Self-efficacy Promoting Interventions for Breastfeeding Outcomes: An Integrative Review of Research Conducted in Thailand

Tassanee Prasopkittikun, Parnnarat Sangperm*

Abstract: Low breastfeeding rates have continued to generate public health concerns in Thailand, and a number of nursing intervention programs have been implemented among Thai mothers to enhance the breastfeeding outcomes like practice and duration. Enhancement of self-efficacy in breastfeeding is a substantial method used in the interventions because of the evidence supporting the influence of self-efficacy on breastfeeding behavior and duration. However, the state of evidence relevant to the effects of self-efficacy promoting interventions on breastfeeding outcomes has not yet been examined. The purpose of this integrative review was to determine the methodological and substantive features of the studies of self-efficacy promoting interventions for breastfeeding outcomes published between 2005 and 2015, and listed on Thai databases and CINAHL. Methodological quality was assessed using the Scottish Intercollegiate Guideline Network Methodological Checklist.

The review included 10 eligible studies with acceptable quality. No study with randomized control trial design was found. The reviewed outcomes of the interventions including breastfeeding self-efficacy were found in 7 studies, breastfeeding behavior in 7 studies, and number of mothers giving exclusive breastfeeding in 4 studies. The review indicated the positive effects of self-efficacy promoting interventions on the breastfeeding outcomes. However, clinical heterogeneity was found from diverse sample characteristics, different usual nursing practice across the hospitals, varied dose of the self-efficacy promoting interventions given, and different time of outcomes measurement. Due to insufficient rigorous designs and clinical heterogeneity of the studies reviewed, well-designed clinical trials are needed.

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Introduction

It has been well recognized that breastfeeding offers many positive benefits to both mothers and babies.[1] Economic benefits are also evident through a cost analysis showing that the United States would save $13 billion per year if 90% of mothers breastfeed

Correspondence to: Tassanee Prasopkittikun*, RN, PhD. Associate Professor, Department of Pediatric Nursing, Faculty of Nursing, Mahidol University, Thailand **E-mail:** tassanee.pra@mahidol.act.th
Parnnarat Sangperm, RN, PhD. Assistant Professor, Department of Pediatric Nursing, Faculty of Nursing, Mahidol University, Thailand **E-mail:** parnnarat.san@mahidol.ac.th

their infants exclusively for 6 months.[2] As the best food source for infants, exclusive breastfeeding is highly recommended for the first six months of life, followed by nutritionally age-appropriate food together with continued breastfeeding for up to two years or beyond.[3] A global effort to implement practices that protect, promote and support breastfeeding was launched by the World Health Organization (WHO) and UNICEF through the Baby Friendly Hospital Initiative (BFHI) in 1991;[4] thereafter, a number of countries have taken essential actions for improving breastfeeding practices in maternity facilities. Thailand is one of 12 developing countries to take the lead in establishing the baby-friendly practice in as many hospitals as possible.[5] Even though Thai Royal Government has launched many breastfeeding promotion projects, the exclusive breastfeeding rate has still been very low. A report by the National Statistical Organization data for 2012 indicates that only 12.3% exclusive breastfeeding for six months was found among Thai mothers.[6] A variety of breastfeeding promotion interventions based on certain theoretical frameworks and principles in nursing and public health has been implemented to achieve the optimal breastfeeding outcomes. However, the effects of these interventions and gaps in the Thai studies have never been reviewed.

One well-known theoretically-based nursing intervention used in Thailand for breastfeeding promotion is to promote breastfeeding self-efficacy among the mothers. Breastfeeding self-efficacy refers to a mother's belief/confidence in her ability to breastfeed.[7] Theoretically, self-efficacy, first proposed by Bandura[8], provides the foundation for personal motivation and accomplishment. If an individual believes that her behaviors can produce the desirable outcomes, she will keep at it in spite of difficulties that she may face, and vice versa. According to self-efficacy theory, people form their self-efficacy beliefs by interpreting information from four sources: mastery experiences, or previous successful performance in a given task strengthening one's self-efficacy, which is the most influential way of developing a strong sense of efficacy; vicarious experience, or observational learning from the success of live or symbolic model; verbal persuasion, or appraisals of one's ability to accomplish a task from significant others; and physiological and affective states, or maintaining one's optimal level of physiological intensity and positive emotions to successfully execute a task.[9] Research has supported that self-efficacy is one of the strong predictors for exclusive breastfeeding. For example, a longitudinal study of Australian mothers revealed that breastfeeding self-efficacy and confidence to maintain exclusive breastfeeding were significantly predictors of exclusive breastfeeding duration at 6 months postpartum ($\beta = 24$, $p < .001$; $\beta = .44$, $p < .001$, consecutively).[10] Additionally, a study of Chinese mothers in Shanghai, China, indicated that breastfeeding control, or a mother's belief in her ability to control exclusive breastfeeding, was one of the significant predictors of exclusive breastfeeding at 4 months; that is, there would be 10% increase in the odds of giving 4-month exclusive breastfeeding for a one-unit increase in breastfeeding control scores.[11] It is generally believed that once a mother develops breastfeeding self-efficacy through these sources, despite any difficulties, she is more likely to breastfeed her baby with great resolution and positive reactions. Thus, by enhancing the mothers' self-efficacy in breastfeeding, the rates, duration, and behavior of breastfeeding would increase; and previous studies in both Asian and Western countries confirm this belief.[12-14]

