Breastfeeding Education in a Newly Organized Lactation Consultation Clinic: An Evaluation of Its Effects on the Improvement of Maternal Attitudes to Breastfeeding

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What is already known on this topic?

- Although authorities strongly recommend exclusive breastfeeding for the first 6 months, the actual data reports an average of 38% worldwide.
- Low breastfeeding rates depend on reported interrelated reasons.

What this study adds on this topic?

- Breastfeeding education in an officially organized clinic improves lactation duration.
- Spreading the lactation consultation clinics children's hospitals will support to reach considered targets in exclusive breastfeeding worldwide.

ABSTRACT

Objective: Breastfeeding is the principal feeding source in the first years of life. Its targeted rates are not achieved properly, globally. Multifactorial reasons have been reported, but the effect of the facilities in the hospitals including lactation consultation clinics have rarely been discussed. The aim of this study was to assess the effects of breastfeeding education in a first officially organized clinic. This may further help authorities make any necessary interferences and improve public health strategies.

Materials and Methods: A cross-sectional, interventional study was performed in 100 mothers who were given breastfeeding education and was compared with 100 mothers without education. All of the mothers were interviewed to assess breastfeeding attitudes after 6 months.

Results: The study group demonstrated higher exclusive breastfeeding rates than controls (76% and 28%, respectively). Having an education was the most significant factor affecting exclusive breastfeeding duration ($P < .05$). Complementary feeding, bottles, and pacifiers were introduced significantly earlier in the control group ($P < .05$). There was a negative association between breastfeeding duration and both bottle and pacifier use ($P < .05$).

Conclusion: Lactation consultation at a breastfeeding clinic improved the breastfeeding rate. Extending this project to maternity and children’s hospitals will help to achieve the desired national targets in exclusive breastfeeding.

Keywords: Breastfeeding, lactation, consultants, infants

INTRODUCTION

The American Academy of Pediatrics recommends exclusive breastfeeding for the first 6 months of a child’s life. Then, complementary feeding is needed along with breast milk until the baby is at least 1 year of age. Feeding a baby with only breast milk for the first 6 months of life is defined as exclusive breastfeeding. It has many benefits for children. It provides preventive effects against asthma, obesity, gastrointestinal tract infections, necrotizing enterocolitis, type 2 diabetes, ear infections, respiratory infections, and sudden infant death syndrome. The World Health Organization (WHO) reported that globally only 38% of infants aged 0–6 months are exclusively breastfed, and the desired targets for exclusive breastfeeding is planned to be at least 50% by 2025.

The Baby-friendly Hospital Initiative (BFHI) and the 10 steps to successful breastfeeding is a certification process conducted to improve the rates of exclusive breastfeeding. Turkey is one of the countries that provide certification for hospitals obeying the rules for the BFHI process. The recent field survey on health population provides information on the
breastfeeding practices of the whole country. The results of the survey indicated that almost all (99%) deliveries occurred in “Baby-friendly” hospitals across the country with a breastfeeding initiation rate of 98% at birth, and with 42% continuation at 6 months in Turkey. Breastfeeding rates are not sufficient, even in countries conducting the program effectively, due to multiple factors. The mode of delivery, the mother’s socioeconomic status, return to work, and prenatal breastfeeding education have been reported as factors that influence breastfeeding.

Nutritional and breastfeeding support, which is one of the main topics in pediatric well-child care, is difficult to carry out because of the insufficient time associated with daily routine practices. Therefore, lactation consultation and a breastfeeding clinic were opened firstly in our tertiary community hospital for the further evaluation, support, and follow-up of breastfeeding problems.

The aim of this current study was to assess the effects of breastfeeding problems interrupting breastfeeding, were using medications for any medical reasons, having a premature baby, or staying in the hospital were not included in the study.

The Study Population
It consisted of 100 mothers who applied to the breastfeeding clinic for lactation consultation in the first week of their baby’s life for breastfeeding consultation. A control group was created consisting of 100 mothers attending the hospital for well-child care who had no breastfeeding consultation including during their pregnancy and did not collaborate for further breastfeeding education. Mothers having breast problems, medical problems interrupting breastfeeding, were using medications for any medical reasons, having a premature baby, or staying in the hospital were not included in the study.

Intervention
Education based on the basic principles of the BFHI and the 10-steps to successful breastfeeding rules of the WHO was provided to our study population by the counselor nurse (SO) and the responsible pediatrician (MA). Topics included the importance of breastfeeding for babies and mothers, placing and attaching on the breast, signs of good attachment, effective suckling and the frequency of breastfeeds, indicators of milk reserve (wet/soiled nappies), appetite hints, milking and milk storage conditions, knowledge about complementary feeding, and the harmful effects of bottles and pacifiers. The breastfeeding education continued until all of the questions had been answered and satisfactory information was provided.

Re-evaluation
Mothers in the study and control groups were recalled for the evaluation and comparison of breastfeeding attitudes 6 months after receiving the education.

