencing Factors in Thai Adolescent Mothers

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Breastfeeding Influencing Factors in Thai Adolescent Mothers

A dissertation project submitted in partial fulfillment of the

requirements for the degree of Doctor of Philosophy

at Virginia Commonwealth University

by

Supannee Kanhadilok

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Abstract

BREASTFEEDING INFLUENCING FACTORS IN THAI ADOLESCENT MOTHERS

By Supannee Kanhadilok, PhD, RN

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2013

Major Director: Nancy L. McCain, DSN, RN, FAAN; Nursing Alumni

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Background: Breastfeeding is well established as the optimal method for ensuring healthy infant nutrition. However, many adolescents remain unaware of the role of breastfeeding. Adolescent mothers continue to have the lowest rate of breastfeeding in many countries including Thailand, with only 17% of Thai adolescent mothers continuing to breastfed at 6 months postpartum.

Objective: Examine factors influencing breastfeeding behaviors in adolescent mothers, particularly those in Thailand.

Methods: This dissertation project involved two research studies focusing on breastfeeding influencing factors in adolescent mothers. The first study was an integrative review of 22 articles published in 2000-2012. The findings revealed that personal factors appear to be the most important to the decision to initiate and maintain breastfeeding for adolescent mothers. Perceptions of cultural expectations also influence breastfeeding decisions and behaviors. Additionally, infant factors seem to be considerations in breastfeeding duration for the adolescent mother.

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The second study used a prospective cohort design to explore personal, social, cultural, and infant factors that explain and predict breastfeeding initiation and maintenance at 4 weeks postpartum in Thai adolescent mothers. The sample of 96 adolescent mothers was recruited at two prenatal clinics in Thailand. There were three time points for data collection; the initial visit was completed in the prenatal period, the second visit was within 48 hours postpartum, and the third was at 4 weeks postpartum. Instruments were the Iowa Infant feeding Attitude Scale (IIFAS), Breastfeeding Influencing Factor Assessment (BIFA), Hughes Breast-Feeding Support Scale (HBSS), Pictorial Assessment of Temperament (PAT), Vulnerable Baby Scale (VBS), and Parenting Sense of Competence Scale (PSOC), all of which were translated into the Thai language.

Results: Personal, social, and cultural factors were significantly correlated with breastfeeding initiation and were significant positive predictors of exclusive breastfeeding duration. Infant temperament was a significant negative predictor of exclusive breastfeeding duration. Maternal competence was also positively correlated with duration of exclusive breastfeeding.

Conclusion: Facilitating the support mothers receive from their personal support systems is important to breastfeeding duration and maternal competence in the postpartum period. Enhancing exclusive breastfeeding and maternal competence provides a supportive environment for new adolescent mothers to develop their maternal role.

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Chapter 1

Overview of the Research Project

With the consultation and approval of the dissertation committee, a publication style dissertation option was selected for the dissertation project. This option included two manuscripts prepared for journal submission and a detailed IRB application. Chapter 2 presents the first manuscript, entitled "An Integrative Review of Breastfeeding Influencing Factors in Adolescent Mothers." The purpose of this integrative review was to identify and summarize the research literature related to breastfeeding in adolescent mothers and to articulate existing knowledge about factors that may be influential in the breastfeeding situation. The findings revealed that personal factors appear to be the most important to the decision to initiate and maintain breastfeeding for adolescent mothers. The perceived benefits of breast milk motivate the mother to plan her infant feeding choices and also provide motivation for her to continue feeding for a longer duration because of the value to her infant's health. Previous experiences with breastfeeding, the in-hospital experience, and the after-hospital experience are considered both positive and negative factors that influence the mother in her decision to continue breastfeeding. Breastfeeding attitudes both in the prenatal and early postpartum period are important to early decision making about infant feeding methods. Social factors have both positive and negative influences on the breastfeeding experiences of adolescent mother. Concern about embarrassment from breastfeeding exposure in public is a critical issue to the adolescent mother. However, the social support she receives is what adolescent mothers report as essential to their breastfeeding success during both initiation and continuation of breastfeeding for longer durations. Perceptions of cultural expectations also influence breastfeeding decisions and

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behaviors for adolescent mothers. Lastly, even though there is not strong evidence, infant factors seem to be considerations in breastfeeding duration for the adolescent mother.

Chapter 3 is the second manuscript, entitled "Breastfeeding Influencing Factors in Thai Adolescent Mothers." Breastfeeding rates and breastfeeding performance in adolescent mothers is considered poor in Thailand. There are efforts to increase the incidence and duration of breastfeeding in Thailand, including national programs to increase awareness and educational interventions to better prepare mothers and families. However, in a Thai national survey conducted between 2003 and 2008, only 17% of adolescent mothers continued to breastfed at 6 months postpartum. The purpose of this study was to explore influencing factors, including personal, social, cultural, and infant factors that potentially explain and predict breastfeeding initiation and maintenance at 4 weeks postpartum in Thai adolescent mothers. For this study, the instruments including the Iowa Infant feeding Attitude Scale (IIFAS), the Breastfeeding Influencing Factor Assessment (BIFA), the Pictorial Assessment of Temperament (PAT), the Vulnerable Baby Scale (VBS), and the Parenting Sense of Competence Scale (PSOC), all of which were translated into the Thai language. The adolescent mothers were recruited at the prenatal clinic in one of two large, public hospitals in Thailand. There were three time points for data collection. The initial visit was completed in the prenatal period between 34-40 weeks gestation in the prenatal care clinic. The second time point for data collection occurred within 48 hours after birth during the early postpartum period in the hospital, and the final data collection point occurred at 4-5 weeks postpartum. Study participants were 96 Thai primigravida women between 14-19 years of age. Neither infants nor mothers had complications after birth or during the postpartum period. The results indicated that most of the participants initiated breastfeeding within 48 hours during their hospital stay. At 4 weeks postpartum, duration of exclusive breastfeeding averaged 24.4 days. Half of the

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mothers continued exclusively breastfeeding. Personal factors including perceived benefit of breastfeeding and infant feeding attitude, social factors including social influence and social support, and the cultural factor referred to as cultural expectation were significantly correlated with breastfeeding initiation. Infant feeding attitude and social influence were significant positive predictors of exclusive breastfeeding duration. Infant temperament was a significant negative predictor of exclusive breastfeeding duration. Maternal competence was also positively correlated with duration of exclusive breastfeeding. The most common barriers to breastfeeding maintenance were returning to work and/or school, nipple pain, and discomfort with public breastfeeding.

Chapter 4 is the Institutional Review Board (IRB) submission and approval documents. The study plan for “Breastfeeding Influencing factors in Thai Adolescent Mothers” was submitted to the IRB at Virginia Commonwealth University.

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Chapter 2

An Integrative Review of Breastfeeding Influencing Factors in Adolescent Mothers

Abstract

Objective: Describe research related to adolescent mothers and factors that influence breastfeeding intention, initiation, and continuation.

Data source: CINAHL, PsycINFO, PubMed, and Web of Science databases were searched for articles relevant to the objective published between 2000 and 2012.

Study selection: Studies were included if the adolescent mothers were breastfeeding or planning to breastfeed, 13-19 years old during pregnancy and the postpartum period and full term infant.

Data extraction and Synthesis: A total of 143 articles were retrieved; 22 studies met the inclusion criteria: 14 were quantitative, 6 were qualitative, and 2 were mixed-methods designs. Approximately 80% of adolescent mothers intended to breastfeed during pregnancy. Yet, initiation of breastfeeding ranges from 81-84%. Continuation of breastfeeding varies during the first six months after birth. Almost half (46%) of adolescent mothers who initiate breastfeeding wean their infant in the first month. Only about 20% continue to breastfeed or provide breast milk to 6 months. Social factors appear to influence breastfeeding decisions. Cultural norms influence the adolescent mothers' perceptions of being a good mother and appear important to intention and initiation of breastfeeding. Maternal-infant interactions and infant responses may influence the continuation of breastfeeding.

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Conclusion: Promoting positive maternal perceptions and maternal competence are essential to breastfeeding initiation and continuation for the adolescent mother. In the early postpartum period, support from partner and professionals also lead to positive attitudes towards breastfeeding initiation and continuation.

Keywords: breastfeeding, infant feeding, adolescent mother

Callout

1. Spear (2006) found that 94.3% of adolescent mothers intended to breastfeed for at least 6 months, only 11.3% continued breastfeeding until 6 months.
2. Barriers to initiating breastfeeding included perception of difficult breastfeeding, concerns about freedom, embarrassment of being breastfeeding younger mother and responding appropriately to infant responses.
3. Breastfeeding interventions should focus on not only breastfeeding techniques and kinds of support but also on developmental need of adolescent mothers who is simultaneously adapting to motherhood.

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Breastfeeding is well established as the optimum method for ensuring healthy infant nutrition. However, many adolescents remain unaware of the role of breastfeeding in health promotion and disease prevention (Arora, McJunkin, Wehrer, &Kuhn, 2000). The World Health Organization (WHO) has recommended that all newborn infants receive exclusive breastfeeding (breastmilk) for the first 6 months of life (WHO, 2002). While there is an increase in the number of adolescent mothers worldwide (WHO, 2007), adolescent mothers continue to have the lowest rate of breastfeeding in the United States as well as throughout other countries (Bar-Yam, 1998; Centers for Disease Control and Prevention [CDC], 2007). There are approximately 425,000 infants born to adolescents each year; of these only 43% will initiate breastfeeding in contrast to 75% of mothers of adult age (Forster & Hoffmann, 2008; National Center for Health Statistics[NCHS],2008). Additionally, Misra and James (2000) found that 95% of adolescent mothers began feeding formula by the second week of the postpartum period, further reducing the number of infants of adolescent mothers receiving breast milk for the first six months of life. In a different study, Spear (2006) found that although 94.3% of adolescent mothers intended to breastfeed for at least 6 months after birth, only 11.3% continued breastfeeding until 6 months.

Various explanations for the low rate of breastfeeding among adolescent mothers have been considered. The maturity level of adolescent mothers appears to be one of the barriers for continuation of breastfeeding (Peterson & Da Vanzo, 1992). Given their age, adolescent mothers are more likely than older mothers to be single and to have lower levels of education and income, characteristics that are often negatively associated with breastfeeding (Park, Meier, & Song, 2003). On the other hand, Wambach and Koehn (2004) explained that adolescent mothers have both positive and negative attitudes toward their decision-making about infant feeding methods

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and effort to continue breastfeeding. When mothers have more positive attitudes toward feeding choices, they also are more successful in their breastfeeding experiences (Wambach, 1997).

Some adolescent mothers make their decision to breastfeed during the prenatal period (Wambach & Cohen, 2009), a decision which is often the result of effective breastfeeding promotion and intention during the prenatal period (Treffers, Olukoya, Ferguson, & Liljestrand, 2001).The early postpartum period is an important transitional time for the mother and her infant. Breastfeeding initiation occurs during this critical period and for adolescent mothers who are also experiencing the new and ambiguous maternal role, breastfeeding performance can seem very demanding and difficult to achieve (Mossman, Heaman, Dennis, & Morris, 2008).

The purpose of this integrative review was to expand and review the research literature related to breastfeeding in adolescent mothers and to articulate existing knowledge about factors that may be influential to the breastfeeding situation.

Methods

Data Sources

An integrative review of research was undertaken to better understand factors that influence breastfeeding for the adolescent mother and her infant. Structured searches with a nursing/medical librarian were conducted within four electronic databases: CINAHL, PsycINFO, PubMed, and Web of Science. Articles published between 2000 and 2012 were included in the search. The key words used were: breastfeeding, breast-feeding, infant feeding, adolescent mother, teenage mother, and young mother. The keywords were first used one by one for searching the articles and then in combination with each other. Eligible studies met the following criteria:

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- Participants: 13-19 years of age
- Adolescent mothers during pregnancy and the postpartum period who gave birth to full term infants. Studies included adolescent mothers who breastfed their infant after birth and/or into the first year of age. Mothers and infants with complications and/or labeled as high risk were excluded.
- Outcomes: Primary outcomes of the studies were breastfeeding and/or factors influencing breastfeeding that were described or measured in the research.
- Research methodology: Studies included in this integrative review were of quantitative, qualitative, and mixed-methods designs.

Study Selection

A total of 143 articles were retrieved, evaluated, and reviewed. The retrieved articles were screened first by reading the abstract and evaluating the research using the inclusion and exclusion criteria. Systematic reviews, case studies, reports of literature reviews, and unpublished doctoral dissertations were excluded from the review results. However, reports of systematic reviews and literature reviews were included in the discussion of the findings as additive to our findings.

During the selection process, the number of articles reviewed was initially decreased to 47 articles (others were duplicates across the four databases). A total of 22 studies met the inclusion criteria: 14 articles were quantitative research, 6 were qualitative research, and 2 were mixed- methods designs. Of the 25 articles that were excluded, 7 reported findings of studies including mothers more than 19 years of age, 5 were studies with infants more than one year of age, 5 were literature reviews, 2 were case studies, 2 were studies related to violence and adolescent mothers, one was related to adolescent breastfeeding of premature infants, and 3 were

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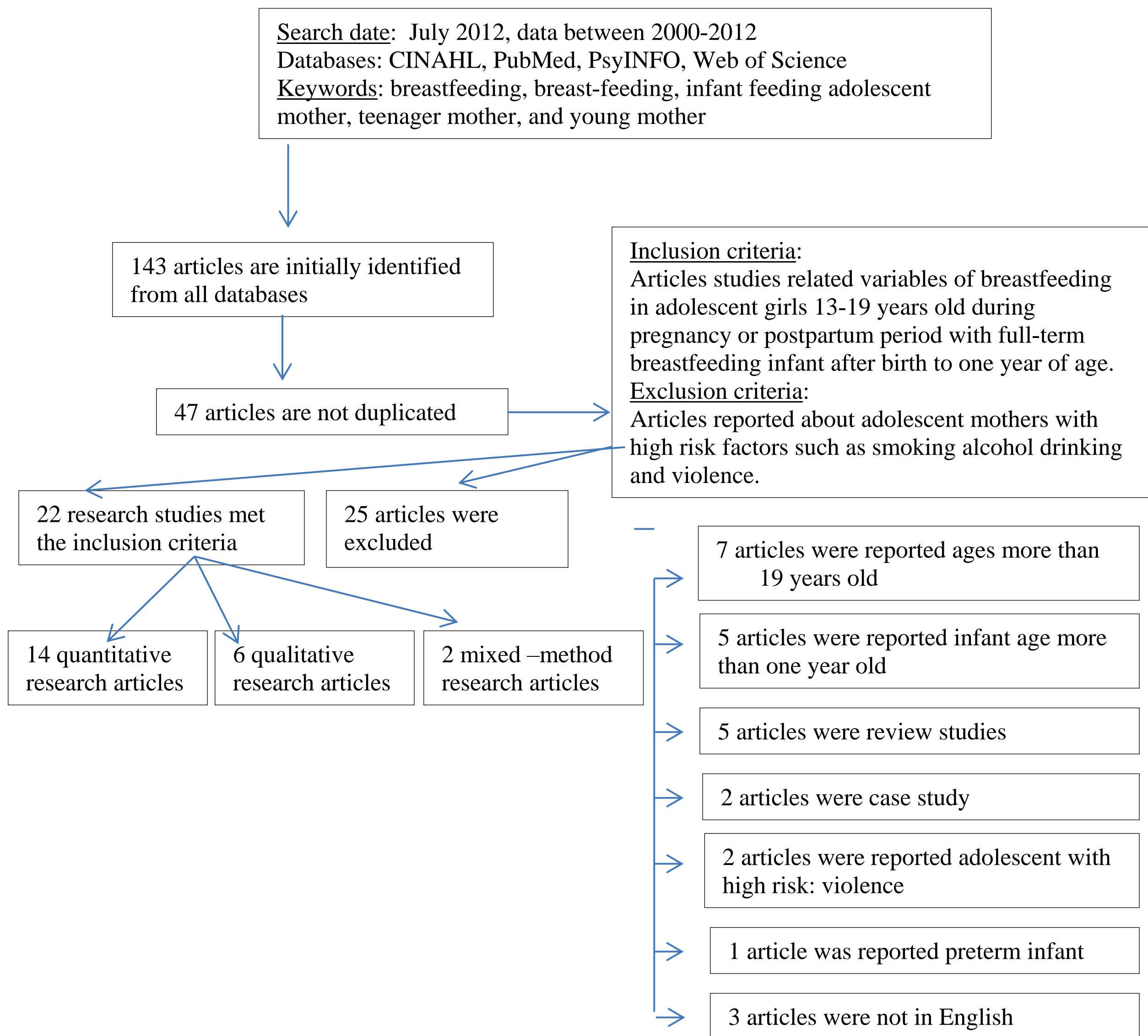
not available in English. A diagram of the decision making process for the integrative review is provided as Figure 1. This comprehensive review was conducted to examine evidence regarding the factors that contribute to the initiation and continuation of breastfeeding in adolescent mothers.

Figure 1. Diagram of Systematic Search Strategy



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Findings

The individual study sample size ranged from 16 to 389 adolescent mothers. The maternal age in the included studies was between 13-19 years old and the infant age was between 24 hours after birth to 12 months of age. The results from two quantitative studies illustrated that the intention to breastfeeding during pregnancy ranged from 81% to 84% of the participating adolescent mothers (Dennis, Heaman, & Mossman, 2010; Hunter, 2008). However, the actual initiation of breastfeeding ranged from 39% to 69% (Dennis et al, 2010; Glass, Tucker, Stewart, Baker, & Kauffman, 2010; Lavender, Thompson, & Wood, 2005; Tucker, Wilson, & Samandari, 2011; Wambach, Aaronson, Domian, Rojjianasrirat, & Yeh, 2011). The duration of breastfeeding varied from one month to 6 months after the infant's birth. More than half of adolescent mothers who initiated breastfeeding stopped within the first month (Spear, 2006; Tucker et al, 2011). Dennis and colleagues (2010) found that only 46% of mothers who initiated breastfeeding continued to 4 weeks. Glass et al. (2010) found that only 22% of those who initiated breastfeeding continued to 6 weeks. In two other studies it was reported that only 18.7% to 22.6% of adolescent mothers continued breastfeeding at 6 months after the infant's birth(de Oliverira, Giugliani, Santo, & Nunes, 2012; Dykes, Moran, Burt, & Edwards, 2003).

Findings from studies of descriptive, correlational, and intervention designs provided evidence of influencing factors statistically significantly related to breastfeeding intention and continuation. Wambachet al. (2011) found that an intervention using peer and professional support which began in the second trimester of pregnancy and extended through 4 weeks postpartum, positively influenced breastfeeding duration. Mossman, Heaman, and Dennis (2008) also found that adolescent mothers with higher prenatal attitudes scores were significantly more likely to initiate breastfeeding than those with lower scores. Mothers with higher prenatal

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breastfeeding attitude scores and higher prenatal and postnatal confidence scores were more likely to continue breastfeeding to 4 weeks postpartum. In addition, the findings from the qualitative designs including focus group interviews, semi-structured ethnographic interviews, and grounded theory provided more details and understanding about the contributions of several different influencing factors to intention, initiation, and continuation of breastfeeding in adolescent mothers. These findings can be described by dividing them into personal factors, social context factors, influences of social norms, and influences of infant characteristics on adolescent mothers' breastfeeding behaviors. The next several sections provide evidence of how these factors are related to breastfeeding intention, initiation, and continuation for the adolescent mother and her infant during the first year of life.

Personal Factors

Adolescent mothers reported reasons influencing their breastfeeding choices that were related to personal factors such as breastfeeding attitudes, perceived benefit of breastfeeding, perceived previous experiences of breastfeeding, self-efficacy and/or knowledge of breastfeeding, and perceived problems with breastfeeding such as pain and inconvenience(Glass et al., 2010; Hannon, Willis, Bishop-Townsend, Martinaz, & Scrimshaw, 2000; Hunter, 2008; Nelson, 2009; Tucker et al., 2011;Wambach& Koehn, 2004). Wambach and Cohen (2009) found that adolescent mothers continued breastfeeding when they perceived there were benefits for breastfeeding. The most commonly reported perception of infant health benefits was focused on best nutrition and this belief lead mothers to persist in their breastfeeding. Hannon et al.(2000) also found that adolescent mothers' perceptions of health benefits for the infant increased the initiation and duration of breastfeeding. The benefit for the mother to continue to breastfeed was her belief that it made her a better mother (increased self-esteem for being a "good" mother)

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(Lavender et al., 2005). The second most commonly identified benefit was related to bonding. Most often adolescent mothers reported that because they felt closer (more attached) to their infant, they made the decision to continue breastfeeding for a longer duration (Hannon et al., 2000; Wambach & Cohen, 2009).

Previous experiences with breastfeeding were found to be important for initiation of breastfeeding for adolescent mothers (Wambach & Cohen, 2009). However, after-hospital experiences were found to be more significant to continuing to provide breastfeeding. These experiences were associated with perceptions of physical changes including insufficient milk supply, fatigue, pain, and nipple trauma. The perception of physical problems with breastfeeding that was reported most often was pain during feeding (Camarott, Nakano, & Pereira, 2011). In a separate study, pain was noted to be one of the major reasons that adolescent mothers discontinued breastfeeding (Nelson, 2009). Adolescent mothers did not seem to have any perceptions or knowledge that pain during early breastfeeding might be considered normal. Nipple trauma was also identified as a contributing factor (Camarott et al, 2011; Nelson, 2009). These findings were further substantiated in the descriptions from qualitative studies in which pain, nipple soreness, or bleeding contributed to early weaning (Hannon et al., 2000; Wambach & Cohen, 2009).

Prenatal attitudes toward breastfeeding were identified as contributing to early breastfeeding decision making for adolescent mothers (Mossman et al., 2008). Adolescent mothers with significantly higher prenatal attitude scores were more likely to initiate breastfeeding than those with lower scores. Moreover, adolescent mothers with higher prenatal attitudes and higher early postpartum confidence were more likely to continue breastfeeding to 4 weeks (Mossman et al., 2008). Attitudes about breastfeeding also were found to be related to

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knowledge of the benefits of breast milk. The adolescent mother viewed breastfeeding as a choice that provided the infant the best benefit (Nelson, 2009). Early introduction of breastfeeding education served to increase the adolescent mother's knowledge and increase awareness of the importance of breastfeeding. However, improving knowledge was not always found to lead to improvement in breastfeeding rates. Dewan, Wood, Maxwell, Cooper, and Brabin (2002) found that positive attitudes toward breastfeeding were not dependent on knowledge alone. For example, problems experienced in the first week after hospital discharge, including nipple trauma, pain, and engorgement, negatively contributed to continuation of breast feeding. Consequently, breastfeeding was sometimes perceived as more difficult than the adolescent mothers had expected (Wambach & Cohen, 2009; Wambach & Koehn, 2004). Findings from qualitative studies revealed that hearing from other women that breastfeeding hurt prevented some adolescent mothers from wanting to try breastfeeding. Further, in the postpartum period, adolescent mothers listed the pain associated with breastfeeding as one of the major reasons for discontinuing breastfeeding sooner (Nelson, 2009). Because some mild to moderate pain is normal during the initiation of breastfeeding, this finding has important implications for nursing practice and research. For example, how this information is provided to adolescents might be important to both initiation and continuation of breastfeeding.

Social Context Factors

Strong evidence exists that receiving effective support significantly influences the duration of breastfeeding in adolescent mothers (Dykes et al, 2003; Hannon et al, 2000; Nelson, & Sethi, 2005; Spear, 2006; Wambach & Cohen, 2009). For the adolescent mother to be continuously committed to breastfeeding, she requires social support which includes information, facilitates proper techniques, and provides emotional support related to breastfeeding (Dykes, Moran, Burt,

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& Edwards, 2003). Adolescent mothers were found to gain from their informal networks with their partner, friends, mothers, other family members, and people in their communities (Nelson, & Sethi, 2005). Support from formal networks including health professionals and parenting programs was also found to be important (Nelson & Sethi, 2005). Most of adolescent mothers reported receiving overall positive emotional support in the first weeks and months for breastfeeding and this informal support contributed and enhanced their abilities to learn to breastfeed (Nelson & Sethi, 2005). In addition, the adolescent mothers viewed health care professionals as important sources of breastfeeding support (Nelson & Sethi, 2005).A randomized controlled trial examining the effects of using peer support and professional support for initiation and continuation of breastfeeding in adolescent mothers found that support that began in the second trimester and extended through 4 weeks postpartum positively influenced breastfeeding duration (Wambach et al., 2011). However, adolescent mothers perceived breastfeeding as contributing to a loss of their personal freedom and to negatively changing their relationships with their partners. Overall, the adolescents believed their worlds were reconstructed because of motherhood and breastfeeding (Nelson, 2009; Nelson & Sethi, 2005).

Influence of Cultural Norms

Although most adolescent mothers perceived support from their partners, families, friends, and professionals about breastfeeding, some studies found that some of the mothers felt pressure about their choice of feeding methods because their partners and families told them that breastfeeding was the best feeding method (Wambach & Koehn, 2004). Qualitative reports also found that adolescent mothers often perceived negative moral judgments related to their decision not to breastfeed. On the other hand, breastfeeding was considered an acceptable infant feeding method among other adolescent mothers and to be a “good mother”, the adolescent should

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breastfeed her baby. Some adolescent mothers perceived that breastfeeding demonstrated to others in their peer and cultural groups that they were good mothers (Dysonet al., 2011). Cultural influences related to breastfeeding thus were identified as predictive factors influencing adolescent mothers' intentions and choices about infant feeding methods (Wambach & Koehn, 2004).

However, embarrassment about exposure during breastfeeding in public was viewed as a barrier for many adolescent mothers (Nelson & Sethi, 2005; Wambach & Koehn, 2004). They were aware of the potential sexual interest that this behavior might attract from others. Breastfeeding that would be embarrassing was a belief that was often rated as important in influencing adolescent intention to breastfeed (Dyson et al., 2011).

Infant Characteristics

Although a common reason to initiate breastfeeding was the perceived benefit of breastfeeding for infant health, two studies reported how infant responses influenced the continuation of breastfeeding in adolescent mothers. Infant responses related to issues with latching and sucking problems influenced adolescent mothers to switch from breastfeeding to mixed or bottle feeding (Hunter, 2008). On the other hand, breastfeeding experiences of adolescent mothers became better when their infants responded well, grew and developed (Nelson & Sethi, 2005). Although there is a limited evidence concerning relationships between infant characteristics and responses and breastfeeding in adolescent mothers, there is some information of the importance of infant factors for continuing breastfeeding in adolescent mothers.

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Summary of Significant Factors

Personal factors appear to be the most important to the decision to initiate and maintain breastfeeding for adolescent mothers. The perceived benefits of breast milk motivate the mother to plan her infant feeding choices and also provide motivation for her to continue feeding for a longer duration because of the value to her infant's health. Previous experiences with breastfeeding, the in-hospital experience, and the after-hospital experience are considered both positive and negative factors that influenced the mother in her decision to continue breastfeeding. Breastfeeding attitudes both in the prenatal and early postpartum period are important to early decision making about infant feeding methods. Social factors demonstrated both positive and negative influences on the breastfeeding experiences of adolescent mother. Concern about embarrassment from breastfeeding exposure in public is a critical issue to the adolescent mother. However, the social support she receives is what adolescent mothers report as essential to their breastfeeding success during both initiation and continuation of breastfeeding for longer durations. Perceptions of cultural expectations also influence breastfeeding decisions and behaviors for adolescent mothers. Lastly, even though there is not strong evidence, infant factors seem to be considerations in breastfeeding duration for the adolescent mother.

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Table 1. Studies related to breastfeeding in adolescent mothers

Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
Attitude and perception of breastfeeding					
1.Tucke, Wilson, &Samandari (2011)	Mixed-methods	-389 adolescent mothers of descriptive study -22 adolescent mothers of in-depth interview -13-17 years of age (mean= 16.3) -1-9 months of Infant age.	-Descriptive analyses were conducted using data from the North Carolina Pregnancy Risk. -The qualitative component consisted of semi-structured interviews	• 52% of adolescent mothers initiated BF but half of those stopped within first month postpartum. • Common barriers to BF initiation and continuation included not liking breastfeeding, returning to school, nipple pain, and insufficient milk. • Qualitative data revealed professional support during pregnancy, encouragement from family was important to BF initiation. • Reasons for not initiating included fear of pain anticipation of difficulty upon return to school. • Reasons for stopping included pain, difficulty latching on and insufficient breast milk.	(1)Positive factors are support from professional and family. (2)Barriers are pain, perceptions of difficulties of breastfeeding.
2.Wambach, & Koehn (2004)	Qualitative study	-14 pregnant adolescent -14-18 years of age (mean=16.6/ SD=1.3)	Five- focus groups about decision making of breastfeeding	• 10/14 of adolescents had decide for method of infant feeding, only one of adolescents decided to BF. • Adolescent mothers perceived benefits of BF included infant health, increasing infant intelligence, fewer infant allergies, less costly, and increased bonding. • The concept of freedom appeared to be tied to adolescent mother's discomfort with BF in public.	(1) Perceived benefits of breastfeeding (2) discomfort with breastfeeding in public (3) pain as a barrier

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Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
				• Concerns arose about embarrassment, self-consciousness, and fear related to BF in public. • Pain was viewed as disadvantage	
3. Dennis, Heaman, & Mossman, (2010)	Instrument developmen t	-103 pregnant adolescent mothers -15-19 years of age(mean=16.8/ SD=1.18)	A methodological study examined the reliability and validity of the Breastfeeding self-efficacy scale-short form (BSES-SF) among adolescent mothers	• 81.55% of adolescent mothers attempted to BF, 66.9% initiated BF and 44.6 % continued BF to 4 weeks. • Time of decision to BF was a predictor of BF outcome. Earlier decision showed higher score of BSES-SF. • There are significantly higher of score between mothers who continued BF until 4 weeks than those who stopped BF before 4 weeks. • Significantly higher BSES-SF scores in BF mothers than bottle-feeding mothers.	(1) Maternal self-efficacy in BF (2) Previous BF experiences (3) Time of decision making for BF
4. Glass, Tucker, Stewart, Baker, & Kauffman (2009)	Retrospectiv e chart review	-543 adolescent mothers -13-18 years of age	Retrospective review of variables included maternal age, infant feeding method at discharge & 6 weeks postpartum	• At hospital discharge, 59.3% initiated breastfeeding, but this dropped to 22.2% at the 6-week postpartum.	Mutiparity was associated with failure initiation BF
5. Mossman, Heaman, Dennis, & Morris (2008)	Prospective correlational design	103 pregnant adolescents 15-19 years of age (mean:16.82/SD: 1.18)	Measures: BF self-efficacy scale - short form BSES-SF Breastfeeding attitude questionnaire (BAQ) breastfeeding	• Significantly higher prenatal attitude in mothers who initiated breastfeeding (p=0.001). • Mothers with higher prenatal and higher prenatal and postpartum confidences were more likely to continue breastfeeding to 4 weeks.	(1) Prenatal attitude toward breastfeeding (2) Prenatal and postpartum confidences in breastfeeding

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Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
			outcome; initiation and duration breastfeeding		
6. Wambach, & Cohen (2009)	Qualitative study	- 23 adolescent mothers -14-18 years of age (mean:16.3/SD: 1.2) -6 months of infant age	Focus group and semi-structured interview	• Breastfeeding decision making were based on: concerns about infant's health • BF initiation was influenced by positive or negative BF experiences during hospitalization • Positive experiences included: bond and closeness • Negative experiences included; perceptions of physical changes- insufficient milk supply, and perception of lack of family support. • Continued breastfeeding factors were perceived health benefits for infant, convenience, maternal emotional benefits. • Earlier gestation continued to breastfeeding after three months and longer than later gestation.	(1) perceived benefit of infant health (2) Growing of bond (3) Supports from nurses, mother, partner, and peer (4) Factors related to wean: nipple pain, insufficient milk supply, perceived lack of support (5) Attitude about breastfeeding and early decision making
7. Camarotti, Nakano, Pereira, Modeiros,	Descriptive study	-80 of postpartum adolescent mothers	Using a quantitative questionnaire for breastfeeding practices (frequency,	• There were 46.2 of mothers maintained exclusive breastfeeding for 90-180 days. • Mother with previous breastfeeding experience, 38.5% breastfed longer than six	(1)Previous breastfeeding experience (2) Nipple

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Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
&Monteir, (2011)		-15-19 years of age(mean:17)	duration of breastfeeding, maternal perception and satisfaction of the child	months. • Majority of adolescent mother believed that they were satisfied, • The most problem of BF were: nipple trauma, and poor sucking of the newborn.	trauma and baby poor suckling
8. Park, Meier, & Song, 2003	Retrospective chart review	-3534 postpartum adolescent mother -12-19 years of age	Using chart review to evaluate breastfeeding initiation rates in the Michigan WIC program in 1995	• BF initiation rates was 35.1% • Significant predictors independently associated with breastfeeding initiation. White and Hispanic were more rate of BF than Black teen mothers. • Plan for BF in the first trimester have higher rate of BF initiation. • Smoking habit mother had lower rate of breastfeeding than non-smoker.	(1)Race (2)Early plan of BF (3)Smoking habit
9. Hunter (2008)	Descriptive design	-29 of complete questionnaire - Unger 19 years of age	Questionnaires sent to teenagers, 91 questionnaires were sent 29 completed questionnaires were returned; overall response rate was 31.8%. Questionnaire covered care in hospital & at home in postnatal period.	• 81% of respondents stated that they wanted to BF their babies, but only 14 (48%) actually initiated breastfeeding. • Reasons given for switching from breast to mixed or bottle feeding were that baby did not latch on, nipples soreness, feeling unable to breastfeed, baby needed more milk.	(1) Nipple soreness (2) Perceived Insufficient milk supply (3) Feeling unable to breastfeeding

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Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
Perceived support of breastfeeding					
10. Meglio, McDermott, & Klein (2009)	Randomized controlled trial	-46 adolescent mothers (Intervention=22) (control=24) -17-19 years of age(mean:18.4/SD:1.3) -8 weeks of infant age	The intervention was telephone interviewing providing by peer support	• Duration of any breastfeeding did not differ significantly between the groups (median 75 days in the intervention group vs. 35 days in the control group, p=0.26). • Duration of exclusive BF duration of was increased in the intervention group(median 35 days vs. 10days, p=0.004)	Peer support was clearly significant for duration of exclusive breastfeeding in adolescent mothers.
11. Spear, Hily (2006)	Cross-sectional, descriptive design	-53 adolescent mothers - 13-19 years of age(mean=17.7/SD:1.3) -2 months of infant age	Descriptive telephone survey with 10 closed-ended questions and 5 open-ended questions	• 39.6% planned to breastfeeding at least 6 months. • Actual duration of breastfeeding ranged from 1 week to 18 months. • Over one half (60.3%) of the adolescent mothers breastfeeding for 2months, 22.6% adolescent mothers breastfeeding for 6 months, and 39.6% breastfeeding for 1 month. • Outcome variables included breastfeeding experiences and perceived benefit breastfeeding and support.	(1) Friends, families, and healthcare professionals were supportive (2) perceived benefit breastfeeding
12. Dykes, Moran, Burt, & Edwards,	Qualitative study :	- 7 adolescent mothers -16-19 years of	focus group and in-depth interview In-depth semi-	• Five themes related to experiences emerged: (1) feeling watched and judged; (2) lacking confidence; (3) tiredness; (4) discomfort; and	(1) Emotional support, esteem support,

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Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
(2003)		age Infant : age from 2 weeks to 6 months	structured interviews which explored the support needs identified by adolescent mothers.	(5) sharing accountability. • Five themes were developed to describe the adolescents' support needs: (1) emotional support; (2) esteem support; (3) instrumental support; (4) informational support; and (5) network support. • These forms of support were most effective when provided together in a synergistic way and within a trusting relationship. • Key supporters identified were the mother's mother, the partner, and the midwife employed in a teenage pregnancy coordinator role.	instrumental support. Informational support, and network support (2) Significant supporters were mother's mother , partner, and healthcare professional
13. Alexander, Riordan, & Furman (2010)	Prospective cross-sectional survey using a structured interview	-46 adolescent pregnant and 122 non-adolescent pregnant - 15-19 years of age	Structured interviews examined feeding intentions and attitudes and compared BF intentions and attitudes to determine if age is a significant determinant	• Rate of breastfeeding attitudes, intention & planned duration and exclusivity of breastfeeding are not significant different between adolescent and non-adolescent women. • Significant determinants included prima-parity, good self-assessed breastfeeding knowledge, and having support from the father of the baby.	Primipara, breastfeeding, husband support
14. Lavender, Thompson, & Wood (2005).	Descriptive design	-60 adolescent mothers -16-18 years of age(median:16)	A semi-structured questionnaire was used; both positive and negative aspects of experience were recorded.	• 38 mothers initiated breastfeeding and median duration was 28 days (range 1day to 224 days). Teenagers had a desire to do the best for the baby and were proud when they succeeded. • Peer support was important • Breastfeeding guardian, as outlined in this	Peer support and support received from professionals is important.

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Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
				paper, was well received by teenagers and has the potential to improve breastfeeding rates. • Health professionals that teenagers can relate to should be available within maternity care.	
15. Nelson, &Sethi (2005)	Qualitative study	-8 adolescent mothers -15-19 years of age(mean:17.5) -6 weeks of infant age	Grounded theory method was used to study the first-time breast feeding experiences of adolescent mothers.	• The core variable was adolescent mother: continuously committing to breast feeding. Four categories supported the core variables: (1) Deciding to breastfeeding based on perception of benefit of breastfeeding such as convenience and cheapness; (2) Learning to breastfeeding were related to support from family and health care professional; (3) Adjusting to breastfeeding is related to how adolescent mother accepts the change of becoming mother and discover the reality of breastfeeding; and (4) Ending breastfeeding related to expectation of family and culture to make decision to continue or end breastfeeding. Some concerns about having more freedom. • The two support subcategories were: (1) Vacillating between the good things and hard things about breastfeeding; (2) Social support and other social influences.	(1) perceived benefit of breastfeeding (2) perceived social support (3) accept of becoming adolescent mother (4) family and cultural expectation
16. Wambach, Aaronson, Domian, Rojjianasrirat, &Yeh (2011)	Randomized control trial	-289 Adolescent mothers (Intervention =97, Control=90, Usual care=102)	Non-blinded, three-group, RCT - The education and support intervention began at 2nd trimester	• The intervention positively influenced breastfeeding duration. • 69% of samples initial breastfeeding • breastfeeding duration of experimental group was significantly longer among those of	(1) breastfeeding knowledge (2)prenatal breastfeeding intention

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Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
		-14-18 years of age(mean:16.3/SD:1.2)	and extended through 4 weeks postpartum	control group (p<0.001, intervention=177 days, control =61 days	(3) Time of feeding decision (4) Social and professional support
Concerning public exposure and privacy					
17. Hannon, Willis, Sharla, Bishop-Townsend, Martinaz, Scrimshaw (2000)	Qualitative study	-35 adolescent mothers -12-19 years of age (mean = 15.74) Infants: after birth – 6 months	Semi-structured ethnographic interview and focus group	• The greatest barriers to breastfeeding included pain, embarrassment, and lack of interest. • There are three main concepts that influence breaastfeeding decision: (1)Influence people are mothers, health care professionals, friends; (2) perceptions of benefits of breast-feeding: bonding, baby's health, baby IQ, convenience; (3) perceptions of problems with breast-feeding: pain, public exposure, unease with act of breast feeding , inconvenience, breast feeding myths	(1) Support (2) Perceived benefits of breastfeeding (3) Public exposure
18. Nelson (2009)	Qualitative study	-16 adolescent (8 were pregnant and 8 were postpartum) 14-19 years of age	Focus groups Key questions included the following: attitude, concerns, and beliefs	• Breastfeeding beliefs helped a new mother lose her body weight and increased sense of infant bonding. • Pain" was one major factor for discontinued breastfeeding. • Breastfeeding Attitudes included that breastfeeding is the mother's choice and the baby come first as a benefit of breastfeeding. • Concerns related to breastfeeding included discomfort of breastfeeding, privacy, and	(1) Maternal infant bonding (2) Pain as barrier of breastfeeding (3) breastfeeding attitudes (4) Concerns about privacy during

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Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
				leading to infant being dependent on mother.	breastfeeding
19. Dyson, Green, Renfrew, McMillan, & Woolridge (2011)	Mixed Methods	-71 Adolescent mothers for quantitative -17 adolescent mothers for focus group -16–19 years of age	Using a quantitative questionnaire for feeding intension and focus groups for data on the perceived disadvantages of breastfeeding.	• Adolescent mother intend to formula feed their infant four time more than women aged 20 or older (32.4% VS.7.8%) • Intention of breastfeeding was predictive of behavior at all times point for adolescent mothers who intend to breastfeeding or intend to formula feeding. • Moral norms were identified as the most predictive variable influencing adolescent mother's breastfeeding intentions. • Embarrassing was significantly important in influencing adolescent mothers in intention to breastfeeding. • Self-esteem, with concerns R/T breastfeeding in public	(1) Perceived moral norm (2) Embarrassing and self–esteem when breastfeeding in public
20. Luciana Dias de Oliveira, Giugliani, Santo, & Nunes (2012)	Randomized controlled trial	323 adolescent mother 163 in intervention and 160 in control groups --aged under 20 years of age(mean: 17.4)	Counseling intervention included benefit of breast milk in hospitals.	• Counseling intervention postponed the introduction of non-breast milk to 153 day while control group began non-breast milk at 95 days.	Knowledge about nutrition of breast milk.

