

Original Article

The Effect of Antenatal Education on Breastfeeding Self-Efficacy: Primiparous Women in Turkey

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Abstract

Background: Breastfeeding self-efficacy is a modifiable factor that can increase breastfeeding success and duration. Breastfeeding support programmes help to improve self-efficacy and to facilitate a longer duration of breastfeeding.

Aims: The aim of this study was to evaluate the effect of antenatal breastfeeding education on breastfeeding self-efficacy and breastfeeding success.

Methodology: This was an intervention study. The study was carried out in 6 family health centers (FHC) in Eskisehir. There were a total of 90 research subjects. We divided the participants into the following two groups: an intervention group (n=45) and a control group (n=45). The researchers provided breastfeeding education to the intervention group to develop breastfeeding self-efficacy. We evaluated breastfeeding self-efficacy at 1, 4, and 8 weeks postnatally and breastfeeding success at 1 and 8 weeks postnatally.

Results: There were no significant differences between the groups in the mean antenatal BSES-SF scores. However, there was a significant difference between the groups in the mean BSES-SF scores at 1, 4 and 8 weeks postpartum, with higher scores in the intervention group at these time points. At 1 and 8 weeks postpartum, the intervention group had a significantly higher rate of breastfeeding success than the control group.

Conclusions: This study concluded that antenatal breastfeeding education and support were given to pregnant women/mothers from the prenatal period to the postnatal period increases breastfeeding self-efficacy and breastfeeding success. Nurses who provide breastfeeding education should be informed about breastfeeding self-efficacy. Nurses should attempt to employ breastfeeding self-efficacy into breastfeeding education.

Keywords: Breastfeeding education, breastfeeding self-efficacy, breastfeeding success, breastfeeding self-efficacy tool, antenatal, postnatal.

Introduction

Due to the compelling importance and benefits of human milk, the American Academy of Pediatrics (AAP, 2005), the Canadian Pediatric Society (2005) and the World Health Organization (WHO, 2001) have recommended that mothers exclusively breastfeed their infants for the first 6 months of life, with the addition of complementary nutrition at 6 months to 2 years

(American Academy of Pediatrics, 2005; Canadian Pediatric Society, 2005; WHO, 2001)

According to the Turkey Demographic and Health Survey (TDHS) (2008), breastfeeding is very common in Turkey. Almost all children (97%) were breastfed for a certain period of time. However, the survey shows that mothers start breastfeeding too late. Only 39% percent of children are breastfed within 1 hour after birth (TNSA, 2008).

Background

There are several factors that influence when a mother starts breastfeeding, breastfeeding duration and the decision to continue breastfeeding. These factors include the following: mother's age, education, socioeconomic status (Demirtas, 2012), smoking (Dennis, 2002; Peat et al., 2004; Wambach et al., 2005) and support resources (Dennis, 2002; Peat et al., 2004; Taveras et al., 2003). Furthermore, positive intentions, attitudes, and beliefs towards breastfeeding (Dennis, 2002); mother rooming-in with her baby; and hospital policies, such as early discharge (Demirtas, 2012), affect breastfeeding initiation and duration. Breastfeeding self-efficacy is another important factor that affects breastfeeding (Blyth et al., 2002; Chezem et al., 2003; Dennis and Faux, 1999; Swanson et al., 2012).

Breastfeeding self-efficacy and confidence in breastfeeding have been used synonymously. Breastfeeding self-efficacy is a modifiable factor that can increase breastfeeding success and duration. Mothers with low breastfeeding self-efficacy give up breastfeeding much sooner than the recommended time; however, mothers with high breastfeeding self-efficacy have fewer difficulties with breastfeeding initiation and continuation (Dennis, 1999; Dennis and Faux, 1999; McQueen et al., 2011). Breastfeeding self-efficacy and the negative factors associated with it can be changed by initiating education and supportive measures in the prenatal period (Alus Tokat et al., 2010; Dennis, 1999; Dennis and Faux, 1999; McQueen et al., 2011).