During the past decade, research has been conducted in Thailand to examine the effects of a breastfeeding self-efficacy promoting intervention; and positive breastfeeding outcomes including an increase of mothers giving exclusive breastfeeding, proper breastfeeding behavior, and high breastfeeding self-efficacy are promising.[e.g.,15-17] However, the methodological and substantive features of these existing studies have never been reviewed to identify gaps in the studies which, in turn, will affect the effectiveness of the interventions. Thus, a comprehensive review of the

research conducted in Thailand is needed. Even though there is no previous research specifically supporting the cultural influence on mothers' self-efficacy in breastfeeding, empirical research in other fields does confirm that self-efficacy beliefs vary across cultures due to the differences in expectations and cultural dimensions (in terms of separateness and connectedness of individuals and groups) in the settings.[18, 19] As cultural context can affect experiences and perceptions of self-efficacy which influence one's health behavior,[20] only the interventions implemented in Thai culture were emphasized in this review.

Objectives

An extensive review of the current research conducted in Thailand during the last decade (2005-2015) was performed with the purpose of describing and analyzing the state of evidence relevant to self-efficacy promoting interventions for breastfeeding outcomes. The following review question was determined.

What are the methodological and substantive features of the research relevant to self-efficacy promoting interventions for breastfeeding outcomes including number of mothers giving exclusive breastfeeding, breastfeeding self-efficacy, and breastfeeding behavior/practice?

Methods

Inclusion criteria for considering studies for the review

Types of studies - The inclusion criteria for the review were studies conducted in Thailand with either randomized controlled trials (RCTs) or quasi-experimental with control group design that explored the effects of self-efficacy promoting interventions on breastfeeding outcomes. Both published and unpublished studies written in Thai or English during 2005-2015 were included. Studies reported as abstracts were excluded.

Types of participants - Thai pregnant women and/or mothers of either premature or full-term infants were the target participants of the studies.

Types of interventions - Interventions of interest were any aiming to promote mothers' self-efficacy in breastfeeding. The activities in the interventions had to be mainly based on sources of self-efficacy proposed by Bandura.[9] The interventions given during either antenatal or postnatal period, or both would be included for the review. The interventions of interest were compared to the usual nursing care (or breastfeeding education and support routinely given to mothers in a setting) given to a control or comparison group.

Types of outcomes measures - The outcomes of interest in this review included the number of mothers giving exclusive breastfeeding at a specified period, breastfeeding self-efficacy and breastfeeding behavior/practice.

Search strategy for identification of studies

A search of the studies was undertaken using the following databases: Thai Nursing Research Database (including published nursing research during 1988-2005); Thai Library Integrated System, or ThaiLIS (including full-text theses and research reports from universities over the country); Faculty of Nursing Mahidol University (FON-MU) Nursing Research Database (including published nursing research, during 1988-2013); Thai Journal Online (including Thai academic journals from all fields); and CINAHL Complete. Reference lists of all relevant review articles and all studies identified for inclusion in the review were screened to identify any additional studies. Initial search descriptors were the following: breastfeeding, breastfeeding behavior, breastfeeding duration, breastfeeding self-efficacy, breastfeeding skill, breastfeeding intervention, exclusive breastfeeding, mothers, self-efficacy, and Thailand.

All studies identified during the databases search were assessed for relevance to the review based on the information provided in the titles and abstracts. For all articles that appeared to meet the inclusion criteria, a full report of the article was retrieved for further evaluation. The applicability of these full-text articles to the inclusion criteria was assessed in order to determine the relevance to the review objectives.

Quality appraisal

Methodological quality was assessed using the SIGN Methodological Checklist 2: Controlled Trials (version 2.0) developed by the Scottish Intercollegiate Guideline Network.[21] For the first section of the checklist, ten items assessed how well a study addressed each issue of internal validity; for example, the clarity of the study's question, random assignment to the study groups, concealment of the group allocation, blindness about treatment allocation, similarity of the study groups at the start of the trial, validity and reliability of the outcome measurement, and intention to treat analysis. For the second section, based on the responses on these items, the overall assessment of each study was rated as high quality (++), acceptable (+), or low quality (0). Two researchers, who had been trained to conduct a Cochrane systematic review and the essential skills for evidence-based practice, independently assessed all the eligible studies, and any disagreement between them was resolved by consensus.

Data extraction

A form for data extraction was designed. Data were extracted from the included studies by the two independent researchers. Disagreements were resolved through discussion. For the intervention part of each study, the text was read several times with the intention of finding common patterns and further relevant content in terms of similarities and differences. During this process, authors from the three original studies were contacted to obtain additional information and clarify some unclear information.

Results

Search outcomes. Overall, 120 articles were reviewed during the searches. After the duplicated ones were removed, the titles and abstracts of 105 articles were screened. A preliminary inspection on basis of title and abstract excluded 46 studies that were not intervention studies. Out of 59 full-text articles, 10 studies were finally considered relevant. All ten studies were master's theses, 6 of which were published in national level journals while the rest were unpublished.

A flow diagram demonstrating the search was illustrated in Figure 1. Note that among the 48 intervention studies that were excluded from the review, most embraced the principles of knowledge and techniques of breastfeeding and UNICEF/WHO ten steps to successful breastfeeding as the study theoretical framework.