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Study	Design	Sample	Methods and measurement	Results	Significant Breastfeeding Factors
Breastfeeding knowledge					
21. Dewan, Wood, Maxwell, Cooper, &Brabin (2002)	Descriptive design	-40 adolescent mothers and 40 non-adolescent mothers - 15-19 years old (mean:17, SD:1)	A questionnaire with closed and open questions.	• More adolescent mothers planned to bottle feed (57.5%vs. 22.5%, p=0.002) • Adolescent mother had poorer knowledge about basic breast-feeding messages colostrum and exclusive breast-feeding	Breastfeeding knowledge
22. Volpe, & Bear (2000)	Randomized controlled trial	-91 adolescent mothers -43 in intervention and 48 in control group -14 and 19 years of age (mean:16.2)	The BF BEST Club (Breastfeeding Educated and Supported Teen) offered to pregnant adolescents. Program uses role playing and games to educate the adolescent learner about the BF basics.	• There was significant different of initiation BF between the groups regard to infant feeding choices (65.1% of intervention group initiated BF while 14.6% of control group initiated BF, p<0.001).	(1) Education including nutrition, child development, maternal-child issues and preventive health care. (2) Using role playing and games to educate the adolescent learner

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Discussion

This integrative review was conducted with the aim of describing the current evidence related to breastfeeding in adolescent mothers and to articulate what is known and unknown about factors that may be influential to breastfeeding behaviors. The highlights of the review introduce the personal factors, social and cultural factors, and infant factors that contribute to intention, initiation, and continuation of breastfeeding. Personal factors included knowledge, attitudes, and perceived problems of breastfeeding. Personal factors are important to the intentionto and initiation of breastfeeding in adolescent mothers. In general, the earlier the decision is made to breastfeed, the greater the likelihood of breastfeeding initiation and longer continuation (Semenic, Loiselle, & Gottlieb, 2008; Haiek, Gautheir, Brosseau, & Rocheleau, 2007). However, maternal age also has been associated with initiation and duration of breastfeeding. Mothers more than 23 years old are more likely to initiate and continue breastfeeding (Maehr, Lizarraga, Wingard, Felice, 1993) than younger mothers, especially adolescent mothers. From a developmental stage perspective, adolescent mothers are balancing their personal growth, which for most part is egocentric, and focusing on their own development (Feldman, 2010) while at the same time managing the new role of motherhood and breastfeeding. Adolescents are just beginning to consider bigger life decisions and what those decisions mean for them personally. In breastfeeding studies, the reason most often cited by the mother for providing breastfeeding is infant-centered, while the reason offered for bottle feeding is predominantly more personal in nature (mother-centered) (Britton & Britton, 2008; Wagner, 2006). Also, mothers who have a decreased sense of their own self-concept or less self-confidence (Britton, & Britton, 2008) and decreased personal knowledge about breastfeeding have been found to be less likely to breastfeed (Ordway, 2008). In general, adolescent mothers

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have less knowledge about breastfeeding (Dewen, Wood, Maxwell, & Brabin, 2002) and consider breastfeeding to be one of the hardships of motherhood (Nelson, & Sethi, 2005). Therefore, while adolescent mothers have high rates of intention to initiate breastfeeding, the actual breastfeeding rate is decreased both for initiation and continuation (Dennis et al.,2010; Glass et al., 2009; Lavender et al., 2005; Tucker et al., 2011; Wambach et al., 2011).

Although these factors are common influential factors for breastfeeding choices of the first-time mother (Kong & Lee, 2004; Feldman-Winter, & Shaikh, 2007), the adolescent mother's ability to differentiate these attitudes and perceptions and make best choices may be limited due to immaturity of her cognitive processes. On one hand, adolescent mothers whose cognitive processing is not as well developed may not yet be able to cultivate these positive perceptions. However, one might consider that the breastfeeding experience may contribute toward an adolescent mother's evolution in becoming a mother and being a mature woman. With adjustment to breastfeeding and motherhood, the adolescent mother has the potential to embrace the change and responsibility of being a mother and breastfeeding (Benson, 1996; Hannon et al., 2000, Nelson & Sethi, 2005).

Social and cultural factors can be predictive of breastfeeding initiation. Social factors include support related to breastfeeding (Wambach & Cohen, 2009), that is, how the adolescent perceives breastfeeding as supporting her ability or inability to continue to interact within her social environment. On the other hand, some adolescent mothers perceive breastfeeding as tying their infants to them and thus limiting their social activities (Nelson, 2009). Thus, social factors are considered as either positive factors, from sources of support such as partners, family members, peers, and professionals, or negative factors such as barriers to social activities with peers and partners.

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Breastfeeding support is important to adolescent mothers (Spear, 2006; Tucker et al., 2011; Wambach & Cohen, 2009) and is similar in importance to that of adult mothers (Scott, Shaker, & Reid, 2004; Swanson & Power, 2005).In regard to the nature of support for breastfeeding, an adolescent mother may need supports in many aspects such as emotional, self-esteem, instrumental, informational, and network support (Moran, Edward, & Dykes, 2007). A woman's attitudes toward feeding practice are influenced by specific people in her social network, including the baby's father, the maternal grandmother, close friends, and healthcare professionals (Dennis, 2002; Scott, Lander, Hughes, & Binns, 2001), each of whom provides different types of support. Emotional and self-esteem supports are related to the adolescent's stage of ego development (Feldman-Winter & Shaikh, 2007); informational support from healthcare professionals is necessary to improve knowledge of breastfeeding, and network support may include partner, peers, family members, and social group members (Moran et al., 2007). Therefore, social support is important throughout intention, initiation, and continuation of breastfeeding. The infant feeding choice is affected by the type and degree of support that a women has access to within her social context. The source of support may vary in different populations (Giugliani, Caiaffa, Vogelhut,Witter, & Perman, 1994). It seems that adolescent mothers need to access a variety of breastfeeding supports during pregnancy and into the postpartum period. Because of her age, the adolescent mother may need higher levels of support than older mothers.

Moreover, breastfeeding may be perceived as disadvantageous because of the perceived lack of independence for adolescent mothers because of spending most of their time with their infants (Nelson, 2009; Wambach & Koehn, 2004). Due to their cognitive development, adolescent mothers are in the process of defining their personal identity and developing self-

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direction (Feldman, 2010). Perceptions of lack of social independence may occur when they begin breastfeeding. Adolescent identity is facilitated by developing relationships with peers. Time spent with breastfeeding may contribute to feelings of lack of social activities with peers and partners. Similar to the review of breastfeeding promotion, the adolescent mother perceived loss of connection with others and being a breastfeeding mother is seen as putting her life on hold (Feldman, Winter, & Shaikh, 2007).

Cultural factors included perceptions associated with cultural norms that breastfeeding demonstrates being a good mother (Nelson & Sethi, 2005). The adolescent mother's concern about providing the best benefit for her infant's health is the reason adolescent mothers most often provided for continuing breastfeeding. Perceptions of being a good mother logically would contribute to intention and initiation of breastfeeding as well. Additionally, adolescents may perceive negative judgments from peers and cultural groups (norms) when they don't breast feed their infants (Nelson & Sethi, 2005). However, feelings of discomfort about breastfeeding in public are barrier for adolescent mothers (Dyson et al., 2011; Wambach & Koehn, 2004). Embarrassment about breastfeeding in public is one of the major cultural barriers that adolescent mothers are often not developmentally ready to handle.

Even though there is limited evidence related to the contribution to breastfeeding of infant factors such as temperament and vulnerability either in adult or adolescent mothers, younger adolescent mothers have reported that their infants are of more difficult temperament (Secco & Moffatt, 2003). Also, infant feeding difficulties (latching and sucking problems) is often cited for cessation of breastfeeding within the first weeks and months in younger mothers (Ahuwalia, & Morrow, 2005).This difference in infant factors suggests that the initiation of breastfeeding could be more stressful to younger mothers. It is possible that a continuing difficult

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temperament in some breastfeeding infants may contribute to the steady decline in breastfeeding rates (de Lauzon-Guillain, 2011). However, one study documented a negative association between difficult infants and breastfeeding (Niegel, Ystrom, Hagtvet, & Vollrath, 2008). No studies were found that explains how infant factors relate breastfeeding practice and maternal competence in adolescent mothers. Although breastfeeding has been noted to promote bonding between the adolescent mother and her infant (Nelson, 2009; Wambach & Koehn, 2004), without previous mothering experience, an infant with a difficult temperament could contribute to the adolescent mother's decreased sensitivity and responsiveness to the infant and contribute to declines in breastfeeding.

Implications for Practice and Research

This review confirms that breastfeeding knowledge, maternal attitudes, social support, and social and cultural factors are important to intention and initiation of breastfeeding in adolescent mothers. Interventions should be provided that encourage adolescent mothers, focused on maternal factors such as positive attitudes regarding breastfeeding based on knowledge, and at the same time providing personal growth support focused on the developmental needs of a young mother (woman) making choices for herself and her infant. Although previous intervention studies have been based on the provision of social support such as peer and professional support, the breastfeeding rates in adolescent mothers have not increased. It seems that intervention support should focus on not only breastfeeding techniques and various kinds of support, but also on the developmental needs of the adolescent mother as she adapts to this new role.

Future research that focuses in this area will be helpful in expanding recommendations for practice and designing targeted interventions to support adolescent mothers to successfully

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breastfeed their newborn infants. Although there are some common factors related to continuation of breastfeeding that have been documented both in adolescent and older mothers, the breastfeeding rate is still lower in the younger mothers. Thus, the component of decision making related to breastfeeding may be associated with level of maturity. Future research might better explore perceptions and satisfaction with parenting and breastfeeding behavior in adolescent mothers. In addition, the research related to infant responses is limited in adolescent mothers and much understanding might be gained from studies on the influence of infant factors on breastfeeding duration and maternal competence.

Conclusions

There is strong evidence to suggest that breastfeeding is important to both the adolescent mother and her infant. Although there are high numbers of adolescent mothers that expect and intend to breastfeed prenatally, several factors including maternal attitude, perceived benefit, knowledge about breastfeeding, perceived feelings of support, as well as concern about being a good mother, may be not strong enough to continue breastfeeding in the postpartum period. Initiation of breastfeeding is an activity that includes both the mother and infant; the sense of relationship that develops is a part of the activity. Maternal-infant attachment during breastfeeding has been found to be positively tied to this relationship and interaction between the mother and her infant, and this attachment provides motivation for the mother to continue breastfeeding. However, infant characteristics and responsiveness are also significant factors that contribute to whether the mother continues or stops breastfeeding. In this review, breastfeeding influencing factors in adolescent mothers appear to be similar to those encountered by older first-time mothers, especially in relationship to maternal attitude, need of social supports, types of social support, nipple pain, and insufficient milk supply. Furthermore, this review illustrates

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barriers for breastfeeding that may be related to the adolescent's personal growth and development, particularly in her sense of self as well as managing the role of motherhood. Such barriers include perception of the difficulty of breastfeeding, concerns about freedom, embarrassment of being a younger mother who is breastfeeding, and understanding and responding appropriately to infant responses. In prenatal care, promoting positive maternal perceptions about breastfeeding and perceptions of mothering are essential to supporting the intention of breastfeeding. In the early postpartum period, positive support from partners and healthcare professionals is also essential to sustaining positive maternal attitudes toward initiation and continuation of breastfeeding.

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Chapter 3

Breastfeeding Influencing Factors in Thai Adolescent Mothers

Abstract

Background: There are lower rates of breastfeeding initiation and breastfeeding maintenance in adolescent mothers.

Objectives: To explore influencing factors, personal, social, cultural, and infant factors that potentially explain and predict breastfeeding initiation and maintenance at four week postpartum in adolescent mothers.

Methods: This study was prospective cohort study using a descriptive design. The sample of 102 adolescent mothers was recruited at prenatal clinics in Thailand. There were three time points for data collection; the initial visit was completed in the prenatal period, the second visit was within 48 hours at hospital, and the third was at 4 weeks postpartum. Predictive variables included personal, social, cultural, and infant factors. Outcome variables consisted of breastfeeding initiation, breastfeeding duration, and degree of maternal competence. Instruments included were the Iowa Infant feeding Attitude Scale (IIFAS), Breastfeeding Influencing Factor Assessment (BIFA), Hughes Breast-Feeding Support Scale (HBSS), Pictorial Assessment of Temperament (PAT), Vulnerable Baby Scale (VBS), and the Parenting Sense of Competence Scale (PSOC), all of which were translated into the Thai language.

Results: Most participants (93%) initiated breastfeeding within 48 hours during the hospital stay; only 7% did not initiate breastfeeding. At 4 weeks postpartum the duration of exclusive breastfeeding averaged 24.36 days (SD = 9.91). Half of the mothers (53%) continued exclusively breastfeeding, 43% of mother provided partial breastfeeding, and 4% of mothers were exclusively bottle-feeding. Personal, social

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and cultural factors were significantly correlated with breastfeeding initiation and were significant positive predictors of exclusive breastfeeding duration. Infant temperament was a significant negative predictor of exclusive breastfeeding duration. Maternal competence was also positively correlated with duration of exclusive breastfeeding. The most common barriers to breastfeeding maintenance were returning to work and/or school, nipple pain, and discomfort with public breastfeeding.

Conclusion: Given that personal, social, and infant factors are important to maintenance of exclusive breastfeeding, facilitating the support mothers receive from their personal support systems is important to breastfeeding duration and maternal competence in the postpartum period. Enhancing exclusive breastfeeding and maternal competence provides a supportive environment for new adolescent mothers to develop their maternal role.

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Breastfeeding is well established as the optimum method for ensuring healthy infant nutrition. Yet, many adolescents remain unaware of the role of breastfeeding in health promotion and disease prevention (Arora, McJunkin, &Wehrer, 2000). Worldwide the number of adolescent mothers continues to be increasing (WHO, 2007), yet adolescent mothers continue to have the lowest rate of breastfeeding in the United States as well as throughout other countries (Centers for Disease Control and Prevention [CDC], 2007; Bar-Yam, 1998). Similarly, breastfeeding performance in adolescent mothers is considered poor in Thailand. There are efforts to increase the incidence and duration of breastfeeding in Thailand, including national programs to increase awareness and educational interventions to better prepare mothers and families. However, in a Thai national survey conducted between 2003 and 2008, only 17% of adolescent mothers continued to breastfed at 6 months postpartum, compared to 45% of mothers aged 20-29 and 51% of women aged 30 and older (Bureau of Health Promotion, 2006; Hangchaovanich, & Voramongkol, 2008).

Additionally, Misra and James (2000) found that while some adolescent mothers might begin with breastfeeding at birth, 95% of those mothers began some formula feedings by the second week of the postpartum period, further reducing the number of infants receiving breast milk for the first 6 months of life. Spear (2006) found that although 39% of adolescent mothers intended to breastfeed for at least 6 months after birth, only 6% actually continued breastfeeding until 6 months.

There are several factors that may contribute to initiation and continuation of breastfeeding in adolescent mothers. Research indicates that when compared to older mothers, adolescent mothers interact more negatively with their infants (Culp, Appelbaum, Osofsky, & Levy, 1988; Hanna, 2001), which has consistently been linked to less positive parenting and feeding choices (Crnic, Gaze, & Hoffman, 2005).

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Adolescent motherhood not only has negative consequences related to the teenage mother's social and educational well-being, but her child is also more likely to have problems with health and cognitive development compared to a child born to an older mother (East & Felice, 1996; Moore & Brooks-Gunn, 2002).

Moreover, research has indicated that a mother's psychosocial developmental level influences her ability to parent and that adolescent mothers do not maintain the same psychosocial developmental track as adolescents who are not mothers (Ketterlinus, Lamb, & Nitz, 1991, Shapiro-Mendoza, Selwyn, Smith, & Sanderson, 2007). Adolescents have not yet reached adult developmental maturity in a variety of different social and cognitive dimensions. It is often during adolescence that individual progress from concrete to formal operational thinking occurs, and thus the young person becomes more able to think about the past, present, and future in an abstract way (Borkowski et al., 2002). This developmental process adversely affects a young woman's ability to parent because many mothering tasks draw from an adult woman's social and cognitive abilities to respond, guide, and make choices that benefit the child even though the mother may not always benefit in the same ways. Consequently, it is important to gain a deeper understanding of motherhood within the context of adolescent psychosocial development.

Breastfeeding as a specific task of motherhood is correlated with a wide range of beneficial outcomes that could be particularly applicable to adolescent mothers and their children (Klaus, 1998; Bartok, 2011; Dewey, 2003; Sievers, Oldigs, & Santer, 2002). Infants who are breastfed have a reduced rate of respiratory infections, ear infections, diarrhea, childhood obesity, and asthma, and lower rates of infant morbidity and hospitalization (Garner et al., 2005). While breastfeeding is beneficial for mother and infant, the breastfeeding rate remains low in this age group. However,

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there has been relatively little discussion either in the literature about adolescent mothers or in the literature about infant feeding regarding adolescent mothers' feeding intentions in the prenatal period, nor about initiation and continuation of breastfeeding into the postpartum period (Dykes, Moran, Burt, & Edwards, 2003).

Various explanations for the low rate of breastfeeding among adolescent mothers have been considered. The maturity level of adolescent mothers appears to be one of the barriers for continuation of breastfeeding (Peterson & Da Vanzo, 1992). Given their age, adolescent mothers are more likely than older mothers to be single and to have lower levels of education and income, characteristics that are often negatively associated with breastfeeding (Park, Meier, & Song, 2003). The personal factor of *attitude* is viewed as influencing intention for breastfeeding in the prenatal period and also contributes to initiation and continuation of breastfeeding in the postpartum period. Wambach and Koehn (2004) explained that adolescent mothers have both positive and negative attitudes toward decision-making about infant feeding methods and the effort to continue breastfeeding. When mothers have more positive attitudes toward feeding choices, they also are more successful in their breastfeeding experiences (Wambach, 1997). Numerous studies have revealed that the factors associated with initiation and continuation of breastfeeding in mothers may not only depend on personal perspectives about breastfeeding, but also are related to *infant responses*, *social expectations*, as well as kinds of *support provided by family and friends* (Arora et al., 2000; Chan, Nelson, Leung, & Li, 2000; Kong & Lee, 2004). The early postpartum period is an important transitional period for the mother and her infant. Breastfeeding initiation must occur during this critical period and, particularly for adolescent mothers who are also experiencing the new and ambiguous maternal role, breastfeeding performance can seem very demanding and difficult to achieve

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(Mossman, Heaman, Dennis, & Morris, 2008). Thus, the purpose of this study was to obtain a better understanding of factors that influence breastfeeding practices, especially initiation and continuation among adolescent mothers in Thailand. Specific aims were to (1) evaluate relationships among breastfeeding initiation and personal factors, social factors, and cultural factors during pregnancy; (2) define predictive factors associated with breastfeeding initiation; (3) explore relationships among breastfeeding continuation and personal factors, social factors, cultural factors, and infant factors in the postpartum period; (4) define predictive factors associated with breastfeeding continuation; and (5) evaluate the relationship between breastfeeding continuation and maternal competence in Thai adolescent mothers.

Theoretical Framework

Breastfeeding is an aspect of motherhood which is considered a healthy behavior that positively impacts infant growth and development. Breastfeeding behaviors include intention, initiation, and maintenance of breastfeeding. Breastfeeding intention is defined as a woman's intention to feed her infant exclusively with breast milk. Initiation is actual breastfeeding behavior in the early postpartum period, determined when the mother either places the infant to the breast or the infant receives any of the mother's breast milk. Breastfeeding maintenance is the duration of breastfeeding, determined by the length of time in days from the time the infant received any amount of breast milk to the time of weaning. Breastfeeding maintenance is operationally defined as exclusive breastfeeding, partial breastfeeding, or no breastfeeding. Breastfeeding duration is considered an outcome of the breastfeeding behaviors. The ultimate goal of breastfeeding maintenance is exclusive breastfeeding for at least 6 months.

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Breastfeeding is a choice and mothers decide to breastfeed based on many influencing factors (Kong & Lee, 2004, Swanson, 2004). This process often begins during pregnancy and extends into the postpartum period (Wambach & Cohen, 2009). The concepts selected for study in this research included personal, social and cultural, and infant factors in the context of breastfeeding in adolescent mothers, beginning in pregnancy and extending into the postpartum period. Personal factors focused on a mother's attitudes and beliefs about breastfeeding. Social factors included perceived social support and perceived social influences related to breastfeeding. Cultural factors were described as the culture norm of being a good mother and the mother's perceptions of public breastfeeding that may influence feeding choices (Kong & Lee, 2004; Daglas & Antoniou, 2012). Infant factors included infant temperament and infant vulnerability. Study outcomes were initiation and maintenance of breastfeeding. In addition, maternal competence was considered to be the ultimate outcome of the mother's development in her new role as mother (Liu, Chen, Yeh, & Hsieh, 2012). Thus, we examined the relationship between breastfeeding duration and maternal competence. The theoretical framework presented as Figure 1 was used to explain and evaluate influencing factors of breastfeeding in adolescent mothers in Thailand.

Based on previous research and the theoretical framework, there are many potential factors that may be significant to initiation and continuation of breastfeeding in adolescent mothers. Personal factors appear to be the most important to the decision to initiate and maintain breastfeeding for adolescent mothers. The perceived benefits of breast milk motivate the mother to plan her infant feeding choices and also provide motivation for her to continue feeding for a longer duration to enhance her infant's health. Previous experiences with breastfeeding, the in-hospital experience,

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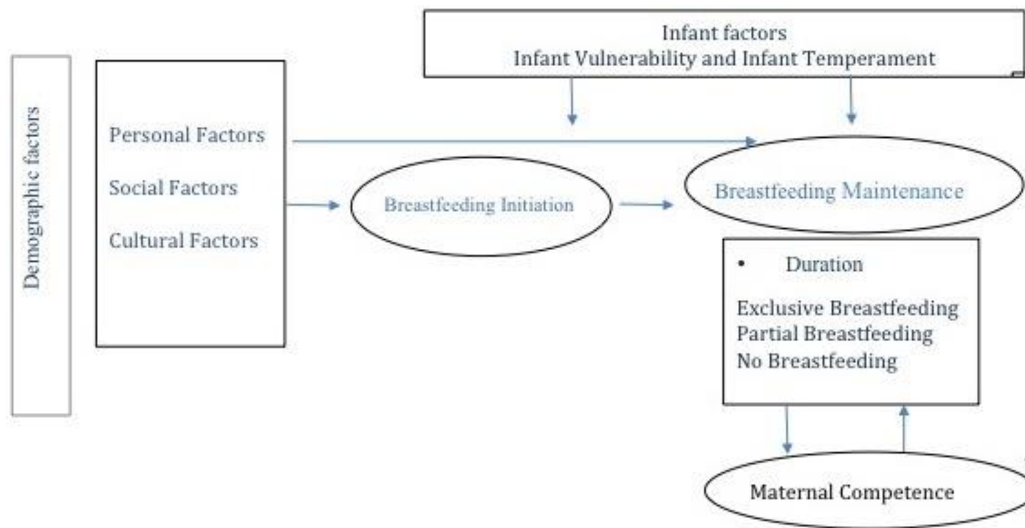
Figure 1. Conceptual Framework of Breastfeeding in Adolescent Mothers



and the after-hospital experience involve both positive and negative factors that influence the mother in her decision to continue breastfeeding. Breastfeeding attitudes are important to early decision making about infant feeding methods. Social factors have been shown to have both positive and negative effects on the breastfeeding experiences of the adolescent mother. However, the social support received by the adolescent mother is reported to be essential to breastfeeding success during both initiation and continuation of breastfeeding for longer durations (Spear, 2006). Perceptions of cultural expectations also influence breastfeeding decisions and behaviors for adolescent mothers. Concern about embarrassment from breastfeeding exposure in public has been found to be a critical issue to the adolescent mother (Dyson, Green, Renfrew, McMillan, &Woolridge, 2011). Additionally, infant factors, even though there is not strong evidence, seem to be considerations in breastfeeding duration for the adolescent mother (Neifert, & Bunik, 2013; Wasser et al, 2011). However, all these factors must be further explored to expand our knowledge and

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guide more developmentally appropriate nursing interventions for adolescent mothers in Thailand, our population of interest.

Methods

Study Design and Setting

This research was a prospective cohort study using a descriptive design. The adolescent mothers were recruited at the prenatal clinic in one of two large, public hospitals in Saraburi and Lopburi provinces, in the central region of Thailand. There were three time points for data collection. The initial visit was completed in the prenatal period between 34-40 weeks gestation in the prenatal care clinic. Once informed consent was completed, the mother was asked to complete several questionnaires related to breastfeeding. The second time point for data collection occurred within 48 hours after birth during the early postpartum period in the hospital and again the mother was asked to complete questionnaires related to the initiation of breastfeeding. The final data collection point occurred at 4-5 weeks postpartum. The mother was asked to once again complete the questionnaires in the clinic during her postpartum checkup visit. Each time, the questionnaires took approximately 30 minutes to complete.

Participants

Study participants were Thai pregnant women 14-19 years of age. Inclusion criteria included being (1) pregnant between 34-40 weeks gestation; (2) able to read, write, and understand Thai; and (3) primigravida. Exclusion criteria were being pregnant with multiples or with complications. Participants were administratively withdrawn from the study if their infants were born preterm, with an abnormality, or admitted to the neonatal intensive care unit (NICU).

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Measurement

Predictive variables included in the study design were personal, social, cultural, and infant factors. Outcome variables consisted of breastfeeding initiation, breastfeeding duration, and degree of maternal competence. Instruments used to measure these variables are described below.

The Iowa Infant feeding Attitude Scale (IIFAS) (De La Mora, Russell, Dungy, Losch, & Dusdieker, 1999) consists of 17 attitude questions. The IIFAS can be used to predict the choice of infant feeding method, as reflected by measures of behavioral intentions, and the actual feeding behavior, as reflected by the duration. In this study, the IIFAS was measured both during pregnancy and at 4 weeks postpartum. The IIFAS scales revealed good internal consistency at both data collection points (Cronbach's $\alpha = 0.87$ and 0.89, respectively).

The Breastfeeding Influencing Factor Assessment (BIFA) consists of 39 items. This instrument was modified from a tool which, to our knowledge, had only been used once in a study in Hong Kong with full-term mothers (Kong &Lee, 2004). Psychometric properties were poorly reported and the authors were unavailable for discussion. The unnamed, original instrument contained most but not all the factors we intended to measure. Thus, in order to measure maternal perceptions about personal, social, and cultural factors in the context of breastfeeding, we modified the instrument by adding two items to the original instrument. The modified BIFA was used to reflect breastfeeding behaviors of intention, initiation, and maintenance, along with personal (BIFAp), social (BIFAs), and cultural (BIFAc) categories of influencing factors. The BIFA was used at the initial data collection point during late pregnancy and at 4 weeks postpartum. The modified BIFA demonstrated good internal

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consistency in our study at both data collection points ($\alpha = 0.84$ and 0.87, respectively).

The Hughes Breast-Feeding Support Scale (HBSS) (Hughes, 1984) is a 30-item instrument designed to measure the breastfeeding mother's perception of support received while breastfeeding. The HBSS was translated from the English version to a Thai version in 2001(Ratananugool, 2001). In our study, the HBSS was used both during late pregnancy and 4 weeks postpartum period. Good internal consistently was noted at both data collection points ($\alpha = 0.89$ and 0.91, respectively).

The Pictorial Assessment of Temperament (PAT) (Clarke-Stewart, Fitzpatrick, Allhusen, & Goldburg, 2000) includes10 illustrated vignettes each demonstrating three different infant temperaments in response to different events. The PAT was used only at the 4 weeks postpartum data collection point and had strong internal consistency (α=0.87).

The Vulnerable Baby Scale (VBS) (Kerruish, Settle, Cambell-Stokes, & Taylor, 2005) is designed to measure parents' perceptions of baby vulnerability. The VBS is composed of 10 items. The VBS was also measured at 4 weeks postpartum. The scale had acceptable internal consistency ($\alpha = 0.74$), at a level consistent with the original internal consistency demonstrated by the authors of the scale.

The Parenting Sense of Competence Scale (PSOC) (Johnston & Mash, 1989) is a 17-item scale designed to measure parents' satisfaction with parenting and their self-efficacy in the parenting role. The PSOC was used at the 4 weeks postpartum data collection point; internal consistency was good at $\alpha = 0.88$.

Breastfeeding duration was defined as the total number of days from the beginning to the end of exclusive breastfeeding. The method of feeding was classified as exclusive breastfeeding (receiving all breast milk either at breast or in bottles),

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partial breastfeeding (receiving some breast milk and some formula), and bottle-feeding (all formula feeding) as reported by the mother.

Translation Process

The IIFAS, BIFA, PAT, VBS and PSOC had not been previously used in Asian countries and they had not been previously translated into the Thai language. For this study with the Thai population, a systematic process recommended by Beaton et al. (2002) was used for translation of these instruments from English to Thai versions in order to ensure semantic and content equivalence, the two major dimensions of cross-culture translations. Each item in the original and back-translated versions was ranked in terms of comparability of language and similarity of interpretability. Comparability of language refers to the formal similarity of words, phrases, and sentences. Similarity of interpretability refers to the degree to which the two versions engender the same response even though the wording is not the same. Using this well delineated process enabled the first author (a native Thai speaker) to identify potentially problematic items and retranslate them until the items were deemed to be interpreted in the same way. All translated instruments were then pre-tested with a small sample of Thai mothers to ensure both clarity in meaning and understanding. The good internal consistency values for the Thai versions used in this study support the validity of the translated instruments.

Data Analysis

Descriptive statistics were used to summarize demographic characteristics, personal factors, social factors, cultural factors, infant factors, and study outcomes of breastfeeding initiation and duration and maternal competence. Pearson correlation coefficients were used to examine relationships between breastfeeding initiation and personal, social, and cultural factors in pregnancy. Odd ratios and their 95%

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confidence interval are also presented. Variables with *p*-values less than 0.2 were included in multivariate analyses to determine relationships when controlling for other explanatory variables. Univariate and multiple linear regression analyses were used to analyze relationships between the predictive factors and breastfeeding duration. Confounders and effect modifiers were evaluated in the multivariate analyses. Pearson correlation coefficients were used to describe the magnitude of relationship between breastfeeding duration and maternal competence scores. Independent *t-test* was used to evaluate difference of maternal competence score between the exclusive and partial breastfeeding. Data analyses were performed using IBM SPSS Statistics for Mac, version 20. All tests and confidence intervals (*CI*) were considered to be significant at *p*-values less than 0.05.

Findings

A sample of 120 adolescents at 34-40 weeks gestation was recruited from the prenatal clinics. From this initial sample, 102 participants provided data in the early postpartum period in the hospital, and 96 participants were followed through 4 weeks postpartum. Of the 18 participants who did not complete data collection in the early postpartum period, 5 had preterm babies, 4 had infants admitted to NICU, and 9 did not delivery at the study hospital. An additional 6 participants were lost to follow-up at 4 weeks postpartum, yielding a study attrition rate of 20%. There were no differences in the demographic variables between those who did and did not remain in the study through 4 weeks postpartum.

The sample ranged between 14-19 years of age, with a mean age of 16.75 years (*SD* =1.51). Over half of the adolescent mothers (62.7%) had only a middle school education. Most were still in school at the time of the study. Approximately half of the adolescent mothers (58.8%) had a low income. Approximately 88% of

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adolescent mothers lived with their partner. The partners' average age was 20.32 years (*SD* = 4.10). Half of partners (51.1%) also had only completed middle school, and most were still in school at the time of the study. Approximately three quarters of the adolescent mothers (73.5%) were unemployed, and over half of them (56.9%) became pregnant while they were still in school. On average, the adolescent mothers were 35.1 weeks pregnant at the time of recruitment. All adolescent mothers reported that breastfeeding was the best choice for infant feeding. Most of the mothers (60.8%) reported making the decision about infant feeding methods during the first trimester of pregnancy. Adolescent mothers (91.2%) who reported making a decision about infant feeding method during pregnancy intended to breastfeed. However, 8.8% of the mothers did not report making a decision about infant feeding method during pregnancy. Additional demographic data are presented in Table 1.

Table 1. Demographic Data at Enrollment

Characteristics (*N* = 102)	*n*	%
Marital status		
Single or separate	12	11.8
Living with partner	56	54.9
Married	34	33.3
Maternal education		
Elementary school	13	12.7
Middle school	64	62.7
High school	12	11.8
College	13	12.8
When feeding decision made during pregnancy		
At 1-3 months	62	60.8
At 4-6 months	22	21.6
At 5-9 months	9	8.8
Not decided during pregnancy	9	8.8

Infant birth weight averaged 2,959.15 grams (*SD* = 0.93) and mean birth gestation was 38.85 weeks (*SD* = 0.90), with 93.1% delivered vaginally. Most of the adolescent mothers in this study (93.1%) initiated breastfeeding within 48 hours, during their initial hospital stay; only 6.9% of mothers did not initiate breastfeeding in the hospital. At 4 weeks postpartum, average duration of exclusive breastfeeding was

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reported to be 24.4 days (*SD* = 9.91). Half of the sample (53.1%) continued exclusively breastfeeding, 42.7% of the mothers were providing partial breastfeeding, and 4.2% of the mothers were bottle-feeding their infants. Additionally, the partial breastfeeding group reported mean exclusive breastfeeding days as 13.3, while mothers who were bottle feeding had on average only breastfed exclusively for 2.75 days as shown in Table 2.

Table 2.Breastfeeding (BF) at 4 weeks Postpartum

Feeding Method (*N* =96)	*n*	%	Exclusive BF Days Mean (*SD*)
Exclusively breastfeeding	51	53.1	28.25 (2.85)
Partially breastfeeding	41	42.7	13.26 (6.60)
No breastfeeding	4	4.2	2.75 (0.95)

Table 3. Influencing Factors and Breastfeeding Initiation in Early Postpartum Period during Hospitalization

Influencing Factors for Mothers Who Initiated Breastfeeding (*N* =102)	Instrument Mean Score (*SD*)	*r*	*p*
Personal factors			
IIFAS	4.13 (.32)	0.55	0.01
BIFAp	4.21 (.34)	0.46	0.01
Social factors			
BIFAs	3.63 (.34)	0.08	0.58
HBSS	3.21 (.45)	0.21	0.05
Cultural factors			
BIFAc	3.87(.36)	0.46	0.01

As seen in Table 3, there were significant correlations among influencing factors and breastfeeding initiation while mothers were at the hospital during the early postpartum period. We found that personal factors, social support, and cultural factors had significant relationships with breastfeeding initiation. Adolescent mothers with higher scores in personal factors, social factors, and cultural factors were noted to have higher rates of breastfeeding initiation during the initial hospital stay.

As shown in Table 4, the strongest correlations with reported duration of exclusive breastfeeding at 4 weeks postpartum were personal factors, social factors,

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maternal competence ($r > 0.50$ for each variable) and infant temperament ($r = -0.37$). There was also a strong correlation between the personal factor variables measured by the IIFAS and BIFAp ($r = 0.46$). Additionally, a strong correlation was noted between social factor variables indicated by the BIFAs and HBSS ($r = 0.61$). Overall, there was a strong correlation between personal factors and social factors ($r > 0.50$), and minimal but statistically significant correlations among cultural factors, personal factors, and social factors ($r = 0.21$ to 0.24).

For infant factors, infant vulnerability had no correlation with other variables, while positive perception of infant temperament had a negative correlation with duration of exclusive breastfeeding. Among the demographic data, only the number of prenatal visits had a positive but minimal association with duration of exclusive breastfeeding ($r = 0.21$).

Table 4. Correlations of Variables at 4 Weeks Postpartum (*N* = 96)

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Exclusive BF duration	_	.51**	.58**	.66**	.54**	.15	.53**	.13	-.37**	.14	.03	.21*
2. Personal factor (BIFAp)	.51**	_	.46**	.54**	.46*	.22**	.13	.10	-.20*	.14	.12	.17
3. Personal factor (IIFAS)	.58**	.46**	_	.49**	.50**	.21*	.34**	.07	-.30*	.21*	.21*	.15
4. Social factor (BIFAs)	.66**	.54**	.49**	_	.61**	.24*	.46**	.15	-.25*	.08	.12	.24*
5. Social factor (HBSS)	.54**	.46**	.50**	.61**	_	.12	.46**	.13	-.41**	.04	.04	.05
6. Cultural factor (BIFAc)	.15	.22*	.21*	.24*	.12	_	.14	-.06	-.07	.07	.11	.09
7. Maternal competence (PSOC)	.53**	.13	.34**	.46**	.46**	.14	_	.18	-.41**	.03	.10	.25*
8. Infant vulnerability (VBS)	.13	.10	.07	.15	.13	-.06	.18	_	-.03	.13	.02	.12
9. Infant temperament (PAT)	-.37*	-.20*	-.30*	-.25*	-.41**	-.07	-.41**	-.03	_	.01	.10	.01
10. Age	.14	.14	.21*	.08	.04	.07	.03	.13	.01	_	.23*	.07
11. Education	.03	.12	.21*	.12	.04	.11	.10	.02	.10	.23*	_	.02
12. Prenatal visit	.21*	.17	.15	.24*	.05	.09	.25*	.12	.01	.07	.02	_

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

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Table 5. Univariate Regression of Breastfeeding Duration on Influencing Factors

Covariate	*β*	*SE*	*p*
Personal factors			
IIFAS	19.09	2.71	0.01
BIFAp	13.82	2.40	0.01
Social factors			
BIFAs	14.75	1.69	0.01
HBSS	15.85	2.51	0.01
Cultural factors			
BIFAc	3.68	2.38	0.12
Infant factors			
Infant vulnerability (VBS)	3.18	2.45	0.19
Infant temperament (PAT)	-7.69	1.94	0.01
Age	0.93	0.65	0.15
Education	0.40	0.12	0.74
Prenatal visits	0.77	0.37	0.03

Table 6. Multivariate Regression of Breastfeeding Duration on Influencing Predictors

Covariate	β	*SE*	*p*
Step 1- Influencing factors			
Personal factors			
IIFAS	8.42	2.84	0.004
BIFAp	3.25	2.37	0.17
Social factors			
BIFAs	9.25	2.18	0.001
HBSS	1.17	2.86	0.68
Cultural factors			
BIFAc	1.03	1.72	0.55
Infant factors			
Infant vulnerability (VBS)	0.50	1.71	0.76
Infant temperament (PAT)	-3.18	1.58	0.04
Step 2- Addition of demographic variables			
Personal factors			
IIFAS	8.42	2.84	0.01*
BIFAp	3.25	2.38	0.15
Social factors			
BIFAs	9.26	2.18	0.01*
HBSS	1.16	2.86	0.48
Cultural factors			
BIFAc	1.03	1.73	0.55
Infant factors			
Infant vulnerability (VBS)	0.51	1.71	0.76
Infant temperament (PAT)	-3.18	1.58	0.04*
Age	0.72	0.46	0.11
Education	1.29	0.87	0.13
Prenatal visits	0.20	0.27	0.43

Note: For step 1, R^2 change = 0.568, $p < 0.001$; step 2, R^2 change = 0.593, $p < 0.001$

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For univariate regression analysis (Table 5), the significant correlation of exclusive breastfeeding duration consisted of personal factors, social factors, infant temperament and prenatal clinic visits. Multiple regression analysis (Table 6) was used to understand which variables predicted exclusive breastfeeding duration. The variables of personal factors, social factors, cultural factors, infant factors, and demographic variables explained 59.3% of the variance in exclusive breastfeeding duration. However, after controlling confounders and interactions, the demographic variables were not significantly predictive of duration of exclusive breastfeeding. The standard coefficient (β) indicated that feeding attitude and social influence were significant positive predictors, and infant temperament was a significant negative predictor of exclusive breastfeeding duration. That is, higher feeding attitudes and social influences and lower infant temperament scores predicted longer duration of exclusive breastfeeding.

Maternal competence, our second outcome measure, was found to have a significant relationship with infant feeding method, as shown in Table 7. Adolescent mothers who were exclusively breastfeeding their infants at 4 weeks were more likely to report higher levels of maternal competence than adolescent mothers who were partially breastfeeding or bottle-feeding. Also when examined as a continuum, duration of exclusive breastfeeding and maternal competence were significantly correlated at $r = 0.53$ (Table 4).

Table 7. Differences in Maternal Competence and Infant Feeding Methods

Feeding Methods ($N = 96$)	Maternal Competence						
	n	Mean (*SE*)	Mean Difference	*t*	*df*	95% *CI*	*p*
Exclusive breastfeeding	51	5.11 (0.07)	0.55	5.00	94	4.96-5.26	0.01
Partial breastfeeding and bottle-feeding	45	4.57 (0.079)				4.41-4.72	

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Higher maternal competence scores were associated with a greater number of exclusive breastfeeding days in adolescent mothers, as shown in Table 8. Additionally, there was a strong negative correlation between maternal competence and infant temperament. Higher maternal competence scores were associated with lower scores in infant temperament, indicating that adolescent mothers who perceived higher satisfaction with the maternal role tended to have lower perceptions of their infants as being irritable. Infant vulnerability was found to have no significant relationship with maternal competence. Mothers' reports of reasons for discontinuing breastfeeding are summarized in Table 9.

