



Prenatal Breastfeeding Training in Turkish Women: How are the effects?

Türk Kadınlarında Doğum Öncesi Anne Sütü Eğitimi: Etkileri Nasıldır?

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ABSTRACT

Objective: Mothers should be trained and supported to enable them to breastfeed effectively, as the mother's milk is the most important nutrient in an infant's feeding. This study intends to show the effect of breastfeeding training during pregnancy on mothers' breastfeeding experiences and emphasize its importance. **Materials and Methods:** This study was performed between December 2013 and February 2014. A cross-sectional study was conducted with 190 mothers. In this study, we compared two groups, who were educated or not educated on breastfeeding and breast milk. The data was collected through a face to face interview. **Results:** The study group consisted of 190 mothers; 100 in the control group and 90 in the training group. There was a significant difference in the frequency (88,8 %) and duration of breastfeeding (62,2 %) among the mothers in the training group. There was a significantly high tendency among mothers in the control group to feed their babies water, supplementary food / baby formula and use pacifiers during the first 6 months. Using feeding bottles has been shown to cause mothers to feed their babies only with breast milk for less than 6 months. **Conclusion:** It has been concluded that breastfeeding training given to mothers before delivery increases breastfeeding frequency and duration while lowering the use of feeding bottles and making the practice of feeding babies water in the first 6 months less common. Mothers should be trained on breast milk and breastfeeding starting from the period before delivery.

Key words: Breast milk, breastfeeding, training

ÖZET

Amaç: Bebek beslenmesinde en önemli besin olan anne sütünün etkili ve bilinçli olarak bebeklere verilmesi için annelerin bilgilendirilmesi ve desteklenmesi şarttır. Bu çalışma, gebelik döneminde verilen anne sütü ve emzirme eğitiminin emzirme üzerine olan etkisini göstermek ve eğitimin önemini vurgulamak amacıyla yapılmıştır. **Gereç ve Yöntem:** Bu çalışma Aralık 2013 ile Şubat 2014 arasında gerçekleştirilmiştir. 190 anne ile kesitsel bir çalışma yapılmıştır. İki ayrı grubu, emziren ve anne sütü üzerine eğitilmiş ve eğitilmemiş annelerle karşılaştırmayı amaçlayan bu çalışmada veriler yüz yüze yapılan görüşme sonucu toplanmıştır. **Bulgular:** Kontrol grubu 100, eğitim grubuna 90 olmak üzere toplam 190 anne çalışmaya alınmıştır. Eğitim grubu annelerde anne sütü ile beslenme sıklığı (%88,8) ve süresinde (%62,2) anlamlı olarak fark bulunmuştur. Kontrol grubu annelerde ilk altı ayda su, emzik, tamamlayıcı gıda/mamaya başlanma davranışı anlamlı derecede yüksektir. Biberon kullanımının altı aydan az sadece anne sütü ile beslenmeye neden olduğu gösterilmiştir. **Sonuç:** Doğum öncesi dönemde annelere verilen eğitimle emzirme sıklığı ve süresinin arttığı, biberon kullanma davranışı ve ilk altı ayda su vermenin azaldığı sonucuna varılmıştır. Anneler, doğum öncesi dönemden başlayarak anne sütü ve emzirme ile ilgili eğitimler verilerek bilgilendirilmelidir.

Anahtar kelimeler: Anne sütü, emzirme, eğitim

Received Date: 10.07.2018, Accepted Date: 06.02.2019

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Akbayram HT, Sahin HA. Prenatal Breastfeeding Training in Turkish Women: How are the effects? TJFMPC, 2019; 13(2): 183-190.

DOI: 10.21763/tjfmpe.569762

INTRODUCTION

Breast milk is the most appropriate food for a baby's physical, mental and physiological development. Breastfeeding reduces mortality rates associated with infancy diseases and also protects against various diseases that may emerge in the later stages of life.