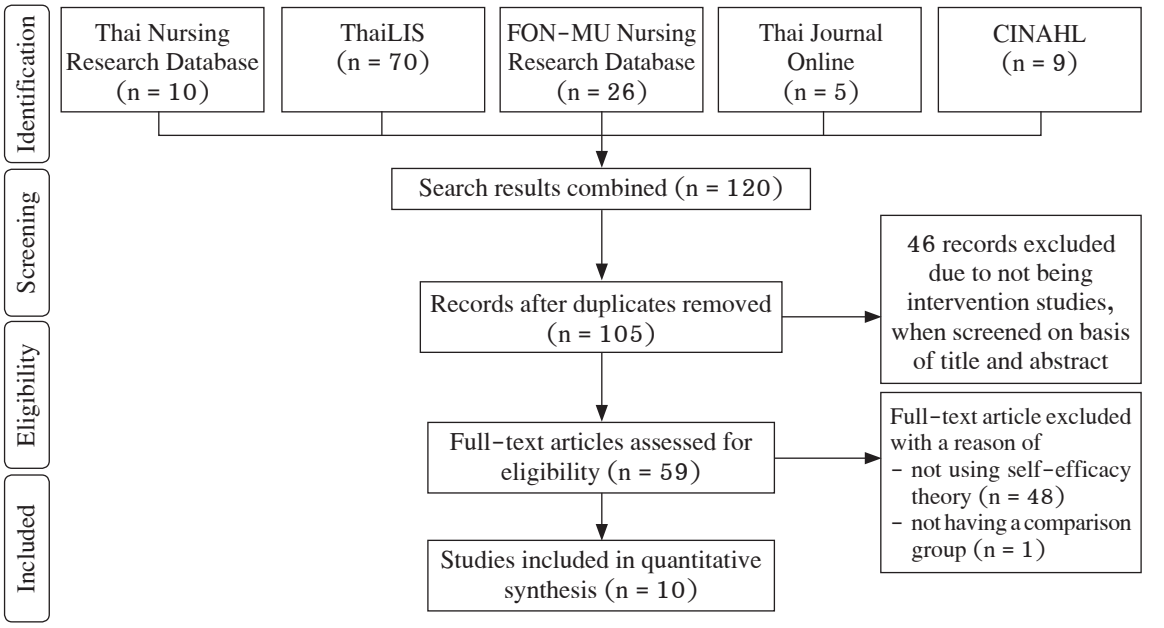

Figure 1. A flow diagram of the study inclusion

Quality of the reviewed studies. All included studies used quasi-experimental design. According to the SIGN Methodological Checklist 2, a non-randomized controlled trial cannot be rated higher than 1+. The quality of all ten studies was rated as 1+, or acceptable. Thus, none of the studies assessed had high quality.

Methodological and substantive characteristics. The methodological characteristics (including design, sampling method, sample size, quality of measures, and forms of data analysis) and substantive characteristics (including characteristics of the subjects used, nature of the intervention provided and outcomes)[22] of the included studies were reviewed and summarized (as seen in **Table 1** and **Table 2**).

Table 1 Characteristics of the Included Studies

PI and Year	Population, Eligibility, Sample size	Tools Measuring Outcomes	Outcomes & Measuring time
Poungkaew[25] 2005	• First-time working mothers; normal delivery with a normal and healthy full-term infant • Matched pair with age and education level • N = 60 (E 30, C 30)	• Perceived Self-efficacy in Breastfeeding Questionnaire; Cronbach's alpha = .93 • Breastfeeding Behavior Assessment Form; percent agreement = 98%	[a] BFSE; 2 days postpartum (baseline), 4 and 8 weeks [a] BFB; 2 days postpartum (baseline), 3 days postpartum [a] EBFD; 8 weeks [a] Intention for EBF [b] Number of mothers EBF; 8 weeks
Thussanasupap[26] 2005	• First-time mothers; unplanned ceasarean delivery with a normal and healthy full-term infant • N = 60 (E 30, C 30)	• The Breastfeeding Self-efficacy Scale-Short Form[29]; Cronbach's alpha = .84 • Visual Analogue Nipple Pain Scale; • The Assessment Form for Nipple Skin Changes; inter-rater reliability = .86 • Visual Analogue Incision Pain Scale	[a] Nipple pain [a] Nipple skin change [a] Incision pain All above measured at 1 day (baseline), 2 days and 3 days postpartum [a] BFSE; 1 day (baseline), 3 days postpartum
Rungreang[27] 2007	• First-time mothers; normal delivery with a normal and healthy full-term infant; planning to resume employment • Matched pair with age and income • N = 40 (E 20, C 20)	• Breastfeeding Behavior of Working Mothers Questionnaire; Cronbach's alpha = .84	[a] BFB; 4 weeks
Pomjumpa[31] 2008	• First-time adolescent mothers; normal delivery with a normal and healthy full-term infant • N = 60 (E 30, C 30)	• Perceived Self-efficacy in Breastfeeding Questionnaire; Cronbach's alpha = .94 • Breastfeeding Behavior Assessment Form; percent agreement = 98%	[a] BFSE; gestational age 36-38 weeks (baseline), 2 days postpartum, 6 weeks [a] BFB; 2 days postpartum, 6 weeks [a] Correlation between BFSE and BFB
Teunjarern[32] 2008	• First-time mothers and fathers; normal delivery with a normal and healthy full-term infant • Matched pair with high or moderate marital relationship score • N = 40 (E 20, C 20)	• Breastfeeding Practice Questionnaire; Cronbach's alpha = .92	[a] BFB; 6 weeks
Sanghuaiprai[33] 2009	• First-time mothers; normal delivery with a normal and healthy full-term infant • N = 64 (E 32, C 32)	• Perceived Self-efficacy in Breastfeeding Questionnaire; Cronbach's alpha = .90 • Outcome Expectation on Breastfeeding Questionnaire; Cronbach's alpha = .91 • Breastfeeding Behavior Questionnaire; Cronbach's alpha = .84	[a] BFSE [a] OEBF [a] BFB All above measured at 1 days postpartum (baseline), 3 months. [b] Number of mothers EBF; 6 months