Table 8. Correlations between Maternal Competence and Days of Exclusive Breastfeeding, Infant Vulnerability, and Infant Temperament

	Maternal Competence		
Variables	Mean (*SD*)	*r*	*p*
Days of exclusive breastfeeding	21.36 (9.91)	0.32	0.01
Infant vulnerability	4.26 (0.41)	0.27	0.72
Infant temperament	1.88 (0.48)	-0.51	0.01

Table 9. Reasons for Discontinuing Exclusive Breastfeeding Reported at 4 Weeks Postpartum

Reason for Discontinuing Exclusive BF (*N* = 45)	*n*	%
Returned to work	11	24.4
Return to school	10	22.2
Short nipple	5	11.1
Sometimes no privacy at home	4	8.9
Milk did not come in enough	5	11.1
Difficult baby	3	6.7
Need help to take care of baby	3	6.7
Pain	4	8.9

Discussion

Factors Associated with Breastfeeding Initiation in Adolescent Mothers

This study illustrates that personal, social, and cultural factors have a significant correlations with breastfeeding initiation in adolescent mothers. As found in our study and previous studies, personal factors including perceived benefit of breastfeeding and attitude about feeding, are significant factors associated with

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breastfeeding initiation. Similar to the findings of Hannon et al. (2000) and Nelson and Sethi (2005), the major reasons provided for initiating breastfeeding were related to benefits to the infant. Thus, information provided about breastfeeding benefits during pregnancy may assist the adolescent mother in making decisions about initiating breastfeeding with her infant. Also, these findings are congruent with previous findings that adolescent mothers with more positive prenatal attitudes about breastfeeding are more likely to initiate breastfeeding (Mossman, Heaman, Dennis, &Morris, 2008). Social factors including support and influence from the social context were also found to be important to adolescent mothers. The majority of adolescent mothers agreed that encouragement and support from partner or husband were important. Cultural factors relate to belief that being a good mother is important and these beliefs support the general practice of exclusive breastfeeding in the community. Cultural factors were found to be important to the initiation of breastfeeding in this study. In the Thai culture, breastfeeding is considered an important aspect of the maternal role. A significant number (n = 89 [87.2%]) of the adolescent mothers agreed that "breastfeeding makes me feel I am a good mother." We also found high intercorrelations among personal, social, and cultural factors that make separating these issues difficult. However, because of breastfeeding policies of the "Friendly Hospital" initiative in Thailand, breastfeeding initiation is considered as a key success and thus, postpartum clinics have specific guidelines to promote breastfeeding. While the identified influencing factors were indeed correlated with breastfeeding initiation in these adolescent mothers, hospital guidelines also played a key role in breastfeeding initiation, in that mothers were directed to breastfeed while in the hospital. The small number of participants (n = 4) who did not initiate

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breastfeeding limits full evaluation of the influence of influencing factors in the early postpartum period

Factors Predicting Exclusive Breastfeeding at 4 Weeks Postpartum

We theoretically considered personal, social, and cultural factors as well as infant factors to be predictors of duration of exclusive breastfeeding. And, indeed, we found empirical support for most of these predictors, with particularly for personal and social factors. Similar to Spear's (2006) findings, breastfeeding duration in adolescent mothers was related to perceived benefit of breastfeeding and support from family and friends. At 4 week postpartum, we found that important breastfeeding support persons identified by the adolescent mother were her own mother (37%) and husband/partner (31%). Interestingly, in other research with adult mothers the husband/partner was more often reported as most important to the mothers. The additional support role of the adolescent's mother is important to consider when providing information to the pregnant adolescent. In addition, easier perceived infant temperament predicted a longer duration of exclusive breastfeeding in adolescent mothers. This finding is similar to those of Lauzon-Guillain et al. (2012),who documented in a longitudinal study that perceptions of a more difficult infant were associated with lower rates of breastfeeding in adult mothers. In another study, more irritable infant temperament has also been associated with earlier introduction of solid foods (Wasser et al., 2011).

Duration of Exclusive Breastfeeding in Adolescent Mothers

In our study, exclusive breastfeeding duration decreased quickly with almost half of those who initiated exclusive breastfeeding providing some partial or all bottle-feeding within the first 2 weeks. This finding, too, is similar to previous research. Glass et al. (2009) reported that with adolescent mothers initiating

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breastfeeding in the hospital, exclusive breastfeeding duration dropped to half by 6 weeks postpartum. The main reasons given for cessation of exclusive breastfeeding in the current study included returning to work or school, perception of poor milk supply, and pain. These barriers correspond with previous research (Tucker, Wilson, &Samandari, 2011). Although cultural norms encourage mothers to breastfeed, more than haft of adolescent mothers (60.5%) agreed to the statement, “I would feel embarrassed if someone saw me breastfeeding”, and it was also one of reasons given by the adolescent mothers in our study for stopping exclusive breastfeeding. Similar to Wambach (2004), concern about embarrassment, self-consciousness, and fear related to breastfeeding in public was a concern in our study as well.

Maternal Competence and Breastfeeding Duration

Another interesting finding of our study provided increased understanding of the correlation between breastfeeding and maternal competence in adolescent mothers. Acquiring maternal competence is considered a maturational process in maternal role attainment. Gaining this maturity while also being an adolescent mother has been questioned, largely because these young women have other developmental tasks to be attained in their maturational process. In this study, the adolescent mothers with longer durations of exclusive breastfeeding had higher maternal competence. This finding is similar to previous research with adult mothers, in documenting that breastfeeding and experience with infant care were major factors affecting maternal competency (Ngai, Chan, & Holroyd, 2001). These findings highlight the importance of understanding Thai culture attitudes about breastfeeding and the maternal role. New mothers need positive experiences related to infant caregiving to enhance maternal competency. As mothers, adolescents who continue breastfeeding exclusively may attain increased maternal skills and satisfaction with the maternal

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role. Most adolescent mothers reported that they were satisfied and felt very good when they were providing breastfeeding for their infant.

Study Limitations

The study had some limitations that should be considered. As noted, hospital policies tended to enforce breastfeeding initiation and the group of mothers who did not initiate breastfeeding in the hospital was very small, limiting insights into relationships among influencing factors and breastfeeding initiation. Also, participants were enrolled through a hospital clinic and thus represent only Thai adolescents who sought prenatal care.

Implications for Practice

There are many factors related to maintenance of exclusive breastfeeding in adolescent mothers. However, the findings in this study indicated that the key factors contributing to breastfeeding maintenance in the adolescent mother were personal attitude and belief, social support, and social influence from her own mother and her husband/partner. Moreover, infant temperament was also a predictor of breastfeeding behavior. We recommend that interventions be aimed at creating a more positive attitude about breastfeeding during pregnancy and the early postpartum period. Health providers need to encourage adolescent mothers to be successful with breastfeeding through interventions that will enhance or create positive experiences in the early postpartum period. Adolescent mothers need information about how to best handle common difficulties faced when maintaining exclusive breastfeeding. The adolescent mother may need a good team of supporters in order to be successful. This might include her family as well as her partner. They need education to support problem solving when barriers appear. Given our findings the support team should include both her mother and/or her partner/husband to increase the likelihood of success in

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exclusively breastfeeding for 6 months. Based on the high correlations in this study of maternal competence with influencing factors and breastfeeding duration, we recommend that intervention promoting maternal competence among adolescent mothers begin during pregnancy.

Perceiving one's infant as difficult was a negative factor affecting both breastfeeding duration and maternal competence. Thus, helping adolescent mothers in understanding their infant's characteristics and learning to work them is important to success with exclusive breastfeeding.

Conclusion

Breastfeeding initiation in adolescent mothers was correlated with personal, social, and cultural factors, while breastfeeding maintenance at 4 weeks postpartum was predicted by personal, social, and infant factors. The duration of exclusive breastfeeding also was highly correlated with maternal competence at 4 weeks postpartum. Thus we recommend interventions to support positive attitudes about breastfeeding for adolescent mothers during pregnancy and the early postpartum period and to engage both the mother and partner/husband to provide support for breastfeeding. Providing this support should also enhance maternal competence and promote positive attainment of the maternal role in Thai adolescent mothers.

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Chapter 4

Institute Review Board Submission and Approval

VCU RESEARCH PLAN TEMPLATE

Use of this template is required to provide your VCU Research Plan to the IRB.Your responses should be written in terms for the non-scientist to understand. If a detailed research protocol (e.g., sponsor's protocol) exists, you may reference specific sections of that protocol.NOTE:**If that protocol does not address all of the issues outlined in each Section Heading, you must address the remaining issues in this Plan.It is NOT acceptable to reference a research funding proposal**.

ALL Sections of the Human Subjects Instructions must be completed with the exception of the Section entitled "Special Consent Provisions." Complete that Section if applicable. When other Sections are not applicable, list the Section Heading and indicate "N/A."

NOTE:The Research Plan is required with ALL Expedited and Full reviewsubmissions and MUST follow the template, and include version number or date, and page numbers.

DO NOT DELETE SECTION HEADINGS OR THE INSTRUCTIONS.

I. TITLE

Breastfeeding influencing factors in Thai adolescent mothers

II. RESEARCH PERSONNEL

A. PRINCIPAL INVESTIGATOR

List the name of the VCU Principal Investigator

Nancy L. McCain DSN, RN Student Advisor/Dissertation Chair **Supannee Kanhadilok MS, RN** Student Investigator

B. STUDY PERSONNEL

NOTE:

1. **Information pertaining to each project personnel, including their role, responsibilities, and qualifications, is to be submitted utilizing a *VCU IRB Study Personnel Information and Changes Form.* This form is available at http://www.research.vcu.edu/forms/vcuirb.htm.**
2. **A roster containing a list of project personnel is to be maintained as a separate study document which is retained with the Research Plan, and is to be updated as applicable. The roster is to include all VCU project personnel(including the principal investigator) who are *engaged* in this research protocol, aswell as non-VCU personnel who are also*engaged* but do not have local IRB approval for this protocol from their own institution,. This template document, entitled *VCU IRB Study Personnel Roster*, is available at http://www.research.vcu.edu/forms/vcuirb.htm.**

C. Describe the process that you will use to ensure that all persons assisting with the research are adequately informed about the protocol and their research-related duties and functions.

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The principal investigator, Dr. Nancy L. McCain, the PhD Candidate's Dissertation Chair, will oversee all aspects of the research by means of routine and as needed electronic or telephone communications with the student and the onsite committee member, Dr. Chantira Chiaranai (BOTH CVs ATTACHED).
The student investigator, Supannee Kanhadilok will be responsible for directly implementing all aspects of the study, including participant recruitment, data collection, and analysis. Ms. Kanhadilok will routinely (not less than monthly) and as needed communicate electronically or by telephone with both Drs. McCain and Chiaranai to discuss research progress and any issues. Drs. McCain and Chiaranai and Ms. Kanhadilok have completed CITI training.

III. CONFLICT OF INTEREST

Describe how the principal investigator and sub/co-investigators might benefit from the subject's participation in this project or completion of the project in general. Do not describe (1) academic recognition such as publications or (2) grant or contract based support of VCU salary commensurate with the professional effort required for the conduct of the project

This study will be the basis for the student's PhD dissertation. The investigators will not benefit from subjects' participation in the study or completion of this project.

IV. RESOURCES

Briefly describe the resources committed to this project including: (1) time available to conduct and complete the research, (2) facilities where you will conduct the research, (3) availability of medical or psychological resources that participants might require as a consequence of the research (if applicable), and (4) financial support.

The student plans to initiate this study in November 2012 and complete data collection in March 2013. All data collection activities will take place in Saraburi, Loburi and Phraputtabat hospitals in Thailand. The staff in the hospitals will not be engaged and will not be responsible for any of the research activities. The student investigator is familiar with each setting and has contacted the facilities for preliminary approvals to recruit study participants, and will concurrently obtained formal approvals from the three hospitals. The study design and questions do not require the need for medical or psychological resources. This study does not have any financial support from any grant.

V. HYPOTHESIS

Briefly state the problem, background, importance of the research, and goals of the proposed project.

Breastfeeding is well established as the optimum method for ensuring healthy infant nutrition. Many adolescents remain unaware of the role of breastfeeding in health promotion and disease prevention (Arora, McJunkin, & Wehrer, 2000). It has been recommended by the World Health Organization (WHO) that all newborn infants receive exclusive breastfeeding (breast milk) for the first six months of life (WHO, 2002). While there is an increase in the number of adolescent mothers worldwide (WHO, 2007), adolescent mothers continue to have the lowest rate of breastfeeding in the United States as well as throughout other countries (Bar-Yam, 1998; Centers for Disease Control and Prevention [CDC], 2007). There are approximately 425,000 infants born to adolescents each year; of these only 43% of adolescent mothers initiate breastfeeding in contrast to 75% of mothers of adult age (Forste, & Hoffmann, 2008; National Center for Health Statistics [NCHS]). Additionally, Misra and James (2000) found that 95% of adolescent mothers in their study began feeding formula by the second week of the postpartum

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period, further reducing the number of infants of adolescent mothers receiving breast milk for the first six months of life. Spear (2006) found that although 39% of adolescent mothers intended to breastfeed for at least 6 months after birth, only 6% continued breastfeeding until 6 months.

Similarly, breastfeeding performance in adolescent mothers is considered poor in Thailand, and there are increasing efforts to increase the incidence and duration of breastfeeding in Thailand. In1991, the Ministry of Public Health launched the ten steps to successful breastfeeding practice and the Baby-friendly hospital initiative programs as a strategy to promote exclusive breastfeeding (Chatranon, 1993). However, in a Thai National survey conducted between 2003 and 2008 only 17% of adolescent mothers continued to breastfed at six months postpartum, compared with 45% of mothers aged 20-29 and 51% of women age 30 and older (Bureau of Health Promotion [Thailand], 2006; Hangchaovanich & Voramongkol, 2008). There are several factors that may contribute to initiation and maintenance of breastfeeding in adolescent mothers. Adolescent mothers and their children have been shown to be at a high risk for numerous economic, physical, psychological, and developmental problems. Adolescent mothers are more likely to be single, to live below the poverty level, and to have lower educational attainment (Terry-Humen, Manlove, & Moore, 2005). Young mothers have been shown to encounter more socio-economic deprivation, have significantly less human and social capital, and to experience more mental health difficulties. Additionally, the children of young mothers have demonstrated more emotional and behavioral problems (Moffitt, 2002). Research indicates that when compared to older mothers, adolescent mothers interact more negatively with their infants (Culp, Appelbaum, Osofsky, & Levy, 1988; Hanna, 2001), which has consistently been linked to less positive parenting as the infant becomes a young child (Crnic, Gaze, & Hoffman, 2005). Adolescent motherhood not only has negative consequences for the teenage mother's social and educational well-being, but her child is also more likely to have problems with health and cognitive development compared to a child who is born to an older mother (East & Felice, 1996; Moore & Brooks-Gunn, 2002).

Research has indicated that a mother's psychosocial developmental level influences her ability to parent and that adolescent mothers do not maintain the same psychosocial developmental trajectory as adolescents who are not mothers (Ketterlinus, Lamb, & Nitz, 1991, Shapiro-Mendoza, Selwyn, Smith, & Sanderson, 2007). Adolescents also have not yet reached adult developmental maturity in a variety of social and cognitive areas. It is often during adolescence that individuals progress from concrete to formal operational thinking, and thus become more able to think about the past, present, and future in an abstract way (Borkowski et al., 2002). Adolescence is also a time when many young people gain a sense of identity and self, which allows them to form stronger relationships with friends and family, including their children. This developmental process adversely affects a young woman's ability to parent because many mothering tasks draw on an adult woman's level of social and cognitive abilities to respond, guide, and make choices for her child in appropriate ways. Adolescent mothers are situated in a distinct psychological developmental stage. Undertaking the task of understanding these young mothers requires taking into account adolescent psychological capabilities. Consequently, it is important to gain an understanding of motherhood within the context of adolescent psychosocial development.

Breastfeeding as a specific task of motherhood is correlated with a wide range of beneficial outcomes that could be particularly applicable to adolescent mothers and their children, including reduced cost when compared to formula, increased physical health for both mother and child over time, high-quality mother/child bonding, and reduced levels of child abuse (Gartner & Black, 1997; Klaus, 1998). Research confirms breast milk possesses more health benefits than formula (Bartok, 2011; Dewey, 2003; Sievers, Oldigs, & Santer, 2002). Babies who

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are breastfed have a reduced rate of respiratory infections, ear infections, diarrhea, childhood obesity, asthma, and lower rates of infant morbidity and hospitalization (Garner et al., 2005). While breastfeeding is beneficial for mother and infant, the breastfeeding rate remains lower for adolescent mothers than in any other group of mothers. However, there has been relatively little discussion either in the literature about adolescent mothers or the literature about infant feeding regarding adolescent mothers' feeding intentions during the prenatal period, followed by initiation and maintenance of breastfeeding into the postpartum period (Dykes, Moran, Burt, & Edwards, 2003).

Various explanations for the low rate of breastfeeding among adolescent mothers have been considered. The maturity level of the adolescent mothers appears to be a barrier for continuation of breastfeeding (Peterson & Da Vanzo, 1992). Given their age, adolescent mothers are more likely than older mothers to be single and to have lower levels of education and income, characteristics that are often negatively associated with breastfeeding (Park, Meier, & Song, 2003). The personal factor of *attitude* is viewed as influencing intention of providing breast milk in the prenatal period and also contributing to initiation and maintenance of breastfeeding in the postpartum period. Wambach and Koehn (2004) explained that adolescent mothers have both positive and negative attitudes toward decision making about infant feeding methods and the effort to continue breastfeeding. When mothers have more positive attitudes toward feeding choices, they also are more successful in their breastfeeding experiences (Wambach, 1997). Numerous studies have revealed that the factors associated with initiation and maintenance of breastfeeding in mothers may not only depend on personal perspectives about breastfeeding but also are related to *infant responses*, *social expectations*, as well as kinds of *support provided by family and friends* (Arora et al, 2000; Chan, Nelson, Leung, & Li, 2000; Kong & Lee, 2004). The early postpartum period is an important transitional period for the mother and her infant. Breastfeeding initiation must occur during this critical period and, for adolescent mothers who are also experiencing the new and ambiguous maternal role, breastfeeding performance can seem very demanding and difficult to achieve (Mossman, Heaman, Dennis, & Morris, 2008).

VI. Specific Aims

The purpose of this study is to obtain a better understanding of factors that influence breastfeeding practices, especially initiation and maintenance among adolescent mothers. Specific aims are to (1) evaluate relationships among personal factors, social factors, and cultural factors during pregnancy and breastfeeding initiation in adolescent mothers; (2) define predictive associated with breastfeeding initiation in adolescent mothers; (3) explore relationships among personal factors, social factors, cultural factors, and infant factors in the postpartum period and breastfeeding maintenance in adolescent mothers; (4) define predictive factors associated with breastfeeding maintenance in adolescent mothers; and (5) examine the relationship between breastfeeding maintenance and level of maternal competence.

VII. Background and Significance

Include information regarding pre-clinical and early human studies. Attach appropriate citations.

Adolescent Development

A significant characteristic of the adolescent's developmental stage is egocentrism (Bentley, Gavin, Black, & Teti, 1999). The findings of a study by Yoos (1985) indicated that reasons for breastfeeding among adolescents were infant-centered, such as "it's healthier for baby", and reasons for bottle feeding were self-centered, such as "I'm not as tied down."

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Developing beyond the self-centered egocentric focus seems be an important factor in considering breastfeeding (Wambach & Cole, 2000). Research suggested that adolescent egocentrism leads to two consequences. First, adolescents are self-centered. They still have much concern about their own needs and physical appearance, which contributes to several reasons for not breast-feeding (Yoos, 1985). Most teenagers who decided to formula feed their babies perceived the convenience of formula feeding over breastfeeding (Wiemann, Dubois, & Berenson, 1998). It is possible that adolescents who cannot overcome their egocentricity may avoid breastfeeding because it does not meet their own needs. The second consequence of adolescent egocentrism is the "imaginary audience", which refers to the teenager's imagination that her behavior will draw the attention of others (Steinberg, 1999). This feeling may affect the decision to breastfeed, as noted in several studies demonstrating that a majority of adolescents felt that breast feeding in public was embarrassing (Nelson & Sethi, 2005; Wambach & Koehn, 2004).

Empirical findings demonstrated that adolescent mothers need a variety of supports to initiate and maintain breastfeeding (Hannon et al, 2000; Nelson & Sethi, 2005). Developmental issues may influence teenagers' beliefs, confidence, and intentions about breast-feeding and this, in turn, may affect breastfeeding behaviors. Harrison, Zaghloul, Galal, and Gabr (1993) suggested that successful breastfeeding required maturity, patience, and a sense of responsibility. Thus, very young mothers may have difficulties with breastfeeding due to their lack of maturity and life experiences. Additionally, other factors, similar to factors affecting breastfeeding in adults, may take part in explaining breastfeeding behaviors among young mothers.

Breastfeeding Intention, Initiation, and Maintenance

Breastfeeding intention is defined as a woman's intention to feed her infant exclusively with breast milk. The initiation is manifested by actual breastfeeding behavior in the early postpartum period, determined when the mother either places the infant to the breast or the infant receives any of the mother's breast milk. Breastfeeding maintenance is duration of breastfeeding determined by the length of time in days from the time the infant first received any amount of breast milk to the time of weaning. Breastfeeding maintenance is operationally defined as exclusive breastfeeding, partial breastfeeding, or bottle-feeding. Breastfeeding duration is considered to be the outcome of these breastfeeding behaviors. The ultimate goal of breastfeeding maintenance is exclusive breastfeeding for at least the first six months for newborns.

Attitudes about the intention to breastfeed may occur during the pregnancy period and may contribute to initiation of breastfeeding in the postpartum period. The first step toward successful breastfeeding is for the mother is to establish the intention to breastfeed before the birth, since breastfeeding intention has been found to be predictive of breastfeeding initiation and duration (Shapiro-Mendoza, Selwyn, Smith, & Sanderson, 2007). Women who plan to breastfeed are more likely to initiate breastfeeding, and those who intend to breastfeed for longer durations of time are more likely to continue for longer than those who plan a shorter duration of breastfeeding (Donath, Amir, & Team, 2003). However, there are several factors that contribute to intention, initiation, and maintenance of breastfeeding. Personal, social and cultural, and infant factors are considered to be influencing factors for breastfeeding behaviors in adolescent mothers.

Personal factors are those attitudes that influence the mother's perceptions about her ability to perform breastfeeding for her infant. Maternal perceptions about breastfeeding include breastfeeding attitudes, perceived benefit of breastfeeding, perceived previous experiences of breastfeeding, self-efficacy and/or knowledge of breastfeeding, and perceived problems with breastfeeding such as pain and inconvenience (Glass, Tucker, Stewart, Baker, & Kauffman, 2009; Hannon, Willis, Bishop-Townsend, Martinaz, & Scrimshaw, 2000; Hunter, 2008; Nelson, 2009;

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Tucker, Wilson, & Samandari, 2011; Wambach & Koehn, 2004). Research has shown that adolescents' views on the advantages and disadvantages of breastfeeding and their perceptions of breastfeeding barriers significantly influenced their infant feeding decisions (Ineichen, Pierce, & Lawrenson, 1997; Wambach & Cole, 2000). Brownell, Hutton, Hartman, and Dabrow (2002) revealed that the most frequently reported reasons mothers gave for breastfeeding are benefits related to the baby's health, benefits for the mother, and convenience. The most frequently reported reasons adolescent mothers gave for not breastfeeding were embarrassment, perceived pain, and lack of interest. Wambach and Cohen (2009) found adolescent mothers continued breastfeeding when they perceived there were benefits for breastfeeding. The perception of health benefits for their infant was focused on best nutrition and this belief lead mothers to persist in their breastfeeding. Hannon et al (2000) also found that mother's perception of health benefit for the infant increased the initiation and duration of breastfeeding for adolescent mothers. The benefit for the mother to continue breastfeeding was her belief that it made her a better mother (increased self-esteem for being a "good" mother) (Lavender, Thompson, & Wood, 2005).

The second most commonly identified benefit was bonding. Most often adolescent mothers reported that because they felt closer (more attached) to their infant, they made the decision to continue breastfeeding for a longer duration (Hannon el al, 2000; Wambach & Cohen, 2009). Previous experiences with breastfeeding were found to be important for initiating breastfeeding by adolescent mothers (Wambach & Koehn, 2009). However, experiences after hospitalization were found to be more significant to maintenance of breastfeeding. Experiences negatively associated with maintenance of breastfeeding were perceptions of physical changes including insufficient milk supply, fatigue, pain, and nipple trauma. Prenatal maternal attitudes concerning breastfeeding were identified as a contributor to early breastfeeding decision making (Mossman, Dennis, & Morris, 2008). Adolescent mothers with significantly higher prenatal attitude scores were more likely to initiate breastfeeding than were those with lower scores. Moreover, adolescent mothers with higher prenatal attitudes and higher postpartum confidence were more likely to continue breastfeeding to 4 weeks (Mossman, Dennis, & Morris, 2008). Attitudes about breastfeeding also were found to be related to knowledge of the benefits of breast milk. The adolescent mother who viewed breastfeeding as a choice believed that it provided the infant the greatest benefit (Nelson, 2009).

Social context also contributes to intention, initiation, and maintenance of breastfeeding. Social support and concern about social activity are considered as influencing factors for breastfeeding. Breastfeeding support is thought to be a significant factor for initiation and maintenance of breastfeeding in adolescent mothers. Strong evidence exists that receiving effective support significantly influences the duration of breastfeeding in adolescent mothers (Dykes, Moran, Burt, & Janet, 2003; Hannon et al., 2000; Nelson & Sethi, 2005; Spear, 2006; Wambach & Cohen, 2009). For the adolescent mother to be continuously committed to breastfeeding, she requires social support, which includes information and facilitation of proper techniques, as well as emotional support related to breastfeeding. Adolescent mothers were found to gain support from her social network, including her partner, friends, mothers, other family, and people in the community (Nelson & Sethi, 2005). Most adolescent mothers reported receiving overall positive emotional support in the first week and month for breastfeeding, and support contributed and enhanced their ability to learn and continue to breastfeed (Nelson & Sethi, 2005). Results from a randomized controlled trial examining breastfeeding support showed that the supports that started in the second trimester and extended through four weeks postpartum positively influenced breastfeeding duration (Wambach, Aaronson, Domian, Rojjianasrirat, & Yeh, 2011).

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However, the interaction between balancing breastfeeding and social activity seems to affect adolescent mothers' decisions about continuing breastfeeding. Adolescent mothers have reported feeling that breastfeeding contributed to a loss of personal freedom in their social activities with partners and peers, including lack of independence because breastfeeding requires spending more time with their infants. The perception of lack of social independence may relate to the young mother trying to balance the needs of her infant with her personal needs (Nelson & Sethi, 2005; Nelson, 2009). Also, breastfeeding may lead to lack of participation from partners in the care of the infant and may change relationships with partners. Similar to the review by Feldman, Winner, and Shaikh (2007), Nelson and associates (2005) found that the adolescent mother perceived loss of connection with others associated with being a breastfeeding mother as "putting her life on hold."

Conforming to cultural norms was found to often lead to the initiation of breastfeeding. Although most adolescent mothers perceived support from their partners, families, friends, and professionals about breastfeeding, some studies found that some of the mothers felt pressure about feeding methods because their partners and families told them it was the "best" feeding method (Wambach & Koehn, 2004). Qualitative researchers have found that adolescent mothers often perceived negative moral judgments related to their decision not to breastfeed. For many adolescent mothers, breastfeeding was considered a more acceptable infant feeding method. Some adolescent mothers perceived that breastfeeding demonstrated to others such as peers and cultural groups that they were "good mothers." Mothers reported they were "trying their best", however they felt that society did not give them a reasonable chance, such that they were always trying to prove their abilities to be good mothers to those around them (Dyson et al., 2011).

However, concerns about exposure in public during breastfeeding were viewed as a barrier for many adolescent mothers and were often rated as a significant and important factor in influencing adolescent intentions to breastfeed (Dyson, Green, Renfrew, McMillan, & Woolridge, 2011; Hannon el al., 2000; Wambach & Koehn, 2004). In our society, the breast is often perceived as a sexual symbol (Dyson et al, 2011). Thus, embarrassment about breastfeeding in public is one of major barriers that adolescent mothers may not be mature enough or ready to handle.

Infant factors that appear to affect breastfeeding behaviors include infant vulnerability and temperament. These infant factors are considered as influencing factors for maintenance of breastfeeding in adolescent mothers. Infant temperament is defined as maternal perception of infant personality and response when the infant interacts with mother, others, and environment. Jang and Chung (2009) found that there was a significant positive correlation between positive infant temperament and mother-infant attachment, and breastfeeding mothers perceived infants' temperament as more positive. However, Cronenwett et al. (1992) found no relationship between infant temperament and successful breastfeeding. On the other hand, later researchers found that infant temperament is related to the duration of breastfeeding. De Lauzon-Guillain et al. (2011) compared breastfeeding infant and formula-feeding infants and found that breastfeeding infants showed more distress than bottle-feeding infants. Vandiver (1997) found that infant temperament is related to maintenance of breastfeeding. When a mother perceived her infant as having an "easier" temperament, she tended to breastfeed longer. Although there is limited research about infant temperament related to maintenance of breastfeeding, this study revealed that temperament is one of predictors of maternal confidence which is often related to breastfeeding continuation (Russell, 2006).

Infant vulnerability is defined as a mother's perception that her infant that may be more susceptible to illness or injury than other infants (Dogan, Ertem, Karraaslan, & Forsyth, 2009). There is evidence that younger mothers tended to view their babies as vulnerable (Forsyth, &

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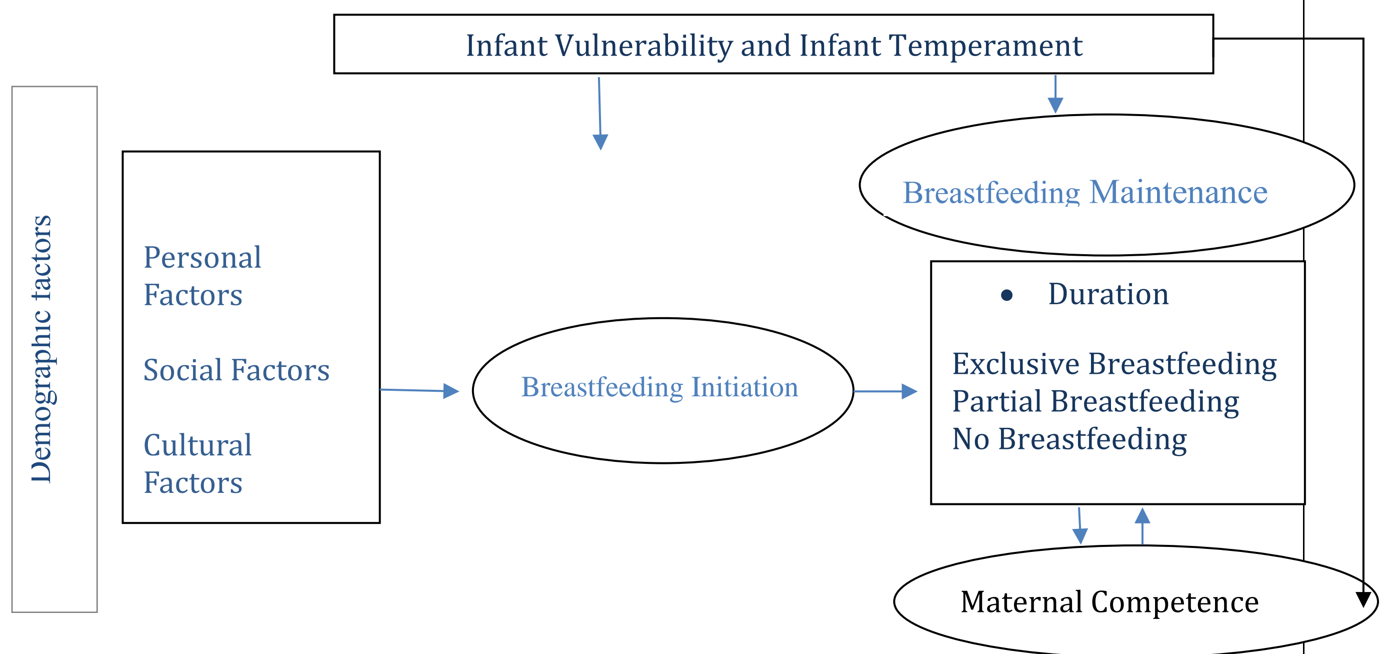
Canny, 1991). However, there is no evidence to support that maternal perception of infant vulnerability and infant feeding method. Thus, both infant vulnerability and temperament have been selected for inclusion in the current study to describe infant influencing factors that may either contribute to maintenance of breastfeeding or early weaning because of infant responses.

Breastfeeding is an aspect of motherhood and it is considered a healthy behavior that positively impacts infant growth and development. Breastfeeding behaviors include intention, initiation, and maintenance of breastfeeding. Breastfeeding is a choice and mothers decide to breastfeed based on many influencing factors. This process begins during pregnancy and extends into the postpartum period. The concepts that were selected for study in this research include personal, social and cultural, and infant factors in the context of breastfeeding in adolescent mothers, beginning in pregnancy and extending into the postpartum period. The personal factors are focused on attitudes and beliefs about breastfeeding. The social factors include perceived social support and perceived social influences related to breastfeeding. Cultural factors are the cultural norms of being a good mother and perceptions of public breastfeeding that have the potential to influence breastfeeding. The infant factors are comprised of the influences of infant temperament and infant vulnerability. The proposed outcomes are initiation and maintenance of breastfeeding. In addition, maternal competence is an ultimate outcome of the mother's development and competence in her new role. It also proposed that a relationship exists between breastfeeding duration and maternal competence. The theoretical framework for this study is used to explain and evaluate influencing factors of breastfeeding in adolescent mothers in Thailand. The model for the theoretical framework is presented as Figure 1.

Figure 1.Conceptual Framework for Breastfeeding in Adolescent Mothers



Based on previous research and the theoretical framework, there are many potential factors that may be significant to initiation and maintenance of breastfeeding in adolescent mothers. Personal factor appear to be the most important to the decision to initiate and maintain breastfeeding for adolescent mothers. The perceived benefits of breast milk motivate the mother to plan her infant feeding choices and also provide motivation for the adolescent mother to continue feeding for a longer duration to enhance her infant's health. Previous experiences with breastfeeding, the in-hospital experience, and the after-hospital experience involve both positive

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and negative factors that influence the mother in her decision to continue breastfeeding. Breastfeeding attitudes are important to early decision making about infant feeding methods. Social factors have both positive and negative effects on the breastfeeding experiences of the adolescent mother. However, the social support received by the adolescent mother is reported to be essential to breastfeeding success during both initiation and maintenance of breastfeeding for longer durations. Perceptions of cultural expectations also influence breastfeeding decisions and behaviors of adolescent mothers. Concern about embarrassment from breastfeeding exposure in public is a critical issue to the adolescent mother. Additionally, infant factors, even though there is not strong evidence, seem to be considerations in breastfeeding maintenance for the adolescent mother. However, all these factors must be further explored to expand our knowledge and guide nursing intervention development, particularly for adolescent mothers in Thailand.

VIII. Preliminary Progress/Data Report

If available.

NA

IX. Research Method and Design

Include a brief description of the project design including the setting in which the research will be conducted and procedures. If applicable, include a description of procedures being performed already for diagnostic or treatment purposes.

Design

The study is a longitudinal design to assess relationship among personal, social, cultural and infant factors and predict factors toward breastfeeding in adolescent mothers.

Sample

A convenience sample of up to160 adolescent mothers will be recruited from prenatal clinics of three public hospitals in Saraburi and Lopburi provinces in the central region of Thailand. Participants will be recruited between 34 and 40 weeks gestation and followed through 4 weeks postpartum. This number will allow for much higher study attrition than expected and ensure the target sample of 100 participants at follow-up. The study participants will be Thai pregnant women between 13 and 19 years old. Inclusion criteria include being: (1) pregnant between 34-40 weeks gestation; (2) able to read, write, and understand Thai; and (3) primigravida. Exclusion criteria are: (1) being pregnant with multiples, (2) being pregnant with complications such as gestational diabetes, preeclampsia, HIV positive, hepatitis B, Tuberculosis (3) having an infant born preterm(4) an abnormality that will interfere sucking and swallowing, and (5) having and infant admitted to the critical care unit.

The participants will be recruited at prenatal clinic when they come in for prenatal care service; procedures for informed consent (and assent with parental consent for those under age18) will be followed at the first contact with potential participants. There will be three time points for data collection. The first visit is between 34 and 40 weeks during the last trimester of pregnancy in the prenatal care clinic. The mother will be asked to complete questionnaires related to breastfeeding intention (see Table 1). The second visit is within 48 hours postpartum in the hospital and again the mother will complete questions related to initiation of breastfeeding. The delivery record at the hospitals will be checked every day to identify participants in the early postpartum period. Data about whether breastfeeding was initiated in the hospital will be collected and the mother will be reminded about the 4-week data point;

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contact information will be updated as needed. The mother will receive a telephone call at 3 weeks postpartum to remind her about her checkup and last appointment. The final visit is at 4 weeks postpartum and again questionnaires will be completed. The mother will be asked to complete the questionnaire in the clinic at the time she is scheduled for postpartum checkup. Each time, the questionnaires will take approximately 30 minutes to complete.

*Table 1.*Time Schedule for Data Collection Procedures

Measures	Time		
	Pregnancy 34-40 weeks	Hospital 48 hours	4 weeks Postpartum
Personal Factors			
Iowa Infant feeding Attitude Scale	✔		✔
Breastfeeding Influencing factor Assessment	✔		✔
Social and Cultural Factors			
Breastfeeding Influencing Factor Assessment	✔		✔
Hughes Breast-Feeding Support Scale	✔		✔
Infant Factors			
Pictorial Assessment of Temperament			✔
Vulnerable Baby Scale			✔
Outcome Measures			
Parenting Sense of Competence Scale			✔
Breastfeeding Initiation		✔	
Breastfeeding Duration			✔

Definitions

Breastfeeding initiation is manifested by actual breastfeeding behavior in the early postpartum period, determined when the mother either places the infant to the breast or the infant receives any of the mother's breast milk. Breastfeeding maintenance is duration of breastfeeding determined by the length of time in days from the time the infant first received any amount of breast milk to the time of weaning. Breastfeeding maintenance is operationally defined as exclusive breastfeeding, partial breastfeeding, or bottle feeding. Breastfeeding duration is considered to be the outcome of these breastfeeding behaviors. The ultimate goal of breastfeeding maintenance is exclusive breastfeeding for at least the first six months for baby. Personal factors are those attitudes that influence the mother's perceptions about her ability to perform breastfeeding for her infant. Maternal perceptions about breastfeeding include breastfeeding attitudes, perceived benefit of breastfeeding, perceived previous experiences of breastfeeding, self-efficacy and/or knowledge of breastfeeding, and perceived problems with breastfeeding such as pain and inconvenience. Social factors include perceived social support and concerning of balancing breastfeeding activity and social activity. Perceived social support includes information, facilitation and emotional support related to breastfeeding from partner, friend, and family. Interaction between balancing breastfeeding and social activity. Cultural factors are perception of expectation of being a good mother and embarrassment of breastfeeding in public. Infant factors are infant temperament and infant vulnerability. Infant temperament is defined as maternal perception of infant personality and response when the infant interacts with mother, others, and environment. Infant vulnerability is defined as a mother's perception that her infant that may be more susceptible to illness or injury than other infants. Maternal competence is defined as the satisfaction with mothering and self-efficacy in the maternal role and is an ultimate outcome of mother's development and competence in the maternal role.

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Instruments

Personal factors

The Iowa Infant feeding Attitude Scale (IIFAS) (De La Mora, Russell, Dungy, Losch, & Dusdieker, 1999) consists of 17 attitude questions using a 5-point Likert scale (strongly disagree to strongly agree). The items address both breastfeeding and formula feeding mothers. The IIFAS is used to predict choice of feeding method as well as duration of both exclusive and partial breastfeeding. Approximately half of the items are stated in a manner favorable to breastfeeding and the remaining are favorable to formula feeding. Items that favor formula feeding are reverse scored. Total attitude scores range from 17, reflecting positive formula feeding attitudes, to a high of 85, indicating attitudes that favor breastfeeding. Researchers have used the IIFAS for studies on breastfeeding in various international locations including the United States, Australia, and Scotland (Dungy, McInnes, Tappin, Wallis, & Oprescu, 2008; Giglia, Binns, Alfonso, & Zhao, 2007; Marrone,Vogeltanz-Holm, & Holm, 2008) and it was also translated from the English version to a Chinese version and used for study in Taiwan (Ho & McGrath, 2011).