The concept of self-efficacy was first described by Albert Bandura. According to Bandura (1977), self-efficacy is one's perceived belief to perform a specific task or behavior. Incorporating self-efficacy theory, Dennis (1999) developed the breastfeeding self-efficacy concept (Bandura, 1977; Dennis, 1999).

Breastfeeding self-efficacy refers to a mother's confidence in her ability to breastfeed her infant. It is an important variable in breastfeeding outcomes as it predicts the following:

- (1) whether a mother chooses to breastfeed,
- (2) how much effort she will expend,
- (3) whether she will have self-enhancing or self-defeating thought patterns, and

(4) how she will emotionally respond to breastfeeding difficulties (Dennis, 1999).

The aim of this study was to evaluate the effect of antenatal breastfeeding education on breastfeeding self-efficacy and breastfeeding success.

Methodology

Design

This study was conducted as an intervention study to evaluate the effect of antenatal breastfeeding education on breastfeeding self-efficacy and breastfeeding success.

Sample

This study was carried out in six family health centers providing primary health care services in the center of Eskisehir, Turkey. The data were collected between January 15th and June 15th 2013. The facility selections were made based on ease of access, the presence of a sufficient number of registered pregnant women, experience in routinely providing breastfeeding education to pregnant women and location in the city center.

A power analysis was applied to determine the sample size. The validity and reliability of the breastfeeding self-efficacy scale were made for the first time by Tokat in Turkey (Alus Tokat et al., 2010). On the basis of the mean scores of this study, with a power of 86.7%, the intervention and control groups were created with 45 pregnant women.

The sample group consisted of the following:

- Primiparous women at 32 or more weeks of gestation;
- The absence of systemic disease;
- A healthy pregnancy; and
- A plan to breastfeed.

In the postnatal period, the absence of any obstacles to breastfeeding for the mother and baby were required to continue in the study.

On January 15, 2013, the first day of the study, 124 subjects from the family health centers met our inclusion criteria. Proportional selection, which is a type of stratified cluster sampling method, was used to determine the number of subjects from each family health center.

A random number table was used to divide the subjects into the control and intervention groups.

Ethical considerations

All the experimental protocols were performed in accordance with guidelines issued by the Eskisehir Osmangazi University, Faculty of Medicine, Ethical Committee of Non-drug Clinical Research with 2012\05 file number.

Data Collection

The Antenatal Period Information Form, Breastfeeding Self-Efficacy Short Form (BSES-SF) Tool (Postnatal Version and Antenatal), Postnatal Period Information Form and LATCH Breastfeeding Diagnostic Tool were used as data collection tools.

1. Antenatal Questionnaire

There were 26 questions in the Antenatal Questionnaire form. The Antenatal Questionnaire form was developed by the researcher to determine the socio-demographic characteristics of women and their husbands, obstetric properties and attitudes about breastfeeding.

2. Postnatal Questionnaire

There are 29 questions in this form. The Postnatal Questionnaire was developed by the researcher to determine the labor process and the initial and post-discharge breastfeeding status.

3. Breastfeeding Self-efficacy Scale

The Breastfeeding Self Efficacy Scale-Short Form (BSES-SF) is a 14-item, self-reporting instrument developed to measure breastfeeding self-efficacy. The BSES is an ordinal scale in which all items are preceded by the phrase “I can always” and anchored with a 5-point Likert-type scale where 1 indicates not at all confident and 5 indicates always confident. All items are presented positively, and scores are summed to produce a range from 14 to 70, with higher scores indicating higher levels of breastfeeding self-efficacy (Dennis, 2003). Sample items include “I can tell when my baby is finished breast-feeding” and “I can feed my baby with breast-milk only.” In a psychometric assessment of the BSES-SF, Cronbach’s α was 0.94, and the predictive validity was confirmed by the positive relationship between breast-feeding self-efficacy and infant feeding patterns at 1, 4, and 8 weeks (Dennis, 2003). The validity and reliability of the

Turkish version made by Tokat in 2009 and Cronbach’s α were 0.86 (Alus Tokat et al., 2010).