Table 1 Characteristics of the Included Studies (continued)

PI and Year	Population, Eligibility, Sample size	Tools Measuring Outcomes	Outcomes & Measuring time
Chaibarn[16] 2010	• First-time mothers and fathers/ grandparents; attending antenatal clinic and having a normal healthy baby • Matched pair with poor or moderate breastfeeding self-efficacy score, age, and education level • N = 52 (E 26, C 26)	• Exclusive Breastfeeding Behavior Assessment Form; percent agreement = 100% • Breastfeeding Self-efficacy Scale (BSES)[30]; Cronbach's alpha = .94	[a] EBFB; 6 weeks [b] BFSE; 6 weeks [b] Number of mothers EBF; 6 weeks
Yuangthong[28] 2012	• First-time mothers and husbands/ grandmothers; normal delivery with a normal and healthy infant • N = 30 (E 30, C 30)	• Breastfeeding Behavior Questionnaire; Cronbach's alpha = .72	[a] BFB; 4 weeks [a] EBFD; 4 weeks
Boonchalerm[17] 2012	• 36 dyads of mothers & preterm infants aged 30-32 week post conceptual age • N = 36 (E 15, C 21)	• The Mothers' Breastfeeding Self-efficacy Questionnaire; Cronbach's alpha = .95 • The Preterm Infant's Sucking Quality Scale; percent agreement = 94%	[a] BFSE; 1 day postpartum (baseline), the first day of BF [a] Sucking quality; the first and the third days of BF
Budsaengdee[15] 2013	• Mothers with cesarean operation; having a normal and healthy baby • Matched pair with poor or moderate breastfeeding self-efficacy score, age, education level, and parity • N = 52 (E 26, C 26)	• Breastfeeding Self-efficacy Questionnaire (BSES)[30]; Cronbach's alpha = .90	[a] Number of mothers EBF; 6 weeks [b] BFSE; 1 day postpartum (baseline), 4 days postpartum

Note: [a] Outcome reported in the study reviewed, [b] Data obtained from the study reviewed/author, BF = Breastfeeding, BFSE = Breastfeeding self-efficacy, BFB = Breastfeeding behavior, C = Control group, E = experimental group, EBF = Exclusive breastfeeding, EBFD = Exclusive breastfeeding duration, EBFS = Exclusive breastfeeding support, OEBF = Outcome expectation for breastfeeding

Table 2 Characteristics of Breastfeeding Self-efficacy Promoting Intervention

PI and Year	Framework	Activities & Duration	Results which are relevant for the review
Poungkaew[25] 2005	Self-efficacy (Bandura, 1997)	• Starting on 1-2 days before discharge; 4 times within 6 weeks duration • Information about breastfeeding given in group through didactic instruction, group discussion, demonstration, and handbook • Self-efficacy promotion: practice, positive appraisal highlighting personal capabilities, sharing and solving problems with other mothers in group (no use of observational learning as a source of self-efficacy) • Phone visit	• Average BFSE scores in the experimental group were significantly higher than that in the control group at 4 weeks (E: 81.49 ± 15.21 vs C: 67.97 ± 9.40) and 8 weeks (E: 80.62 ± 9.08 vs C: 67.23 ± 10.73). • Average BFB scores at 3 days postpartum in the experimental group were significantly higher than that in the control group (E: 25.86 ± 3.15 vs C: 15.90 ± 3.83). • At 8 weeks, 22 mothers in the experimental group continued EBF while none was found in the control group.
Thussanasupap[26] 2006	Self-efficacy (Bandura, 1997)	• Starting on D1 post-cesarean delivery; 3 times within 3 days • Information about breastfeeding and pain reduction given individually through didactic instruction, demonstration, VCD, handbook	• During the first week postpartum, mothers participating in the program had significantly higher BFSE scores compared with mothers who did not (E: 64.87 ± 4.95 vs C: 52.47 ± 9.38).

Table 2 Characteristics of Breastfeeding Self-efficacy Promoting Intervention (continued)