The Breastfeeding Influencing Factor Assessment (BIFA) tool has been modified by the current researcher from an instrument used in a breastfeeding study in Hong Kong (Kong & Lee, 2004). The original aim of the tool was to identify the influencing factors among first-time mothers. The original version was a 30-item scale with five categories (personal factors, social factors, cultural factors, facilities and environmental factors, and other influences). The BIFA was modified in order to measure mothers' perceptions about personal, social, and cultural factors in context of breastfeeding. The modified BIFA (mBIFA) will be used to reflect behaviors related to breastfeeding intention, initiation, and maintenance. The mBIFA includes three categories of influencing factors: personal, social, and cultural factors. The instrument is a 40-item scale comprised of (1) 16 personal factor items related to breastfeeding attitudes, perceptions, and beliefs; (2) 12 social factor items addressing perceptions of support, social independence, and social activity; and (3) 12 cultural factor items such as perceptions of being a good mother and perceptions of breastfeeding in public The mBIFA is a 5-point Likert type scale that ranges from 1 to 5 (1 = strongly disagree, 2= disagree, 3= neither, 4= agree, and 5= strongly agree). With18 items reverse scored (2, 9, 11, 12, 13, 17, 18, 19, 20, 22, 25, 28, 35, 36, 37, 38, 39, and 40), higher scores reflect greater positive influencing factors related to decision making about breastfeeding.

Social and cultural factors

The Breastfeeding Influencing Factor Assessment (BIFA) tool has been modified by the current researcher from an instrument used in a breastfeeding study in Hong Kong (Kong & Lee, 2004). The original aim of the tool was to identify the influencing factors among first-time mothers. The original version was a 30-item scale with five categories (personal factors, social factors, cultural factors, facilities and environmental factors, and other influences). The BIFA was modified in order to measure mothers' perceptions about personal, social, and cultural factors in context of breastfeeding. The modified BIFA (mBIFA) will be used to reflect behaviors related to breastfeeding intention, initiation, and maintenance. The mBIFA includes three categories of influencing factors: personal, social, and cultural factors. The instrument is a 40-item scale comprised of (1) 16 personal factor items related to breastfeeding attitudes, perceptions, and beliefs; (2) 12 social factor items addressing perceptions of support, social independence, and social activity; and (3) 12 cultural factor items such as perceptions of being a good mother and perceptions of breastfeeding in public. The mBIFA is a 5-point Likert type scale that ranges from 1 to 5 (1 = strongly disagree, 2= disagree, 3= neither, 4= agree, and 5= strongly agree). With18 items reverse scored (2, 9, 11, 12, 13, 17, 18, 19, 20, 22, 25, 28, 35, 36, 37, 38, 39, and 40), higher scores reflect greater positive influencing factors related to decision making about breastfeeding.

The Hughes Breast-Feeding Support Scale (HBSS) (Hughes, 1984) is an instrument designed to measure the perception of support of breastfeeding mothers. The 30-item scale

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includes three components related to breastfeeding support, with 10 questions in each component: (1) emotional support or interactions which convey caring, trust, and love; (2) instrumental support or task-oriented behaviors that directly assist the person; and (3) informational support or knowledge-sharing behaviors. Participants are asked to identify their perceptions of the total amount of support from spouse, family, friends, and health care providers on scale items. The HBSS is a 4-point Likert-type scale that ranges from 1 (none at all) to 4 (as much as I wanted), with higher scores reflecting greater perceived support.

Infant factors

The Pictorial Assessment of Temperament (PAT) (Clarke-Stewart, Fitzpatrick, Allhusen, & Goldburg, 2000) tool includes10 illustrated vignettes each demonstrating how three different infants (an “easy” infant, a “difficult” infant, and “average or a slow to warm-up” infant) would react to common or daily events. The vignettes reflect four dimensions of temperament difficulty: negative mood, lack of approach to strangers, slow adaptability to change, and high intensity of emotional expression. For each vignette, the first page sets the scene and describes the event, and a second page shows the three different reactions of Baby X, Baby Y, and Baby Z. Mothers are asked to read the first page, think about how their baby might react, then turn the page and select the picture that best represents their baby’s reaction. The PAT score is the mean value for the 10 illustrated vignettes, with Baby X (easy baby) = 1; Baby Y (average or slow to warm-up child) = 2; and with Baby Z (difficult baby) = 3. Mother’s responses are summed to create a continuous score of temperament, with a higher score indicating a more difficult baby.

The Vulnerable Baby Scale (VBS) (Kerruish, Settle, Cambell-Stokes, & Taylor, 2005) is designed to measure parents’ perceptions of baby vulnerability. The VBS is composed of 10, 5-point Likert scale items that identify parental perceptions of their baby’s general health, illness, pain, fear about leaving their baby with someone else, and fear that their baby might die. Three items (1, 2, and 10) are reverse scored, with higher scores indicating perceptions of higher baby vulnerability.

Outcome variables

Breastfeeding initiation is determined by questionnaire to answer when the mother either places the infant to the breast or the infant receives any of the mother’s breast milk within 48 hours during the postpartum period.

Breastfeeding duration is measured by the total number of days from the beginning to the end of breastfeeding. The method of feeding will be classified as exclusive breastfeeding, partial breastfeeding, and bottle feeding on the basis of the number of days of breastfeeding at 4 weeks postpartum.

The Parenting Sense of Competence Scale (PSOC) (Johnston & Mash, 1989) is a 17-item scale designed to measure parents’ satisfaction with parenting and their self-efficacy in the parenting role. The PSOC items are appropriately phrased for the parent (either mother or father) completing the questionnaire. In this study, only the mother will complete the questionnaire. The mother indicates her level of agreement with each item by cycling a number between 1 (strongly disagree) and 6 (strongly agree). Nine items (2, 3, 4, 5, 8, 9, 12, 14, and 16) are reverse scored so that high scores indicate positive parental experience. The total range of scores is between 17 and 102.

The HBSS was translated from an English version to a Thai version in 2001(Ratananugool, 2001). Psychometric properties of the HBSS were assessed from a sample of 150 Thai adolescent mothers. The HBSS had alpha coefficients of .94 for the total scale and .84 to .89.

Tranlastion Procedures

The IIFAS, BIFA, PAT, VBS, and POSC have not been previously translated for use in Thai population in Thailand. For use in this study, a systematic process recommended by Beaton et al. (2002) was used for translating of the instruments.

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(1) Initial Translation:
The first stage was the forward translation. Forward translation of the tools will be conducted by two bilingual translators to produce the instrument from the source language (English) into the target language (Thai).These two bilingual translators have the target language as their mother tongue. The two translators have different backgrounds to establish the best possible translation. One of the translators (See Appendix 8 for her resume) is knowledgeable about the type of concepts the questionnaire in order to aim at equivalence from a more clinical perspective, and may produce a translation that is more reliable equivalence to the original from a measurement perspective. The other translator neither be aware nor be informed of the concepts being translated, and have no medical/clinical background. A synthesis of the two translations will be produced, resulting in one common translation.
(2) Synthesis of these translations
A synthesis of the two translations will be produced by the student investigator. In this step, the student investigator served as a mediator in discussion the differences between the first translator's version (T1) and the second translator's version (T2), and produce a written documentation of the process, resulting in one common translation (T-12).
(3) Back-translation:
Two bilingual translators worked from the T-12 version of the questionnaire, and totally blinded to the original English version, the questionnaire is then translated back into the original language. This process is a validity checking to make sure the translated version accurately reflects the items content of the original version. Back translation is only one type of validity checking, and is the best at highlighting gross inconsistencies or conceptual errors in the translation process (Beaton et al., 2002). The back-translations (BT1) will be produced by a bilingual person with the source language (English) as their mother tongue. And another one is a Thai- American (BT2). These translators neither are aware nor are informed of the concepts explored in order to avoid information bias and to elicit unexpected meaning of the items in the translated questionnaire. The non-professional translators are to ensure language commonly understood by the Thai-speaking mothers.
(4) Synthesis of back-translated versions will be produced by the student investigator. In this step, the investigator will examine the differences between these two back-translated versions (maintaining written documentation of the process) and will mediate differences to produce one common translation (BT-12).
(5) Equivalence testing
Semantic equivalence and content equivalence that are two major dimensions of cross-culture equivalences are tested. Semantic equivalence implies that the meaning of each item is the same in each culture after translation into the target language (Flaherty, et al., 1988). Back-translation is the key to establish semantic equivalence. An innovative method developed by Skperber, DeVellis and Boehlecke (1994) is used in theThai version of the instruments for establish semantic equivalence and validating the translated instrument. Each item in the original and back-translated versions will be ranked in terms of comparability of language and similarity of interpretability. Comparability of language refers to the formal similarity of words, phrases,and sentences. Similarity of interpretability refers to the degree to which the two versions engender the same response even though the wording is not the same. Likert scales ranging from 1 (extremely comparable/ extremely similar) to 7 (not at all comparable/not at all similar) were used by raters who are fluent in the source language. Any mean score>3 requires a formal review of the translation, and mean score between 2.5 and 3 in the interpretability column is also considered problematic and is reviewed for possible correction. If the item has a poor mean score, it will be revised and the revised item is back-translated until the mean scores indicated a valid version. Three native English speakers who are doctoral students were asked to participant in this process to rate their agreement independently between the original version and back-translated version of the instrument. As a result, all items were rated less than score 3 in terms of comparability of language and similarity of interpretability. No modifications to items are indicated.

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X. PLAN FOR CONTROL OF INVESTIGATIONAL DRUGS, BIOLOGICS, AND DEVICES.

Investigational drugs and biologics: IF Investigational Drug Pharmacy Service (IDS) is not being used, attach the IDS confirmation of receipt of the management plan.

Investigational and humanitarian use devices (HUDs):Describe your plans for the control of investigational devices and HUDs including:
(1) how you will maintain records of the product's delivery to the trial site, the inventory at the site, the use by each subject, and the return to the sponsor or alternative disposition of unused product(s);
(2) plan for storing the investigational product(s)/ HUD as specified by the sponsor (if any) and in accordance with applicable regulatory requirements;
(3) plan for ensuring that the investigational product(s)/HUDs are used only in accordance with the approved protocol; and
(4) how you will ensure that each subject understands the correct use of the investigational product(s)/HUDs (if applicable) and check that each subject is following the instructions properly (on an ongoing basis).

NA

XI. DATA ANALYSIS PLAN
For investigator–initiated studies.

Specific aim 1: Univariate and multiple logistic regression will be used to examine relationships between personal factors, social factors and cultural factors and breastfeeding initiation (p-value).
Specific aim 2: Univariate and multiple logistic regression will be used and odds ratios will be presented for direction and magnitude of relationship. The explanatory factors with p-value < 0.2 will be included in multiple analyses relationship when controlling for confounders. Effect modifiers and confounders for interesting factors will be evaluated
Specific aim 3: Univariate and multiple linear regressions will be used to analyze relationships between the predictive factors and breastfeeding duration. (p-values will be used to examine the effect of each factors)
Specific aim 4: Regression coefficient (β) and their standard error will be presented for significant predictive factors. Confounding factors and interaction effect will be evaluated in the multiple analyses.
Specific aim 5: Pearson's correlation coefficients will be used to evaluate the magnitude of relationships between exclusive breastfeeding duration(days)and maternal competence scores. ANOVA will be used to evaluate difference among the three levels of breastfeeding maintenance (exclusive, partial, and no breastfeeding and maternal competence scores.
Specific aim 6: Simple linear regression will be used to evaluate the magnitude of relationships among infant temperament and infant vulnerability scores and maternal competence scores. (Regression coefficient (β) and their standard error will be presented for the relationships).

XII. DATA AND SAFETY MONITORING

- **If the research involves greater than minimal risk and there is no provision made for data and safety monitoring by any sponsor, include a data and safety-monitoring plan that is suitable for the level of risk to be faced by subjects and the nature of the research involved.**
- **If the research involves greater than minimal risk, and there is a provision made for data and safety monitoring by any sponsor, describe the sponsor's plan.**
- **If you are serving as a Sponsor-Investigator, identify the Contract Research Organization (CRO)**

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that you will be using and describe the provisions made for data and safety monitoring by the CRO. Guidance on additional requirements for Sponsor-Investigators is available at http://www.research.vcu.edu/irb/wpp/flash/X-2.htm

This study involves no more than minimal risk to subjects. All surveys are numbered; no names or other identifying information will be stored in the database. Confidentiality is ensured by assigning each subject an identification number. All material associated with the study will be stored in a locked location in the investigator's home office and transferred to the PI for storage in a secured, locked cabinet.

XIII. Multi-center Studies

If VCU is the lead site in a multi-center project or the VCU PI is the lead investigator in a multi-center project, describe the plan for management of information that may be relevant to the protection of subjects, such as reporting of unexpected problems, project modifications, and interim results.

The student investigator will collect the data from three prenatal clinics at three Thai hospitals. Appointments will be scheduled to see the participants. The arbitrary study ID codes will be assigned successively by date of data collection and will not include hospital or patient codes.

XIV. Involvement of Non-VCU Institutions/Sites (Domestic and Foreign)

1. **Provide the following information for each non-VCU institution/site (domestic and foreign) that has agreed to participate (all non-VCU institutions/sites are to be listed, including those who obtain local IRB approval from their own institution and those who request deferral to the VCU IRB):**
   - **Name of institution/site**
   - **Contact information for institution/site**
   - **Engaged in Research or not (if YES AND the research involves a DIRECT FEDERAL AWARD made to VCU, include FWA #). See OHRP's guidance on "Engagement of Institutions in Research" at http://www.hhs.gov/ohrp/policy/engage08.html.**
   - **Request for the VCU IRB to review on behalf of the Non-VCU institution?** Submit either the template Authorization Agreement or Individual Investigator Agreement with this application. See additional requirements found at http://www.research.vcu.edu/irb/wpp/flash/XVII-6.htm.
   - See VCU WPPs:
     http://www.research.vcu.edu/irb/wpp/flash/XVII-6.htm and
     http://www.research.vcu.edu/irb/wpp/flash/XVII-11.htm.

Name of Institution	Contact Information for Site	Engaged (Y/N) and FWA # if applicable	Request for VCU IRB to review on behalf of the non-institution (Y/N)*
Lopburi Hospital, Thailand	260 Phahonyathin Rd, Koasamyod, MeungLopburi, Lopburi province,Thailand 15000 Tel:+66-36-62-1545	N	N
Phraputtabat hospital Thailand	86 M. 8 Phahonyathin Rd. Thankasam, Phraputtabat 18120, Thailand Tel: +66-36-26-6111	N	N

*NOTE: If a Non-VCU site is engaged in the research, the site is obligated to obtain IRB review or request that the VCU IRB review on its behalf.

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2. Provide a description of each institution's role (whether engaged or not) in the research, adequacy of the facility (in order to ensure participant safety in the case of an unanticipated emergency), responsibilities of its agents/employees, and oversight that you will be providing in order to ensure adequate and ongoing protection of the human subjects. You should only identify institutions that have agreed to participate. If additional institutions agree to participate at a later time, they must be added by amendment to the protocol.

Lopburi and Phraputtabat hospitals are the settings for recruitment and data collection for this research. The three hospitals have separate IRB requirements and the researchers will concurrently seek IRB approval from the hospitals. The student investigator will be responsible for all onsite study activities.

XV. Human Subjects Instructions

ALL sections of the Human Subjects Instructions must be completed with the exception of the section entitled "Special Consent Provisions." Complete that section if applicable.

A. Description

Provide a detailed description of the proposed involvement of human subjects or their private identifiable data.

The study will involve a sample of up to 160 pregnant adolescent mothers between 13-19 years old initially recruited at 34-40 weeks gestation. Inclusion criteria include being: (1) pregnant between 34-40 weeks gestation; (2) able to read, write, and understand Thai; and (3) primigravida. Exclusion criteria are: (1) being pregnant with multiples; (2) being pregnant with complications such as gestational diabetes, preeclampsia, HIV positive, hepatitis B, or tuberculosis; (3) having an infant born preterm; (4) having an infant with an abnormality that interferes sucking and swallowing; and (5) having an infant admitted to the critical care unit.

B. Subject Population

Describe the subject population in terms of sex, race, ethnicity, age, etc., and your access to the population that will allow recruitment of the necessary number of participants. Identify the criteria for inclusion or exclusion of all targeted populations and include a justification for any exclusions. Explain the rationale for the involvement of special cases of subjects, such as children, pregnant women, human fetuses, neonates, prisoners or others who are likely to be vulnerable. If you plan to allow for the enrollment of Wards of the State (or any other agency, institution, or entity), you must specifically request their inclusion and follow guidance in VCU IRB WPP XV-3: Wards and Emancipated Minors available at http://www.research.vcu.edu/irb/wpp/flash/XV-3.htm.

The study will involve a sample of up to 160 pregnant adolescent mothers between 13-19 years old initially recruited at 34-40 week gestation. Participants must meet outlined study criteria and must be able to read and speak Thai. They will be recruited by the student investigator at prenatal clinic by introducing information about participating in the study. Eligible participants over age 18 will sign the consent form; participants under age 18 years old will sign an assent form and at least one parent will sign a parental consent form. If the parent does not accompany the adolescent mother to the initial recruitment visit, the parental consent form will be sent home with the adolescent for parental signature and recruitment will continue at the next prenatal care service appointment.

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C. RESEARCH MATERIAL

Identify the sources of research material obtained from individually identifiable living human subjects in the form of specimens, records, or data. Indicate whether the material or data will be obtained specifically for research purposes or whether use will be made of existing specimens, records, or data.

Data specifically for research purposes will be obtained using the Iowa Infant Feeding Attitudes Scale (IIFAS), Breastfeeding Influencing Factor Assessment (BIFA), Hughes Breastfeeding Support Scale (HBSS), Pictorial Assessment of Temperament (PAT), the Vulnerable Baby Scale (VBS), and the Parenting Sense of Competence Scale (PSOC). Breastfeeding Initiation and Breastfeeding Duration will be obtained through individual survey of participants in prenatal clinic, postpartum ward, and postpartum care clinic. Also demographic data will be obtained at the prenatal clinic visit using a questionnaire. The phone calls will occur for appointment reminders.

D. RECRUITMENT PLAN

Describe in detail your plans for the recruitment of subjects including:
(1) how potential subjects will be identified (e.g., school personnel, health care professionals, etc),
(2) how you will get the names and contact information for potential subjects, and
(3) who will make initial contact with these individuals (if relevant) and how that contact will be done.
If you plan to involve special cases of subjects, such as children, pregnant women, human fetuses, neonates, prisoners or others who are likely to be vulnerable, describe any special recruitment procedures for these populations.

When the proposed project is initiated, the student investigator will invite the adolescents to participant in this study in accord with the inclusion criteria as determined by a review of the medical record. For those who wish to participant in the study, the investigator will meet with each participant individually to explain the purpose of the study and answer any questions about the study purpose or procedures they might have. The investigator will then provide an unmarked envelope containing the instruments including demographic information (See Appendix B), and the contact information form (for participants to provide their telephone number to the investigator so that a follow-up call to collect data on admission for delivery and reminders for the follow-up visit at 4 weeks postpartum) in. Participants will be asked to complete the forms and questionnaires at that time IF (a) they are at least 18 years old and have signed consent forms or (b) they are less than 18 and their parent(s) are present and have signed consent forms and participants have signed assent forms. Those interested potential participants less than 18 who do not have parents in attendance will be asked to take home the consent and assent forms for discussion with and consent from their parent(s). Should consent and assent subsequently be documented, they will be asked to complete study forms and questionnaires at their next prenatal visit.

E. PRIVACY OF PARTICIPANTS

NOTE: Privacy refers to individuals and their interests in controlling access to their identities, their physical person, and how and what kind of information is obtained about them. Privacy also encompasses the interests of defined communities (e.g. those with a certain diagnosis or social circumstance) in controlling access to the group identity and information about the group or

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individuals as part of the group.

Describe how the privacy interests of subjects (and communities, if appropriate) will be protected including:
(1) in the research setting (e.g., in the identification, recruitment, and intervention settings) and (2) with the information being sought and the way it is sought. For example, providing drapes or barriers, interviewing in a private room, and collecting only the amount of sensitive information needed for identification, recruitment, or the conduct of the study.

Before data collection from the participants, the student investigator will provide an introduction about the study that allows an open, warm atmosphere in which to collect data. Participants will be reminded of their rights and any questions about the study that they have will be answered. The process of data collection is designed to start and end in a positive manner.
The participants will complete the questionnaire in a private conference room in each clinic of the three clinics or in their hospital rooms in the case of the immediate postpartum visit.

F. CONFIDENTIALITY OF DATA
NOTE: Confidentiality refers to the way private, identifiable information about a subject or defined community is maintained and shared.

Check all of the following precautions that will be used to maintain the confidentiality of identifiable information:

☒ Paper-based records will be kept in secure location and only accessed by authorized study personnel
☒Electronic records will be made available only to those personnel in the study through the use of access controls and encryption
☒ Identifiers will be removed from study-related data (data is coded with a key stored in a separate secure location)
☐ For research involving web-based surveys, data is secured via passwords and encryption
☐ Audio or video recordings of subjects will be transcribed and then destroyed to prevent audio or visual identification. Note the date of destruction (e.g., 3 months from close of study; after transcription is determined to be error free).
☐ Obtaining a Certificate of Confidentiality
☐ Other precautions: ☐

G. POTENTIAL RISKS
Describe potential risks (physical, psychological, social, legal, or other) and assess their likelihood and seriousness. Where appropriate, describe alternative treatments and procedures that might be advantageous to the subjects.

This study presents no more than minimal risk to the participants. There are no questions which would be expected to be troublesome for the adolescents and their confidentiality will be assured as outlined above

H. RISK REDUCTION
Describe procedures for protecting against or minimizing potential risk. Where appropriate, discuss provisions for ensuring necessary medical or professional intervention in the event of adverse events to the subjects. Describe the provisions for monitoring the data collected to ensure the safety of subjects, if any.

The nature of the questions is not sensitive and unlikely to cause stress or anxiety for participants. All Survey data will not include identifying data on it, and only ID number will be used to link to

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demographic data and response. The names, ID number and telephone numbers of participants will be kept in a separate file and used only for the follow-up. All data will be stored in locked file cabinet by the student investigator. Participants may withdraw from this study at any time without affecting the care that they receive at hospital.

I. Additional Safeguards for Vulnerable Participants

Describe any additional safeguards to protect the rights and welfare of participants if you plan to involve special cases of subjects such as children, pregnant women, human fetuses, neonates, prisoners or others who are likely to be vulnerable.

Safeguards to protect the rights and welfare of participants might relate to Inclusion/Exclusion Criteria: ("Adults with moderate to severe cognitive impairment will be excluded." "Children must have diabetes. No normal controls who are children will be used.") Consent: ("Participants must have an adult care giver who agrees to the participant taking part in the research and will make sure the participant complies with research procedures." "Adults must be able to assent. Any dissent by the participant will end the research procedures.") Benefit: ("Individuals who have not shown benefit to this type of drug in the past will be excluded.").

Potential participants must have written consent from at least one parent if they are less than 18 years old.

J. Risk/Benefit

Discuss why the risks to participants are reasonable in relation to the anticipated benefits to subjects and in relation to the importance of the knowledge that may reasonably be expected to result. If a test article (investigational new drug, device, or biologic) is involved, name the test article and supply the FDA approval letter.

There are no known risks to participants in this study. Also, there are no specific benefits to participants as a result of participating in this study. The results of this study are important in understanding factors that may be associated with breastfeeding behavior in adolescent mothers and will be used to provide data for further research. The participants may gain some personal satisfaction in knowing they are contributing to research that may help others in promoting breastfeeding.

K. Compensation Plan

Compensation for participants (if applicable) should be described, including possible total compensation, pro-rating, any proposed bonus, and any proposed reductions or penalties for not completing the project.

Participants will be informed that participation in this study is completely voluntary and they will not be compensated for participating in this study.

L. Consent Issues

1. Consent Process

Indicate who will be asked to provide consent/assent, who will obtain consent/assent, what language (e.g., English, Spanish) will be used by those obtaining consent/assent, where and when will consent/assent be obtained, what steps will be taken to minimize the possibility of coercion or undue influence, and how much time will subjects be afforded to make a decision to participate.

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Informed consent will be obtained in a private setting at one of the three prenatal clinics. Informed consent will be obtained directly from participants over 18 years old and a combined assent and parental permission form will be used with minor participants under 18 instead of a separate assent form because the youngest enrolled in this study will be 13 years old and are therefore old enough to read (and it will be verbally reviewed with the minors) the form. The combined assent and permission form will be reviewed with the parent of the minor participant and with the minor participant, and the consent form will be reviewed with the adult-aged participant. Potential participants can take as much time as needed to read or discuss the consent or the study with the student investigator, family or friends before making their decision. Furthermore, explanation of the study will be provided verbally and in writing. Both potential participants and parents of minor participants will be allowed to ask questions or call the study investigator to discuss any concerns at any time.

2. SPECIAL CONSENT PROVISIONS

If some or all subjects will be cognitively impaired, or have language/hearing difficulties, describe how capacity for consent will be determined. Consider using the VCU Informed Consent Evaluation Instrument available at http://www.research.vcu.edu/irb/guidance.htm. If you anticipate the need to obtain informed consent from legally authorized representatives (LARs), please describe how you will identify an appropriate representative and ensure that their consent is obtained. Guidance on LAR is available at http://www.research.vcu.edu/irb/wpp/flash/XI-3.htm.

N/A

3. ASSENT PROCESS

If applicable, explain theAssent Process for children or decisionally impaired subjects. Describe the procedures, if any, for re-consenting children upon attainment of adulthood. Describe procedures, if any, for consenting subjects who are no longer decisionally impaired. Guidance is available at http://www.research.vcu.edu/irb/wpp/flash/XV-2.htmand http://www.research.vcu.edu/irb/wpp/flash/XVII-7.htm.

The combined assent and consent authorization form will be verbally reviewed with the investigator and signed by the participant and at least one parent. Participants can take as much time as needed to read or discuss the assent and consent form or the study with the student investigator or family/friends before making their decision. The participants will be allowed to ask questions or call the study investigator to discuss any questions or concerns at any time.

4. REQUESTS FOR WAIVERS OF CONSENT (COMPLETE IF REQUESTING ANY TYPE OF WAIVER OF CONSENT OR ASSENT)

4-A.REQUEST TO WAIVE SOME OR ALL ELEMENTS OF INFORMED CONSENT FROM SUBJECTS OR PERMISSION FROM PARENTS:A waiver of informed consent means that the IRB is not requiring the investigator to obtain informed consent OR the IRB approves a consent form that does not include or alters some/all of the required elements of consent. **Guidance is available at http://www.research.vcu.edu/irb/wpp/flash/XI-1.htm.NOTE:Waiver is not allowed for FDA-regulated research unless it meets FDA requirements for Waiver of Consent for Emergency Research (see below).**

4-A.1.Explain why a waiver or alteration of informed consent is being requested.

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4-A.2.Describe how this study meets ALL FOUR of the following conditions for a waiver or alteration:

- The research involves no more than minimal risk to the participants. → Explain how your study meets this criteria: ☐
- The waiver or alteration will not adversely affect the rights and welfare of participants. → Explain how your study meets this criteria: ☐
- The research could not practicably be carried out without the waiver or alteration. → Explain how your study meets this criteria: ☐
- Will participants be provided with additional pertinent information after participation?
  ☐ Yes
  ☐ No → Explain why not: ☐

4-B. REQUEST TO WAIVE DOCUMENTATION OF CONSENT: A waiver of documentation occurs when the consent process occurs but participants are not required to sign the consent form. Guidance is available at http://www.research.vcu.edu/irb/wpp/flash/XI-2.htm. One of the following two conditions must be met to allow for consenting without signed documentation. Choose which condition is applicable and explain why (explanation required):

☐ The only record linking the participant and the research would be the informed consent form. The principal risk to the participant is the potential harm resulting from a breach of confidentiality. Each participant will be asked whether he/she wants documentation linking the participant with the research and the participants wishes will govern. → Explain how your study fits into the category: ☐

☐ The research presents no more than minimal risk of harm to participants & involves no procedures for which signed consent is normally required outside of the research context. → Explain how your study fits into the category: ☐

4-C.REQUEST TO WAIVE SOME OR ALL ELEMENTS OF ASSENTFROM CHILDREN ≥ AGE 7 OR FROM DECISIONALLY IMPAIRED INDIVIDUALS:A waiver of assent means that the IRB is not requiring the investigator to obtain assent OR the IRB approves an assent form that does not include some/all of the required elements.Guidance is available at http://www.research.vcu.edu/irb/wpp/flash/XV-2.htm.

4-C.1. Explain why a waiver or alteration of informed consent is being requested.
☐

In order for the IRB to approve a request for waiver of assent, the conditions for 4-C.2, 4-C.3, OR4-C.4 must be met. Check which ONE applies and explain all required justifications.

4-C.2.☐Some or all of the individuals age 7 or higher will not be capable of providing assent based on their developmental status or impact of illness. → Explain how your study meets this criteria: ☐

4-C.3.☐The research holds out a prospect of direct benefit not available outside of the research. → Explain how your study meets this criteria: ☐

4-C.4.☐Describe how this study meets ALL FOUR of the following conditions:

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- The research involves no more than minimal risk to the participants. → Explain how your study meets this criteria: [ ]

- The waiver or alteration will not adversely affect the rights and welfare of participants. → Explain how your study meets this criteria: [ ]

- The research could not practicably be carried out without the waiver or alteration. → Explain how your study meets this criteria: [ ]

- Will participants be provided with additional pertinent information after participation?
  ☐ Yes
  ☐ No → Explain why not: [ ]

4-D. REQUEST TO WAIVE CONSENT FOR EMERGENCY RESEARCH: Describe how the study meets the criteria for emergency research and the process for obtaining LAR consent is appropriate. See guidance at http://www.research.vcu.edu/irb/wpp/flash/XVII-16.htm.

N/A

5. GENETIC TESTING
If applicable, address the following issues related to Genetic Testing.

5-A. FUTURE CONTACT CONCERNING FURTHER GENETIC TESTING RESEARCH
Describe the circumstances under which the subject might be contacted in the future concerning further participation in this or related genetic testing research.

N/A

5-B. FUTURE CONTACT CONCERNING GENETIC TESTING RESULTS
If planned or possible future genetic testing results are unlikely to have clinical implications, then a statement that the results will not be made available to subjects may be appropriate. If results might be of clinical significance, then describe the circumstances and procedures by which subjects would receive results. Describe how subjects might access genetic counseling for assistance in understanding the implications of genetic testing results, and whether this might involve costs to subjects. Investigators should be aware that federal regulations, in general, require that testing results used in clinical management must have been obtained in a CLIA-certified laboratory.

N/A

5-C. WITHDRAWAL OF GENETIC TESTING CONSENT
Describe whether and how subjects might, in the future, request to have test results and/or samples withdrawn in order to prevent further analysis, reporting, and/or testing.

N/A

5-D. GENETIC TESTING INVOLVING CHILDREN OR DECISIONALLY IMPAIRED PARTICIPANTS
Describe procedures, if any, for consenting children upon the attainment of adulthood. Describe procedures, if any, for consenting participants who are no longer decisionally impaired.

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N/A

5-E.CONFIDENTIALITY OF GENETIC INFORMATION
Describe the extent to which genetic testing results will remain confidential and special precautions, if any, to protect confidentiality.

N/A

Appendix A **Consent form**
Permission form
Appendix B **Instruments**

- The Iowa Infant Feeding Attitude Scale (IIFAS)
- Breastfeeding Influencing Factor Assessment (BIFA)
- Hughes Breastfeeding Support scale(HBSS)
- Pictorial Assessment of Temperament (PAT)
- Vulnerability Baby Scale(VBS)
- Parenting Sense of Competence
- Breastfeeding initiation
- Breastfeeding maintenance

Appendix C **CITI Training**

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RESEARCH SUBJECT INFORMATION AND CONSENT FORM

TITLE: Breastfeeding influencing factors in Thai adolescent mothers

VCU IRB PROTOCOL NUMBER: HM 14762

INVESTIGATOR: Nancy L. McCain, DSN, RN, FAAN
Supannee Kanhadilok, MS, RN
Chantira Chiaranai, PhD, RN

SPONSOR: This study has no sponsor.

This consent form may contain words that you do not understand. Please ask the study staff to explain any words or information that you do not clearly understand. You may take home an unsigned copy of this consent form to think about or discuss with family or friends before making your decision.

PURPOSE OF THE STUDY
The purpose of this research study is to understand the factors that influence breastfeeding behaviors in Thai adolescent mothers.

DESCRIPTION OF THE STUDY
Your participation in this study will take about 30 minutes in each of three visits and you will be asked about your perceptions about breastfeeding. Your participation includes visits during the pregnancy period at prenatal clinic, within 48 hours after your baby is born, and 4 weeks after childbirth at outpatient clinic that provides physical checkup services for after-delivery mothers. About 160 adolescent mothers will be in this study.

PROCEDURES
If you decide to be in this study, you will be asked to sign this consent form after you have had all your questions answered. During the approximately 30-minute study visit, you will be asked to fill out a set of surveys. After you fill out the surveys, you will be asked for contact information and an appointment will be coordinated for your next visit.

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RISKS AND DISCOMFORTS
We do not expect anyone to be harmed by this study any more than they would be in daily life. Some of the questions you will be asked are personal and could make you feel uncomfortable. If there are questions that you do not wish to answer, you may skip those questions.

BENEFITS TO YOU AND OTHERS
This is not a treatment study, and you are not expected to receive any direct medical or health benefits from your participation in the study. The information from this research study may lead to a better intervention to improve breastfeeding behaviors and breastfeeding rates in adolescent mothers.

COSTS
There are no costs for participating in this study.

PAYMENT FOR PARTICIPATION
You will not receive compensation for your time and effort.

ALTERNATIVE TREATMENT
Your alternative is not to participate in this study.

CONFIDENTIALITY
Potentially identifiable information about you will consist of surveys and consent forms. Data are being collected only for research purposes. Your surveys will be identified by arbitrary Identification (ID) numbers, not names, and stored separately from consent forms in a locked research area. All personal identifying information will be kept in password protected computer files or locked file cabinets. Paper documents such as surveys and consent forms will be shredded seven years after the completion of the study. Electronic files that include data with ID numbers but not names will be maintained indefinitely. Access to all data will be limited to study personnel including primary investigator, student investigator, and research committee members.

You should know that research data or medical information about you may be reviewed by the student investigator's PhD committee members. What we find from this study may be presented at meetings or published in papers, but only group data will be presented and your name will never be used in these presentations or papers.

VOLUNTARY PARTICIPATION AND WITHDRAWAL
Your participation in this study is voluntary. You may decide not to participate in this study. Your decision not to take part will involve no penalty or loss of benefits to which you are otherwise entitled. If you do participate, you may freely withdraw from the study at any time. Your decision to withdraw will involve no penalty or loss of benefits to which you are otherwise entitled.

Your participation in this study may be stopped at any time by the study staff or the sponsor without your consent.

QUESTIONS
In the future, you may have questions about your study participation. If you have any questions, complaints, or concerns about the research, contact:

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Supannee Kanhadilok, MS, RN
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Chantira Chiaranai

Institute of Nursing, Suranaree University of Technology
111 University Avenue
Muang District, Nakhonratchasima 30000
Telephone: 044- 223931

OR you may contact:

Nancy L. McCain, DSN, RN, FAAN

nlmccain@vcu.edu

If you have questions about your rights as a research subject, you may contact:

Office of Research
Virginia Commonwealth University
800 East Leigh Street, Suite 113
P.O. Box 980568
Richmond, VA 23298
Telephone: (804) 827-2157
ORSP@vcu.edu

Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions. Additional information about participation in research studies can be found at http://www.research.vcu.edu/irb/volunteers.htm.

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CONSENT
I have been provided with an opportunity to read this consent form carefully. All of the questions that I wish to raise concerning this study have been answered.

By signing this consent form, I have not waived any of the legal rights or benefits to which I otherwise would be entitled. My signature indicates that I freely consent to participate in this research study. I will receive a copy of the consent form once I have agreed to participate.

____
Participant's Name, printed

____ ____________
Participant's Signature Date

____
Name of Person Conducting Informed Consent

Discussion (Printed)

____ ____________
Signature of Person Conducting Informed Consent Date
Discussion / Witness

____ ____________
Co- investigator's Signature Date
Nancy L, McCain

____ ____________
Co-investigator's Signature Date
Chantira Chiaranai

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RESEARCH SUBJECT INFORMATION AND PERMISSION FORM

TITLE: Breastfeeding influencing factors in Thai adolescent mothers

VCU IRB NO.: HM 14762

INVESTIGATOR: Nancy L. McCain, DSN, RN, FAAN
Supannee Kanhadilok, MS, RN
Chatira Chiaranai, PhD, RN
SPONSOR: This study has no sponsor

This permission form may contain words that you do not understand. Please ask the study investigator to explain any words that you do not clearly understand. You may take home an unsigned copy of this permission form to think about or discuss with family or friends before making your decision.

PURPOSE OF THE STUDY
The purpose of this research study is to understand the factors that influence breastfeeding behaviors in Thai adolescent mothers.

DESCRIPTION OF THE STUDY AND YOUR CHILD'S INVOLVEMENT
If you decide to allow your child to be in this study, you will be asked to sign this permission form after you have had all your questions answered and understand what will happen to your child.

Your child's participation in this study will take about 30 minutes in each of three visits and she will be asked about her perceptions about breastfeeding. Your child's participation includes visits during the pregnancy period at prenatal clinic, within 48 hours after her baby is born, and 4 weeks after childbirth at outpatient clinic that provides physical checkup services for after-delivery mothers. About 160 adolescent mothers will be in this study.

RISKS AND DISCOMFORTS
We do not expect anyone to be harmed by this study any more than they would be in daily life. Some of the questions your child will be asked are personal and could make your child feel uncomfortable. If there are questions that your child does not wish to answer, she may skip those questions.

BENEFITS TO YOU AND OTHERS
This is not a treatment study, and your child is not expected to receive any direct medical or health benefits from participation in the study. The information from this research study may lead to a better intervention to improve breastfeeding behaviors and breastfeeding in adolescent mothers.

COSTS
There are no costs for participating in this study.

PAYMENT FOR PARTICIPATION

Your child will not receive compensation for her time and effort.

ALTERNATIVES
Your child's alternative is to not participate in the study.

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CONFIDENTIALITY

Potentially identifiable information about your child will consist of surveys and consent forms. Data are being collected only for research purposes. Completed surveys will be identified by arbitrary Identification (ID) numbers, not names, and stored separately from consent forms in a locked research area. All personal identifying information will be kept in password protected computer files or locked file cabinets. Paper documents such as surveys and consent forms will be shredded seven years after the completion of the study. Electronic files that include data with ID numbers but not names will be maintained indefinitely. Access to all data will be limited to study personnel including primary investigator, student investigator, and research committee members.

What we find from this study may be presented at meetings or published in papers, but only group data will be presented and your child's name will never be used in these presentations or papers.

VOLUNTARY PARTICIPATION AND WITHDRAWAL

Your child's participation in this study is voluntary. Your child may decide to not participate in this study. Her decision not to take part will involve no penalty or loss of benefits to which she is otherwise entitled. If your child does participate, she may freely withdraw from the study at any time. Your child's decision to withdraw will involve no penalty or loss of benefits to which she is otherwise entitled.

Your child's participation in this study may be stopped at any time by the study staff or the sponsor without your consent.

QUESTIONS

In the future, you may have questions about your child's participation in this study. If you have any questions, complaints, or concerns about the research, contact:

Supannee Kanhadilok, MS, RN
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111 University Avenue
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Telephone: 044- 223931

OR you may contact:

Nancy L. McCain, DSN, RN, FAAN

nlmccain@vcu.edu

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If you have questions about your child's rights as a research subject, you may contact:

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Virginia Commonwealth University
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Richmond, VA 23298
Telephone: (804) 827-2157
mailto:ORSP@vcu.eduORSP@vcu.edu

Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions. Additional information about participation in research studies can be found at http://www.research.vcu.edu/irb/volunteers.htm.

ASSENT TO PARTICIPATE

I have been given the chance to read this permission form. I understand the information about this study. Questions that I wanted to ask about the study have been answered.

____

Name of Child Printed

____

Child's Signature   *Date*

PERMISSION

I have been given the chance to read this permission form. I understand the information about this study. Questions that I wanted to ask about the study have been answered. My signature says that I am willing for my child to participate in this study. I will receive a copy of the permission form once I have agreed to participate.