The World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend only breastfeeding for the first 6 months and breastfeeding along with supplementary food until at least the age of 2.¹ Despite studies in Turkey and around the world that made out a case for breastfeeding, breastfeeding is still not at the desired levels. Worldwide, 12 month-long breastfeeding rates are highest in sub-Saharan Africa, South Asia and some parts of Latin America. This rate drops below 20% in many advanced nations. In the UK, this rate is less than 1% while it is 27% in the United States, 35% in Norway and 16% in Sweden.² According to a 2008 study by Turkey Population and Health Surveys, the rate for feeding babies from only mother's milk in the first 6 months was 41.8%, while the same rate fell to 30.1% according to a 2013 report.³⁻⁴

The studies mention that breastfeeding practices can be improved through influence from external interventions, that education programs are the most important factor affecting breastfeeding on its own, and that breastfeeding training and support to be provided by health personnel will increase the duration and frequency of breastfeeding.⁵⁻⁷

This study intends to reveal the factors that cause mothers to only feed their babies breast milk, increase the breastfeeding rates and duration, and emphasize the benefits of training in that respect.

MATERIALS AND METHODS

This cross-sectional study has been performed between December 2013 and February 2014, mothers pregnant for 36 weeks or more who were admitted to Yuzuncu Yil University Medical Faculty Gynecology Polyclinic were given training on the importance of breast milk and breastfeeding.

The pregnant women who were not medically fit and under risk were not included in

the study. As teaching material, the program used the booklet "A Training Guide and Diet Modules for Trainers" published by the Turkish Ministry of Health General Directorate of Health Education and the breastfeeding handbook prepared by the Turkish Ministry of Health and UNICEF as well as brochures on breast milk and breastfeeding printed by the Public Health Department and a presentation file was prepared on the basis of these materials.^{8,9} After a 15-20 minute training session, questions asked by mothers about breast milk and breastfeeding were answered. Written informed consent was obtained from each participant. Permission was obtained from the Ethics Committee of Yuzuncu Yil University prior to the study.

In the survey, there were 32 questions about the mothers' and the babies' socio-demographical characteristics, the time when breastfeeding started, the first nutrients feed to the baby, the frequency of breastfeeding, whether water was also given during the time when only breast milk was used, the time when supplementary food was started and the reasons for it, about using feeding bottles and pacifiers, whether the mothers received support during breastfeeding amongst other questions on breast milk.

Mothers who were trained on breast milk and breastfeeding during their pregnancy were contacted by phone when their babies were 6 months old and the survey form was filled out by the investigator. The control group contained randomly selected mothers with babies 6-12 months old who were admitted to our hospital from December 2013 to February 2014 for any reason. The study group consisted of 190 mothers; 100 in the control group and 90 in the training group. The mothers of infants unable to breastfeed due to sickness in the mother or the baby were not included in the study.

Statistical Analysis

The results were expressed as the mean \pm standard deviation or in numbers (%). Normal distribution of quantitative variables was tested with the single-sample Kolmogorov Smirnov test. For intergroup comparisons, the t-test was used in independent groups for variables with a normal distribution

while the Mann Whitney U test was used for variables without a normal distribution. The Chi-square test was used to compare categorical data between groups. The logistic regression analysis was used to determine the factors affecting the duration of the period mothers only give their babies breast milk as well as breastfeeding periods. SPSS 13 software package was used for statistical analyses. The statistical significance limit was accepted as $p < 0.05$.

RESULTS

There were no significant differences between the training and the control groups in terms of age, education status, income status, number of children, and previous training on breastfeeding. In this study, 2 groups made up of mothers who received training on breast milk and breastfeeding and mothers who did not are compared.

Sixty-four (71.1%) of mothers in the training group and 60 (60%) of mothers in the control group breastfed their babies in the first hour. Eighty-two (91.1%) of mothers in the training group and 82% of mothers in the control group firstly fed their babies breast milk when their babies were born. There was no statistically significant difference between the mothers in the training group and the control group regarding the time they started breastfeeding and their choice of breast milk as the first nutrient to feed their babies ($p=0.261$). 88.8% of the mothers in the training group and 63 (63%) of the mothers in the control group breastfed their babies when their babies wanted it (i.e. each time the baby cried). In our study, 62.2% of the mothers in the training group and 40% of the mothers in the control group stated that they breastfed their babies "as much as their babies wanted it" when they were asked about the length of their breastfeeding at one time. There was a statistically significant difference between the groups in terms of the frequency and duration of breastfeeding ($p=0.001$, $p=0.009$, respectively). The rate for feeding babies breast milk only for 6 months was 57.7% in the training group and 51% in the control group. There was no statistically significant difference between the groups who received training and the groups who did not. ($p=0.109$) Data pertaining to mothers' breastfeeding their babies are summarized in Table-1. Thirty-eight (42.2%) of the mothers in the training group and 49% of those in the control group gave their babies supplementary food before the 6th month.