An anonymous questionnaire adapted from a previous study was administered to the mothers via a face-to-face interview (Appendix A). The instrument was determined to have validity by a senior faculty (SS) but was not tested for reliability. The interviews were recorded by one of the authors (GC) and there was no enumerator. The participants were asked opened-ended, yes/no, and multiple-choice questions about the demographic variables of the mothers and their infants (the age and gender of the children, maternal age, maternal educational status, and household monthly income, including their perinatal and obstetric history, as well as the duration of breastfeeding, the timing of complementary feeding, and related factors (cultural aspects, breastfeeding duration, and weight gain of the child). Monthly income was categorized as below or above the national poverty threshold.

Statistical Analysis
The statistical analysis was performed using the Statistical Package for Social Sciences, version 21.0 software (SPSS Inc., Chicago, IL, USA). The parametric continuous variables presented as mean ± SD (P > .05 on the Kolmogorov–Smirnov or Shapiro–Wilks test); on the other hand, they were described as median (min–max). Intergroup comparisons were analyzed using Student’s t-test or for parametric data, while the Mann–Whitney U test was used to examine non-parametric data. The categorical variables were compared between groups using the chi-square test. The independent risk factors were evaluated by using multivariate logistic regression. Logistic regression was used to determine the odds ratio for the independent predictors. The likelihood ratio from the multivariate logistic regression model containing all the predictors was also statistically significant (χ² = 84.8, P < .01). A stepwise regression approach (backward procedure, based on the P value of predictor removed) was used. P values <.05 were considered statistically significant. The sample sizes required for the tests (t-test, one-way analysis of variance, and chi-square tests for independent groups at 5% statistical significance level) were found by using the GPower 3.1 program.

RESULTS
The Demographic Variables
During the study period, 100 mothers were admitted to the lactation consultation and breastfeeding clinic for breastfeeding education and lactation consultation. A further 100 mothers were enrolled in the study as controls. There was no significant difference between the 2 groups in terms of demographic variables (age, natal history, educational status, employment, and the number of children). The demographic variables of the study and control groups are summarized in Table 1. The study group’s children were mean aged 1.6 ± 0.1 months (66% girls,
Breastfeeding rates were higher in the lactation consultation group than the control groups (76% and 28%, respectively) (P < .01). Receiving breastfeeding education was the most significant factor affecting exclusive breastfeeding duration (P < .01). The complementary feeding, bottles, and pacifiers were introduced significantly earlier in the control group (P < .01). The rate of use of pacifiers and bottles is high in mothers who breastfeed for less than 6 months (Table 2).

Correlations
Bivariate correlation analysis revealed a negative relationship between maternal educational status and the number of siblings in both groups (R = −0.358, P < .01).

The mothers’ age (OR: 0.515; 95% CI: 0.024–3.34), educational status (OR: 0.516; 95% CI: 0.025–10.447), employment (OR: 0.9; 95% CI: 0.355–2.283) and the number of siblings (OR: 0.62; 95% CI: 0.239–1.609) did not alter the duration of exclusive breastfeeding (P > .05) (Table 3). Breastfeeding duration was significantly affected from having lactation consultation (OR: 9.156; 95% CI: 4.6–18.1; P < .01).

DISCUSSION
The results of the current study revealed that receiving breastfeeding education was the most significant factor for the improvement of maternal breastfeeding attitudes including exclusive breastfeeding rates and duration. The results also highlighted that the lactation consultation at the breastfeeding clinic was an important step in order to improve exclusive breastfeeding rates. We believe that individualized breastfeeding education by a certified consultant contributes a lot to this valuable effect.

The 10 steps to successful breastfeeding of the BFHI and its certification procedure considerably improve exclusive breastfeeding rates. To sustain the effectiveness, continued education, and the recertification of hospitals are needed. Qualified antenatal counseling and professionally-mediated post-natal care programs supporting breastfeeding and lactation, even at a local level, have been reported to raise exclusive breastfeeding. Integrating lactation support throughout routine maternal and child health care has improved the rates of exclusive lactation in Sri Lanka, Cambodia and Malawi. Turkey is one of the countries that strictly follow the recommendations of the WHO on breastfeeding and ‘Baby-friendly’ hospitals have been established across the country. However exclusive breastfeeding for 6 months was reported to be 42% in the largest survey in Turkey. This rate is compatible with global data. United Nations International Children’s Emergency Fund (UNICEF) reported that only 42% of the 141 million babies born annually are exclusively breastfed until they reach 6 months of age. Breastfeeding rates are not sufficient even in those countries conducting the program effectively. The United Kingdom has one of the lowest breastfeeding rates and one of the highest uses of formula in the world despite nearly 90% of pregnant women wanting to breastfeed. There are many reasons for suboptimal breastfeeding rates, globally. Physiological and socio-cultural factors, restrictive family and work environments, the aggressive marketing of commercial products, lack of prenatal breastfeeding education and low maternal self-efficacy, deficient expertise and awareness about breastfeeding and related problems at health care facilities all have a negative impact on breastfeeding practices. Prenatal period and pregnancy establish the most appropriate time for breastfeeding education.