____

Name of Parent or Legal Guardian
(Printed)

____

Parent or Legal Guardian Signature   Date

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Name of Person Conducting Informed Consent
Discussion / Witness
(Printed)

Signature of Person Conducting Informed Consent Discussion / Witness — Date

Co- investigator's Signature — Date
Nancy L, McCain

Co-investigator's Signature — Date
Chantira Chiaranai

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หนังสือแสดงความยินยอมเข้าร่วมการวิจัย

Consent form

ชื่อหัวข้อโครงการวิจัย: ปัจจัยที่มีอิทธิพลต่อการเลี้ยงลูกด้วยนมแม่ของแม่วัยรุ่นในประเทศไทย

เลขที่หนังสือ: HM 14762

ผู้วิจัย :ดร. แนนซี่ แมคเคน นางสาว สุพรรณี กัณหดิลก และ ดร. จันทิรา เจียรนัย

แหล่งสนับสนุนงานวิจัย: ไม่มี

หนังสือยินยอมเข้าร่วมการวิจัยนี้อาจประกอบด้วยคำที่ท่านไม่การเข้าใจท่านผู้เข้าร่วมการวิจัยอาจต้องสอบถามเพิ่มเติมจากผู้ที่ทำการวิจัยอธิบายเพื่อให้เกิดความเข้าใจที่ชัดเจน หากผู้เข้าร่วมการวิจัยต้องนำสำเนาหนังสือแสดงความยินยอมเข้าร่วมการวิจัยที่ยังไม่ได้ลงนามไปพิจารณาและปรึกษากับครอบครัวหรือเพื่อนเพื่อประกอบการตัดสินใจก่อนตัดสินใจยินยอมลงนามในหนังสือแสดงความยินยอมเข้าร่วมการวิจัยนี้

วัตถุประสงค์ของการวิจัย

การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีอิทธิพลต่อพฤติกรรมการเลี้ยงลูกด้วยนมแม่ของแม่วัยรุ่นในประเทศไทย

คำอธิบายงานวิจัยสำหรับผู้เข้าร่วมงานวิจัย

ผู้ที่เข้าร่วมในโครงการวิจัยนี้จะใช้เวลาประมาณ 30 นาทีในแต่ละครั้งจำนวน 3 ครั้ง ตั้งแต่ระยะตั้งครรภ์ที่คลินิกฝากครรภ์ ระยะ 48 ชั่วโมงหลังคลอด และสี่สัปดาห์หลังคลอด โดยท่านจะตอบคำถามเกี่ยวกับ ทัศนคติต่อการเลี้ยงลูกด้วยนมแม่ โครงการนี้จะประกอบด้วย ผู้ที่เข้าร่วมในการวิจัยจำนวน เป็นมารดาวัยรุ่นในระยะตั้งครรภ์ 160 คน

วิธีการตอบแบบสอบถามการวิจัย

ถ้าท่านตัดสินใจเข้าร่วมการวิจัยในโครงการวิจัยนี้ ท่านจะต้องลงนามยินยอมในหนังสือพิจารณาจริยธรรมการวิจัย หลังจากที่ท่านได้ทำความเข้าใจและเห็นด้วยกับคำตอบของผู้ทำการวิจัยนี้ ท่านจะตอบแบบสอบถามของโครงการวิจัยนี้เป็นเวลา30 นาทีทุกครั้งที่เข้าร่วมการวิจัยในโครงการวิจัยนี้ หลังจากที่ท่าน
ตอบแบบสอบถามแล้วท่านอาจจะได้รับการติดต่อขอข้อมูลในการนัดเข้าร่วมการวิจัยในครั้งต่อไปจากผู้ทำการวิจัย

ปัจจัยเสี่ยงที่อาจทำให้เกิดการเข้าร่วมงานวิจัย

งานวิจัยนี้ไม่ได้มีวัตถุประสงค์ที่จะเพิ่มความเสี่ยงที่อาจส่งผลต่อการดำเนินชีวิตประจำวันของผู้เข้าร่วมงานวิจัย ถ้าคำถามในงานวิจัยนี้ส่งผลให้ท่านรู้สึกไม่สะดวกที่จะตอบคำถาม ท่านสามารถเลือกที่จะไม่ตอบคำถามเหล่านั้นได้

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ประโยชน์ที่ท่านจะได้จากงานวิจัยนี้

โครงการวิจัยนี้ไม่ได้เกี่ยวข้องหรือมีวัตถุประสงค์ในการรักษาผู้เข้าร่วมการวิจัย และผู้ที่เข้าร่วมงานวิจัยจะไม่ได้รับการรักษาทางการแพทย์ หรือผลประโยชน์ทางด้านการรักษาสุขภาพจากทางแพทย์ในการเข้าร่วมการวิจัยนี้ ข้อมูลที่ได้รับจากการวิจัยอาจจะนำไปสู่ความเข้าใจพฤติกรรมในการเลี้ยงลูกด้วยนมแม่ของมารดาวัยรุ่น และพัฒนาวิธีการที่จะนำไปใช้ในการสนับสนุนพฤติกรรมการให้น้ำนมแม่ของมารดาวัยรุ่น

ค่าใช้จ่ายในการเข้าร่วมการวิจัย

ผู้เข้าร่วมงานวิจัยไม่ต้องเสียค่าใช้จ่ายในการร่วมงานวิจัยนี้

ค่าตอบแทนในการเข้าร่วมโครงการวิจัย

ผู้เข้าร่วมโครงการวิจัยนี้จะไม่ได้รับค่าตอบแทนสำหรับเวลาที่ใช้ในการเข้าร่วมโครงการวิจัยนี้

ทางเลือกสำหรับผู้เข้ารับการวิจัยของโครงการวิจัยท่านสิทธิ์ที่จะไม่ร่วมงานวิจัยได้

การรักษาประโยชน์ของข้อมูลส่วนตัวของผู้เข้าร่วมงานวิจัย

ข้อมูลส่วนตัวเกี่ยวกับผู้เข้ารับการวิจัยซึ่งจะมีปรากฏอยู่ในแบบสอบถามและหนังสือพิจารณาจริยธรรมการวิจัยนี้จะถูกเก็บไว้ภายในโครงการวิจัยเท่านั้น สำหรับแบบสอบถามข้อมูลวิจัยที่สมบูรณ์แล้วจะมีการใช้ลำดับตัวเลขแทนชื่อของผู้เข้าร่วมรับการวิจัยและเก็บข้อมูลแยกจากหนังสือแสดงความยินยอมเข้าร่วมการวิจัย ดังนั้นข้อมูลที่เป็นข้อมูลส่วนตัวและข้อมูลที่ต้องการไม่ให้ได้รับการเปิดเผยของผู้เข้าร่วมการวิจัยจะจัดเก็บในตู้เก็บมิดชิดหรือคอมพิวเตอร์และมีการป้องกันการเข้าถึงข้อมูลโดยการใช้กุญแจล็อคและรหัสป้องกันการเข้าใช้คอมพิวเตอร์ สำหรับข้อมูลที่เป็นเอกสารและสำเนาเอกสารที่พิมพ์ออกมาใช้เป็นแบบสอบถามและหนังสือแสดงความยินยอมเข้าร่วมการวิจัย จะถูกทำลายด้วยเครื่องทำลายเอกสารภายในเวลาเจ็ดปีหลังจากเสร็จสิ้นโครงการวิจัย ข้อมูลที่เป็นอิเล็กโทรนิคที่ใช้ในระบบคอมพิวเตอร์และมีแต่ลำดับตัวเลขแทนที่จะเป็นชื่อผู้เข้าร่วมการวิจัยจะถูกเก็บไว้ถาวรและมีการใช้รหัสป้องกันการเข้าถึงข้อมูลและให้รหัสผ่านสำหรับผู้ที่เกี่ยวข้องในการทำการวิจัยในโครงการวิจัยนี้เท่านั้น ซึ่งผู้ที่ทำการวิจัยจะประกอบไปด้วยหัวหน้าคณะวิจัย นักศึกษาผู้ทำการวิจัยและคณะกรรมการพิจารณาโครงการวิจัย

ข้อมูลที่ได้รับจากการศึกษาทำการวิจัยนี้ทั้งจากการตอบแบบสอบถามและข้อมูลทางการแพทย์อาจจะถูกอ่านและตรวจสอบโดยคณะกรรมการทางวิชาการของนักศึกษาผู้เป็นหัวหน้าโครงการวิจัย
และข้อมูลจากโครงการวิจัยนี้อาจถูกนำไปเสนอผลงานในงานสัมมนาวิชาการหรือตีพิมพ์เป็นผลงานวิจัยทางวิชาการแต่จะแสดงผลในรูปแบบของกลุ่มข้อมูลและไม่ได้แสดงชื่อหรือข้อมูลที่ไม่ได้อนุญาตให้รับการเปิดเผยจากผู้เข้าร่วมการวิจัย

การเข้าร่วมเป็นอาสาสมัครของโครงการและการถอนตัวจากการเข้าร่วมเป็นอาสาสมัครของโครงการ

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การเข้าร่วมรับการวิจัยในโครงการนี้ถือว่าเป็นอาสาสมัคร ผู้เข้าร่วมรับการวิจัยสามารถที่จะตัดสินใจไม่เข้าร่วมโครงการวิจัยนี้ต่อ และไม่มีบทลงโทษหรือสูญเสียผลประโยชน์จากการตัดสินใจถอนตัวจากการเข้าร่วมโครงการนี้ ผู้เข้าร่วมการวิจัยสามารถถอนตัวไม่เข้าร่วมรับการวิจัยได้ตลอดเวลาและไม่มีบทลงโทษหรือสูญเสียผลประโยชน์จากการตัดสินใจของผู้เข้าร่วมโครงการผู้เข้าร่วมการวิจัยสามารถถูกหยุดไม่ให้เข้าร่วมรับการวิจัยได้ตลอดเวลาโดยเจ้าหน้าที่ของโครงการวิจัยหรือผู้สนับสนุนโครงการวิจัยนี้และการถอนผู้เข้าการวิจัยออกจากโครงการสามารถทำได้โดยไม่ต้องขอใบรับรองการยินยอมจากผู้เข้าร่วมรับการวิจัยในโครงการวิจัยนี้

คำถามเกี่ยวกับโครงการวิจัย

ถ้าผู้ที่เข้าร่วมการวิจัยในโครงการนี้มีคำถามเพิ่มเติมต่อโครงการวิจัยนี้ ท่านสามารถติดต่อผู้ทำการวิจัยตามข้อมูลข้างล่างนี้

สุพรรณี กัณหดิลก

วิทยาลัยพยาบาลบรมราชชนนี พระพุทธบาท

91 ม. 8 ตำบลธารเกษม อำเภอพระพุทธบาท สระบุรี 18120 โทร 036 266170

ดร. จันทิรา เจียรนัย

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เลขที่ 111 ถนน มหาวิทยาลัย อ. เมือง จ. นครราชสีมา 30000

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หรือ ดร. แนนซี่ แมคเคน

จดหมายอิเลคโทรนิค *nlmccain@vcu.edu*

ถ้าท่านมีคำถามเกี่ยวกับสิทธิของเด็กที่เข้าร่วมรับการวิจัย คุณสามารถติดต่อไปตามที่อยู่ข้างล่างนี้

สำนักงานวิจัย มหาวิยาลัยเวอจิเนีย คอมมอลเวล

เลขที่ *800* ถนน อีท ลี *113*

ไปรษณีย์ *980568*

ริชมอน รัฐเวอจิเนีย *23298*

ประเทศ สหรัฐอเมริกา

โทร *(804) 827-2157*

กรุณาเซ็นหนังสือแสดงความยินยอมเข้าร่วมการวิจัยนี้ หลังจากที่ท่าน ยินยอม เข้าใจและพอใจการตอบคำถามจากโครงการวิจัยนี้ คุณสามารถหาข้อมูลการวิจัยของโครงการวิจัยนี้ได้ทางอินเตอร์เนตตามที่อยู่นี้ http://www.research.vcu.edu/irb/volunteers.htm.

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การยินยอมเข้าร่วมการวิจัย

ท่านได้ยินยอมโดยได้อ่านพร้อมกับทำความเข้าใจและยอมรับข้อตกลงตามหนังสือยิมยอมเข้าร่วมการวิจัย ทุกคำถามที่ท่านสงสัยเกี่ยวกับโครงงานวิจัยนี้ได้ถูกตอบและได้ทำความเข้าใจและยอมรับพร้อมเห็นด้วยในการเข้าร่วมในโครงการวิจัยนี้

. การลงนามหนังสือยินยอมเข้าร่วมการวิจัยนี้เป็นการแสดงว่า ข้าพเจ้าไม่ได้สละสิทธิ์ที่จะได้รับผลประโยชน์ หรือสิทธิทางกฎหมายที่ข้าพเจ้าควรได้รับ แต่เป็นการแสดงว่าลายเซ็นต์ที่ใช้ในการลงนามในหนังสือยินยอมนี้ เพื่อเป็นการใช้สิทธิเสรีในการเข้าร่วมการรับการวิจัยในโครงการวิจัยนี้ ข้าพเจ้าจะได้รับสำเนาเอกสารใหนังสือยินยอมนี้ เมื่อข้าพเจ้าลงนามยินยอมในการเข้าร่วมการวิจัยนี้

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ชื่อผู้เข้าร่วมโครงการวิจัย

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ลายเซ็นผู้เข้าร่วมโครงการวิจัย วันที่ที่ลงนาม

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ลายมือชื่อ ผู้เก็บรวบรวมข้อมูล วันที่ลงนาม

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พยานในการลงนาม วันที่ลงนาม

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ลายมือชื่อ นักวิจัยร่วม วันที่ลงนาม

ดร. แนนซี แมคเคน

________________________________ __________

ลายมือชื่อ นักวิจัยร่วม วันที่ลงนาม

ดร. จันทิรา เจียรนัย

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หนังสือแสดงความอนุญาตให้เด็กเข้าร่วมการวิจัย

Parental permission form

ชื่อหัวข้อโครงการวิจัย: ปัจจัยที่มีอิทธิพลต่อการเลี้ยงลูกด้วยนมแม่ของแม่วัยรุ่นในประเทศไทย

เลขที่หนังสือ HM 14762

ผู้วิจัย : ดร. แนนซี่ แมคเคน นางสาว สุพรรณี กัณหดิลก และ ดร. จันทิรา เจียรนัย

แหล่งสนับสนุนงานวิจัย: ไม่มี

หนังสืออนุญาตให้เด็กของท่านเข้าร่วมการวิจัยนี้ อาจประกอบด้วยคำที่ท่านไม่การเข้าใจ ท่านอาจต้องสอบถามเพิ่มเติมจากคณะผู้ที่ทำการวิจัย อธิบายเพื่อให้เกิดความเข้าใจที่ชัดเจน หากผู้เข้าร่วมการวิจัยต้องนำสำเนาใบรับการพิจารณาจริยธรรมการวิจัยที่ยังไม่ได้ลงนาม ไปพิจารณาและปรึกษากับครอบครัวหรือเพื่อนเพื่อประกอบการตัดสินใจ ก่อนตัดสินใจยินยอมลงนามในหนังสืออนุญาตให้เข้าร่วมการวิจัยนี้

วัตถุประสงค์ของการวิจัย

การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีอิทธิพลต่อพฤติกรรมการเลี้ยงลูกด้วยนมแม่ของแม่วัยรุ่นในประเทศไทย

คำอธิบายงานสำหรับวิจัยผู้เข้าร่วมงานวิจัย

ผู้ที่เข้าร่วมในโครงการวิจัยนี้จะใช้เวลาประมาณ 30 นาทีในแต่ละครั้งจำนวน 3 ครั้ง ตั้งแต่ระยะตั้งครรภ์ที่คลินิกฝากครรภ์ ระยะ 48 ชั่วโมงหลังคลอด และสี่สัปดาห์หลังคลอด โดยเด็กของท่านจะตอบคำถามเกี่ยวกับ ทัศนคติต่อการเลี้ยงลูกด้วยนมแม่ โครงการนี้จะประกอบด้วย ผู้ที่เข้าร่วมในการวิจัยจำนวนเป็นมารดาวัยรุ่นในระยะตั้งครรภ์ 160 คน

วิธีการตอบแบบสอบถามการวิจัย

ถ้าท่านตัดสินใจให้เด็กของท่านเข้าร่วมการวิจัยในโครงการวิจัยนี้ ท่านจะต้องลงนามยินยอม

ในหนังสืออนุญาตฉบับนี้ หลังจากที่ท่านได้ทำความเข้าใจและเห็นด้วยกับคำตอบของผู้ทำการวิจัยนี้ เด็กของท่านจะตอบแบบสอบถามของโครงการวิจัยนี้เป็นเวลา30 นาทีทุกครั้งที่เข้าร่วมการวิจัยในโครงการวิจัยนี้ หลังจากที่เด็กของท่านตอบแบบสอบถามแล้ว
เด็กของท่านอาจจะได้รับการติดต่อขอข้อมูลในการนัดเข้าร่วมการวิจัยในครั้งต่อไปจากผู้ทำการวิจัย

ปัจจัยเสี่ยงที่อาจทำให้เกิดการเข้าร่วมงานวิจัย

งานวิจัยนี้ไม่ได้มีวัตถุประสงค์ที่จะเพิ่มความเสี่ยงที่อาจส่งผลต่อการดำเนินชีวิตประจำวันของผู้เข้าร่วมงานวิจัย ถ้าคำถามในงานวิจัยนี้ ส่งผลให้เด็กของท่านรู้สึกไม่สะดวกที่จะตอบคำถาม เด็กของท่านสามารถเลือกที่จะไม่ตอบคำถามเหล่านั้นได้

ประโยชน์ที่ท่านจะได้จากงานวิจัยนี้

โครงการวิจัยนี้ไม่ได้เกี่ยวข้องหรือมีวัตถุประสงค์ในการรักษาผู้เข้าร่วมการวิจัย และผู้ที่เข้าร่วมงานวิจัย

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จะไม่ได้รับการรักษาทางการแพทย์ หรือผลประโยชน์ทางด้านการรักษาสุขภาพจากทางแพทย์ในการเข้าร่วมการวิจัยนี้
ข้อมูลที่ได้รับจากการวิจัยอาจจะนำไปสู่ความเข้าใจพฤติกรรมในการเลี้ยงลูกด้วยนมแม่ของมารดาวัยรุ่น
และพัฒนาวิธีการที่จะนำไปใช้ในการสนับสนุนพฤติกรรมการให้น้ำนมแม่ของมารดาวัยรุ่น

ค่าใช้จ่ายในการเข้าร่วมการวิจัย

ผู้เข้าร่วมงานวิจัยไม่ต้องเสียค่าใช้จ่ายในการร่วมงานวิจัยนี้

ค่าตอบแทนในการเข้าร่วมโครงการวิจัย

ผู้เข้าร่วมโครงการวิจัยนี้จะไม่ได้รับค่าตอบแทนสำหรับเวลาที่ใช้ในการเข้าร่วมโครงการวิจัยนี้

ทางเลือกสำหรับผู้เข้ารับการวิจัยของโครงการวิจัย เด็กของท่านมีสิทธิ์ที่จะไม่ร่วมงานวิจัยได้

การรักษาประโยชน์ของข้อมูลส่วนตัวของผู้เข้าร่วมงานวิจัย

ข้อมูลส่วนตัวเกี่ยวกับผู้เข้ารับการวิจัยซึ่งจะมีปรากฏอยู่ในแบบสอบถามและหนังสือแสดงการยินยอมเข้าร่วมการวิจัย
จะถูกเก็บไว้ภายในโครงการวิจัยเท่านั้น
หรับแบบสอบถามข้อมูลวิจัยที่สมบูรณ์แล้วจะมีการใช้ลำดับตัวเลขแทนชื่อของผู้เข้าร่วมรับการวิจัยและเก็บข้อมูลแยกจากหนังสือแสดงค
วามยินยอมเข้าร่วมการวิจัย ดังนั้น
ข้อมูลที่เป็นข้อมูลส่วนตัวและข้อมูลที่ต้องการไม่ให้ได้รับการเปิดเผยของผู้เข้าร่วมการวิจัยจะจัดเก็บในตู้เก็บมิดชิดหรือคอมพิวเตอร์และ
มีการป้องกันการเข้าถึงข้อมูลโดยการใช้กุญแจล็อคและรหัสป้องกันการเข้าใช้คอมพิวเตอร์
สำหรับข้อมูลที่เป็นเอกสารและสำเนาเอกสารที่พิมพ์ออกมาใช้เป็นแบบสอบถาม และหนังสือพิจารณา
จริยธรรมการวิจัยจะถูกทำลายด้วยเครื่องทำลายเอกสารภายในเวลาเจ็ดปีหลังจากเสร็จสิ้นโครงการวิจัย
ข้อมูลที่เป็นอิเล็กโทรนิคที่ใช้ในระบบคอมพิวเตอร์และมีแต่ลำดับตัวเลขแทนที่จะเป็นชื่อผู้เข้าร่วมการวิจัยจะถูกเก็บไว้ถาวรและมีการใช้ร
หัสป้องกันการเข้าถึงข้อมูลและให้รหัสผ่านสำหรับผู้ที่เกี่ยวข้องในการทำการวิจัยในโครงการวิจัยนี้เท่านั้น
ซึ่งผู้ที่ทำการวิจัยจะประกอบไปด้วยหัวหน้าคณะวิจัย นักศึกษาผู้ทำการวิจัยและคณะกรรมการพิจารณาโครงการวิจัย

ข้อมูลที่ได้รับจากการศึกษาทำการวิจัยนี้ทั้งจากการตอบแบบสอบถามและข้อมูลทางการแพทย์อาจจะถูกอ่านและตรวจสอบโดย
คณะกรรมการทางวิชาการของนักศึกษา ผู้เป็นหัวหน้าโครงการวิจัย
และข้อมูลจากโครงการวิจัยนี้อาจถูกนำไปเสนอผลงานในงานสัมมนาวิชาการหรือตีพิมพ์เป็นผลงานวิจัยทางวิชาการแต่จะแสดงผลในรูป
แบบของกลุ่มข้อมูลและไม่ได้แสดงชื่อหรือข้อมูลที่ไม่ได้อนุญาตให้รับการเปิดเผยจากผู้เข้าร่วมการวิจัย

การเข้าร่วมเป็นอาสาสมัครของโครงการและการถอนตัวจากการเข้าร่วมเป็นอาสาสมัครของโครงการ

การเข้าร่วมรับการวิจัยในโครงการนี้ถือว่าเป็นอาสาสมัคร ผู้เข้าร่วมรับการวิจัยสามารถ
ที่จะตัดสินใจไม่เข้าร่วมโครงการวิจัยนี้ต่อ และไม่มีบทลงโทษหรือสูญเสียผลประโยชน์จากการตัดสิน
ใจถอนตัวจากการเข้าร่วมโครงการนี้ ผู้เข้าร่วมการวิจัยสามารถถอนตัว ไม่เข้าร่วมรับการวิจัย
ได้ตลอดเวลาและไม่มีบทลงโทษหรือสูญเสียผลประโยชน์จากการตัดสินใจของผู้เข้าร่วมโครงการผู้เข้าร่วมการวิจัยสามารถถูกหยุดไม่ให้เ
ข้าร่วมรับการวิจัยได้ตลอดเวลา โดยเจ้าหน้าที่ของโครงการวิจัยหรือผู้สนับสนุน

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โครงการวิจัยนี้ และการถอนผู้เข้าการวิจัยออกจากโครงการสามารถทำได้โดยไม่ต้องขอใบรับรอง
การยินยอมจากผู้เข้าร่วมรับการวิจัยในโครงการวิจัยนี้

คำถามเกี่ยวกับโครงการวิจัย

ถ้าผู้ที่เข้าร่วมการวิจัยในโครงการนี้มีคำถามเพิ่มเติมต่อโครงการวิจัยนี้ ท่านสามารถติดต่อผู้ทำการวิจัยตามข้อมูลข้างล่างนี้

สุพรรณี กัณหดิลก

วิทยาลัยพยาบาลบรมราชชนนี พระพุทธบาท

91 ม. 8 ตำบลธารเกษม อำเภอพระพุทธบาท สระบุรี 18120 โทร 036 266170

ดร. จันทิรา เจียรนัย

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หรือ ดร. แนนซี่ แมคเคน

จดหมายอิเลคโทรนิค : nlmccain@vcu.edu

ถ้าท่านมีคำถามเกี่ยวกับสิทธิของเด็กที่เข้าร่วมรับการวิจัย คุณสามารถติดต่อไปตามที่อยู่ข้างล่างนี้

สำนักงานวิจัย มหาวิยาลัยเวอจิเนีย คอมมอลเวล

เลขที่ 800 ถนน อีท ลี 113

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ประเทศ สหรัฐอเมริกา

โทร (804) 827-2157

กรุณาเซ็นหนังสือพิจารณาจริยธรรมการวิจัยนี้ หลังจากที่ท่าน ยินยอม เข้าใจและพอใจการตอบคำถาม
จากโครงการวิจัยนี้ ท่านสามารถหาข้อมูลการวิจัยของโครงการวิจัยนี้ได้ทางอินเตอร์เนต ตามที่อยู่นี้
http://www.research.vcu.edu/irb/volunteers.htm.

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การยินยอมเข้าร่วมการวิจัย

ท่านได้ยินยอม ได้อ่านพร้อมกับทำความเข้าใจและยอมรับข้อตกลงตามใบรับพิจารณาจริยธรรมการวิจัยนี้
ทุกคำถามที่ท่านสงสัยเกี่ยวกับโครงงานวิจัยนี้ได้ถูกตอบและได้ทำความเข้าใจและยอมรับพร้อมเห็นด้วยในการเข้าร่วมรับการวิจัยในโครงการวิจัยนี้

ชื่อเต็มของเด็กหรือผู้เข้าร่วมการวิจัยเป็นตัวพิมพ์

ลายเซ็นของเด็กหรือผู้เข้าร่วมรับการวิจัย วันที่ที่ลงนาม

ใบยินยอมอนุญาตให้เด็กเข้าร่วมโครงการของผู้ปกครอง.

ท่านได้ยินยอม ได้อ่านพร้อมกับทำความเข้าใจและยอมรับข้อตกลงตามใบรับพิจารณาจริยธรรมการวิจัยนี้
ทุกคำถามที่ท่านสงสัยเกี่ยวกับโครงงานวิจัยนี้ได้ถูกตอบและได้ทำความเข้าใจและยอมรับพร้อมเห็นด้วยในการเข้าร่วมรับการวิจัยในโครงการวิจัยนี้ การลงนามและลายเซ็นในใบยินยอมนี้เป็นการระบุว่า ท่านยินยอมและต้องการให้เด็กในปกครองของท่าน
เข้ารับการวิจัยในโครงการวิจัยนี้
ท่านจะได้รับสำเนาเอกสารใบยินยอมนี้เมื่อท่านลงนามและเซ็นต์ยินยอมในหนังสืออนุญาตให้เด็กเข้าร่วมการวิจัยนี้

ชื่อผู้ปกครองตามกฎหมายของเด็กหรือผู้เข้าร่วมโครงการวิจัยเป็นตัวพิมพ์

ลายเซ็นผู้ปกครองตามกฎหมายของเด็กหรือผู้เข้าร่วมโครงการวิจัย วันที่ลงนาม

ชื่อผู้เก็บรวบรวมข้อมูล วันที่ลงนาม

ลายเซ็นต์ผู้เก็บรวบรวมข้อมูล วันที่ลงนาม

นักวิจัยร่วมในโครงการวิจัย วันที่ลงนาม
ดร. แนนซี่ แมคเคน

นักวิจัยร่วมในโครงการวิจัย วันที่ลงนาม
ดร. จันทิรา เจียรนัย

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DATE: December 12, 2012

TO: Nancy L. McCain, DSN, RN, FAAN
School of Nursing
Box 980567

FROM: Andrea Hastillo, MD
Chairperson, VCU IRB Panel C
Box 980568

Andrea Hastillo MD
12-13-2012

RE: **VCU IRB #: HM14762**
Title: Breastfeeding Influencing Factors in Thai Adolescent Mothers

On December 11, 2012, the following research study was ***approved*** by expedited review according to 45 CFR 46.110 Category 7. This research involves children and is approved under 45 CFR 46.404. This approval reflects the revisions received in the Office of Research Subjects Protection on December 11, 2012. This approval includes the following items reviewed by this Panel:

PROTOCOL: Breastfeeding Influencing Factors in Thai Adolescent Mothers

- Research Plan (Version dated 10-10-12; received by ORSP October 11, 2012)
- Measures:
  - Demographic Questionnaire (Prenatal Clinic) – *English Version* (Version dated 9-7-12; received by ORSP October 11, 2012)
  - Demographic Questionnaire (Prenatal Clinic) – *Thai Version* (Version dated Oct-1-12; received by ORSP October 18, 2012)
  - Breastfeeding Initiation Questionnaire (48 hours postpartum period) – *English Version* (Version dated 9-7-12; received by ORSP October 11, 2012)
  - Breastfeeding Initiation Questionnaire (48 hours postpartum period) – *Thai Version* (Version dated 9-7-12; received by ORSP October 18, 2012)
  - Breastfeeding Maintenance Questionnaire (4 weeks postpartum period) – *English Version* (Version dated 9-7-12; received by ORSP October 11, 2012)
  - Breastfeeding Maintenance Questionnaire (4 weeks postpartum period) – *Thai Version* (Version dated 9-7-12; received by ORSP October 18, 2012)
  - Iowa Infant Feeding Attitude Scale (IIFAS) – *English Version* (Version dated 9-7-12; received by ORSP October 11, 2012)
  - Iowa Infant Feeding Attitude Scale (IIFAS) – *Thai Version* (Version dated Oct-1-12; received by ORSP October 18, 2012)
  - Breastfeeding Influencing Factor Assessment (BIFA) – *English Version* (Version dated 9-7-12; received by ORSP October 11, 2012)
  - Breastfeeding Influencing Factor Assessment (BIFA) – *Thai Version* (Version dated Oct-1-12; received by ORSP October 18, 2012)

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- Hughes Breastfeeding Support Scale (HBSS) – *English Version* (Version dated 9-7-12; received by ORSP October 11, 2012)
- Hughes Breastfeeding Support Scale (HBSS) – *Thai Version* (Version dated Oct-1-12; received by ORSP October 18, 2012)
- Parenting Sense of Competence Scale (PSOC) – *English Version* (Version dated 9-7-12; received by ORSP October 11, 2012)
- Parenting Sense of Competence Scale (PSOC) – *Thai Version* (Version dated Oct-1-12; received by ORSP October 18, 2012)
- Vulnerable Baby Scale (VBS) – *English Version* (Version dated 9-7-12; received by ORSP October 11, 2012)
- Vulnerable Baby Scale (VBS) – *Thai Version* (Version dated Oct-1-12; received by ORSP October 18, 2012)
- Pictorial Assessment of Temperament: Infant Version – *English Version* (Version dated 9-7-12; received by ORSP October 11, 2012)
- Pictorial Assessment of Temperament: Infant Version – *Thai Version* (Version dated 10/1/2012; received by ORSP October 18, 2012)

VCU IRB APPROVED CONSENT/ASSENT FORMS (attached):

- Research Subject Information and Consent Form – *English Version* (McCain/Kanhadilok Consent_12-11-12, 4 pages; received by ORSP December 11, 2012)
- Consent form – *Thai Version* (McCain/KanhadilokConsent_12-11-12, 4 pages; received by ORSP December 11, 2012)
- Research Subject Information and Permission Form – *English Version* (McCain/Kanhadilok ParentConsent_Assent_11-27-12, 4 pages; received by ORSP December 11, 2012)
- Parental Permission form – *Thai Version* (McCain/KanhadilokParentConsent_Assent_12-11-12, 4 pages; received by ORSP December 11, 2012)

ADDITIONAL DOCUMENTS:

- Potential Subject Script – *English Version* (T3, dated 11-27-12; received by ORSP December 5, 2012)
- Next Day Study Visit Reminder Call Script – *English Version* (Dated 9-10-12; received by ORSP October 18, 2012)
- Next Day Study Visit Reminder Call Script – *Thai Version* (Dated 9-10-12; received by ORSP October 18, 2012)
- VCU IRB Study Personnel Roster (Version date: 9-7-2012; received by ORSP October 11, 2012)

This approval expires on November 30, 2013. Federal Regulations/VCU Policy and Procedures require continuing review prior to continuation of approval past that date. Continuing Review report forms will be mailed to you prior to the scheduled review.

The Primary Reviewer assigned to your research study is Tina Lucas, RN, MS. If you have any questions, please contact Ms. Lucas at vslucas@vcu.edu or 804-828-3049; or you may contact Elicia Preslan, IRB Coordinator, VCU Office of Research Subjects Protection, at IRBPanelC@vcu.edu or 804-827-0899.

Attachment – Conditions of Approval

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Conditions of Approval:

In order to comply with federal regulations, industry standards, and the terms of this approval, the investigator must *(as applicable):*

1. Conduct the research as described in and required by the Protocol.

2. Obtain informed consent from all subjects without coercion or undue influence, and provide the potential subject sufficient opportunity to consider whether or not to participate (unless Waiver of Consent is specifically approved or research is exempt).

3. Document informed consent using only the most recently dated consent form bearing the VCU IRB "APPROVED" stamp (unless Waiver of Consent is specifically approved).

4. Provide non-English speaking patients with a translation of the approved Consent Form in the research participant's first language. The Panel must approve the translated version.

5. Obtain prior approval from VCU IRB before implementing any changes whatsoever in the approved protocol or consent form, unless such changes are necessary to protect the safety of human research participants (e.g., permanent/temporary change of PI, addition of performance/collaborative sites, request to include newly incarcerated participants or participants that are wards of the state, addition/deletion of participant groups, etc.). Any departure from these approved documents must be reported to the VCU IRB immediately as an Unanticipated Problem (see #7).

6. Monitor all problems (anticipated and unanticipated) associated with risk to research participants or others.

7. Report Unanticipated Problems (UPs), including protocol deviations, following the VCU IRB requirements and timelines detailed in VCU IRB WPP VIII-7):

8. Obtain prior approval from the VCU IRB before use of any advertisement or other material for recruitment of research participants.

9. Promptly report and/or respond to all inquiries by the VCU IRB concerning the conduct of the approved research when so requested.

10. All protocols that administer acute medical treatment to human research participants must have an emergency preparedness plan. Please refer to VCU guidance on http:/www.research.vcu.edu/irb/guidance.htm.

11. The VCU IRBs operate under the regulatory authorities as described within:
    a) U.S. Department of Health and Human Services Title 45 CFR 46, Subparts A, B, C, and D (for all research, regardless of source of funding) and related guidance documents.
    b) U.S. Food and Drug Administration Chapter I of Title 21 CFR 50 and 56 (for FDA regulated research only) and related guidance documents.
    c) Commonwealth of Virginia Code of Virginia 32.1 Chapter 5.1 Human Research (for all research).

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Appendix

A: Measurement

The Demographic Information Questionnaire
(Prenatal clinic)

For each of the following statements, please indicate your information by filling or circling the number that most closely corresponds to your personal information

1. How old are you? ……………years ………months

2. What is your marital status?
   1. Single
   2. Living with partner
   3. Married

4. What is your highest level of education?
   1. Elementary school
   2. Middle school
   3. High school
   4. Some college preparation
   5. College graduate

5. How old is your partner? ………………..years ……….months

6. What is the highest level of education of your partner?
   1. Elementary school
   2. Middle school
   3. High school
   4. Some college preparation
   5. College graduate

6. How much is your family income/month? (Bath: 30 bath = 1 US dollar)
   1. 10,000 or less
   2. 10,001-20,000

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3. 20,001-30,000

4. More than 30,000

7. How many weeks pregnant are you now? ………………………..weeks

8. Do you have previous experience with breast feeding (such as your mother, family member, and friend breastfed their baby)
   1. Yes
   2. No

9. How many times have you attended the prenatal clinic? …………………..times

10. Have you received any advice about breastfeeding?
   1. Yes
   2. No

11. From whom? …………………………..

12. What is your best choice for infant feeding?
   1. Breastfeeding
   2. Formula
   3. Mixing

13. If you are planning to breastfeed, how long will you plan to breastfeed your baby? ………infant moths age

14. During pregnancy, when do you make the decision about how you will feed your infant?
   1. At 1-3 months
   2. At 4-6 months
   3. At 5-9 months
   4. Not yet

15. Are you (mother) working outside the home?
   1. Yes
   2. No

16. If you are working, do you have maternity leave?
   1. Yes
   2. No

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17. If yes, how long do you have maternity leave? ……………………..days

18. Were you in school before and/or during your pregnancy?
    1. Yes
    2. No

19. If yes, do you intend to continue with school after delivery?
    1. Yes
    2. No

20. If yes, when will you go back to school? ……………..months after delivery

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Breastfeeding Initiation Questionnaire
(48 hours postpartum period)

For each of the following statements, please indicate your information by filling or circling the number that most closely corresponds to your breastfeeding information in hospital.

Question	Response
1. What is infant gestation at birth?	……………………….weeks
2. What is the birth weight of infant?	……………………….grams
3. What is method of delivery?	1. Caesarean surgery 2. Vaginal delivery
4. When did you begin breastfeeding after birth?	1. Within 30 minutes 2. Within 12 hours 3. Within 24 hours 4. Within 48 hours 5. Not at all
5. Have you decided to continue breastfeeding after discharge from hospital?	1. Yes 2. No 3. Not sure
6. If yes, how long do you plan to exclusive breastfeeding your baby?	………………infant months age
7. Who is the best supporter of your breastfeeding since your child's birth?	…………………………………..
8. What do you find most difficult about breastfeeding your infant?	………………………………………

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9. Do you feel satisfied when you are breastfeeding your baby?	1. Yes 2. No 3. Not sure

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Breastfeeding Maintenance Questionnaire
(4 weeks postpartum period)

For each of the following statements, please indicate your information by filling or circling the number that most closely corresponds to your breastfeeding information at 4 weeks postpartum.

No.	Question	Answer
1.	What is the weight of baby at four weeks?	……………………..grams
2.	After discharge from hospital, how many times has your baby been sick and had to see the doctors?	………………..times
3.	Do you still exclusively breastfeed your baby?	1. Yes (answer no.4-6) 2. No (answer no. 7-13)
4.	If yes, what is the method that you provide breast milk?	1. Breast feed 2. Bottle feed (using breast pump) 3. Both
5.	If yes, how long do you plan to continue exclusively breastfeed your baby?	…………………..baby months age
6.	**If yes, what is the best part of breastfeeding that that helps you decide to continue breastfeeding?**	…………………………………………
7.	If no**, what type of infant feeding is provided daily?**	1. Breast milk and formula milk 2. Only formula milk
8.	If no**, how long did you exclusively breastfeed your baby?**	……………. days

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9. If no**, what is your significant reason that leads you to stop exclusive breastfeeding?**	………………………………………… …………………………………………
10. If no, **what was the most difficult for you about breastfeeding?**	……………………………………
11. If no, **what is the best part during breastfeeding that you like?**	…………………………………………..
12. **If you are feeding your baby with breast milk and formula milk (partial breastfeeding), how long do you plan to continue feeding your baby with breast milk?**	………………………...baby months age
13. **If you are partially breastfeeding, what method do you use to provide breast milk?**	1. Breast feed 2. Bottle feed (using breast pump) 3. Both

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The Iowa Infant Feeding Attitude Scale (IIFAS)

For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely corresponds to your opinion

1= strong disagreement
2= disagreement
3= neutral
4= agreement
5= strong agreement

1. The benefits of breast milk last only as long as the baby is breast fed	1	2	3	4	5
2. Formula feeding is more convenient than breastfeeding	1	2	3	4	5
3. Breastfeeding increases mother infant bonding	1	2	3	4	5
4. Breast milk is lacking in iron	1	2	3	4	5
5. Formula fed babies are more likely to be overfed than breast fed babies	1	2	3	4	5
6. Formula feeding is the better choice if the mother plans to go out to work	1	2	3	4	5
7. Mothers who formula feed miss one of the great joys of motherhood	1	2	3	4	5
8. Women should not breastfeed in public places such as restaurants	1	2	3	4	5
9. Breastfed babies are healthier than formula fed babies	1	2	3	4	5
10. Breast fed babies are more likely to be overfed than formula fed babies	1	2	3	4	5
11. Fathers feel left out if a mother breasts feeds	1	2	3	4	5
12. Breast milk is the ideal food for babies	1	2	3	4	5
13. Breast milk is more easily digested than formula	1	2	3	4	5
14. Formula is as healthy for an infant as breast milk	1	2	3	4	5
15. Breastfeeding is more convenient than formula	1	2	3	4	5

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16. Breast milk is cheaper than formula	1	2	3	4	5
17. A mother who occasionally drinks alcohol should not breastfeed her baby	1	2	3	4	5

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Breastfeeding Influencing Factor Assessment (BIFA)

For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely corresponds to your opinion.

1=strong disagreement,
2=disagreement,
3=neutral
4=agreement
5=strong agreement.)