There was no statistically significant difference between the groups in terms of when supplementary food was started ($p=0.349$).

The pacifier utilization rate was 28% in the training group and 34% in the control group. Even though mothers who did not receive training made more frequent use of pacifiers in comparison to mothers who did, there was no statistically significant difference. ($p=0.419$) The feeding bottle utilization rate was 45.5% in the training group and 64% in the control group. For untrained mothers, the feeding bottle utilization rate for the first 6 months was significantly higher statistically ($p=0.01$). Twenty-seven (30.0%) of the mothers in the training group and 59 (59%) of mothers in the control group gave their babies water during the time they only fed them breast milk. Untrained mothers were found to be more likely to give their babies water than trained mothers ($p=0.04$).

In this study, mothers were asked questions to measure their level of knowledge about breast milk. 98.8% of mothers in the training group and 27% of mothers in the control group responded yes to the question of whether babies should be initially fed the mother's milk; while 80% of mothers in the training group and 27% of mothers in the control group responded yes to the question of whether the mother's milk can be collected and stored in suitable conditions and 56.6% of mothers in the training group and 34% of mothers in the control group responded yes to the question of whether breastfeeding had a contraceptive effect. The rate of correct answers given by trained mothers was significantly higher ($p=0.01$). The rate of correct answers given by trained mothers to the questions asked on the appropriateness of feeding the baby the mother's first milk, the contraceptive effect of breastfeeding and whether the mother's milk can be collected and stored were significantly higher when compared to the answers given by untrained mothers ($p=0.01$).

Using feeding bottles was the only factor that affected the rate of feeding babies only breast milk for less than 6 months for mothers in both groups. Table 2 summarizes the logistic regression model concerning the factors causing mothers to feed their babies only breast milk for less than 6 months.

Table 1. Comparison of baby feeding in the training and control groups			
Feeding characteristics	Training group n=90 (%)	Control group n=100 (%)	p
Initial time of breastfeeding after birth			
Within the first hour	64 (71.1)	60 (60.0)	0.262
Within the first two hours	14 (15.5)	19 (19.0)	
2-24 hours	7 (7.7)	8 (8.0)	
After 24 hours	5 (5.5)	13 (13.0)	
No breastfeeding	-	-	
First nutrient fed to the baby			
Breast milk	82 (91.1)	82 (82.0)	0.261
Sugared water	-	1 (1.0)	
Formula	7 (7.7)	16 (16.0)	
Other	1 (1.1)	1 (1.0)	
Breastfeeding duration			
5-10min	9 (10.0)	25 (25.0)	0.009
10-15min	18 (20.0)	23 (23.0)	
15-20min	7 (7.7)	12 (12.0)	
As much as the baby wants	56 (62.2)	40 (40.0)	
Breastfeeding frequency			
Whenever the baby wants	80 (88.8)	63 (63.0)	0.001
Every hour	5 (5.5)	20 (20.0)	
Every two hours	5 (5.5)	11 (11.0)	
Every three hours	-	3 (3.0)	
Every four hours or less frequently	-	3 (3.0)	
Length of feeding only breast milk			
Less than a month	3 (3.3)	13 (13.0)	0.109
1-2 months	4 (4.4)	9 (9.0)	
3-4 months	18 (20.0)	16 (16.0)	
5 months	13 (14.4)	11 (11.0)	
6 months and longer	52 (57.7)	51 (51.0)	
Number of babies who cannot be breastfed any longer	8 (8.8)	10 (10.0)	0.349

For intergroup comparisons, the t test was used in independent groups for variables with a normal distribution while the Mann Whitney U test was used for variables without a normal distribution.