PI and Year	Framework	Activities & Duration	Results which are relevant for the review
		• Self-efficacy promotion: practice, positive appraisal highlighting personal capabilities, sharing and solving problems with researcher, observational learning from model through VCD	
Rungreang[27] 2007	Self-efficacy (Bandura, 1997)	• Starting on D1 postpartum; 6 times within 4 weeks duration • Individual and group education about breastfeeding through didactic instruction, flip chart, handbook, and demonstration • Self-efficacy promotion: practice, discuss with live models, positive appraisal highlighting • personal capabilities, sharing and solving problems with other mothers in group, observational learning from the researcher and friends • Phone & home visits	• Average BFB scores at 4 weeks in the experimental group were significantly higher than that in the control group (E: 54 ± 5.29 vs C: 43 ± 7.15).
Pomjumpa[31] 2008	Self-efficacy (Bandura, 1997)	• Starting at ANC when GA 36-38 WK; 4 times within 6 weeks duration • Information about BF given individually through didactic instruction, flip chart, and cartoon handbook • Self-efficacy promotion: practice, positive appraisal highlighting personal capabilities, sharing and solving problems with researcher, observational learning from model through cartoon book • Phone visits	• Average BFSE scores in the experimental group were significantly higher than that in the control group at Day2 postpartum (E: 94.97 ± 3.02 vs C: 75.88 ± 10.17) and 6 weeks (E: 97.05 ± 1.39 vs C: 76.95 ± 6.56). • Average BFB scores in the experimental group were significantly higher than that in the control group at 3-6 hours postpartum (E: 41.43 ± 2.41 vs C: 27.03 ± 4.08), Day2 postpartum (E: 55.03 ± 1.35 vs C: 48.43 ± 4.10), and 6 weeks (E: 56.00 ± 1.31 vs C: 52.46 ± 1.77), respectively.
Teunjarern[32] 2008	Self-efficacy (Bandura, 1997) Social support (House, 1981)	• Starting on D1 postpartum; 5 times within 4 weeks duration • Information about roles of husbands for BF support given to mothers and fathers in groups through verbal instruction and handbook • Information about BF given to mothers in group through didactic instruction, VCD, and handbook • Self-efficacy promotion: practice, positive appraisal highlighting personal capabilities, sharing and solving problems with researcher, observational learning from model through VCD • Phone & home visits	• Average BFB scores at 6 weeks in the experimental group were significantly higher than that in the control group (E: 76.85 ± 9.02 vs C: 69.25 ± 5.01).
Sanghuaiprai[33] 2009	Self-efficacy (Bandura, 1997)	• Starting one day before discharge; 4 times within 3 months duration • Information about BF given in group through didactic instruction, flip chart, VCD, handbook, and group discussion	• Average BFSE scores at 3 months in the experimental group were significantly higher than that in the control group (E: 4.81± 0.23 vs C: 3.05 ± 0.80).

Table 2 Characteristics of Breastfeeding Self-efficacy Promoting Intervention (continued)

PI and Year	Framework	Activities & Duration	Results which are relevant for the review
		• Self-efficacy promotion: practice, positive appraisal highlighting personal capabilities, sharing and solving problems with other mothers in group and the researcher, observational learning by talking about known mothers with successful breastfeeding • Home visits	• Average BFB scores at 3 months in the experimental group were significantly higher than that in the control group (E: 4.78± 0.17 vs C: 3.13 ± 0.50). • At 6 months, 22 mothers in the experimental group continued EBF while 4 were found in the control group.
Chaibarn[16] 2010	Self-efficacy (Bandura, 1997) Social Support (House, 1981)	• Starting on gestational age 36 weeks at ANC; 6 times within about 9 weeks duration • Information about BF given to mothers and fathers/grandparents in group through didactic instruction, VCD, and handbook • Information about roles of family for BF support given to mothers and fathers/ grandparents in group through verbal instruction and handbook • Self-efficacy promotion: practice, positive appraisal highlighting personal capabilities, group discussion, sharing and solving problems with others in group, observational learning from a symbolic model through VCD • Phone visits	• Average BFSE scores at 6 weeks in the experimental group were significantly higher than that in the control group (E: 152.35 ± 10.11 vs C: 136.92 ± 10.56). • Average EBFB scores at 6 weeks in the experimental group were significantly higher than that in the control group (E: 21.12 ± 1.96 vs C: 13.69 ± 2.39). • At 6 weeks, 22 mothers in the experimental group continued EBF while 12 was found in the control group.
Yuangthong[28] 2012	Self-efficacy (Bandura, 1997) Mind training Family participation	• Starting on D1 postpartum; 4 times within 2 weeks duration • Information about BF given to mothers and fathers/grandmothers in group through group discussion and demonstration • Information about roles of family to promote BF given to mothers and fathers/grandmothers through group discussion • Self-efficacy promotion: practice, positive appraisal highlighting personal capabilities, observational learning by talking about known mothers with successful breastfeeding • Mind training • Phone visits	• Average BFB scores at 4 weeks in the experimental group were not statistically different from that in the control group (E: 15.76 ± 1.81 vs C: 14.73 ± 2.91).
Boonchalerm[17] 2012	Self-efficacy (Bandura, 1997)	• Starting on D1 post normal delivery or D3 post-cesarean section; 3 times within about 3 weeks duration for mothers • Information about BF given individually through didactic instruction, flip chart, cartoon book, VCD, and demonstration • Self-efficacy promotion: practice, positive appraisal highlighting personal capabilities, sharing and solving problems with researcher (no use of observational learning as a source of self-efficacy)	• Average BFSE scores after giving the first BF in the experimental group were significantly higher than that in the control group (E: 86.79 ± 3.72 vs C: 75.85 ± 7.9).

Table 2 Characteristics of Breastfeeding Self-efficacy Promoting Intervention (continued)

PI and Year	Framework	Activities & Duration	Results which are relevant for the review
		• Oral massage given to premature infants (when reaching to 32 week post conceptual age) for 7 consecutive days	
Budsaengdee[15] 2013	Self-efficacy (Bandura, 1997)	• Starting on D2 postpartum; 7 times within 5 weeks duration • Information about BF given individually through didactic instruction and demonstration • Self-efficacy promotion: practice, positive appraisal highlighting personal capabilities, sharing and solving problems with researcher, observational learning from model through VCD • Phone visits	• Average BFSE scores at Day4 postpartum in the experimental group were significantly higher than that in the control group (E: 53.00 ± 5.82 vs C: 33.77 ± 9.75). • At 6 weeks, 24 mothers in the experimental group continued EBF while 6 was found in the control group.