Personal Factors:					
1. Breastfeeding is convenient.	1	2	3	4	5
2. Breastfeeding makes me feel run down.	1	2	3	4	5
3. If I knew more about breastfeeding, I would breastfeed.	1	2	3	4	5
4. Because of my health or diet, I believe I will produce good quality breast milk for my baby.	1	2	3	4	5
5. Breastfeeding is economical.	1	2	3	4	5
6. Breastfeeding is enjoyable.	1	2	3	4	5
7. Breastfeeding makes the baby closer to me.	1	2	3	4	5
8. I feel I am ready to breastfeeding my baby	1	2	3	4	5
9. Insufficient breast milk is a barrier to breastfeeding.	1	2	3	4	5
10. I think I know enough about breastfeeding.	1	2	3	4	5
11. Breastfeeding is difficult.	1	2	3	4	5
12. Breastfeeding makes my breast sag.	1	2	3	4	5
13. I may not breastfeed because of physical pain and discomfort associated with breastfeeding.	1	2	3	4	5
14. Breastfeeding makes my baby healthier than formula feeding.	1	2	3	4	5

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15. Breastfeeding makes me feel important.	1	2	3	4	5
Social factor:					
16. Breastfeeding ties me down socially.	1	2	3	4	5
17. Breastfeeding decreases my ability to do other things away from my baby.	1	2	3	4	5
18. Successful breastfeeding depends very much on the social support network.	1	2	3	4	5
19. In society, women shouldbe tied to the baby and family.	1	2	3	4	5
20. Encouragement and support in breastfeeding from my partner is important for me.	1	2	3	4	5
21. Breastfeeding will make my partner feel left out of feeding our baby.	1	2	3	4	5
22. Support and advices in breastfeeding from my mother is important for me.	1	2	3	4	5
23. My family and friends support breastfeeding.					
24. Infant formula (milk) advertisements have influenced my feeding decisions.	1	2	3	4	5
25. I made the decision to breastfeed because of the health care workers' advice.	1	2	3	4	5
26. The recommendation and success of breastfeeding by my friends have encouraged me to breastfeed.	1	2	3	4	5
Cultural factor					
27. I would feel embarrassed if someone saw me Breastfeeding.	1	2	3	4	5
28. Breastfeeding makes me feel that I am a good mother.	1	2	3	4	5
29. Breastfeeding is a natural human activity.	1	2	3	4	5
30. It is acceptable to breastfeed in front of others such as friend and family member.	1	2	3	4	5

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31. It is acceptable to breastfeed in front of my partner.	1	2	3	4	5
32. It is acceptable to breastfeed in front of health care professional.	1	2	3	4	5
33. It is acceptable to breastfeed in public such as restaurant and work place	1	2	3	4	5
34. The breast is a sex symbol in this community.	1	2	3	4	5
35. Overcrowded living environment in my community is a barrier to breastfeeding.	1	2	3	4	5
36. No privacy for breastfeeding at my homeis a barrierto breastfeeding.	1	2	3	4	5
37. No privacy for breastfeeding at public places is a barrier to breastfeeding.	1	2	3	4	5
38. The facilities at work or school do not support breastfeedingpractices.	1	2	3	4	5
39. This community does not support breastfeeding practices.	1	2	3	4	5

The BIFA is a 5 –Likert type scale that ranges from 1 to 5 (1 = strongly disagree, 2= disagree, 3= neither, 4= agree, and 5= strongly agree). Of 18 items 2,9,11,12,13,17,18,19,20,22,25,28,35,36,37,38,39, and 40) are reverse scores. The higher scores reflect greater positive influencing factors to making decision about breastfeeding.

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The Hughes Breastfeeding Support Scale (HBSS)

Please circle around the number that best describes the amount of help you received in each of the following areas during the first month after your baby arrived.

1 = No help at all
2 = A small amount of help
3 = A moderate amount of help
4 = As much help as I wanted

1. Reassured me that I was doing well caring for my baby	1	2	3	4
2. Took care of the house	1	2	3	4
3.Took me to the store and other places I needed to go	1	2	3	4
4. Answered my questions about breast-feeding	1	2	3	4
5. Took care of the new baby	1	2	3	4
6. Made me feel confident even when I made mistakes	1	2	3	4
7. Prepared meals	1	2	3	4
8. Answer the telephone	1	2	3	4
9. Listened to me talk about the new baby	1	2	3	4
10. Did my laundry	1	2	3	4
11. Entertained visitors	1	2	3	4
12. Showed concern when I felt blue	1	2	3	4
13. Did correspondence I usually do myself	1	2	3	4
14. Shopped for needed items	1	2	3	4
15. Believed that I am a good mother	1	2	3	4
16. Lent or gave me money for baby things	1	2	3	4
17. Was there when I felt lonely	1	2	3	4
18. Praised me for my efforts to care for the baby	1	2	3	4
19. Made me feel that I am still an attractive person	1	2	3	4

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20. Showed concern about my physical condition	1	2	3	4
21. Gave me tips about breast-feeding	1	2	3	4
22. Told me about sources of help (i.e., social services, etc.)	1	2	3	4
23. Showed me how to nurse my baby	1	2	3	4
24. Showed me how to bathe my baby	1	2	3	4
25. Showed me how to diaper my baby	1	2	3	4
26. Answered my questions about my baby	1	2	3	4
27. Helped me to understand my baby's cries	1	2	3	4
28. Taught me how to take care of myself	1	2	3	4
29. Showed me how to hold my baby	1	2	3	4
30. Praised me for my efforts to breast-feed	1	2	3	4

Please answer two questions about breastfeeding by filling your answer in the blank

1. Who is the best supporter for you when you are breastfeeding?
   ………………………………………………………..
2. What is the barrier of breastfeeding?
   ………………………………………………………

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Parenting Sense of Competence scale (PSOC)

For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely corresponds to your opinion.

	1-Strongly disagree, 6 strongly agree					
1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired	1	2	3	4	5	6
2. Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age.	1	2	3	4	5	6
3. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot.	1	2	3	4	5	6
4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	1	2	3	4	5	6
5. My mother/father was better prepared to be a good mother/father than I am.	1	2	3	4	5	6
6. I would make a fine model for a new mother to follow in order to learn what she/he would need to know in order to be a good parent.	1	2	3	4	5	6
7. Being a parent is manageable, and any problems are easily solved	1	2	3	4	5	6
8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.	1	2	3	4	5	6
9. Sometimes I feel like I'm not getting anything done.	1	2	3	4	5	6
10. I meet my own personal expectations for expertise in caring for my child.	1	2	3	4	5	6
11. If anyone can find the answer to what is troubling my child, I am the one.	1	2	3	4	5	6
12. My talents and interests are in other areas, not in being a parent.	1	2	3	4	5	6
13. Considering how long I've been a mother, I feel thoroughly familiar with this role.	1	2	3	4	5	6

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14. If being a mother/father of a child were only more interesting, I would be motivated to do a better job as a parent.	1	2	3	4	5	6
15. I honestly believe I have all the skills necessary to be a good mother/father to my child.	1	2	3	4	5	6
16. Being a parent makes me tense and anxious.	1	2	3	4	5	6
17. Being a parent is manageable, and any problems are easily solved	1	2	3	4	5	6

Note:
The mothers indicate their level of agreement with each item by cycling a number between 1 (strongly disagree) and 6(strongly agree). Nine items (2, 3, 4, 5, 8, 9, 12, 14, and 16) are reverse scored so that high score indicate positive parental experience. The total range of score is between 102 and17.

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Vulnerable Baby Scale (VBS)

Please answer the following statements as honestly as you can. Circle the answer that best fits your level of agreement.

1. I generally check on baby while he/she is asleep at night:

   1 2 3 4 5

   Not at all — 1-2 Times each night — Frequently (at least every 30 minutes)

2. If baby was awake and playing I would leave them unattended and out of earshot for:

   1 2 3 4 5

   Not at all — About 15 minutes — More than an hour

3. If a friend came to visit and they had a cold I would:

   1 2 3 4 5

   Not allow them in the house — Allow them in but not to hold baby — Ask them in and not restrict contact with baby

4. My baby seems to get stomach (puke) pains or other pains:

   1 2 3 4 5

   All the time — Never at all

5. I am concerned that my baby is not as healthy as he/she should be:

   1 2 3 4 5

   Always — Not concerned

6. In general when I compare my baby's health to that of other children the same age I think he/she is:

   1 2 3 4 5

   Less Healthy — More healthy

7. I find myself worrying that my baby may become seriously ill:

   1 2 3 4 5

   All the time — Not at all

8. I worry about SIDS(Sudden infant death syndrome):

   1 2 3 4 5

   All the time — Not at all

9. If you left baby with someone else would you make contact with them while you were away?

   1 2 3 4 5

   Yes, definitely — No, not at all

10. In the last 2 weeks I have contacted a health professional after hours or emergency doctors about the baby:

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1	2	3	4	5
Not at all		about once a week		Daily, or more

Note:

VBS is composed of ten 5- point Likert scale items that identify parental perception of their baby 's general health, illness, pain, fear about leaving their baby with someone else, and fear that their baby might die. Three items (1, 2, and 10) are reverse scored. Thus, the higher score indicates worse perception of baby vulnerability. The lower score indicates better perception of baby vulnerability.

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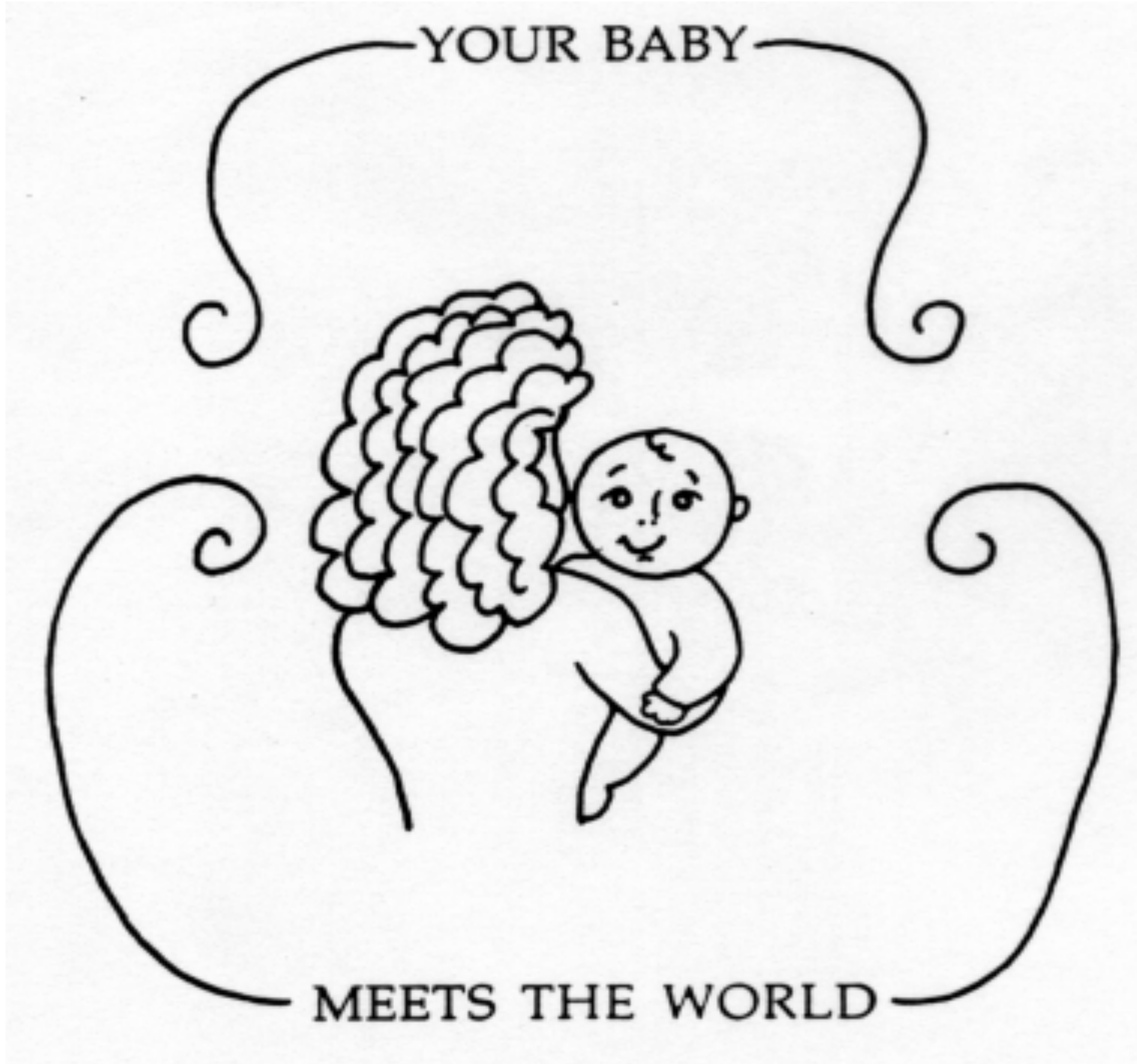

Pictorial Assessment of Temperament: Infant Version

In this booklet are a number of situations that babies often go through.

Different babies react differently to these situations.

Here we show cartoon pictures of three different reactions to each situation.
Please think about how *YOUR BABY* usually reacts to each of these situations.
Then pick which of the three cartoon examples is *most like* how he or she behaves.

Is your baby like:

"Baby X" or "Baby Y" or "Baby Z" ?

Circle your answer on each page

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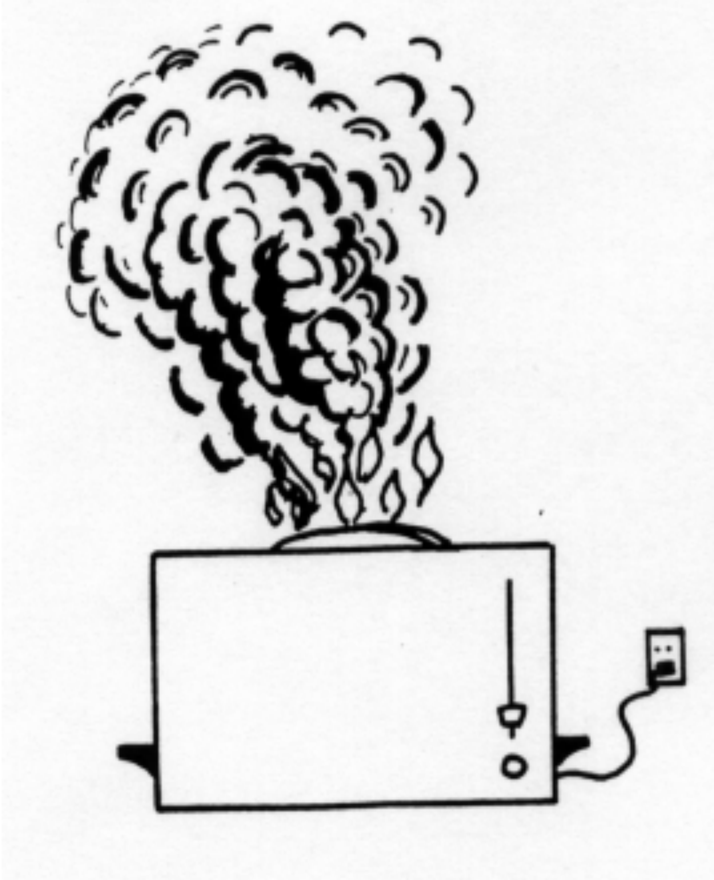
SITUATION 1:
The Burning Toast



You are feeding baby, and after a few minutes, an emergency suddenly arises! The toast is burning! You have to interrupt baby's feeding.

How does baby react?

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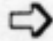
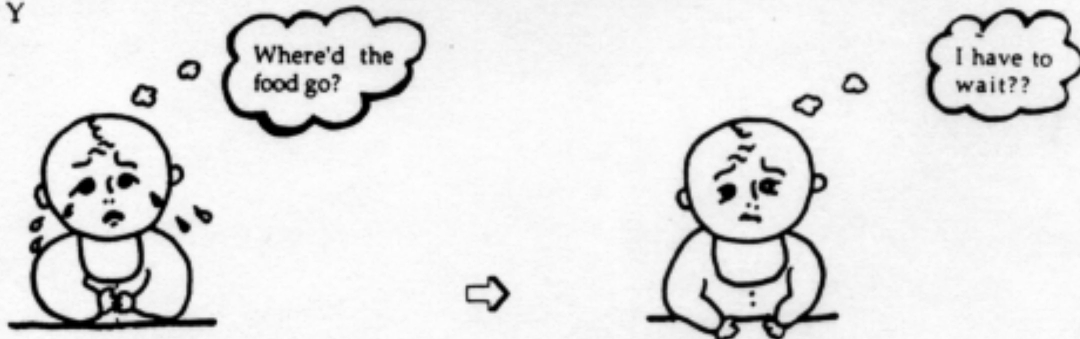
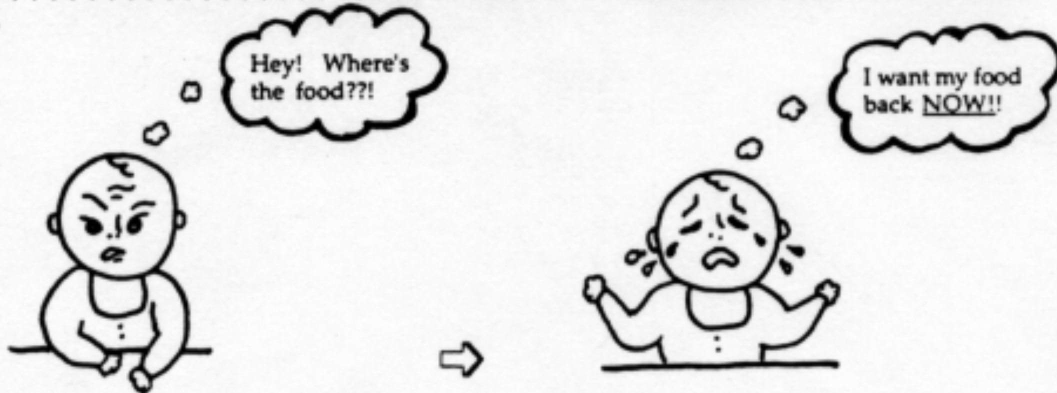
AT FIRST...  A BIT LATER...

Baby X

Baby Y



Baby Z



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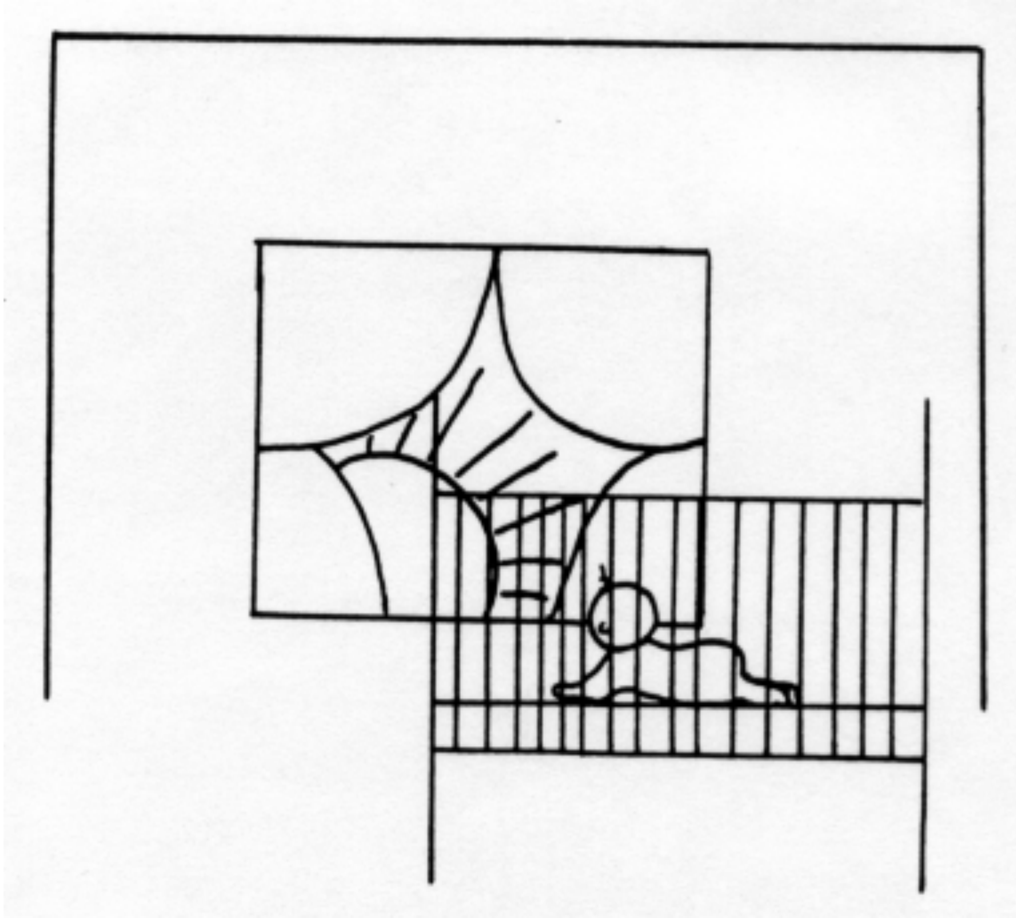
SITUATION 2:
Waking Up



When baby first wakes up in the morning…

How does baby react?

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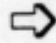
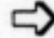
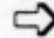
AT FIRST...  A BIT LATER...

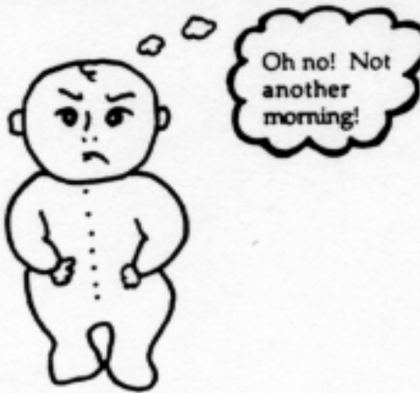
Baby X

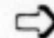


Baby Y



Baby Z





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SITUATION 3:
The Face Washing

When you wash baby's face with a wet washcloth…

How does baby react?

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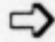
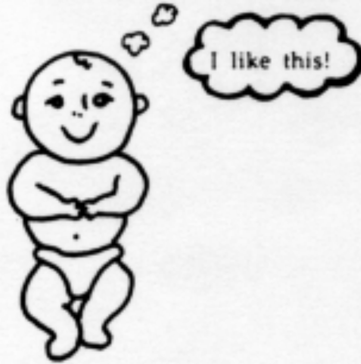
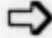
AT FIRST...  A BIT LATER...

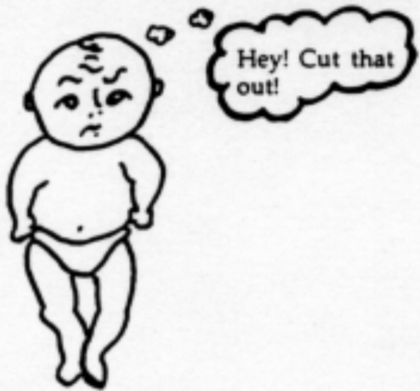
Baby X





Baby Y

Baby Z



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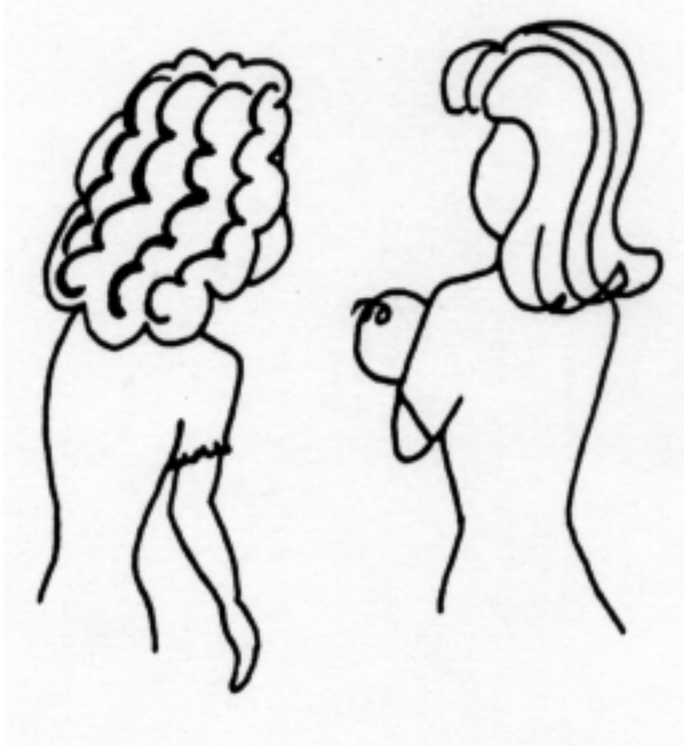
SITUATION 4:

In a Stranger's Arms



You give baby to a stranger to hold while you are busy.

How does baby react?

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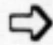
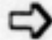
AT FIRST...  A BIT LATER...

Baby X



Baby Y

Baby Z

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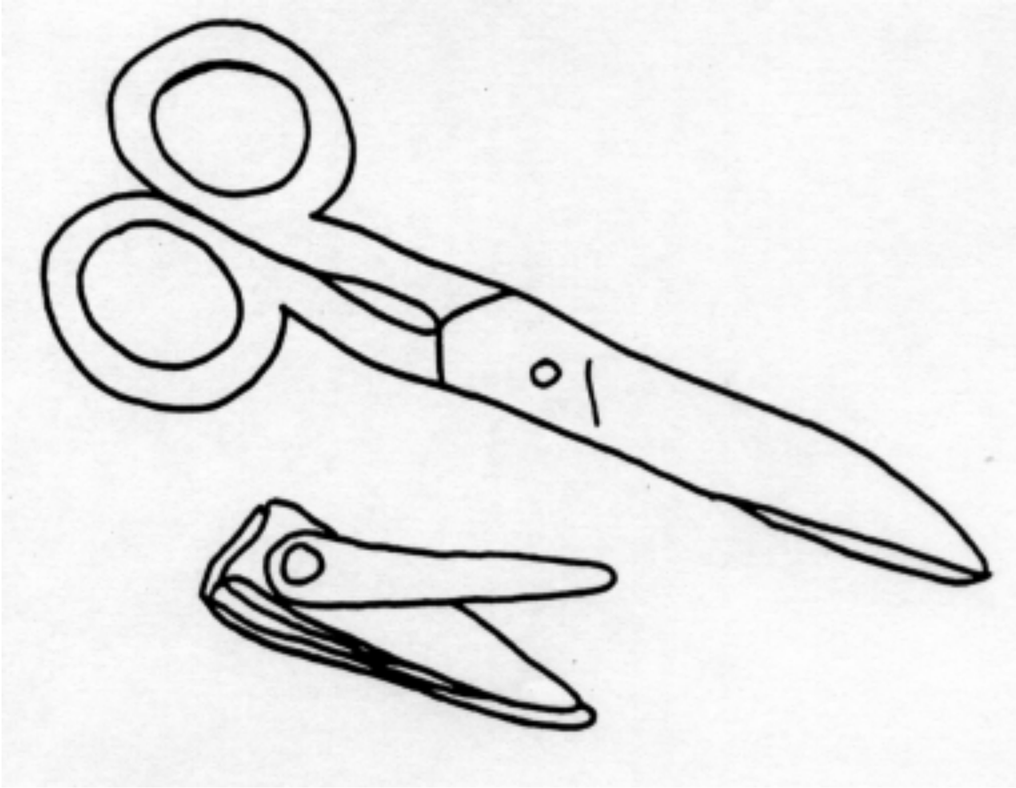
SITUATION 5:
The Manicure



When you cut baby's nails…

How does baby react?

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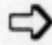
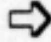
AT FIRST...  A BIT LATER...

Baby X



Baby Y

Baby Z

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SITUATION 6:

Getting Dressed

When you put a shirt on over baby's head…

How does baby react?

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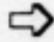
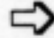
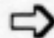
AT FIRST...  A BIT LATER...

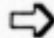
Baby X



Baby Y



Baby Z



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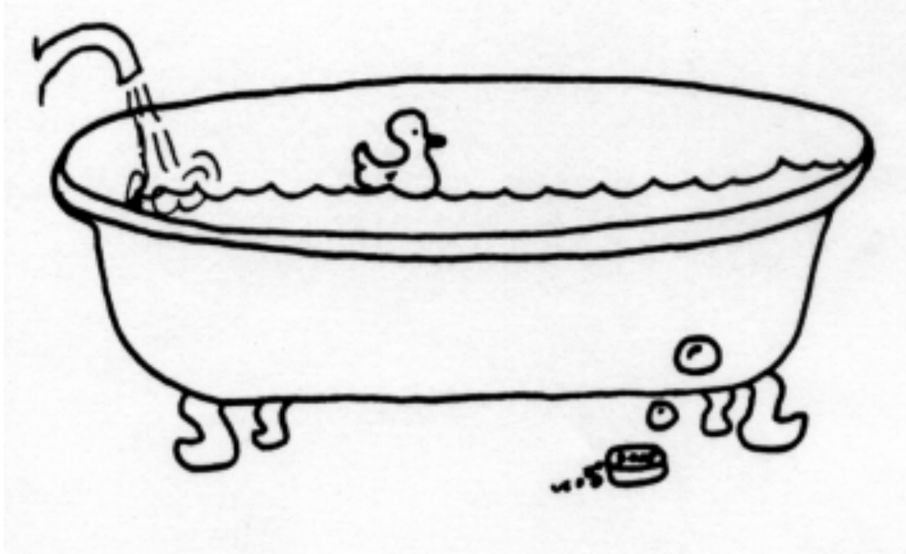
SITUATION 7:
The Bath



When you give baby a bath, in warm water…

How does baby react?

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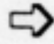
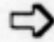
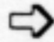
AT FIRST...  A BIT LATER...

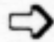
Baby X



Baby Y



Baby Z



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SITUATION 8:
The Big Bang

Baby hears a sudden loud noise!

How does baby react?

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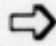
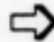
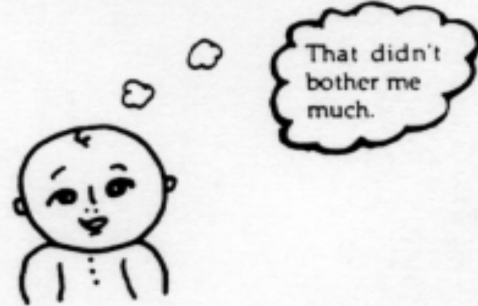
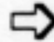
AT FIRST...  A BIT LATER...

Baby X

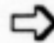


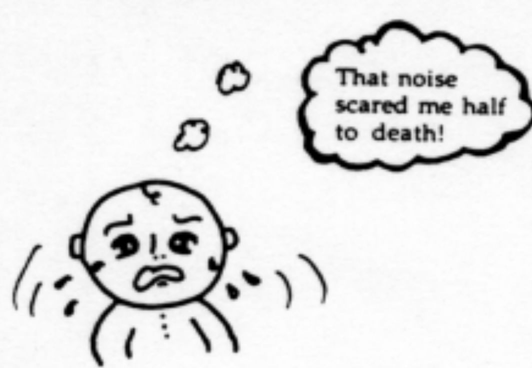


Baby Y



Baby Z





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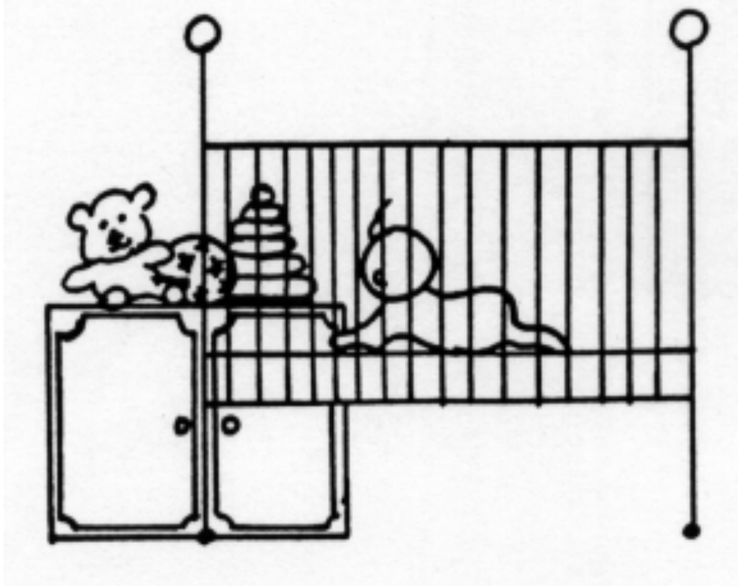
SITUATION 9:

Alone at Last



When you put baby down for a nap while he or she is still awake and you leave baby alone in the crib…

How does baby react?

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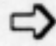
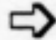
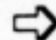
AT FIRST...  A BIT LATER...

Baby X



Baby Y

Baby Z



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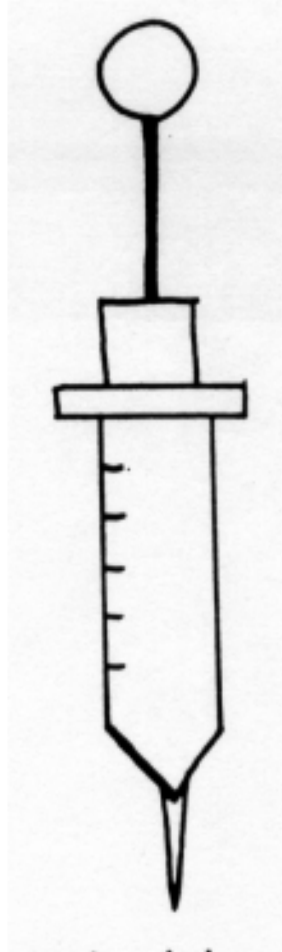
SITUATION 10:

The Needle



The doctor gives baby an injection.

How does baby react?

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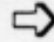
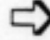
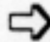
AT FIRST...  A BIT LATER...

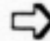
Baby X



Baby Y



Baby Z



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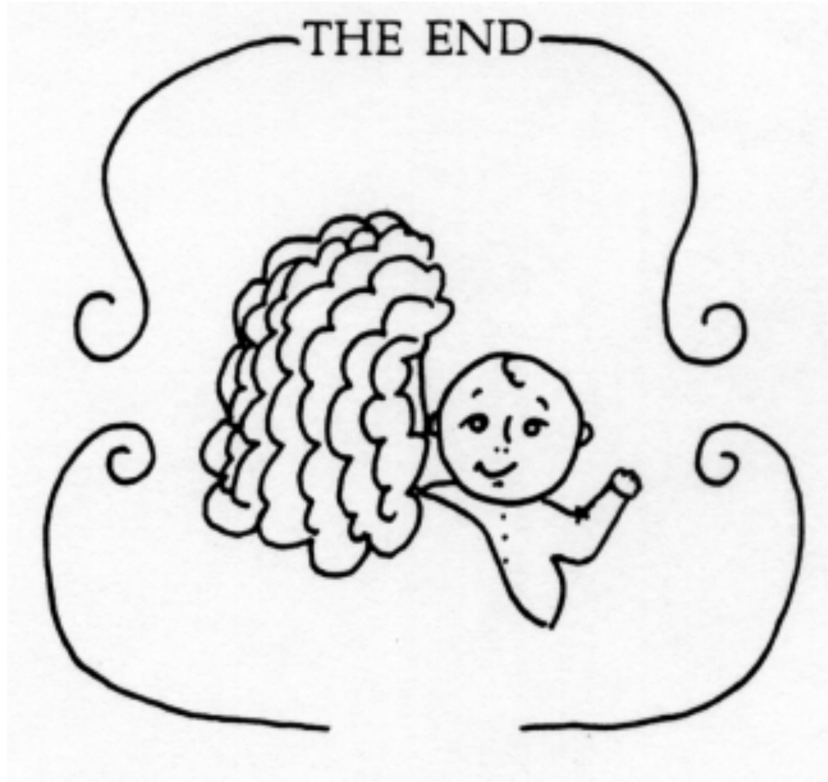

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Instruments in Thai Versions

ข้อมูลประชากร

Demographic information questionnaire

โปรดระบุข้อูลของคุณโดยวงกลมข้อความที่ตรงกับข้อมูลของคุณ

1.คุณอายุเท่าไร	...............ปี ....เดือน
2.สถานภาพสมรสของคุณคืออะไร	1.โสด 2.แต่งงาน 3.หย่า/หม้าย
3.ระดับการศึกษาสูงสุดคือชั้นใด	1. ประถมศึกษา 2.มัธยมต้น 3.มัธยมปลาย 4.อาชีวศึกษา 5.อุดมศึกษา
4.คู่สมรสคุณอายุเท่าไร	...............ปี ....เดือน
5.ระดับการศึกษาสูงสุดของคู่สมรสคือชั้นใด	1. ประถมศึกษา 2. มัธยมต้น 3.มัธยมปลาย 4.อาชีวศึกษา 5.อุดมศึกษา
6.รายได้ครอบครัวต่อเดือน เท่าไร	1.น้อยกว่า 10,000 บาท 2.10,001-20,000 บาท 3.20,001-30,000 บาท 4.มากกว่า 30,000 บาท
7.คุณตั้งครรภ์กี่สัปดาห์	............................สัปดาห์
8.คุณมีประสบการเกี่ยวกับการเลี้ยงลูกด้วยนมแม่มาก่อนหรือไม่ (เช่น แม่ของคุณ สมาชิกในครอบครัว และ เพื่อนที่เลี้ยงลูกด้วยนมแม่)	1.มี 2. ไม่มี
9. คุณเข้ารับบริการฝากครรภ์กี่ครั้ง	........................ครั้ง
10.คุณเคยได้รับคำแนะนำเกี่ยวกับการเลี้ยงลูกด้วยนมแม่หรือไม่	1.เคย 2. ไม่เคย

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11. ถ้าเคย จากใคร	....
12.ทางเลือกที่ดีที่สุดของคุณในการให้นมทารก คืออะไร	1. นมแม่ 2. นมผงสำเร็จ 3. ผสมระหว่างนมแม่และนมสำเร็จ
13.คุณวางแผนที่จะเลี้ยงลูกด้วยนมแม่หรือไม่	1. ใช่ 2. ไม่ใช่
14. ถ้าคุณวางแผนเลี้ยงลูกด้วนนมแม่ คุณจะเลี้ยงด้วยนมแม่ นานเท่าไร	ลูกอายุ....................เดือน
15. ระหว่างการตั้งหครรภ์ เมื่อใด ที่คุณตัดสินใจว่า คุณจะเลี้ยงลูกด้วยนมแม่	1. ตอน 1-3 เดือน 2.ตอน 4-6 เดือน 3.ตอน 5-9 เดือน 4.ยังไม่ตัดสินใจเลย
16. คุณทำงานนอกบ้านหรือไม่	1.ใช่ 2.ไม่ใช่
17. ถ้าคุณทำงานนอกบ้าน คุณมีสิทธิในการลาคลอด หรือไม่	1.มี 2.ไม่มี
18. ถ้ามีสิทธิในการลาคลอด คุณใช้สิทธิในการลาคลอดได้นานเท่าไร	.................วัน
19. ก่อน หรือ ระหว่างการตั้งครรภ์ คุณอยู่ระหว่างการเรียนที่โรงเรียน	1.ใช่ 2.ไม่ใช่
20. ถ้าคุณอยู่ในระหว่างการเรียน คุณตั้งใจจะกลับไปเรียน หลังจากคลอดทารก หรือไม่	1.ใช่ 2.ไม่ใช่
21. ถ้าคุณจะกลับไปเรียน คุณจะกลับไปเมื่อทารก อายุได้เท่าไร	.................เดือน

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แบบสอบถาม การเริ่มต้นให้นมแม่ในระยะ 48 ชั่วโมง แรกหลังคลอด

Breastfeeding Initiation Questionnaire

จากข้อความต่อไปนี้ โปรดระบุข้อมูลของคุณโดยวงกลมข้อความที่ตรงกับข้อมูลเกี่ยวกับการเลี้ยงลูกด้วยนมแม่ ขณะที่อยู่ในโรงพยาบาล

คำถาม	คำตอบ
1. แรกคลอด ทารกอายุครรภ์เท่าไร	............................สัปดาห์
2.ทารกน้ำหนักเท่าไร แรกคลอด	............................กรัม
3.คุณคลอดด้วยวิธีใด	1.ผ่าตัดคลอด 2.คลอดทางช่องคลอด
4.หลังคลอด คุณเริ่มต้นให้ทารกดูดนมแม่ เมื่อไร	1.ภายใน30 นาที 2.ภายใน 24 ชั่วโมง 3.ภายใน 48 ชั่วโมง 4.ไม่ให้นมแม่เลย
5.คุณตัดสินใจจะเลี้ยงลูกด้วยนมต่อไป หรือไม่ หลังจากออกจากโรงพยาบาล	1.ใช่ 2.ไม่ 3.ไม่แน่ใจ
6.ถ้าคุณจะเลี้ยงลูกด้วยนมแม่ คุณวางแผนจะเลี้ยงลูกด้วยนมแม่อย่างดียว นานเท่าไร	ทารกอายุ.................. เดือน
7.ใครที่เป็นคนสำคัญที่สุดสำหรับคุณ ในการเลี้ยง เลี้ยงลูกด้วยนมแม่	....
8.อะไรที่ยากที่สุดสำหรับคุณในการเลี้ยงลูกด้วยนมแม่	....
9.คุณรู้สึกสุขใจ ในขณะให้นมแม่	1.ใช่ 2.ไม่ใช่ 3.ไม่แน่ใจ

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แบบสอบถามความต่อเนื่องในการเลี้ยงลูกด้วยนมแม่ (4 สัปดาห์หลังคลอด)

Breastfeeding Maintenance Questionnaire

จากข้อความต่อไปนี้ โปรดระบุข้อมูลของคุณโดยวงกลมข้อความที่ตรงกับข้อมูลเกี่ยวกับการเลี้ยงลูกด้วยนมแม่ ในช่วง 4 สัปดาห์หลัง