DISCUSSION

In 1989, WHO and UNICEF published a list of recommendations related to the role of delivery services to “maintain, encourage and support” breastfeeding and its third step mention giving pregnant mothers training on the benefits of breastfeeding and breastfeeding techniques. The necessity for breastfeeding training emerged with increased knowledge of factors affecting the duration and practice of breastfeeding, and through identifying risk factors that lead to premature discontinuation of breastfeeding. Studies have shown that with an educational-support system, the percentage and duration of breastfeeding can be increased.^{10,11} There are also studies showing that mothers make the decision to breastfeed their babies during consultancy visits to a physician or midwife for their antenatal checks.¹² Imdad et al.¹³ published a compilation showing that breastfeeding consultancy during the prenatal period was influential in making mothers breastfeed until weeks 4-6 postpartum while consultancy during prenatal and postnatal periods ensured higher rates of mothers feeding their babies only breast milk for the first 6 months.

The first half-hour after birth is the time when the baby is most active and vigilant. It has been shown that starting to breastfeed immediately after delivery results in a longer breastfeeding period. The rate of breastfeeding in the first hour after birth is 60-80% in developed countries and 39% in developing countries. For example, this rate drops to 31% in Central Asia and North Africa and to 27% in South Asia.^{2,14,15} In our study, 71.1% of the mothers in the training group and 60% of mothers in the control group breastfed their babies in the first hour after birth. Although mothers in the training group had a higher rate of breastfeeding within the first hour, there was no statistically significant difference.

Various studies have shown that when compared to mothers giving birth the natural way, breastfeeding starts much later in mothers who had a C-section due to the convalescence period they need to recover.¹⁶ While WHO wishes only 10-15% of babies to be born with a C-section, rates of births with a C-section are on the increase in our country and all over the world.¹⁷ According to the TPHS 2013 data, the rate of births with a C-section is 48% in Turkey and only 50% of infants are breastfed

within the first hour after birth.⁴ The rate of births with a C-section has been reported to be 40-50% in China and South America and 31.8% in the USA.¹⁸ In a study conducted by Erbil and Oral¹⁹, 41.1% of mothers who gave birth the natural way started breastfeeding in a shorter time than 30 minutes while 62.5% of mothers who had a C-section started breastfeeding after the first hour. When we asked mothers about the reasons why they were not able to breastfeed their babies within the first hour, 10% of mothers in the training group and 15% of mothers in the control group cited birth with a C-section as the reason. 42.2% of the mothers in the training group and 44% of the mothers in the control group had a C-section.

For the immunological development of a newborn, it is recommended that the gastrointestinal system should receive the breast milk within the first hour after birth.²⁰ In a study by Haque et al. in Bangladesh, 98.2% of mothers were found to feed their babies colostrum.²¹ In a study by Fikre et al. in Pakistan, 41.7% of mothers firstly fed their babies breast milk, 24.7% honey, 17% a local drink called ghutti, 3.3% water and 3.1% the cow's milk.²² In our study, 91.1% of the mothers in the training group and 82% of the mothers in the control group initially fed their babies colostrum.

Breastfeeding frequency has an important place in an infant's feeding. Breastfeeding should be done according to the baby's wishes rather than on an hourly basis. Babies should be breastfed when they actually want it and this kind of breastfeeding promotes milk secretion.²³ In our study, 88.8% of the mothers in the training group and 63% of the mothers in the control group breastfed their babies every time they wanted it (ie. each time they cried). In a study by Kaya, the rate of babies breastfed each time they cried was 83.8% while the same rate was 77.4% in a study by Sahan.^{24,25} 62.2% of the mothers in the training group and 40% of the mothers in the control group stated that they breastfed their babies "as much as their babies wanted it" when they were asked about for how many minutes they breastfed their babies per feeding session. There was a statistically significant difference between the training and the control groups in terms of the duration and frequency of breastfeeding.