4.LATCH Breastfeeding Assessment Tool

The LATCH Breastfeeding Assessment Tool was developed by Jensen et al. in 1993 (Jensen et al., 1994). The Turkish validity and reliability of the Measurement Tool were assessed by Demirhan in 1997, Koyun in 2001, and Yenal and Okumus in 2003 (Demirhan, 1997; Koyun, 2001; Yenal and Okumus, 2003).

Each letter of the acronym denotes a category as follows:

L: (LATCH) represents how well the infant latches onto the breast,

A: (Audible Swallowing) represents how well the infant latches onto the breast,

T: (Type of Nipple) describes the mother’s nipple type,

C: (Comfort of Breast/Nipple) represents the mother’s degree of breast or nipple comfort, and

H: (Hold/Position) evaluates the amount of help the mother needs to position her baby on the breast (Jensen et al., 1994).The LATCH tool, which is based on observations and descriptions of effective breastfeeding, evaluates five breastfeeding characteristics. A numerical score (0, 1, or 2) is assigned to each measure for a possible total score of 10. Higher scores indicate higher levels of breastfeeding success (Jensen et al., 1994).

Application of Data Collection Tools

After the participants were randomized into the intervention and control groups, researchers informed the participants about the study. Participants in the intervention group were invited to a registered FHC. Two pregnant women in the intervention group and 1 woman in the control group did not consent to participate in the study. Instead of the women who did not accept participation in the study, we chose other pregnant women that met our criteria from the FHC by re-randomization.

The intervention group participated in breastfeeding education sessions two times a week. Before the first education session, the Antenatal Questionnaire Form and Breastfeeding Self-efficacy Scale (Antenatal Form) were performed.

Breastfeeding education sessions were conducted in the FHC classrooms. The average duration of the breastfeeding education sessions was approximately 60-90 minutes. Thus, the average total intervention time was approximately 120-180 minutes. The maximum group size for the interactive breastfeeding education sessions was 5-6 people. Slides, models, examples from breastfeeding studies, videos and demonstration methods were used in the sessions. Participants who missed the education sessions were invited to another FHC. There was no prescribed duration for any of the sessions so that the presentations would not be limited and the needs of the participants could be met. Resources affecting self-efficacy as defined by Bandura and Dennis's theory were prepared and applied. At 1, 4 and 8 weeks postpartum, women in the intervention group were provided breastfeeding support in the FHC or with home visits. In addition, for cases in which the participants had difficulty breastfeeding, breastfeeding counseling was provided by telephone. The Antenatal Questionnaire and Breastfeeding Self-efficacy Scale (Antenatal Form) were given to participants in the control group in FHC or their homes. Participants in the control group received the standard breastfeeding education, which was given in FHC or hospitals by nurses/midwives. In addition, some participants indicated that they received breastfeeding education from family elders or the internet. The Breastfeeding Self-efficacy Scale (Postnatal Form) was given to both groups at 1, 4 and 8 weeks, and breastfeeding success was evaluated using the LATCH at 1 and 8 weeks postpartum in FHC or their homes. In addition the Postnatal Questionnaire was given at 1 week postpartum.

Data Analysis

IBM SPSS Statistics 21.0 and Sigma Stat 3.5 package programs were used for the statistical evaluations. The groups were compared for equivalency on demographic indicators using t-tests for parametric scales and chi-square for categorical variables.

Between group differences in breastfeeding self-efficacy at 1, 4 and 8 weeks postpartum and breastfeeding success at 1 and 8 weeks postpartum were evaluated using two-way repeated measures ANOVA, post hoc Holm-Sidak method. A p-value of <0.05 was considered statistically significant.

Results

The mean age of the participants in the intervention group was 25.86 ± 3.01 , and the mean age in the control group was 25.77 ± 3.49 . The mean gestational week in the intervention group was 39.55 ± 1.11 , and the mean gestational week in the control group was 39.77 ± 1.16 . A total of 35.6% of participants in both groups were elementary school graduates. A total of 66.7% of participants in the intervention group and 71.1% in the control group were not working. In both groups, the majority of participants had a vaginal birth. No association was found between the descriptive characteristics (Table 1).