1.ทารกน้ำหนักเท่าไร เมื่อ 4 สัปดาห์ หลังคลอด	……………………….กรัม
2.หลังจากออกจากโรงพยาบาล ทารกมีการเจ็บป่วย ต้องไปพบแพทย์ กี่ครั้ง	………………..ครั้ง
3.ภายใน 4 สัปดาห์ คุณยังเลี้ยงลูกด้วยนมมแม่อย่างเดียว หรือไม่	1.ใช่ (ตอบข้อ 4-6) 2.ไม่ใช่ (ตอบข้อ7-13)
4.ถ้ายังเลี้ยงลูกด้วยนมแม่คุณใช้วีการใด ให้นมแม่แก่ทารก	1.ให้ดูดจากนมแม่ 2.ให้ดูดจากขวดนม(โดยใช้ ที่ปั๊ม) 3.ให้ผสมกันทั้งดูดจากนมแม่และขวดนม
5.ถ้ายังเลี้ยงลูกด้วยนมแม่ คุณวางแผนจะเลี้ยงลูกด้วยนมแม่ อย่างเดียว นานเท่าไร	ทารกอายุ……… …เดือน
6.ถ้ายังเลี้ยงลูกด้วยนมแม่ ส่วนไหนของการเลี้ยงลูกด้วยนมแม่ ทำให้คุณที่ช่วยให้คุณตัดสินใจ ให้นมแม่ต่อไป	……………………………………………
7.ถ้าคุณไม่ได้เลี้ยงลูกด้วยนมแม่อย่างเดียว คุณใช้วิธีการใดให้นมทารก	1.นมแม่ และ นมผงสำเร็จ 2.นมผงสำเร็จอย่างเดียว
8.ถ้าคุณไม่ได้เลี้ยงลูกด้วยนมแม่อย่างเดียวแล้ว คุณได้ให้นมแม่อย่างเดียวกับทารก นานเท่าไร	…………….. วัน
9.ถ้าคุณไม่ได้ให้นมแม่อย่างเดียวแล้ว เหตผลสำคัญใดที่ทำให้ คุณหยุดให้นมมแม่ อย่างเดียว	…………………………………………… ……………………………………………
10.ถ้าคุณไม่ได้ให้นมแม่อย่างเดียวแล้ว อะไรที่ยากที่สุดในการเลี้ยงลูกด้วยนมแม่	……………………………………
11.ถ้าคุณไม่ได้ให้นมแม่อย่างเดียวแล้ว ส่วนที่ดีที่สุดของการเลือกลูกด้วยนมแม่ คือ อะไร	……………………………………………..
12.ถ้าคุณให้นมแม่และนมผงสำเร็จแก่ทารก คุณวางแผนจะให้นมแม่แก่ทารกต่อไป นานเท่าไร	ทารกอายุ ………..เดือน

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แบบประเมินปัจจัยที่มีผลต่อการเลี้ยงบุตรด้วยนมแม่

(Breastfeeding Influencing Factor Assessment; BIFA)

กรุณาอ่านแต่ละประโยคคำถามและระบุว่าท่านเห็นด้วยกับประโยคในคำถามมากน้อยเพียงใด โดยวงกลมล้อมรอบตัวเลขที่ใกล้เคียงกับความคิดเห็นของท่าน

1	2	3	4	5
ไม่เห็นด้วยมากที่สุด	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยมากที่สุด

คุณสามารถเลือกเพียงหนึ่งคำตอบจากเลข 1-5

ปัจจัยส่วนบุคคล					
1. การให้น้ำนมแม่ เป็นวิธีที่สะดวก	1	2	3	4	5
2. การให้น้ำนมแม่ ทำให้ฉันรู้สึก หมดเรี่ยวแรง	1	2	3	4	5
3. ถ้าฉันมีความรู้เกี่ยวกับการเลี้ยงด้วยนมแม่มากกว่านี้ ฉันจะให้น้ำนมแม่	1	2	3	4	5
4. เมื่อพิจารณาจากสุขภาพและการรับประทานอาหารของฉันฉันเชื่อว่าฉันจะมีน้ำนมที่คุณภาพดีในการ เลี้ยงลูก	1	2	3	4	5
5. การให้น้ำนมแม่ เป็นการประหยัดค่าใช้จ่าย	1	2	3	4	5
6. การให้นมแม่ทำให้ฉันเป็นสุข	1	2	3	4	5
7. การให้น้ำนมทำให้ใกล้ชิดกับลูกมากขึ้น	1	2	3	4	5
8. ฉันรู้สึกว่า ฉันพร้อมแล้ว ที่จะให้น้ำนมแม่	1	2	3	4	5
9. การที่น้ำนมแม่ไม่เพียงพอ เป็นอุปสรรคในการให้นมแม่	1	2	3	4	5
10. ฉันคิดว่า ฉันมีความรู้เพียงพอ เกี่ยวกับการให้น้ำนมแม่	1	2	3	4	5
11. การให้น้ำนมแม่เป็นเรื่องยาก	1	2	3	4	5
12. การให้น้ำนมแม่ ทำให้เต้านมคล้อย	1	2	3	4	5
13. ฉันอาจจะไม่ให้น้ำนมแม่ เนื่องจาก ความเจ็บปวด และไม่สุขสบาย จากการให้นมแม่	1	2	3	4	5
14. การให้น้ำนมแม่ ทำให้ลูกมีสุขภาพดีมากกว่า การให้นมผสม	1	2	3	4	5
15. การให้น้ำนมแม่ทำให้ฉันรู้สึกว่าเป็นคนสำคัญ	1	2	3	4	5
ปัจจัยทางสังคม					
16. การให้น้ำนมแม่ ทำให้ความสัมพันธ์ ทางสังคมของฉันลดลง	1	2	3	4	5
17. การให้น้ำนมแม่ ทำให้ความสามารถในการทำสิ่งอื่น ที่ต้องห่างจากลูกได้น้อยลง	1	2	3	4	5
18. การให้น้ำนมแม่ ให้ประสบความสำเร็จต้องอาศัยการสนับสนุนอย่างมากจากคนรอบข้าง	1	2	3	4	5
19. ในสังคมนี้ ผู้หญิงควรจะผูกติดกับลูกและครอบครัว	1	2	3	4	5
20. กำลังใจและการสนับสนุนในการให้น้ำนมแม่ จากสามี เป็นเรื่องสำคัญสำหรับฉัน	1	2	3	4	5
21. การให้น้ำนมแม่ ทำให้สามีของฉันไม่มีส่วนร่วมในการนมลูก	1	2	3	4	5
22. การสนับสนุน และคำแนะนำ ในการให้น้ำนมแม่ จากแม่ของฉันเป็นเรื่องที่สำคัญสำหรับฉัน	1	2	3	4	5
23. ครอบครัวและเพื่อนของฉันสนับสนันการให้น้ำนมแม่	1	2	3	4	5
24. การโฆษณานมผสม มีอิทธิพลต่อการตัดสินใจให้นมลูกของฉัน	1	2	3	4	5
25. ฉันตัดสินใจให้น้ำนมแม่ เพราะว่า คำแนะนำของ บุคลาการทางสุขภาพ	1	2	3	4	5
26. การให้ข้อแนะนำและความสำเร็จในการน้ำนมแม่ ของเพื่อนๆ เป็นแรงผลักดันให้ฉันให้น้ำนมแม่	1	2	3	4	5
ปัจจัยด้านวัฒนธรรม					

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27. ฉันจะรู้สึกอับอาย ถ้ามีคนเห็นฉันให้ลูกดูดนมจากเต้า	1	2	3	4	5
28. การให้น้ำนมแม่ ทำให้ฉันรู้สึกว่า ฉันเป็นแม่ที่ดี	1	2	3	4	5
29. การให้น้ำนมแม่ เป็นพฤติกรรมตามธรรมชาติของมนุษย์	1	2	3	4	5
30. การให้น้ำนมแม่ ต่อหน้า คนอื่น เช่น เพื่อน และสมาชิกครอบครัวเป็นเรื่องที่ได้รับการยอมรับ	1	2	3	4	5
31. การให้น้ำนมแม่ ต่อหน้า สามี เป็นเรื่องที่ ได้รับการยอมรับ	1	2	3	4	5
32. การให้น้ำนมแม่ ต่อหน้า บุคลากรทางสุขภาพ เป็นเรื่องที่ ได้รับการยอมรับ	1	2	3	4	5
33. การให้นมแม่ ในที่สาธารณะ เช่น ร้านอาหาร และที่ทำงาน เป็นที่ได้รับการยอมรับ	1	2	3	4	5
34. เต้านมเป็น สัญญลักษณ์ ทางเพศ ในสังคมนี้	1	2	3	4	5
35. การอาศัยอยู่ในสิ่งแวดล้อมที่มีคนมากมาย เป็นอุปสรรคหนึ่งในการให้นมแม่	1	2	3	4	5
36. การที่ไม่มีที่ส่วนตัวในการให้น้ำนมแม่ ในบ้าน เป็นอุปสรรค ในการให้น้ำนมแม่	1	2	3	4	5
37. การที่ไม่มีที่ส่วนตัว ในการให้น้ำนมแม่ ในที่สาธารณะ เป็นอุปสรรค ในการให้น้ำนมแม่	1	2	3	4	5
38. ที่ทำงาน หรือที่โรงเรียน ไม่มี สิ่งอำนวยความสะดวก ในการให้น้ำนมแม่	1	2	3	4	5
39. ชุมชนนี้ ไม่สนับสนุน การให้น้ำนมแม่	1	2	3	4	5

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แบบสอบถามทัศนคติในการให้นมทารกของไอโอวา

(IOWA Infant Feeding Attitude Scales: IIFAS)

กรุณาอ่านแต่ละประโยคคำถาม และระบุว่าท่านเห็นด้วยกับประโยคในคำถามมากน้อยเพียงใด
โดยวงกลมล้อมรอบตัวเลขที่ใกล้เคียงกับความคิดเห็นของท่าน

1	2	3	4	5
ไม่เห็นด้วยมากที่สุด	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยมากที่สุด

คุณสามารถเลือกเพียงหนึ่งคำตอบจากเลข 1-5

1.	น้ำนมแม่จะมีประโยชน์ตราบเท่าที่บุตรยังดูดนมแม่	1	2	3	4	5
2.	การให้นมผสม สะดวกมากกว่าการให้น้ำนมแม่	1	2	3	4	5
3.	การให้น้ำนมแม่เพิ่มความผูกพันระหว่างมารดาและทารก	1	2	3	4	5
4.	น้ำนมแม่ ขาดธาตุเหล็ก	1	2	3	4	5
5.	ทารกทีได้รับนมผสม มักจะได้รับนมมากเกินไป กว่าทารกที่ได้รับน้ำนมแม่	1	2	3	4	5
6.	การให้นมผสม เป็นทางลือกที่ดีกว่า หากแม่วางแผนจะไปทำงานนอกบ้าน	1	2	3	4	5
7.	แม่ที่ให้น้ำนมผสม ไม่ได้รับความสุขใจจากการเป็นแม่	1	2	3	4	5
8.	ผู้หญิงไม่ควรให้นมแม่ ในที่สาธารณะ เช่น ในร้านอาหาร	1	2	3	4	5
9.	ทารกที่ได้รับนมแม่ จะแข็งแรงกว่า ทารกที่ได้รับนมผสม	1	2	3	4	5
10.	ทารกที่ได้รับนมแม่ มักถูกให้นมมากเกินไป มากกว่าทารกที่ได้รับนมผสม	1	2	3	4	5
11.	พ่อรู้สึกว่าไม่มีส่วนร่วม (ถูกทอดทิ้ง หรือไม่มีตัวตน) หากแม่กำลังให้นม	1	2	3	4	5
12.	อาหารที่ดีที่สุดสำหรับทารกคือนมแม่	1	2	3	4	5
13.	น้ำนมแม่ ย่อยง่ายกว่านมผสม	1	2	3	4	5
14.	นมผสม ดีต่อสุขภาพทารก เท่ากับนมแม่	1	2	3	4	5
15.	การให้น้ำนมแม่สะดวกสบายมากกว่า นมผสม	1	2	3	4	5
16.	น้ำนมแม่ ถูกกว่า นมผสม	1	2	3	4	5
17.	แม่ที่ดื่มแอลกอร์ฮอ ไม่ควรให้นมบุตร	1	2	3	4	5

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แบบประเมิน ความสามารถในการเป็นพ่อแม่

(Parenting Sense of Competence: PSOC)

กรุณาอ่านแต่ละประโยคคำถาม และระบุว่าคุณเห็นด้วยกับประโยคในคำถามมากน้อยเพียงใด โดยวงกลมล้อมรอบตัวเลขที่ใกล้เคียงกับความคิดเห็นของท่าน

	1-ไม่เห็นด้วยมากที่สุด		6- เห็นด้วยมากที่สุด			
1. การแก้ปัญหาในการเลี้ยงดูเด็กเป็นเรื่องง่าย เพียงแค่ท่านรู้และเข้าใจว่าเด็กมีปฏิกิริยาตอบสนองต่อการกระทำของท่านอย่างไร	1	2	3	4	5	6
2. ถึงแม้ว่าฉันจะรู้สึกเป็นสุขใจกับการได้เป็นพ่อแม่ แต่ฉันก็ยังรู้สึกหงุดหงิดอยู่ดีเมื่อลูกอยู่ในวัยนี้	1	2	3	4	5	6
3. ฉันเข้านอนและตื่นนอนในตอนเช้าเหมือนเดิม ฉันก็ยังรู้สึกว่านอนไม่พอ	1	2	3	4	5	6
4. ไม่รู้ว่าทำไมบางครั้งฉันรู้สึกว่าฉันไม่เป็นตัวของตัวเอง	1	2	3	4	5	6
5. แม่หรือพ่อของฉันเตรียมพร้อมในการเป็นพ่อแม่ได้ดีกว่าฉัน	1	2	3	4	5	6
6. ฉันคิดว่าฉันเป็นพ่อแม่ที่ดีและสามารถที่จะสอนให้คนอื่นรู้ว่า การเป็นพ่อแม่ที่ดีต้องรู้อะไรบ้าง	1	2	3	4	5	6
7. การเป็นพ่อแม่ต้องเป็นคนที่มีระบบการจัดการที่ดี แล้วปัญหาก็จะแก้ไขได้ง่าย	1	2	3	4	5	6
8. ปัญหาของการเป็นพ่อแม่คือการไม่รู้ว่าสิ่งที่กระทำลงไปดีหรือไม่ดี	1	2	3	4	5	6
9. บางครั้งคุณรู้สึกว่า คุณไม่เคยทำอะไรเสร็จอย่างที่ควรจะทำ	1	2	3	4	5	6
10. ฉันมีเชี่ยวชาญการเลี้ยงดูลูก อย่างที่ฉันคาดหวัง	1	2	3	4	5	6
11. ถ้ามีคนต้องการหาคำตอบว่าปัญหาของลูกคุณคืออะไร คุณเป็นคนที่จะสามารถตอบคำถามนี้ได้	1	2	3	4	5	6
12. ความสามารถพิเศษและความสนใจของฉัน อยู่ที่ด้านอื่นที่ไม่ใช่การเป็นพ่อแม่	1	2	3	4	5	6
13. เมื่อพิจารณาระยะเวลาที่ฉันได้เป็นพ่อแม่มาได้สักพัก ฉันรู้สึกว่าฉันได้คุ้นเคยกับหน้าที่นี้แล้ว	1	2	3	4	5	6
14. ถ้าการเป็นแม่หรือพ่อของลูกเป็นหน้าที่ที่น่าสนใจมากกว่านี้ ฉันคงมีแรงจูงใจ ให้ทำหน้าที่พ่อแม่ให้ดีกว่านี้	1	2	3	4	5	6
15. ฉันเชื่อว่า ฉันมีทักษะที่จำเป็นทั้งหมด ในการเป็นแม่หรือพ่อที่ดี สำหรับลูก	1	2	3	4	5	6
16. ฉันรู้สึกเครียดและวิตกกังวลในบทบาทการเป็นพ่อแม่	1	2	3	4	5	6
17. การเป็นพ่อแม่ต้องเป็นคนที่มีการจัดการที่ดี แล้วปัญหาต่างๆ ก็จะแก้ไขได้ง่าย	1	2	3	4	5	6

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แบบสอบถามการสนับสนุนในการเลี้ยงลูกด้วยนมแม่

The Hughes Breastfeeding Support Scale (HBSS)

โปรดวงกลมล้อมรอบตัวเลข ที่อธิบายระดับความช่วยเหลือที่คุณได้รับระหว่างการเลี้ยงลูกด้วยนมแม่

1-ไม่ได้รับความช่วยเหลือ 2-ได้รับความช่วยเหลือ จำนวนเล็กน้อย

3- ได้รับความช่วยเหลือจำนวนปานกลาง 4- ได้รับความช่วยเหลือจำนวนมากเท่าที่ต้องการ

1. ช่วยทำให้ฉันมั่นใจว่าฉันเลี้ยงลูกได้ดี	1	2	3	4
2. ช่วยดูแลบ้าน	1	2	3	4
3.ช่วยพาไปร้านค้าและสถานที่อื่นที่ฉันอยากไป	1	2	3	4
4. ช่วยตอบคำถามของฉันเกี่ยวกับการเลี้ยงลูกด้วยนมแม่	1	2	3	4
5. ช่วยดูแลทารก	1	2	3	4
6. ช่วยทำให้ฉันรู้สึกมั่นใจแม้ว่าเมื่อฉันทำผิดพลาด	1	2	3	4
7. ช่วยเตรียมอาหาร	1	2	3	4
8. ช่วยรับโทรศัพท์	1	2	3	4
9. รับฟังฉันพูดคุยเกี่ยวกับทารก	1	2	3	4
10. ช่วยซักทำความสะอาดเสื้อผ้าฉัน	1	2	3	4
11. ช่วยต้อนรับแขก	1	2	3	4
12. แสดงความเอาใจใส่เมื่อฉันรู้สึกซึมเศร้า	1	2	3	4
13. จ่ายบิล เขียนจดหมาย หรือ เขียนข้อความตอบขอบคุณ เหมือนที่ฉันทำตามปกติ	1	2	3	4
14. ช่วยวื้อส่งของที่ต้องการ	1	2	3	4
15. เชื่อว่าฉันเป็นแม่ที่ดี	1	2	3	4
16. ให้เงินหรือให้ยืมเงินสำหรับค่าใช้จ่ายของทารก	1	2	3	4
17. อยู่เคียงข้างฉันเสมอเมื่อฉันรู้สึกว้าเหว่	1	2	3	4
18. ยกย่องชมเชยความพยายามในการดูแลบุตรของฉัน	1	2	3	4
19. ทำให้ฉันรู้สึกว่าฉันยังเป็นคนที่น่าสนใจ	1	2	3	4
20. แสดงความเอาใส่เกี่ยวกับภาวะร่างกายของฉัน	1	2	3	4
21. ให้คำแนะนำเคล็ดลับเกี่ยวกับการเลี้ยงลูกด้วยนมแม่	1	2	3	4
22. บอกฉันเกี่ยวกับแหล่งที่ให้ความช่วยเหลือ (เช่น สังคมสงเคราะห์ กลุ่มเลี้ยงลูกด้วยนมแม่ ฯลฯ)	1	2	3	4
23. แสดงให้ฉันดูเกี่ยวกับวิธีการเลี้ยงลูกด้วยนม	1	2	3	4
24. แสดงให้ฉันดูเกี่ยวกับวิธีการอาบน้ำทารก	1	2	3	4
25. แสดงให้ฉันดูเกี่ยวกับวิธีการเปลี่ยนผ้าอ้อมทารก	1	2	3	4
26. ตอบคำถามของฉันเกี่ยวกับทารก	1	2	3	4
27. ช่วยทำให้แนเข้าใจ เกี่ยวกับการร้องไห้โยเยของทารก	1	2	3	4
28. สอนฉันในการดูแลตนเอง	1	2	3	4
29. แสดงให้ฉันดูวิธีการอุ้มทารก	1	2	3	4
30. ยกย่องชมเชยความพยายาม ในการเลี้ยงลูกด้วยนมแม่ของฉัน	1	2	3	4

โปรดตอบคำถาม 2 ข้อ เกี่ยวกับการเลี้ยงลูกด้วยนม

1. ใครที่สำคัญที่สุดที่ช่วยสนับสนุน เมื่อคุณเลี้ยงลูกด้วยนมแม่ ....
2. อะไรที่เป็นอุปสรรค ในกสนเลี้ยงลูกด้วยนมแม่ …………………………….............................

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แบบวัดความเสี่ยงของทารก

(Vulnerable Baby Scale: VBS)

คำชี้แจง โปรดตอบคำถามตามข้อต่อไปนี้ ให้ตรงกับความเป็นจริงของท่าน โดยวงกลมข้อที่ใกล้เคียงกับความรู้สึกของท่าน มากที่สุด

1. ฉันมักตรวจสอบลูกในขณะที่เขาหลับในตอนกลางคืน

1	2	3	4	5
ไม่เคยเลย		1-2 ครั้งต่อคืน		บ่อยครั้ง (อย่างน้อยทุกๆ 30 นาที)

2. ถ้าลูกตื่นและกำลังเล่นอยู่ ฉันจะปล่อยให้เขาเล่นโดยละความสนใจ และไม่ได้ตั้งใจเงี่ยหูฟัง เป็นเวลาประมาณ............

1	2	3	4	5
ไม่เคยเลย		ประมาณ 15นาที		มากกว่า 1 ชั่วโมง

3. ถ้าเพื่อนที่มาเยี่ยมเป็นไข้หวัด ฉันจะ.....

1	2	3	4	5
ไม่อนุญาต ให้เขาเข้าบ้าน		อนุญาตให้เข้าบ้าน แต่ไม่ให้อุ้มทารก		อนุญาตให้เข้าบ้าน และไม่ขัดขวาง หากเขาจะสัมผัสทารก

4. ลูกชองฉันดูเหมือนจะปวดท้องหรือมีการอาการปวดอื่นๆ

1	2	3	4	5
ตลอดเวลา				ไม่เคยเลย

5. ฉันกังวลว่า ลูกของฉันจะไม่แข็งแรง เท่าที่ควร

1	2	3	4	5
กังวลตลอดเวลา				ไม่เคยกังวลเลย

6. เมื่อฉันเปรียบเทียบสุขภาพของลูกกับทารกคนอื่นๆที่อายุเท่ากัน ฉันคิดว่า ลูกของฉัน ....

1	2	3	4	5
สุขภาพอ่อนแอกว่า				สุขภาพแข็งแรงกว่า

7. ฉันกังวลว่า ลูกของฉันอาจจะป่วยหนัก

1	2	3	4	5
ตลอดเวลา				ไม่เคยเลย

8. ฉันกังวลเกี่ยวกับโรคการหลับไม่ตื่นในทารก

1	2	3	4	5
ตลอดเวลา				ไม่เคยเลย

9. ถ้าท่านไหว้วานคนอื่นให้ดูแลบุตรช่วงที่ท่านไม่อยู่ ท่านจะหาวิธีติดต่อกับเขา

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1	2	3	4	5
ใช่แน่นอน				ไม่เคยเลย

10. 2 สัปดาห์ที่ผ่านมา ฉันปรึกษาปัญหาสุขภาพของบุตรกับบุคลากรทางการแพทย์ในช่วงเวลานอกเวลางาน

1	2	3	4	5
ไม่เคยเลย		หนึ่งครั้งต่อสัปดาห์		ทุกๆวัน

للاستشارات

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ในคู่มือนี้เป็นสถานการณ์ต่างๆที่เด็กทารกมักได้พบเจอ

ทารกแต่ละคนก็จะตอบสนองต่อสถานการณ์แบบเดียวกันต่างกันไป

คู่มือนี้จะใช้ภาพการ์ตูนประกอบจำลองสามสถานการณ์ที่เกิดขึ้นและปฏิกริยาตอบสนองในแต่ละสถานการณ์

คุณลองพิจารณาดูสิว่าลูกของคุณปกติแล้วตอบสนองต่อสถานการณ์เหล่านี้อย่างไร

แล้วคุณลองพิจารณาว่าสถานการณ์จำลองไหนตรงกับปฏิกริยาตอบสนองที่ลูกของคุณแสดงออก

จะเป็นแบบไหนนะ

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จะเป็นแบบไหนนะ

แบบ " เด็กทารกเอ็กซ์ (X)"

แบบ " เด็กทารก วาย (Y)"

แบบ" เด็กทารก แซด (Z)"

ให้วงกลมเลือกคำตอบปฏิกริยาตอบสนองในแต่ละสถานการณ์ที่ตรงกับลูกของคุณมากที่สุด

للاستشارات المنارة

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สถานการณ์ที่ 1

เครื่องปิ้งขนมปังไหม้

คุณกำลังให้นมลูกอยู่แต่ว่าไม่กี่นาทีต่อมา เกิดเหตุฉุกเฉินขึ้น ที่ปิ้งขนมปังเกิดระเบิดไหม้ คุณจึงหยุดให้นมลูก แล้วลูกของคุณมีปฏิกิริยาตอบสนองแบบไหน

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ปฏิกริยาเบื้องต้น ปฏิกริยาที่ตามมาภายหลัง

ทารกเอ็กซ์ (X)

อาหารหายไปไหน

ติดว่างั้นก็คงต้องรอก่อนอยู่

ทารกวาย

อาหารหายไปได้ยังไง

แบบนี้ก็ต้องรอนะสิ

ทารกแซต

เฮ้ อาหารหายไปได้ไง

ฉันต้องการอาหารเดี๋ยวนี้

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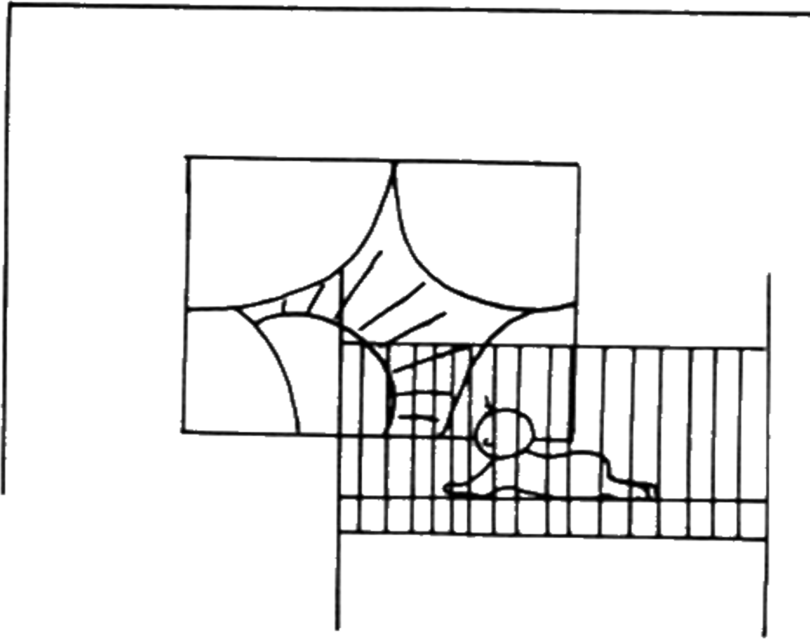
สถานการณ์ที่ 2

ตื่นนอน



เมื่อทารกเพิ่งตื่นนอนตอนเช้า ลูกของคุณมีปฏิกิริยาตอบสนองแบบไหน

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ปฏิกริยาเบื้องต้น

ปฏิกริยาที่ตามมาภายหลัง

ทารกเอ็กซ์ (X)

เย้ ดีจังเช้าแล้ว

วันนี้มีความสุขจังเ

ทารกวาย

อ้าวเช้าแล้วเหรอ

สงสัยว่าวันนี้จะเป็นวันดีไ

ทารกแซต

ไม่จริงเช้าแล้วเหรอเนี่ย

ไม่อยากตื่นนอนเลย

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สถานการณ์ที่ 3

ล้างหน้า

เมื่อคุณใช้ผ้าเปียกชุ่มน้ำเช็ดหน้าลูกของคุณ แล้วลูกคุณมีปฏิกริยาตอบสนองแบบไหน

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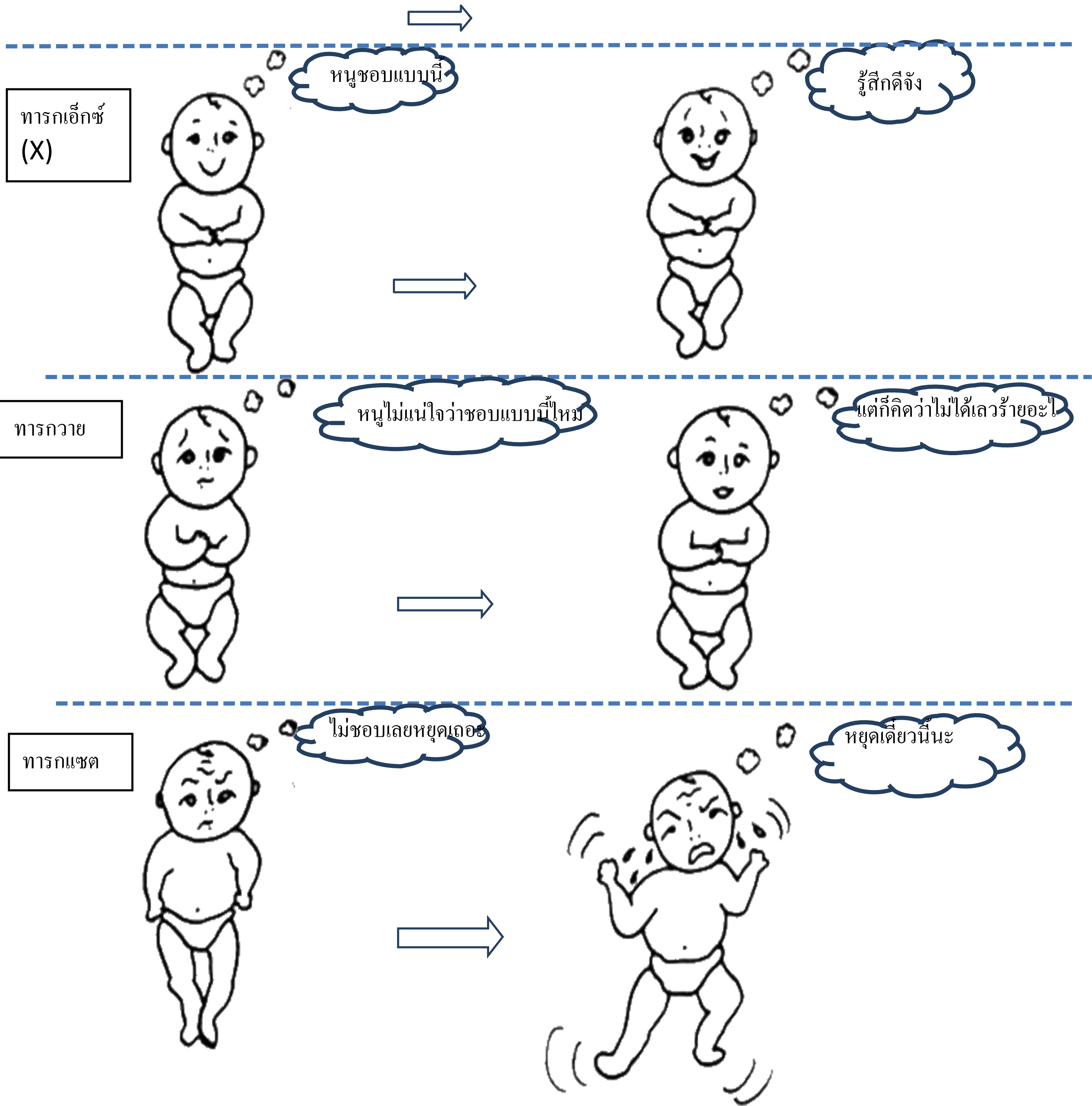

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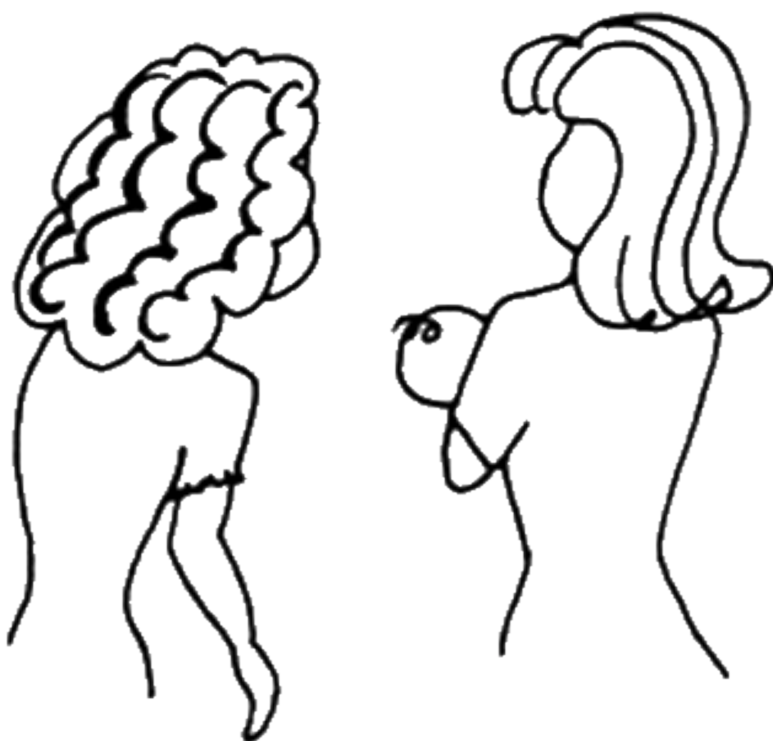
สถานการณ์ที่ 4

คนแปลกหน้าอุ้มลูก



คุณให้คนแปลกหน้าอุ้มลูก ลูกคุณจะมีปฏิกริยาตอบสนองแบบไหน

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ปฏิกิริยาเบื้องต้น ปฏิกิริยาที่ตามมาภายหลัง

ทารกเอ็กซ์ (X)

ทารกวาย

ทารกแซต

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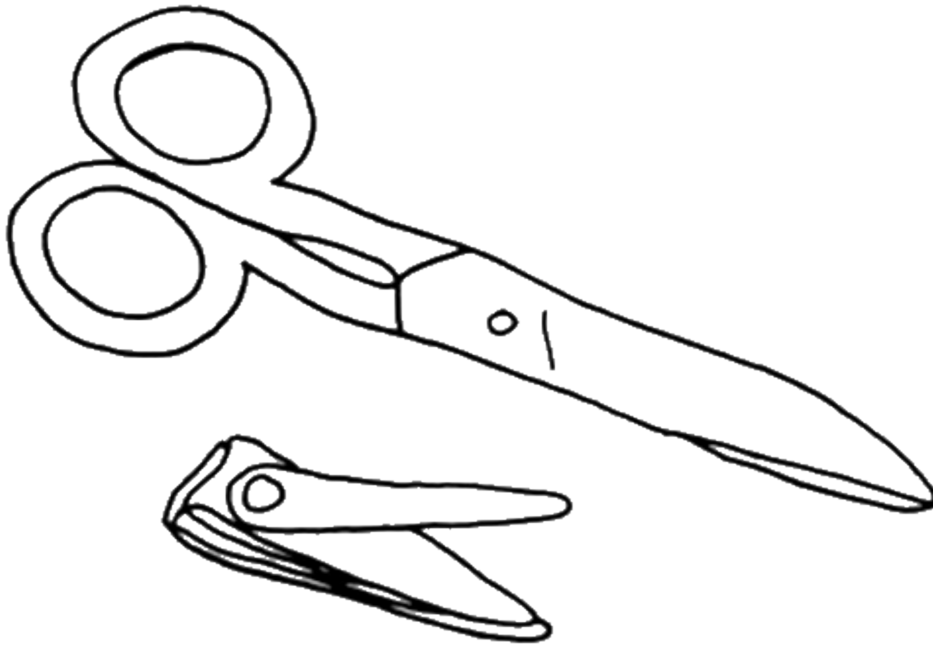
สถานการณ์ที่ 5

ตัดเล็บ



ตอนคุณตัดเล็บลูก ลูกจะมีปฏิกิริยาตอบสนองอย่างไร

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ปฏิกริยาเบื้องต้น ปฏิกริยาที่ตามมาภายหลัง

ทารกเอ็กซ์ (X)

แม่กำลังทำอะไร น้า

เฮ้ก็ดูไม่ได้เลวร้ายน

ทารกวาย

หนูไม่แน่ใจว่า ชอบ

แต่ก็ดูไม่เลว

ทารกแซต

ไม่นะ

หยุดเดี๋ยวนี้

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สถานการณ์ที่ 6

แต่งตัวให้ลูก

ตอนคุณใส่เสื้อโดยใส่ผ่านส่วนศรีษะลงมา ลูกคุณมีปฏิกริยาตอบสนองแบบไหน

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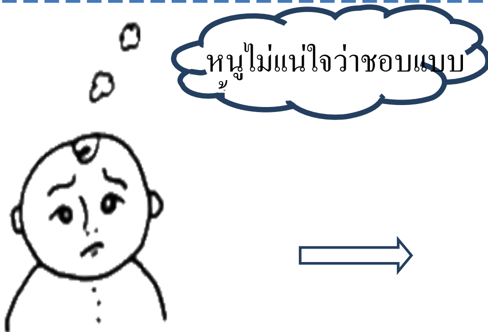
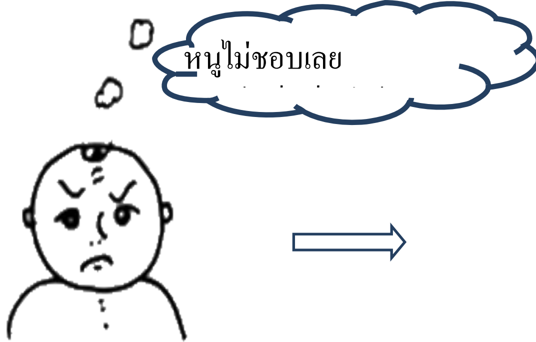
ปฏิกริยาเบื้องต้น ปฏิกริยาที่ตามมาภายหลัง

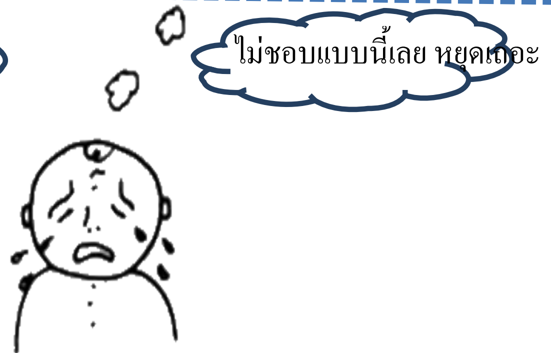
ทารกเอ็กซ์
(X)

ทารกวาย(



ทารกแซต





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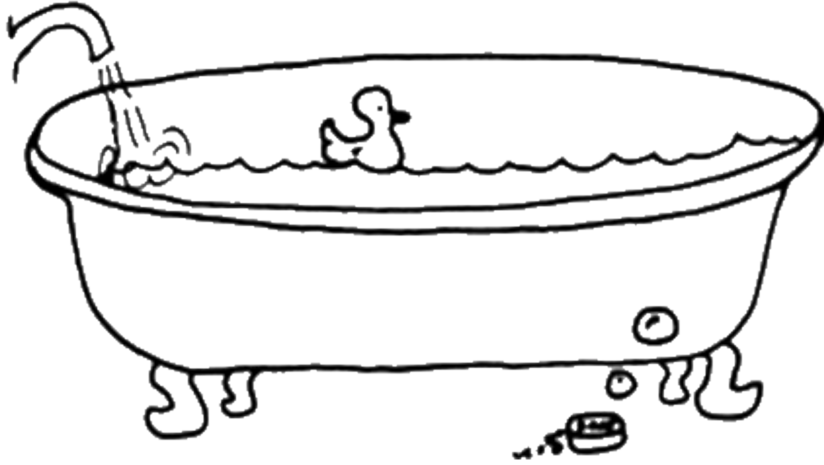
สถานการณ์ที่ 7

อาบน้ำ



เวลาคุณอาบน้ำอุ่นให้ลูก ลูกคุณมีปฏิกิริยาการตอบสนองอย่างไร

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ปฏิกริยาเบื้องต้น ปฏิกริยาที่ตามมาภายหลัง

ทารกเอ็กซ์

สนุกจังเลย

ชอบให้น้ำกระเด็นใ

ทารกวาย(

หนูไม่แน่ใจว่าอาบน้ำเป็

หนูว่าอาบน้ำก็ดี

ทารกแซต

อาบน้ำเหรอ

ช่วยเอาหนูออกไปจาก

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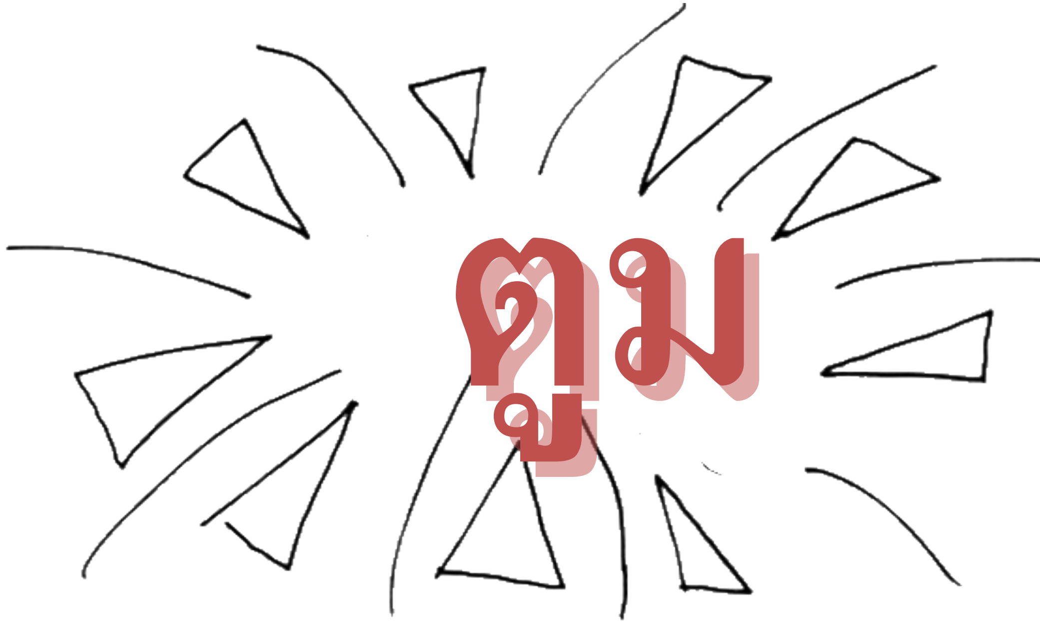
สถานการณ์ที่ 8