Note: ANC = Antenatal care clinic, BF = Breastfeeding, BFSE = Breastfeeding self-efficacy, BFB = Breastfeeding behavior, C = Control group, E = experimental group, EBF = Exclusive breastfeeding, EBFB = Exclusive breastfeeding behavior, GA = Gestational age, VCD = Video compact disk

Design and sampling: All of the studies utilized quasi-experimental designs of which 4 studies employed posttest only design, a pretest measure to establish a benchmark was not performed.

Sampling methods and sample size: Convenience sampling with inclusion criteria was used in all included studies. The sample sizes ranged from 36-64; the sample size calculations were found in 6 studies.

Subject characteristics: All 10 studies included data from 524 mothers with age ranged between 14 and 41 years. Two studies also involved husbands (n = 51) and grandparents (n = 25) in the interventions. The majority of the studies (n = 8) targeted first-time mothers. Two studies focused on mothers with cesarean section, two on working mothers, one on mothers with preterm infants, one on adolescent mothers, and the rest on general mothers. Education of the mothers ranged from no schooling to completion of a master degree.

Intervention characteristics: All studies reported the use of self-efficacy theory[9] as a theoretical framework. Two studies also used social support theory [23] in combination with self-efficacy theory. Four studies reported the use of individualized intervention while the remaining were primarily person-focused but arranged some activities in groups. The interventions were firstly implemented during antenatal care period (n = 2), and post-delivery hospitalization (n = 8). Every intervention in the reviewed studies provided information about breastfeeding to mothers and/or family members through various means, for example, didactic instruction, demonstration, handbook, or video compact disc (VCD). All four sources of self-efficacy[9] were used as a guide to develop the intervention activities in seven studies while observational learning was omitted in 3 studies. One study also integrated mind training, the so-called "Jitprapassorn" or "serene mind",[24] into the intervention. Either phone calls (n = 6) or home visits (n = 1) and both in combination (n = 2) were used as channels to provide breastfeeding support for mothers after hospital discharge.

Usual care to promote breastfeeding provided for the control groups in the reviewed studies depended on the types of hospitals: a) hospital accredited with BFHI, a global program of the WHO and UNICEF aimed at improving the care at health facilities that provide maternity services for protecting, promoting and supporting breastfeeding; or b) hospital not accredited with BFHI. The accredited hospitals had to achieve full implementation of the suggested actions and the ten steps to successful breastfeeding.

Four study hospitals in the current review[25-28] were accredited and provided similar routine practices for breastfeeding promotion. At an antenatal care unit, breasts and nipples of a pregnant women were assessed; and early correction would be advised if such abnormality as short, flat, or inverted nipples was found. Breastfeeding information was also given through a mothers' class with or without VDO presentation. During delivery period the babies were allowed to start suckling within 30 minutes after birth or as soon as possible unless there was a contradiction for breastfeeding. At a postpartum unit, mothers were taught how to breastfeed their babies effectively with close supervision; the techniques of breastmilk expression and storage were also informed via either VDO presentation or demonstration before hospital discharge. For the non-accredited hospitals (found in 6 out of 10 studies), breastfeeding information focusing its benefits towards mothers and babies was given once during antenatal period. Breastfeeding techniques and other related information were taught to mothers at a postpartum unit; however, the content given was not consistent due to lack of verified teaching guideline and individual differences of nursses in educating mothers.

Measurement: Self-administered and observational questionnaires were used for measuring the breastfeeding outcomes. Almost all of the measures for breastfeeding outcomes were developed by authors; only 2 measures of breastfeeding self-efficacy were translated versions from the original scales developed by Dennis[29] and her colleague[30]. Internal consistency reliability using Cronbach's alpha ranged from .84 - .95 for breastfeeding self-efficacy measures, and .72 - .92 for breastfeeding behavior measures. Inter-rater reliability using percentage of agreement for observational measures of breastfeeding behavior ranged between 98% - 100%.

Outcome characteristics: The reviewed outcomes were defined similarly across the included studies (see **Table 3**). The findings from all studies indicated statistically significant increases ($p < .05$) in the reviewed outcomes; that is, breastfeeding self-efficacy ($n = 7$), breastfeeding behavior ($n = 7$), and number of mothers giving exclusive breastfeeding at a specified period ($n = 4$). Others outcomes reported in the studies, but not summarized in this review, included nipple pain, nipple skin change, incision pain, exclusive breastfeeding duration, and sucking quality. Timing for measuring the reviewed outcomes was varied among the included studies. For example, the specified time point for measuring the number of mothers giving exclusive breastfeeding ranged from 4 to 8 weeks upon delivery.

Table 3 Definitions of the Outcomes Reviewed.

Outcome Variable	Definition
Exclusive breastfeeding (EBF)	An infant receives only breast milk; liquids, water, and solids are not allowed – except for oral rehydration solution, or drops/syrups of vitamins, minerals or medicines.
Breastfeeding self-efficacy (BFSE)	A mother's belief in her ability to breastfeed her infant.
Breastfeeding behavior (BSB)	A mother's performance of breastfeeding tasks in terms of breastfeeding techniques, problem solving, hand expression of breast milk, breast milk storage and handling, and cup feeding.