The Effect of Education on Breastfeeding Self-Efficacy

There were no significant differences between the groups in the mean antenatal BSES-SF scores ($p = 0.506$); however, the participants in the intervention group had significantly higher mean BSES-SF scores at 1 ($p < 0.001$), 4 ($p < 0.001$) and 8 ($p < 0.001$) weeks postpartum (Table 2).

The Effect of Education on Breastfeeding Success

The LATCH breastfeeding diagnostic tool was used to evaluate breastfeeding success. At 1 and 8 weeks postpartum the intervention group had a significantly higher rate of breastfeeding success than the control group ($p < 0.001$) (Table 3).

Discussion

The Effect of Education on Breastfeeding Self-Efficacy

This study was an intervention study performed to evaluate the effect of antenatal breastfeeding education on breastfeeding self-efficacy and breastfeeding success. There were no significant differences between the two groups in the mean antenatal BSES-SF scores ($p = 0.506$); however, there was a significant difference between the groups in the mean BSES-SF scores at 1 ($p < 0.001$), 4 ($p < 0.001$) and 8 ($p < 0.001$) weeks postpartum. The participants in the intervention group had higher mean BSES-SF scores at 1, 4 and 8 weeks postpartum. This result demonstrates the effectiveness of breastfeeding education. Noel-Weis et al. (2006) evaluated the effects of a prenatal breastfeeding workshop on breastfeeding self-efficacy and breastfeeding duration. Women who participated in the

workshop had higher breastfeeding self-efficacy scores than the control group at 4 and 8 weeks postpartum. The results of this study are similar to our findings. Similarly, other studies have

shown that antenatal breastfeeding education increases breastfeeding self-efficacy (Alus Tokat et al., 2010; Dennis et al., 2011; Edwards et al., 2013; Hatamleh, 2006; Olenick, 2006).

Table 1: Descriptive Characteristics of the Intervention and Control Groups

	Intervention		Control		Statistical Analysis p
	Mean±SD		Mean±SD		
	Median (25-75) Percentile		Median (25-75) Percentile		
Age	25.86±3.01		25.77±3.49		0.897*
	26 (24-28)		26 (23.5-29)		
Income	1835.53±853.14		1915.55±905.21		0.509*
	1800 (975-2500)		2000 (1000-2750)		
Gestational Week	34.04±1.97		34.75±1.94		0.072*
	34 (32-36)		35 (33-36)		
	n	%	n	%	p
Education					
Elementary	16	35.6	16	35.6	0.966**
High school	14	31.1	13	28.9	
College/university	15	33.3	16	35.6	
Perception of Income Status					
Poor	1	2.2	2	4.4	0.869**
Middle	23	51.1	21	46.7	
Good	21	46.7	22	48.9	
Working Status					
Does not work	30	66.7	32	71.1	0.820***
Works	15	33.3	13	28.9	
Type Of Delivery					
Cesarean section	19	42.2	21	46.7	0.832***
Vaginal	26	57.8	24	53.3	

* Mann-Whitney U test ** Pearson ki-kare test ***Continuity correction test

Table 2: Comparison of the Antenatal, 1, 4 and 8 weeks postpartum breastfeeding self-efficacy (BSES-SF) scores between the groups

	Antenatal Period		Week 1		Week 4		Week 8	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Intervention	48.73	9.98	58.51	7.04	64.84	4.09	66.22	3.77
Control	49.73	10.36	50.24	7.47	58.22	5.19	60.24	6.00
t*;p**	0.665*;0.506**		5.499*;<0.001**		4.405*;<0.001**		3.976*;<0.001**	

*Two way ANOVA-post hoc Holm-Sidak method **p<0.05

Table 3: Comparison of breastfeeding success scores between the groups at 1 and 8 weeks postpartum

	1 week postpartum		8 week postpartum	
	Mean	SD	Mean	SD
Intervention	8.15	1.33	9.82	0.38
Control	6.31	1.42	8.46	1.77
t*;p†	6.557*;< 0.001†		4.819 *; <0.001†	

▪ Two way ANOVA-post hoc Holm-Sidak method † p<0.05

Wilhelm et al. (2006) conducted motivational interviewing in an intervention group to decrease ambivalence and resistance toward sustained breastfeeding at days 2-4 postpartum and they evaluated breastfeeding self-efficacy at 2 and 6 weeks postpartum. The motivational interviewing group had high BSES-SF scores; however, there were no significant differences between the groups in the mean BSES-SF scores at 2 and 6 weeks postpartum. The results of this study are not consistent with our findings. In our study, interventions that combine information, guidance, and support were given to participants from the prenatal period to the postnatal period. However, Wilhelm et al. (2006) only provided information in the postpartum period and focused only on a single aspect of breastfeeding. The results of this study demonstrate that the quality of the education is important to improving breastfeeding self-efficacy.