การเกิดเสียงที่ดังมากเหมือนระเบิด



เกิดเสียงดังมากขึ้นอย่างรวดเร็วลูกคุณมีปฏิกริยาตอบสนองอย่างไร

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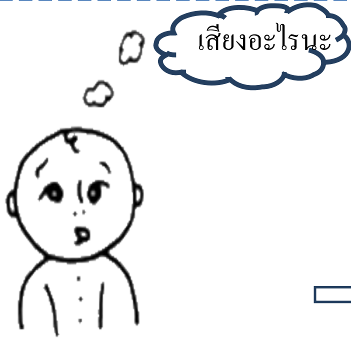
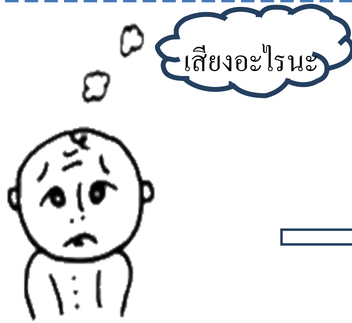
ปฏิกริยาเบื้องต้น ปฏิกริยาที่ตามมาภายหลัง

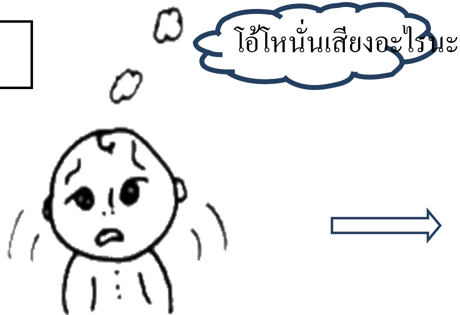
ทารกเอ็กซ์



ทารกวาย(



ทารกแซต(Z)



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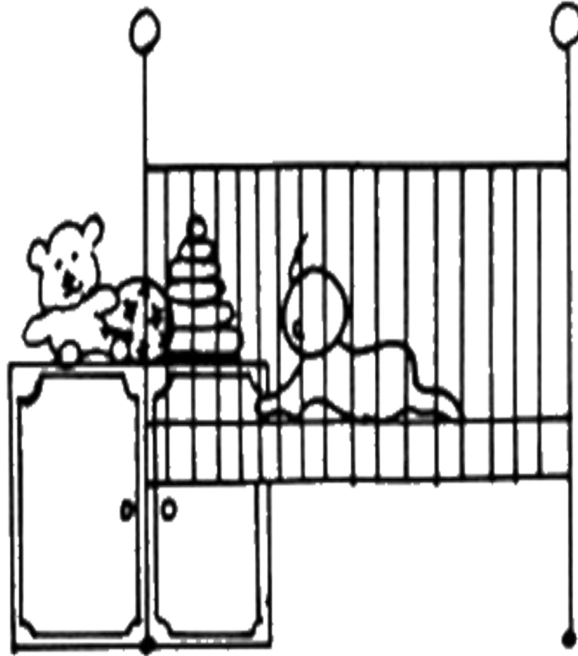
สถานการณ์ที่ 9

ปล่อยให้อยู่คนเดียว



เมื่อคุณพยายามให้ลูกนอนพักในช่วงเวลาที่ลูกยังคงตื่นตัวอยู่ และทิ้งให้อยู่คนเดียวในเปล ลูกคุณมีปฏิกิริยาตอบสนองอย่างไร

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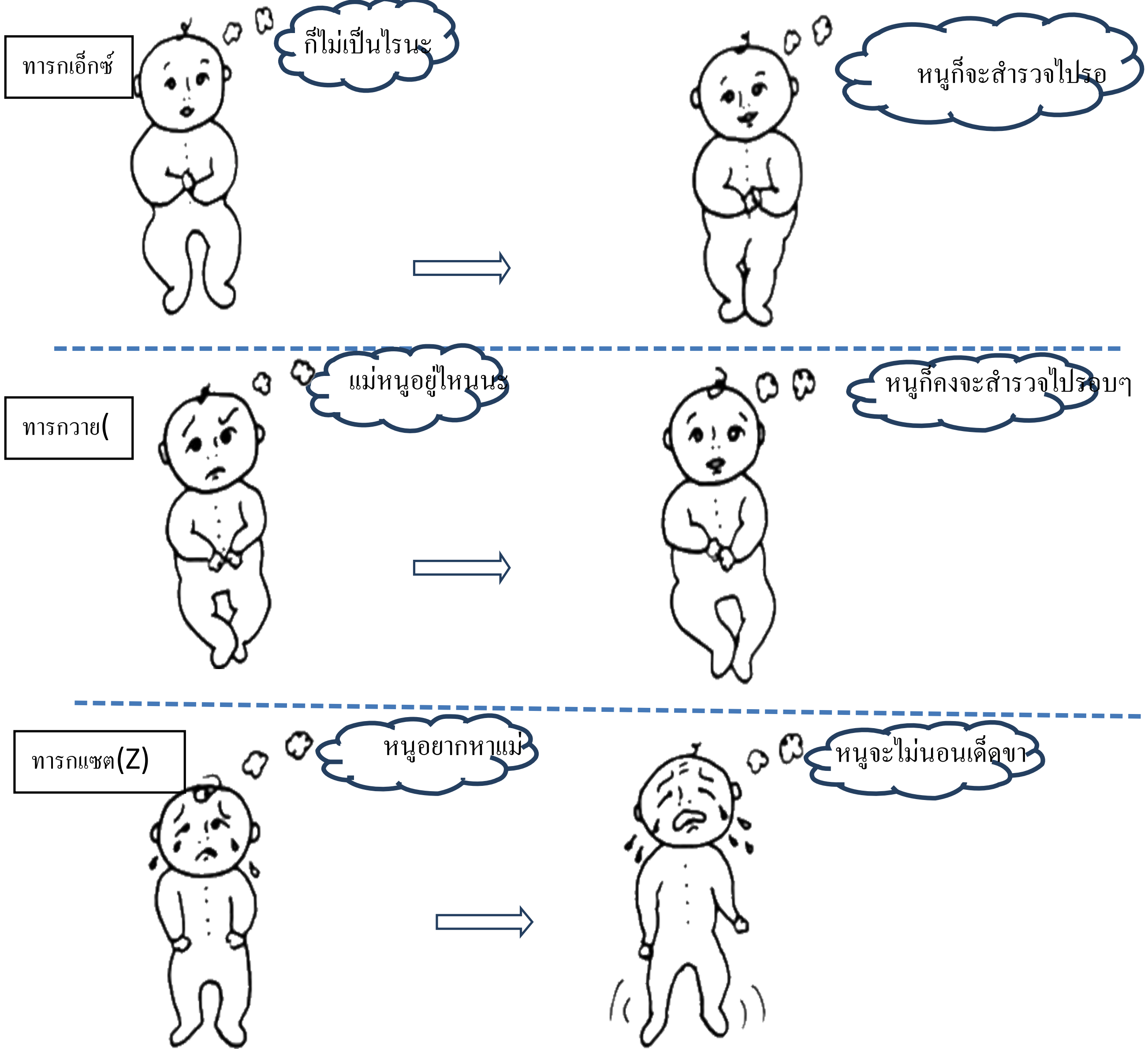

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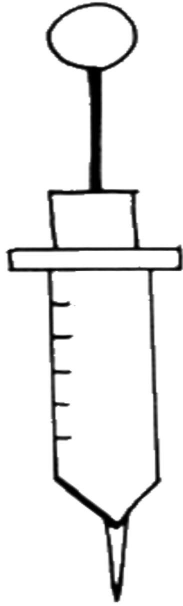
สถานการณ์ที่ 10

การฉีดยา



เมื่อคุณหมอฉีดยาให้ลูก ลูกของคุณมีปฏิกริยาตอบสนองยังไง

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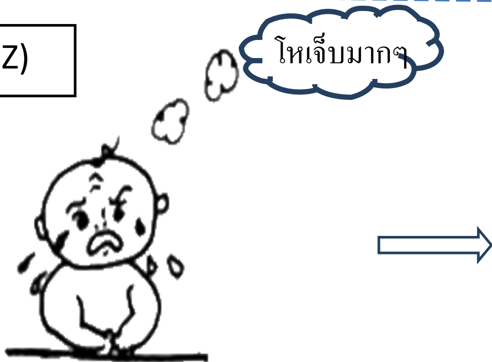
ปฏิกริยาเบื้องต้น → ปฏิกริยาที่ตามมาภายหลัง

ทารกเอ็กซ์

ทารกวาย

ทารกแซต(Z)



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Appendix B: Translation process

The purpose of testing of comparability and interpretability is to compare the original version of instruments (IOWA Infant feeding Attitude Scale-IIFAS, Breastfeeding Influencing factor Assessment-BIFA, Vulnerability baby Scale-VBS, Parenting Senses of Competence-PSOC) , Pictorial Assessment of temperament (PAT) and the instruments with back-translation version (the two English versions) for comparability of language and similarity of interpretation.

Please according to your opinion, circle or highlight the level of comparability and interpretability for each question

Note: These results of tests of comparability and interpretability after comparing original and back- translated versions. Forward translation and back translation were used for items that had scale comparability or interpretability > 4 until comparability and interpretability levels of extremely and moderate (1-4) were achieved.

Original version	Back-translated version	Scaling
Demographic information questionnaire		
For each of the following statements, please indicate your information by filling or circling the number that most closely corresponds to your personal information	For each of the following statements, please indicate your information by filling or circling the number that most closely identify to your personal information	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1a) How old are you?	1b) How old are you?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
2a) What is your marital status? **Single** **Living with partner** **Married**	2b) What is your marital status? Single Living with partner Married	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
3a) What is your highest level of education? 4. **Elementary school** 5. **Middle school** 6. **High school** 7. **Some college preparation** 8. **College graduate**	3b) What is your highest level of education? 1. Elementary school 2. Middle school 3. High school 4. Some college preparation 5. College graduate	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
4a) How old is your partner?	4b) How old is your partner?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
5a) What is the highest level of education of your partner 22. **Elementary school** 23. **Middle school** 24. **High school** 25. **Some college preparation** 26. **College graduate**	5) What is the highest level of education of your partner 1. Elementary school 2. Middle school 3. High school 4. Some college preparation 5. College graduate	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
6a) How much is your family income/month? **(Bath: 30 bath = 1 US dollar)** **5. 10,000 or less** **6. 10,001-20,000** **7. 20,001-30,000** **8. More than 30,000**	6b) How much is your family income/month? (Bath: 30 bath = 1 US dollar) 1. 10,000 or less 2. 10,001-20,000 3. 20,001-30,000 4. More than 30,000	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
7a) How many weeks pregnant are you now?	7b). How many weeks pregnant are you?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
8a)Do you have previous experience with breast feeding (such as your mother, family member, and friend breastfed their baby)	8b)Do you have previous experience about breast feeding (such as your mother, family member, and friend breastfed their baby)	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
9a) How many times have you attended the prenatal care clinic?	9b) How many times have you attended the antenatal care clinic?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
10a) Have you received any advice about breastfeeding? **Yes** **No**	10b) Have you received any advice/suggest about breastfeeding? Yes No	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
11a) From who?	11b) From who?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
12a) What is your best choice for infant feeding? **1. Breastfeeding** **2. Formula** **3. Mixing**	12b) What is your best choice for infant feeding? 1. Breastfeeding 2. Formula 3. Mixing	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
13a) If you are planning to breastfeed, how long will you plan to breastfeed your baby?	13b)If you are planning to breastfeed, how long will you plan to breastfeed your baby?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
14a) During pregnancy, when do you make the decision about how you will feed your infant? **5. At 1-3 months** **6. At 4-6 months** **7. At 5-9 months**	14b) During pregnancy, when do you make the decision about how you will feed your infant? 1. At 1-3 months 2. At 4-6 months 3. At 5-9 months	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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8. **Not yet**	**4.** Not yet	
15a) Are you working outside the home? 1. **Yes** 2. **No**	15b) Are you working outside the home? 1. Yes **2.** No	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
16a) If you are working, do you have maternity leave? **1. Yes** **2. No**	16b) If you are working, do you have maternity leave? 1. Yes 2. No	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
17a) If yes, how long do you have maternity leave?	17b) If yes, how long do you have maternity leave?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
18a) Were you in school before and/or during your pregnancy? **1. Yes** **2. No**	18b) Were you in school before and/or during your pregnancy? 1 Yes 2 No	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
19a) If yes, do you intend to continue with school after delivery? **1 Yes** **2 No**	19b) If yes, do you intend to continue with school after delivery? 3 Yes 4 No	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
20a) If yes, when will you go back to school?	20b) If yes, when will you go back to school?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Breastfeeding Initiation Questionnaire		
For each of the following statements, please indicate your information by filling or circling the number that most closely corresponds to your breastfeeding information in hospital.	For each of the following statements, please indicate your information by filling or circling the number that most closely identify to your breastfeeding information in hospital.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1a) What is infant gestation at birth?	1b) What is infant gestation at birth?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
2a) What is the birth weight of infant?	2b) What is the birth weight of infant?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
3a) What is method of delivery?	3b) What is method of delivery?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
4a) When did you begin breastfeeding after birth? 6. **Within 30 minutes** 7. **Within 12 hours** 8. **Within 24 hours** 9. **Within 48 hours** 10. **Not at all**	4b) When did you begin breastfeeding after birth? 1. Within 30 minutes 2. Within 12 hours 3. Within 24 hours 4. Within 48 hours 5. Not at all	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
5a) Have you decided to continue breastfeeding after discharge from hospital?	5b) Have you decided to continue breastfeeding after discharge from hospital?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7

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4. Yes **5. No** 6. **Not sure**	1. Yes 2. No 3 .Not sure	B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
6a) If yes, how long do you plan to exclusive breastfeeding your baby?	6b) If yes, how long do you plan to exclusive breastfeeding your baby?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
7a) Who is the best supporter of your breastfeeding since your child's birth?	7b) Who is the best supporter of your breastfeeding after your child's birth?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
8a) What do you find most difficult about breastfeeding your infant	8b) What do you find most difficult about breastfeeding your baby	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
9a) Do you feel satisfied when you are breastfeeding your baby? **4. Yes** **5. No** **6. Not sure**	9b) Do you feel satisfied when you are breastfeeding your baby? 1.Yes 2.No 3.Not sure	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
Breastfeeding Maintenance Questionnaire		
For each of the following statements, please indicate your information by filling or circling the number that most closely corresponds to your breastfeeding information at 4 weeks postpartum	For each of the following statements, please indicate your information by filling or circling the number that most closely identify to your breastfeeding information at 4 weeks postpartum	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1a) What is the weight of baby at four weeks?	1b) What is the weight of baby at four weeks?	A) Comparability of Language Extremely Moderate Not at all

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		1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
2a) After discharge from hospital, how many times has your baby been sick and had to see the doctors	2b) After discharge from hospital, how many times has your baby been sick and had to see the doctors	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
3a) Do you still exclusively breastfeed your baby? **3. Yes (answer no.4-6)** **4. No (answer no. 7-13)**	3b) Do you still exclusively breastfeed your baby? 1. Yes (answer no.4-6) 2. No (answer no. 7-13)	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
4a) If yes, what is the method that you provide breast milk? **4. Breast feed** **5. Bottle feed (using breast pump)** 6. **Both**	4b) If yes, what is the method that you provide breast milk? 1. Breast feed 2. Bottle feed (using breast pump) **3.** Both	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
5a) If yes, how long do you plan to continue exclusively breastfeed your baby?	5b) If yes, how long do you plan to continue exclusively breastfeed your baby?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
6a) If yes, what is the best part of breastfeeding that that helps you decide to continue breastfeeding?	6b) If yes, what is the best part of breastfeeding that that helps you decide to continue breastfeeding?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
7a) If no, **what type of infant feeding is provided daily?** **3. Breast milk and formula milk**	7b) **If no**, what type of infant feeding is provided daily? 1. Breast milk and formula milk	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
4. **Only formula milk**	2. Only formula milk	B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
8a) If no, **how long did you exclusively breastfeed your baby?**	8b) **If no**, how long did you exclusively breastfeed your baby?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
9a) If no, **what is your significant reason that leads you to stop exclusive breastfeeding?**	9b) **If no**, what is your important reason that leads you to stop exclusive breastfeeding?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
10a) If no, **what was the most difficult for you about breastfeeding?**	10b) **If no,** what was the most difficult for you about breastfeeding?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
11a) If no, **what is the best part during breastfeeding that you like?**	11b) **If no,** what is the best part during breastfeeding that you like?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
12a) If you are feeding your baby with breast milk and formula milk (partial breastfeeding), how long do you plan to continue feeding your baby with breast milk?	12b) If you are feeding your baby with breast milk and formula milk how long do you plan to continue feeding your baby with breast milk?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
13a) If you are partially breastfeeding, what method do you use to provide breast milk? 4. **Breast feed** 5. **Bottle feed (using breast pump)**	13b) If you are partially breastfeeding, what method do you use to provide breast milk? 1. Breast feed 2. Bottle feed (using breast pump)	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
6. **Both**	3. Both	
IOWA Infant Feeding Scale (IIFAS) 17 items		
For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely corresponds to your opinion	For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely identify to your opinion	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1= strong disagreement **2= disagreement** **3= neutral** **4= agreement** **5= strong agreement**	1= strong disagreement 2= disagreement 3= neutral 4= agreement 5= strong agreement	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1a) The benefits of breast milk last only as long as the baby is breast fed	1b)Breast milk will have value only as long as the infant is still breastfeeding.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
2a) Formula feeding is more convenient than breastfeeding	2b) Feeding with infant formula is more convenient than breastfeeding.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
3a) Breastfeeding increases mother infant bonding.	3b) Breastfeeding increases the bonding between mother and child.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
4a) Breast milk is lacking in iron	4b) Breast milk does not contain iron.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all

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Original version	Back-translated version	Scaling
		1 2 3 4 5 6 7
5a) Formula fed babies are more likely to be overfed than breast fed babies	5b) Infants taking formula tend to overeat more than babies that breastfeed.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
6a) Formula feeding is the better choice if the mother plans to go out to work	6b) The choice to use baby formula is better if the mother has plans to work outside of the home.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
7a) Mothers who formula feed miss one of the great joys of motherhood	7b) Mothers who feed their babies using formula do not receive the same satisfaction or happiness from being a mother.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
8a) Women should not breastfeed in public places such as restaurants	8b) Women should not breastfeed in public places such as restaurants.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
9a) Breastfed babies are healthier than formula fed babies	9b) Babies who receive breast milk are healthier than babies who receive formula.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
10a) Breast fed babies are more likely to be overfed than formula fed babies	10b) Babies who breastfeed might become overfeeding more than formula fed babies.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
11a) Fathers feel left out if a mother breasts feeds	11b) When the mother breast feed , the father feels left out.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
12a) Breast milk is the ideal food for babies	12b) The best food for the infant is breast milk.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
13a) Breast milk is more easily digested than formula	13b) Breast milk is more easily digested than infant formula.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
14a) Formula is as healthy for an infant as breast milk	14b) Formula is just as nourishing to the infant's health as breast milk.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
15a) Breastfeeding is more convenient than formula	15b) Breastfeeding is more convenient than giving formula.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
16a) Breast milk is cheaper than formula	16b) Breast milk is less expensive than formula.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
17a) A mother who occasionally drinks alcohol	17b) Mothers who drink alcohol should not breastfeed.	A) Comparability of Language Extremely Moderate Not at all

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Original version	Back-translated version	Scaling
should not breastfeed her baby		1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

Breastfeeding Influencing Factor Assessment (BIFA) 39 items

Personal factor

Original version	Back-translated version	Scaling
For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely corresponds to your opinion.	For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely identify to your opinion.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1=strong disagreement, 2=disagreement, 3=neutral 4=agreement 5=strong agreement	1=strong disagreement, 2=disagreement, 3=neutral 4=agreement 5=strong agreement	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1a) Breastfeeding is convenient.	1b) Breastfeeding is a convenient method of feeding my baby.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
2a) Breastfeeding makes me feel run down.	2b) Breastfeeding causes me to feel exhausted	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
3a) If I knew more about breastfeeding, I would breastfeed.	3b) If I had more information than this about breastfeeding, I would choose to breast-feed.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
4a) Because of my health or diet, I believe I will produce good quality breast milk for my baby.	4b) When I consider my own health and eating habits, I believe that my breast milk would be of good quality for my baby's care.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
5a) Breastfeeding is economical.	5b) Breastfeeding is a way to economize/save money on expenses	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
6a) Breastfeeding is enjoyable.	6b) Breastfeeding makes me enjoy.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
7a) Breastfeeding makes the baby closer to me.	7b) Breastfeeding increases my bonding/closeness with my baby	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
8a) I feel I am ready to breastfeeding my baby	8b) I feel that I am ready to breastfeed.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
9a) Insufficient breast milk is a barrier to breastfeeding.	9b) Not having enough breast milk is a barrier to breastfeeding.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
10a) I think I know enough	10b) I feel that I have enough	A) Comparability of Language

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Original version	Back-translated version	Scaling
about breastfeeding.	knowledge about breastfeeding	Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
11a) Breastfeeding is difficult.	11b) Breastfeeding is difficult.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
12a) Breastfeeding makes my breast sag.	12b) Breastfeeding causes breasts sag.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
13a) I may not breastfeed because of physical pain and discomfort associated with breastfeeding.	13b) I might not breastfeed because it hurts or is not comfortable. .	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
14a) Breastfeeding makes my baby healthier than formula feeding.	14b) Breastfeeding gives my baby better health than bottle feeding	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
15a) Breastfeeding makes me feel important.	15b) Breastfeeding makes me feel important.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
Social factor:		
16a) Breastfeeding ties me down socially.	16b) Breastfeeding diminishes my social relationships.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation

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		Extremely Moderate Not at all 1 2 3 4 5 6 7
17a) Breastfeeding decreases my ability to do other things away from my baby.	17b) Breastfeeding lessens my ability to do other things that take me away from my baby	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
18a) Successful breastfeeding depends very much on the social support network.	18b) To be successful at breastfeeding, I must truly rely on the support of those around me.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
19a) In society, women should be tied to the baby and family.	19b) In this society, a woman should be very close to her children and family.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
20a) Encouragement and support in breastfeeding from my partner is important for me.	20b) Encouragement and support for breastfeeding from my husband is important to me.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
21a) Breastfeeding will make my partner feel left out of feeding our baby.	21b) Breastfeeding takes away my partner in feeding our baby.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
22a) Support and advices in breastfeeding from my mother is important for me.	22b) It is important to me that I have the support and advice from my own mother for breastfeeding.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
23a) My family and friends support breastfeeding.	23b) My family and friends support me in breastfeeding.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all

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Original version	Back-translated version	Scaling
		1 2 3 4 5 6 7
24a) Infant formula (milk) advertisements have influenced my feeding decisions.	24b) Advertisements about baby formulas has an influence in my decision about giving milk to my baby	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
25a) I made the decision to breastfeed because of the health care workers' advice.	25b) My decision to breastfeed is because of advice given from the health care professionals.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
26a) The recommendation and success of breastfeeding by my friends have encouraged me to breastfeed.	26b) Advice and success in breastfeeding by friends encourage me to breastfeed.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
Cultural factor		
27a) I would feel embarrassed if someone saw me Breastfeeding.	27b) I would be embarrassed if anyone saw me breastfeeding.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
28a) Breastfeeding makes me feel that I am a good mother.	28b) Breastfeeding makes me feel that I am a good mother.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
29a) Breastfeeding is a natural human activity.	29b) Breastfeeding is a natural practice among people.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
30a) It is acceptable to breastfeed in front of others such as friend and family member.	30b) It is acceptable to breastfeed in the presence of others such as friends and family members.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation

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31a) It is acceptable to breastfeed in front of my partner.	31b) It is acceptable to breastfeed in front of my partner.	Extremely Moderate Not at all 1 2 3 4 5 6 7 A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation
32a) It is acceptable to breastfeed in front of health care professional.	32b) It is acceptable to breastfeed in front of healthcare workers.	Extremely Moderate Not at all 1 2 3 4 5 6 7 A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation
33a) It is acceptable to breastfeed in public such as restaurant and work place	33b) It is acceptable to breastfeed in public places such as restaurant and work place.	Extremely Moderate Not at all 1 2 3 4 5 6 7 A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation
34a) The breast is a sex symbol in this community.	34b) Breasts are a sex symbol in our society.	Extremely Moderate Not at all 1 2 3 4 5 6 7 A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation
35a) Overcrowded living environment in my community is a barrier to breastfeeding.	35b) Living in a crowded environment is an obstacle to breastfeeding	Extremely Moderate Not at all 1 2 3 4 5 6 7 A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation
36a) No privacy for breastfeeding at my home is a barrier to breastfeeding.	36b)I do not have a private place in my home to breastfeed that is an obstacle to breastfeeding.	Extremely Moderate Not at all 1 2 3 4 5 6 7 A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation
37a) No privacy for breastfeeding at public places is a barrier to breastfeeding.	37b) There is no private place set aside to breastfeed in public places that is an obstacle to breastfeeding.	Extremely Moderate Not at all 1 2 3 4 5 6 7 A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all

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		1 2 3 4 5 6 7
38a) The facilities at work or school do not support breastfeeding practices.	38b) At work sites or in schools there are no convenient places to breastfeed.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
39a) This community does not support breastfeeding practices.	39b) This population/community does not encourage/support breastfeeding.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
Parenting senses of Competence (PSOC) 17 items		
For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely corresponds to your opinion.	For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely indicate to your opinion.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1-Strongly disagree, 6 strongly agree	1-Strongly disagree, 6 strongly agree	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1a) The problems of taking care of a child are easy to solve once you know how your actions affect your child.	1b) It is easy to solve problems of taking care the child if you understand how your actions affect the child .	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
2a) Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age.	2b) Even though I feel being a parent is rewarding, I still get agitated while my child is in this stage of development.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
3a) I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot.	3b) I go to bed in the same as the past I still feel that I have not slept enough.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7

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		B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
4a) I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	4b) I don't know why sometimes when I feel like I should be in control, I feel like I am being controlled.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
5a) My mother/father was better prepared to be a good mother/father than I am.	5b) My parents were better prepared than I were for being a good parent.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
6a) I would make a fine model for a new mother to follow in order to learn what she/he would need to know in order to be a good parent.	6b) I think I can make a good model for new mothers to learn about what they need to know to become good parents.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
7a) Being a parent is manageable, and any problems are easily solved	7b) Being a parent is manageable, then problems will be easily solved.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
8a) A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.	8b) The trouble with parenting is that you don't know whether what you are doing is good or bad.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
9a) Sometimes I feel like I'm not getting anything done.	9b) Sometimes I feel like I never complete any task that I should do.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
10a) I meet my own personal expectations for expertise in caring for my child.	10b) I meet my personal expectation for expertise in taking care my child.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation

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		Extremely Moderate Not at all 1 2 3 4 5 6 7
11a) If anyone can find the answer to what is troubling my child, I am the one.	11b) If anyone has ever searched for an answer as to what is the troubling my child, I am the one who able to answer.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
12a) My talents and interests are in other areas, not in being a parent.	12b) I have special abilities and interests are in others, not being a parent.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
13a) Considering how long I've been a mother, I feel thoroughly familiar with this role.	13b) When I consider about time period that I have already been a mother, I feel accustomed to my role already.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
14a) If being a mother/father of a child were only more interesting, I would be motivated to do a better job as a parent.	14b) If being a mother/father of child were more interesting, I would be motivated to perform a better job as a parent.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
15a) I honestly believe I have all the skills necessary to be a good mother/father to my child.	15b) I believe that I possess all the necessary skills to be a good parent for my child.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
16a) Being a parent makes me tense and anxious.	16b) I feel stressed and anxious/worried in the role of being a parent.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
17a) Being a parent is manageable, and any problems are easily solved	17b) If parents are well organized, any problems that arise are easily solved.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all

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		1 2 3 4 5 6 7
Vulnerability Baby Scale(VBS) 10 items		
Please answer the following statements as honestly as you can. Circle the answer that best fits your level of agreement.	Please answer the following statements as honestly as you can. Circle the answer that best fits your level of agreement.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
1a) I generally check on baby while he/she is asleep at night	1a) I usually examine my baby while he/she is asleep during the night.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
2a) If baby was awake and playing I would leave them unattended and out of earshot for…	2b) If my baby awakens and is playing, I will leave them not intentionally try hard to listen to him/her for……	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
3a) If a friend came to visit and they had a cold I would…	3b) .If a friend comes to visit who has cold, I will….	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
4a) My baby seems to get stomach (puke) pains or other pains	4b) My baby seems to have a stomachache or some other pains.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
5a) I am concerned that my baby is not as healthy as he/she should be	5b) I worry that my baby is not as healthy as he/she should be.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
6a) In general when I compare my baby's health to that of other children the same age I think he/she is…	6.When I compare my infant health with other infants of the same age, I think that my baby is …	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7

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		B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
7a) I find myself worrying that my baby may become seriously ill.	7b) I worry that my baby might become seriously ill.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
8a) I worry about SIDS(Sudden infant death syndrome)	8b) I worry that my baby will die from SIDS (sudden infant death syndrome)	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
9a) If you left baby with someone else would you make contact with them while you were away?	9b) If you have someone to watch your baby would you find a way to communicate with them?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
10a) In the last 2 weeks I have contacted a health professional after hours or emergency doctors about the baby.	10b).In the previous two weeks, I have consulted a healthcare worker about my baby's health problem after hours or emergency.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
Pictorial Assessment of Temperament (PAT)		
1a) In this booklet are a number of situations that babies often go through.	1b) In this booklet are a number of situations that baby often goes through.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
2a) Different babies react differently to these situations.	2b) Different babies react differently to these situations.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
3a) Here we show cartoon pictures of	3b) Here we show cartoon pictures of	A) Comparability of Language Extremely Moderate Not at all

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three different reactions to each situation.	three different reactions to each situation.	1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
4a) Please think about how *your baby* usually reacts to each of these situations.	4b) Please think about how *your baby* usually reacts to each of these situations.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
5a) Then pick which of the three cartoon	5b) Then pick which of the three cartoon	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
6a) Examples is most like how he or she behaves. Is your baby like: Baby X" or "Baby Y" or "Baby Z" ?	6b) Examples is most like how he or she behaves. Is your baby like: Baby X" or "Baby Y" or "Baby Z" ?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
7a) Circle your answer on each page	7b) Circle your answer on each page	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
8a) Situation 1: The Burning Toast	8b) Situation 1: The Burning Toast	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
9a) You are feeding baby, and after a few minutes and emergency suddenly arise The toast is burning. You have to interrupt baby's feeding.	9b) You are feeding baby, and after a couple minutes and emergency suddenly happen The toast is burning. You have to interrupt baby's feeding.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
10a) How does baby react?	10b) How does baby react?	A) Comparability of Language Extremely Moderate Not at all

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Original version	Back-translated version	Scaling
		1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
11a) At first A bit later	11b) At first A bit later	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
12a) Food's gone	12b) Food is gone	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
13a) Oh well guess I'll just sit here and wait	13b)Oh I guess I'll just sit here and wait	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
14a) Where'd the food go?	14b) Where is the food go?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
15a) I have to wait	15b) I have to wait	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
16a) Hey where's the food?	16b) Hey where is the food?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation

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		Extremely Moderate Not at all 1 2 3 4 5 6 7
17a) I want my food back now	17b) I want my food back now	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
18a) situation2:Waking Up	18b) situation2:Waking Up	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
19a) When baby first wakes up in the morning… How does baby react?	19b) When baby first wakes up in the morning… How does baby react?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
20a) Yea it's morning	20b) Yes it is morning	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
21a) I'm happy today	21b) Iam happy today	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
22a) Oh, it's morning.	22b) Oh, it's morning.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
23a) I wonder if this is going to be a good day?	23b) I wonder that this is going to be a good day?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
24a) Oh no Not another morning!	24b) Oh no Not another morning!	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
25a) I don't want to be awake.	25b) I don't want to wake up.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
26a) Situation 3: The face washing	26b) Situation 3: The face washing	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
27a) When you wash baby's face with a wet washcloth How does baby react?	27b) When you wash baby's face with a wet washcloth How does baby react?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
28a) I like this	28b) I like this	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
29a) This feels ood!	29b) This feels good!	A) Comparability of Language

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Original version	Back-translated version	Scaling
		Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
30a) I'm not sure I like this.	30b) I'm not sure I like this.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
31a) Um I guess this is okey.	31b) Um I guess this is okey.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
32a) Hey! Cut that out	32b) Hey! Cut that out	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
33a) Stop it! Stop it Now	33b) Stop it! Stop it Now	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
34a) Situation 4: I a stranger's arm	34b) Situation 4: I a stranger's arm	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
35a) You give baby to a stranger to hold while you are busy How does baby react?	36b) You give baby to a stranger to hold while you are busy How does baby react?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
37a) I like this person	37b) I like this person	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
38a) This is fun.	38b) This is fun.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
39a) I'm not sure about this person	39b) I am not sure about this person	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
40a) Well I guess she's okey	40b) Well I guess she is okey	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
41a) I don't think I like this.	41b) I don't think I like this.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
		B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
42a) I want my mommy back now	42b) I want my mom back now	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
43a) Situation 5: the manicure	43b) Situation 5: the manicure	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
44a) When you cut baby's nails… How does baby react?	44b) When you cut baby's nails… How does baby react?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
45a) Now what's she doing?	45b) what's she doing now ?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
46a) Hey, this is not so bad	46b) Hey, this is not so bad	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
47a) I'm not so sure I like this.	47b) I am not so sure I like	A) Comparability of Language

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Original version	Back-translated version	Scaling
	this.	Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
48a) Well'', I guess it's okey.	48b) Well'', I guess it is okey.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
49a) Oh No!	49b) Oh No!	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
50a) Stop it now.	50b) Stop it now.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
51a) Situation 6: getting dressed	51b) Situation 6: getting dressed	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
52a) When you put a shirt on over baby's head.. How does baby reaction?	52b) When you put a shirt on over baby's head.. How does baby reaction?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all

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Original version	Back-translated version	Scaling
		1 2 3 4 5 6 7
53a) No problem	53b) No problem	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
54a) This is fun	54b) This is fun	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
55a) I'm not sure I like this.	55b) I am not sure I like this.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
56a) This isn't much fun.	56b) This is not much fun.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
57a) I don't like this. Please hurry up!	57b) I don't like this. Please hurry up!	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
58a) I hate this please stop!!	58b) I hate this please stop!!	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
		B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
59a) Situation 7: the bath	59b) Situation 7: the bath	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
60a) When you give baby a bath, in warm water… How does baby react?	60b) When you give baby a bath, in warm water… How does baby react?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
61a) This is fun	61b) This is fun	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
62a) I love a splash!	62b) I love a splash!	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
63a) A bath?	63b) take A bath?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
64a) I guess this bath is okey.	64b) I guess this bath is okey.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
65a) A bath? I don't think so.	65b) take a bath? I don't think so.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
66a) I want out now!	66b) I want out now!	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
67a) Situation 8: the big bang.	67b) Situation 8: the big bang.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
68a) "Bang"	68b) "Bang"	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
69a) Baby hears a sudden loud noise! How does baby react?	69b) Baby hears a sudden loud noise! How does baby react?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7

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		B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
70a) What was that?	70b) What was that?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
71a) That didn't bother me much.	72b) That didn't bother me much.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
72a) What was that?	72b) What was that?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
73a) I guess that wasn't bad.	73b) I guess that was not bad.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
74a) Oh my gosh! What was that?	74b) Oh What was that?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
75a) That noise scared me half	75b) That noise scared me	A) Comparability of Language

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Original version	Back-translated version	Scaling
to death.	almost to death.	Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
76a) Situation 9: alone at last	76b) Situation 9: alone at last	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6
77a) When you put baby down for a nap while he or she is still awake and you leave baby alone in the crib.. How does baby react?	77b) When you put baby down for a sleep while he or she is still awake and you leave baby alone in the crib.. How does baby react?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
78a) This is fine.	78b) This is fine.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
79a) I'll just look around.	79b) Iwill just look around.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
80a) Where's mommy?	80b) Where is my mom?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
81a) I guess I'll just look around.	81b) I guess I will just look around.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all

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Original version	Back-translated version	Scaling
		1 2 3 4 5 6 7
82a) I want mommy!	82b) I want my mom	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
83a) I'm not going to settle down.	83b) I am not going to stop.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
84a) Situation10: the needle	84b) Situation10: the needle	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
85a) The doctor gives baby an injection. How does baby react?	85b) The doctor gives baby an injection. How does baby react?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
86a) Oh Oh! What's this?	86b) Oh Oh! What's this?	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
87a) Whew! That's over.	87b) Whew! That's over.	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Original version	Back-translated version	Scaling
88a) Ouch!	88b) Ouch	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
89a) I didn't like that!	89b) I didn't like that!	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
90a) Oww!	90b) Ouch	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7
91a) That was awful! Don't ever do that again!!	91b) That was awful! Don't ever do that again!!	A) Comparability of Language Extremely Moderate Not at all 1 2 3 4 5 6 7 B) Similarity of Interpretation Extremely Moderate Not at all 1 2 3 4 5 6 7

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Appendix C: Resume

Supannee Kanhadilok, PhD, RN

Contact Address:

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Phone: +066(036) 266170

Education:

1993 BSN: Boromrajonni Sumpasittipasong Nursing College, Ubolrajchatani, Thailand
1998 MSN: Khonkean University, Thailand
2013 PhD: Virginia Commonwealth University, Richmond, VA, USA

Work experience:

1993- 1998	Junior instructor Maternal and Child department	Boromrajonnani Phaputtabat Nursing College, Saraburi, Thailand
1998-2004	Department Chair, Maternal and Child Nursing	Boromrajonnani Phaputtabath Nursing College, Saraburi, Thailand
2005-2008	Department Chair of Educational Quality Assurance	Boromrajonnani Phaputtabath Nursing College, Saraburi, Thailand
2010- 2012	Research Assistant	Center of Excellence for Biobehavioral Approaches to Symptom Management, School of Nursing, VCU

Honors and Awards:

2009- March 2014: Full Scholarship from the Royal Thai Government for PhD study in Nursing
1995-1998: Scholarship awarded by the Royal Thai Government for full-time study for a Master's of Science in Nursing degree
1988-1992: Full Scholarship earned from the Royal Thai Government for study for a Bachelor of Science in Nursing degree

Presentations:

Sosom, B., Kanhadilok, S. (2000). Retrospective Study: Relationships between self-care behavior in pregnancy women and premature laboring, poster presentation, Thailand Nursing Research Conference.

Kanhadilok, S., Poonsumreung, T., Joomtong, S. (2003). The Effect of using participatory learning on critical thinking in 3rd year student in Maternal and

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Child Nursing course, Podium presentation in Teaching and learning International Conference 2003, Thailand.

Kanhadilok, S., Sosom, B., Jinanurak, S. (2006). Effect of breast feeding promoting program on breast feeding self-efficacy and breast feeding behavior in pregnant women in Thailand. Podium persenation, 1st Breast Feeding National Conference.

Kanhadilok, S., & Pickler, R.P. (2011). Measuring maternal attachment in adolescent mothers, poster presentation, Southern Nursing Research Society Annual Conference, Jacksonville, Florida.

Kanhadilok, S. & McGrath, J.M. (2012). Factors that influence early breastfeeding experiences in adolescent mothers, Poster presentation, Southern Nursing research Society Annual Conference, New Orleans, Louisiana.

Kanhadilok, S. & McGrath, J.M. (2012). Predicting factor of breastfeeding duration in Thai adolescent mothers, poster presentation, The Council for the Advancement of Nursing Science, Washington, DC.

Kanhadilok, S. & Brown, L.F. (2013). Early preterm infant feeding behaviors in adolescent and adult mothers, Top student poster presentation, Southern Nursing Research Society Annual Conference, Little Rock, Arkansas.

Publications:

Kanhadilok, S. (2013). Breastfeeding Influencing Factors in Thai Adolescent Mothers. PhD Dissertation. Virginia Commonwealth University, Richmond, VA USA

Kanhadilok, S., Kiewying, M., Soomlek, S., & Phanphruk, W. (1999). The relationship between perceived self-efficacy and health behaviors in pregnancy of adolescent mothers. Master's Thesis. Khonkean University, Thailand

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