Discussion

Descriptions of the methodological and substantive characteristics of the included studies provide an overall picture of the nature of research conducted in Thailand and relevant to self-efficacy promoting interventions for breastfeeding outcomes. The review revealed that all of the self-efficacy promoting interventions clearly described the intervention procedures which followed strictly to the self-efficacy

theory;[9] the similarities of the procedures in each reviewed study were noted. This can be regarded as a strength in terms of comprehensive understantding of how this theory guides development, implementation, and evaluation of the interventions for breastfeeding outcomes. However, the effectiveness of the self-efficacy promoting interventions may be inconclusive due to certain methodological issues found.

Design of the studies. The research method using RCT has become the most rigorous way for assessing the effectiveness of any specified internvention for evidence-based health care. However, from the literature review, RCT research evaluating the effectiveness of the breastfeeding self-efficacy promoting intervention is not available. Thus, a calculation of the overall effects of the interventions could not have been done. Consistent with a previous systematic review of antenatal breastfeeding education for increasing breastfeeding duration,[34] recommendations for any specific breastfeeding education intervention could not be provided due to unavailability of RCTs studies with adequate power to evaluate the effectiveness of the interventions on breastfeeding outcomes. Note that all included studies in the current review are master theses which may be a reason why RCT design is hardly found among them. A previous study analyzing master theses in pediatric nursing at one institute reveals that 92% of the theses used quasi-experimental design to determine the effects of the study interventions while 8% using experimental design.[35] The suggestion from the previous study could be applied in this review as well, that is, conducting an experimental study in clinical nursing context is challenging but highly recommended for prospective graduate research in this area.

Diverse sample characteristics. The target population for each of the included studies differed in terms of maternal age (i.e., adolescent to adult mothers), prior experience of breastfeeding (i.e., first-time to multiparous mothers), types of delivery (i.e., vaginal birth to cesarean operation), postconceptional age (i.e., premature to full-term infants). To illustrate, unique characteristics of adolescent mothers may affect their decision to initiate and continue breastfeeding.[36, 37] Thus, information and support provided in the breastfeeding self-efficacy promoting interventions targeting on adolescent mothers was uniquely designed. Differences across study samples and participant characteristics with the small number of studies reviewed could have contributed to bias and limit the possiblities for generalizing the study results and combining the intervention effects.

Usual nursing care provided. The control conditions were described as receiving standard or usual care; however, the usual care procedures were different among the studies. It should also be noted that 4 out of 10 study hospitals were accredited as baby friendly hospitals (BFHs) in which additional resources for protecting, promoting and supporting breastfeeding were provided as part of the usual care. A previous study in Japan revealed that breastfeeding self-efficacy interventions implemented in BFHs yielded more postitive effects, compared to that in non-BFHs[12]. Another study in Pakistan also indicated that breastfeeding practices of mothers receiving counseling from BFHs much increased up to 98.97% compared to 30% in the non-BFHs[38]. Such findings implied that better usual maternity care beforehand was of importance. Thus, differences in the usual nursing care provided in each study hospital possibly brought about the issue of clinical heterogeneity among the studies.

Dose of the interventions given. Dose of nursing intervention is an important issue that should be emphasized in research on the effectiveness of nursing interventions. Variations were observed in three components associated with dose including amount, frequency, and duration.[39] For example, the depth and coverage of breastfeeding information given, the number of breastfeeding skills practiced, and the levels of emotional support provided were different across the studies. Further, the range of intervention duration was from 3 days to 3 months. The studies

also varied in the number of the sessions offered from 3 to 7 sessions. These differences may have contributed to the clinical heterogeneity among the studies.

Measurement Time. The timepoints for measuring the same outcomes varied across the studies. To date the best practice to evaluate breastfeeding outcome has not been established. Further empirical work is needed to determine at what timepoint in an episode of care a specified breastfeeding outcome should be measured. For example, the timepoint for measuring breastfeeding behavior in this review varied from prior to hospital discharge to 3 months after discharge. As breastfeeding is a learned behavior, the sooner appropriate breastfeeding behavior is established, the more likely breastfeeding is sustained. One study revealed that 29% of mothers experienced at least one breastfeeding problem at two weeks after leaving hospital[40] and as a result, breastfeeding behavior should be measured no later than two weeks postpartum. Thus, the critical timepoint a mother should be assessed and corrected for her breastfeeding behavior should be determined based on empirical evidence and within similar time frame among studies. In addition, only one study found in this review reported a number of mothers who exclusively breastfed at 6 months. Six-month exclusive breastfeeding, by WHO's recommendation, is an optimal breastfeeding outcome; thus, an exclsive breastfeeding rate in a study should be measured at 6 months post delivery to identify how many mothers get optimal success from the interventions. Evaluation of exclusive breastfeeding rate prior to six months post delivery is not consistent with the Thailand health policy for promoting breastfeeding ; the findings from such evaluation may not be supportive of breastfeeding policy and decision-making.

The discussed issues indicate that the existing studies were not sufficient in design and clinically homogeneous enough in the methodological and substantive characteristics. As a result, for further investigation, it may be not appropriate to combine the overall effects of the interventions on breastfeeding outcomes using a meta-anlysis.