The Effect of Education on Breastfeeding Success

In this study, the intervention group had a higher rate of breastfeeding success than the control group at 1 and 8 weeks postpartum. Tokat (2010)

studied the effect of antenatal breastfeeding education on breastfeeding self-efficacy and breastfeeding success at 1 and 6 weeks postpartum. In that study, there was a significant difference in breastfeeding success at 1 and 6 weeks postpartum between the intervention and control groups. Our findings are consistent with the results of Tokat et al.(2010).

Another study by Leslie and Wiles (2006) assessed the effect of prenatal breastfeeding education on success in breastfeeding and perceptions of the infant with 40 participants. Half of the mothers attended a prenatal breastfeeding education class, and half served as controls. They found that the intervention group had higher breastfeeding success than the control group. Our findings are in parallel with these results.

Conclusions

Although the majority of new mothers initiate breastfeeding in Turkey (TNSA, 2008) many discontinue breastfeeding prematurely prior to current recommendations and individual goals. Breastfeeding self-efficacy is a modifiable factor

that can increase breastfeeding success and duration. Evidence from this study demonstrated that breastfeeding education, which is based on Dennis's Breastfeeding Self-Efficacy Theory, contributes to increased breastfeeding self-efficacy and success. In accordance with these results, nurses who provide breastfeeding education should be informed about breastfeeding self-efficacy. Nurses should attempt to incorporate breastfeeding self-efficacy in their breastfeeding education programs.