The reasons for suboptimal breastfeeding rates in Turkey may be due to information being unavailable and therefore not reaching all mothers effectively as well as not establishing lactation consultation and breastfeeding clinics “officially” in hospitals. We think the consultant team of an officially established clinic will be vigorous and more dedicated to their work.

The lactation consultation gives accurate information about the correct mode of baby and breast attachment, signs of good attachment, and precise information about complementary feeding processes. The results of the current study revealed the value of breastfeeding education on the improvement of exclusive breastfeeding rates and duration as well as the timely initiation of complementary feeding.

Table 1. Demographic Variables of Mothers in the Study

| Lactation Consultation | P |
|------------------------|---|
| **Age (years) (mean ± SD)** | |
| Yes (n = 100) | 27.81 ± 5.47 |
| No (n = 100) | 27.45 ± 5.48 |
| **Education status, n (%)** | |
| Primary school | 20 (20%) |
| Secondary school | 16 (16%) |
| High school | 36 (36%) |
| University | 28 (28%) |
| **Having a job, n (%)** | |
| Yes | 18 (18%) |
| No | 82 (82%) |
| **Number of children (median/IQR)** | |
| Yes | 1 (1) |
| No | 2 (2) |

+Independent t-test; *Chi-square analysis; ‘Mann–Whitney U test.
SD, standard deviation; IQR, interquartile range.

Table 2. Breastfeeding Data at Seventh Month of the Study Population

| Lactation consultation | P |
|------------------------|---|
| **Exclusive breastfeeding >6 months, n (%)** | |
| Yes (n = 100) | 76 (76%) |
| No (n = 100) | 28 (28%) |
| **Complementary feeding <6 months, n (%)** | |
| Yes (n = 100) | 24 (24%) |
| No (n = 100) | 72 (72%) |
| **Using bottle for complementary feeding, n (%)** | |
| Yes (n = 100) | 23 (23%) |
| No (n = 100) | 50 (50%) |
| **Using pacifier, n (%)** | |
| Yes (n = 100) | 20 (20%) |
| No (n = 100) | 48 (48%) |

*Chi-square analysis.
Probable difficulties in lactation consultation even in “Baby-Friendly Initiative” hospitalization included hospital access on weekends and evening shifts, patient number, and employees’ heavy workloads.16,19 Telephone contact, use of video consultations, and smartphone applications in the hospital, clinic, and at home were suggested to solve these potential problems.16-23 Our consultants used mobile phones for consultation services before the new world order caused by the COVID-19 virus, which made online healthcare delivery mandatory using communication technology (telemedicine). They continue to use telemedicine more frequently. Thereafter we will plan a study to evaluate the effectiveness of breastfeeding consultations with telemedicine.

This study was planned a few months after the clinic’s establishment. Although the results of the current study were similar to the literature, it has value to show the success of a newly organized breastfeeding and lactation education clinic which was also the first to be officially established in a community hospital. To gather all the mothers to be willingly involved in the study 6 months after their breastfeeding education was an accomplishment. The lack of reliability of the questionnaire used is the limitation of the study.

**CONCLUSION**

Individualized breastfeeding education in a lactation consultation and breastfeeding clinic helps mothers to improve their attitudes towards breastfeeding. Spreading the lactation consultation clinics in children’s hospitals will support reaching considered targets in exclusive breastfeeding worldwide. The results may further enlighten authorities to establish breastfeeding consultation clinics “officially” throughout the country. It can also make breastfeeding consultants more vigorous and dedicated to the process.

**Table 3. Regression Analysis of Factors Affecting Lactation Duration**

|                              | Odds Ratio | Relative Risk (95% CI) | P* |
|------------------------------|------------|------------------------|----|
| Lactation consultation       | 9.156      | 4.6-18.1               | <.01 |
| Education status             | 0.516      | 0.025-10.447          | .6  |
| Number of children           | 0.620      | 0.239-1.609           | .326 |
| Having a job                 | 0.900      | 0.355-2.283           | .825 |
| Mother’s age                 | 0.516      | 0.024-3.34            | .734 |

*Binary logistic regression analysis.

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APPENDIX A. SURVEY INSTRUMENT

Open-Ended Questions
How old are you?

How old is your baby?

What is your educational status?

How many children do you have?

What is the birth week of your present child?

What is the birth weight of your present child?

When did you begin complementary feeding?

Yes-No Questions
Do you have a job?

Did you get a lactation consultation?

Does your child use pacifier?

Does your child use bottle for feeding?

Multiple Choice Questions
Monthly income of the family

Household issues supporting breastfeeding