Conclusions

The existing nursing interventions based on self-efficacy theory and conducted in Thailand to promote breastfeeding have never been intensively reviewed before. This intergrative review approach including 10 eligible studies reveals that randomized control trial design has never been used before in this field of study in Thailand and the interventions were different in nature in terms of ususal nursing practice, dose of intervention given, and measurement time. A recommendation therefore is that studies are needed of the effects of breastfeeding self-efficacy promoting interventions using rigorous methodological designs and concerning the similarities of the substantive characteristics between trials for the sake of being able to combine the overall effect of the interventions.

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โปรแกรมส่งเสริมการรับรู้สมรรถนะของตนเองต่อผลลัพธ์การเลี้ยงลูกด้วยนมแม่: การทบทวนวรรณกรรมแบบบูรณาการงานวิจัยในประเทศไทย

ทัศนี ประสบกิตติคุณ, พรรณรัตน์ แสงเพิ่ม*

บทคัดย่อ: อัตราการเลี้ยงลูกด้วยนมแม่ต่ำยังคงเป็นปัญหาสาธารณสุขของประเทศไทยอย่างต่อเนื่อง จึงมีโปรแกรมการพยาบาลที่ส่งเสริมการเลี้ยงลูกด้วยนมแม่เกิดขึ้นจำนวนมากเพื่อส่งเสริมให้เกิดผลลัพธ์ด้านการเลี้ยงลูกด้วยนมแม่ ได้แก่ การปฏิบัติและระยะเวลาการเลี้ยงลูกด้วยนมแม่ การส่งเสริมการรับรู้สมรรถนะของตนเองในการเลี้ยงลูกด้วยนมแม่เป็นวิธีการหนึ่งที่ได้นำมาใช้เป็นกิจกรรมการพยาบาลที่ช่วยเพิ่มผลลัพธ์ด้านการเลี้ยงลูกด้วยนมแม่เนื่องจากมีหลักฐานเชิงประจักษ์ที่สนับสนุนอิทธิพลของการรับรู้สมรรถนะของตนเองต่อพฤติกรรมและระยะเวลาการเลี้ยงลูกด้วยนมแม่ อย่างไรก็ตามสถานะของหลักฐานเชิงประจักษ์เกี่ยวกับผลของโปรแกรมดังกล่าวยังไม่เคยได้รับตรวจสอบ วัตถุประสงค์ของการทบทวนวรรณกรรมในครั้งนี้เพื่อศึกษาถึงคุณลักษณะด้านวิธีการวิจัยและด้านเนื้อหาสาระของงานวิจัยเกี่ยวกับโปรแกรมส่งเสริมการรับรู้สมรรถนะของตนเองต่อผลลัพธ์การเลี้ยงลูกด้วยนมแม่ โดยใช้วิธีการทบทวนวรรณกรรมแบบบูรณาการงานวิจัย ที่มีการเผยแพร่ในระหว่างปี พ.ศ. 2548 ถึง พ.ศ. 2558 และปรากฏในฐานข้อมูลไทยและ CINAHL คุณภาพของงานวิจัยได้รับการประเมินด้วยแบบประเมินของ Scottish Intercollegiate Guideline Nestwork Methodological Checklist

ผลการทบทวนงานวิจัยที่เป็นไปตามเกณฑ์มีจำนวน 10 เรื่อง มีคุณภาพในระดับที่ยอมรับได้ ไม่มีงานวิจัยใดที่ใช้รูปแบบการทดลองแบบสุ่มและมีกลุ่มควบคุม ผลลัพธ์ของโปรแกรมที่ทบทวนได้แก่ การรับรู้สมรรถนะของตนเองในการเลี้ยงลูกด้วยนมแม่ พบในงานวิจัย 7 เรื่อง พฤติกรรมการเลี้ยงลูกด้วยนมแม่ 7 เรื่อง และการเลี้ยงลูกด้วยนมแม่อย่างเดียว 4 เรื่อง ผลการทบทวนแสดงให้เห็นถึงผลลัพธ์เชิงบวกของโปรแกรมการส่งเสริมการรับรู้สมรรถนะของตนเองในการเลี้ยงลูกด้วยนมแม่ อย่างไรก็ตาม ในแต่ละการศึกษามีความหลากหลายทางคลินิกมากในเรื่องของลักษณะกลุ่มตัวอย่าง การปฏิบัติพยาบาลตามปกติ ความเข้มของกิจกรรมส่งเสริมการรับรู้สมรรถนะของตนเอง และช่วงเวลาที่วัดหรือประเมินผลลัพธ์ เนื่องด้วยงานวิจัยยังมีรูปแบบการทดลองที่ไม่รัดกุมและมีความหลากหลายทางคลินิก การผลิตงานวิจัยเชิงทดลองที่มีการออกแบบอย่างดีจึงมีความจำเป็น

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คำสำคัญ: พฤติกรรมการเลี้ยงลูกด้วยนมแม่ การรับรู้สมรรถนะของตนเองในการเลี้ยงลูกด้วยนมแม่ การเลี้ยงลูกด้วยนมแม่อย่างเดียว โปรแกรมส่งเสริมการรับรู้สมรรถนะของตนเอง ประเทศไทย

ติดต่อที่: ทัศนี ประสบกิตติคุณ*, RN, PhD. รองศาสตราจารย์ ภาควิชาการพยาบาลกุมารเวชศาสตร์ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล
E-mail: *tassanee.pra@mahidol.ac.th*
พรรณรัตน์ แสงเพิ่ม*, RN, PhD ผู้ช่วยศาสตราจารย์ ภาควิชาการพยาบาลกุมารเวชศาสตร์ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล*
E-mail: *parnnarat.san@mahidol.ac.th*