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References

- Alus Tokat M, Okumus H and Dennis C-L. (2010) Translation and psychometric assessment of the Breast-feeding Self-Efficacy Scale—Short Form among pregnant and postnatal women in Turkey. *Midwifery* 26: 101-108.
- American Academy of Pediatrics. (2005) Breastfeeding and the use of human milk. *Pediatrics* 115: 496-506.
- Bandura A. (1977) Self-efficacy: toward a unifying theory of behavioral change. *Psychological review* 84: 191.
- Blyth R, Creedy DK, Dennis CL, Moyle W, Pratt J, De Vries SM. (2002) Effect of maternal confidence on breastfeeding duration: An application of breastfeeding self-efficacy theory. *Birth* 29: 278-284.
- Canadian Pediatric Society. (2005) Exclusive breastfeeding should continue to 6 months. *Pediatrics and Child Health* 10: 148.
- Chezem J, Friesen C and Boettcher J. (2003) Breastfeeding knowledge, breastfeeding confidence, and infant feeding plans: effects on actual feeding practices. *Journal of Obstetric, Gynecologic, & Neonatal Nursing* 32: 40-47.
- Demirhan F. (1997) Evaluation of breastfeeding in Sakarya province. Istanbul: Marmara University Health Sciences Institute Child Health and Disease Nursing Department (MSc Dissertation)
- Demirtas B. (2012) Breastfeeding support received by Turkish first-time mothers. *International Nursing Review* 59, 338–344.
- Dennis. (1999) Theoretical underpinnings of breastfeeding confidence: a self-efficacy framework. *Journal of Human Lactation* 15: 195-201.
- Dennis and Faux. (1999) Development and psychometric testing of the Breastfeeding Self-Efficacy Scale. *Research in nursing & health* 22: 399-409.
- Dennis C-L, Heaman M and Mossman M. (2011) Psychometric testing of the breastfeeding self-efficacy scale-short form among adolescents. *Journal of Adolescent Health* 49: 265-271.
- Dennis CL. (2002) Breastfeeding Initiation and Duration: A 1990-2000 Literature Review. *Journal of Obstetric, Gynecologic, & Neonatal Nursing* 31: 12-32.
- Dennis CL. (2003) The Breastfeeding Self-Efficacy Scale: Psychometric Assessment of the Short Form. *Journal of Obstetric, Gynecologic, & Neonatal Nursing* 32: 734-744.
- Edwards RA, Bickmore T, Jenkins L, Foley M, Manjourides J. (2013) Use of an Interactive Computer Agent to Support Breastfeeding. *Maternal and child health journal*:17, 10; 1961-1968.
- Hatamleh W. (2006) The Effect of a breast-feeding self-Efficacy intervention on Breast Feeding Self-Efficacy and Duration. University of Cincinnati. (PhD Thesis)
- Henderson A, Stamp G and Pincombe J. (2001) Postpartum positioning and attachment education for increasing breastfeeding: a randomized trial. *Birth* 28: 236-242.
- Jensen D, Wallace S and Kelsay P. (1994) LATCH: a breastfeeding charting system and documentation tool. *Journal of Obstetric, Gynecologic, & Neonatal Nursing* 23: 27-32.
- Koyun K. (2001) LATCH A study examining the use of the breastfeeding diagnostic scale and the success of newborn breastfeeding Izmir: Dokuz Eylul University Institute of Health Sciences Department of Obstetrics and Gynecology Nursing. (MSc Dissertation)
- Leslie S and Wiles R. (2006) The effect of prenatal breastfeeding education on breastfeeding success and maternal perception of the infant. *Journal of Obstetric, Gynecologic, & Neonatal Nursing* 13: 253-257.
- McQueen KA, Dennis CL, Stremmer R, Norman CD. (2011) A Pilot Randomized Controlled Trial of a Breastfeeding Self-Efficacy Intervention With Primiparous Mothers. *Journal of Obstetric, Gynecologic, & Neonatal Nursing* 40: 35-46.
- Noel-Weiss J, Rupp A, Cragg B, Bassett V, Woodend AK. (2006) Randomized Controlled Trial to Determine Effects of Prenatal Breastfeeding Workshop on Maternal Breastfeeding Self-Efficacy and Breastfeeding Duration. *Journal of Obstetric, Gynecologic, & Neonatal Nursing* 35: 616-624.
- Olenick PL. (2006) The effect of structured group prenatal education on breastfeeding confidence, duration and exclusivity to twelve weeks postpartum: *Journal of Obstetric, Gynaecologic, and Neonatal Nursing* 39: 104–105.

- Peat JK, Allen J, Nguyen N, Hayen A, Oddy WH, Mahrshahi S. (2004) Motherhood meets epidemiology: measuring risk factors for breast-feeding cessation. *Public Health Nutrition-Cab International- 7*: 1033-1038.
- Swanson V, Nicol H, McInnes R, Cheyne H, Mactier H, Callander E. (2012) Developing Maternal Self-Efficacy for Feeding Preterm Babies in the Neonatal Unit. *Qualitative Health Research 22*: 1369-1382.
- Taveras EM, Capra AM, Braveman PA, Jensvold NG, Escobar GJ, Lieu TA. (2003) Clinician support and psychosocial risk factors associated with breastfeeding discontinuation. *Pediatrics 112*: 108-115.
- TNSA. (2008) Hacettepe University Institute of Population Studies. *Ankara*: 289.
- Wambach K, Campbell SH, Gill SL, Dodgson JE, Abiona TC, Heinig MJ (2005) Clinical lactation practice: 20 years of evidence. *Journal of Human Lactation 21*: 245-258.
- WHO. (2001) The optimal duration of exclusive breastfeeding: Report of an expert consultation. *Geneva*
- Wilhelm SL, Flanders Stepan MB, Hertzog M, Rodehorst TK, Gardner P (2006) Motivational interviewing to promote sustained breastfeeding. *Journal of Obstetric, Gynecologic, & Neonatal Nursing 35*: 340-348.
- Yenal K and Okumus H. (2003) A study examining the reliability of the Latch breast-feeding diagnostic tool. *Nursing Research Development Journal, 5*: 38-43.