WHO and the American Academy of Pediatrics recommend that babies should only be

fed breast milk during the first 6 months without any other additional nutrients (except for vitamins, minerals, drugs). It has been reported that in the developing countries the rate of mothers feeding only breast milk to their babies for the first 6 months is 37%.²⁶ The same rate was found to be 50% according to a study conducted in Australia, 7% in Norway and 42.3% in Italy.²⁷⁻²⁹ According to 2014 data by the US Center for Disease Control and Prevention, the rate for feeding babies only breast milk during the first 6 months is 24.9%.³⁰ On the other hand, the rate of feeding babies only breast milk for the first 6 months is 41.6% according to Turkish Population and Health Survey (TPHS) 2008 data while according to TPHS reduced to 30% in 2013.^{3,4} In a randomized controlled study by Aksu et al.³¹ in 2010, it was found that the rate for feeding babies only breast milk during the first 6 months was 43% for the group who received breastfeeding training after delivery in comparison to 23% for the control group. In our study, although the same rate was numerically higher for the babies in the training group (57.7 %) than those in the control group (51%), there was no statistically significant difference between the groups.

Studies conducted around the world show that babies from regions with a hot climate who are fed breast milk do not need water. A predominantly breast milk feeding as defined by the World Health Organization also involves giving babies water or water-based drinks such as sugared water, fruit juice, or herbal tea. In our study, 30% of mothers in the training group and 59% of mothers in the control group fed their babies water within the first six months. Trained mothers were found to be much less likely to feed their babies water than untrained mothers within the first 6 months. In 3 studies conducted by Sankar et al.³² on mortalities caused by infectious diseases in babies younger than 6 months old, it was found that a purely breast milk feeding was 41% more protective against infectious diseases than a predominantly breast milk feeding.

The fact that the use of feeding bottles and pacifiers is so common is among the reasons for the early termination of breastfeeding. In a study conducted in New York, it was emphasized that the use of pacifiers and feeding bottles had a negative effect on breast milk secretion and that their use should be avoided in babies being fed breast milk.³³ According to TPHS 2013 data, the feeding bottle

utilization rate for babies younger than six months old is 40%.⁴ In a study conducted by Gumustakım et al. in five different provinces of Turkey in 2014, the feeding bottle utilization rate was found to be 49.2%.³⁴ In our study, 45.5% of the mothers in the training group and 64% of the mothers in the control group reported using feeding bottles. Untrained mothers were found to be much more likely to use feeding bottles than trained mothers. In this study, the pacifier utilization rate in the training group and the control group was 28% and 34% respectively, with no statistically significant differences. In a study conducted by Yilmazbas et al.³⁵, the pacifier utilization rate was found to be 36% and that of feeding bottles 49%, similar to the findings of this study.

When we used the logistic regression model to examine the impact of the variables maternal age, working status, education level, income level, method of delivery, number of children, breastfeeding training, breastfeeding support, gender, place of delivery, time when breastfeeding started, breastfeeding frequency, the use of pacifiers and feeding bottles and feeding babies water on the length of the practice of feeding babies only breast milk, it was seen that using feeding bottles caused mothers to feed their babies only breast milk for less than 6 months. A study conducted by Collins et al.³⁶ in the UK found that the use of pacifiers did not affect the duration of breastfeeding, whereas the use of feeding bottles shortens the total duration of breastfeeding.

The main limitation of this study is the small sample size that limits the generalizability of the results. Also, breast milk promotion is explained to all mothers before and after delivery because of Turkey's Health Ministry Baby-Friendly Hospitals project. Therefore, this may affect the results of the study.

CONCLUSION

In Turkey and around the world, the rates for feeding babies only breast milk during the first 6 months and the duration of breastfeeding are still not at the desired levels as a majority of mothers are starting to breastfeed their babies much later than what is ideal. For this reason, mothers should be informed through education programs before at the time of delivery and after delivery. This study has

found that mothers breastfeeding trained before delivery, breastfeed their babies more frequently and for longer periods of time with reduced levels of using feeding bottles and feed their babies less water in the first 6 months.

Declaration of Conflicting Interests: The authors declare that they have no conflict of interest.

Financial Disclosure: No financial support was received.

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