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Original Article

# Translation and Adaptation of the Existential Breastfeeding Difficulty Scale to Turkish

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**ABSTRACT**

**Aim:** Existential breastfeeding difficulty scale (ExBreastS) evaluates mothers who interrupt or terminate breastfeeding because of existential difficulties. Aim of the study was to adapt the scale for Turkish.

**Materials and Methods:** This methodological study was carried out between December 2021 and February 2022 in the obstetrics and gynecology clinic of a hospital in the west of Turkey. The study sample consisted of 139 mothers who fulfilling the study inclusion criteria. The data were obtained using a breastfeeding experience information form and the ExBreastS-Turkish form. Language adaptation and content validity, exploratory factor analysis, and confirmatory factor analysis (CFA) were performed to determine the validity of the scale, and internal consistency coefficient, item-total score correlation, split-half reliability, and test-retest analyzes were carried out to establish the reliability of the scale.

**Results:** An exploratory factor analysis showed that the instrument had a 3-factor construction with appropriate factor loads of the items (0.58-0.85). In addition, results of CFA showed that model fit indices of the instrument met the target values. Cronbach's alpha coefficient of the scale was 0.87, and the item-total score correlations ranged from 0.35 to 0.77. The test-retest correlation coefficient was 0.90 ($p<0.001$) and the Spearman-Brown reliability coefficient was 0.79.

**Conclusion:** The Turkish version of the ExBreastS evaluated in Turkish women showed that it was a valid and reliable measurement instrument after necessary corrections.

**Keywords:** Breastfeeding difficulties, existential, nursing, reliability, validity

## Introduction

Breast milk is the best source of nutrition for all infants. Several medical and professional institutions strongly recommend exclusive breastfeeding for the first 6 months of life, followed by complementary and continuous breastfeeding (1,2). The World Health Organization (WHO) emphasizes that breastfeeding is beneficial for both the infant and the mother and strongly suggests the continuation of breastfeeding until at least the age of two (3).

Although the benefits of breastfeeding have been reported in several studies and several organizations have emphasized the importance of breastfeeding, results of the studies in Turkish women and the national data show that Turkish mothers do not follow global recommendations regarding the duration of breastfeeding (4). The WHO reported that approximately 44% of 0-6-month-old infants worldwide were exclusively breastfed over the period of 2015-2020 (5). National data from Turkey show that approximately 59% of 0-1-month-old infants are exclusively breastfed, but this rate decreases to 45% in 2-3-month-old infants and to 14% in 4-5-month-old infants (4). Therefore, breastfeeding has become a public health issue, and several studies have

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reported the biological, psychological, and social factors underlying early termination of breastfeeding (6-8).

Jean-Paul Sartre, who lived in 20th century, introduced the concept of "existentialism," which suggests that the existing is based on reality, that is, real existence, and is the opposite of essence. It is based on the fact that something exists, not what it is or how it is (9). Palmér et al. (10), with her existentialist interpretation of thought, has suggested that breastfeeding can be difficult for the mother and manifests itself in embarrassing feelings such as aversion to breastfeeding, aversion to the milk-producing body and anger at the infant.

Previous experiences of difficulties in breastfeeding may cause an existential trauma of breastfeeding in a woman's life (11). On the other hand, mothers with difficulties in breastfeeding have reported feelings of guilt and loneliness, causing them to have feelings of worthlessness and defeat. Existential anxiety and stress caused by breastfeeding difficulties are associated with other postpartum adjustment problems (12,13).

In Turkey, several breastfeeding inventories and psychometric tools are used to identify mother with breastfeeding issues and/or those who are at a risk of terminating breastfeeding at an early stage (14,15). However, to date, no scale is available to evaluate existential aspects of the breastfeeding difficulties among mothers. Therefore, this study aimed to adapt the existential breastfeeding difficulty scale (ExBreastS) into Turkish culture to examine the existential aspects of breastfeeding difficulties rather than their biological aspects such as insufficient breast milk production, clogged milk ducts, mastitis, and maternal fatigue.

## Materials and Methods

### Research Design, Setting and Relevant Context

A descriptive and methodological design was performed in the study. The study translation process and the Turkish adaptation process were carried out according to the International Test Commission Guide (16). The study was performed over a 5-month period in the Obstetrics and Gynecology ward of a university hospital in western Turkey. The results of the Turkey Demographic and Health Survey 2018 show that breastfeeding is quite common. Forty-one percent of infants under 6 months were exclusively breastfed, with a median breastfeeding period of 1.8 months for exclusively breastfed infants. The proportion of exclusive breastfeeding decreases rapidly with age. There is a sharp drop in the 4th month (4).

### Sample

Mothers with 4-month-old infants were included in the sample because the sample selection favored a population with risk factors for breastfeeding discontinuation. The recommended sample size according to scale development and validity and reliability studies is 5 to 10 times the number of instrument items (17). In line with this recommendation, the study sample for this study consisted of 139 mothers.

Inclusion Criteria

- Mothers, who breastfeed their children at least once after birth,
- Mothers, who had healthy and full-term infants,
- Mothers, who no problems in communication,
- Mothers, who had internet access,
- Mothers, who volunteered to join in the study,
- Mothers, who submitted written consent.

Exclusion Criteria

- Mothers, who did not agree to join in the study,
- Mothers, whose children were born prematurely,
- Mothers, who were unable to communicate properly.

### Measurement

**Breastfeeding Experience Information Form:** The form which was prepared by the researchers under the guidance of the literature, consists of 10 items, including sociodemographic features and information about the mother's breastfeeding experience (7,10,11,13).

**ExBreastS:** The ExBreastS was established by Palmér and Jutengren (18) to measure the existential aspects of the early breastfeeding challenges of the mothers. The questionnaire uses a 5-point likert-type scale (1=strongly disagree, 2=mostly disagree, 3=neither disagree nor agree, 4=mostly agree, 5=strongly agree) and consists of 16 items and has 3 subdimensions. Items that described positive aspects of breastfeeding challenges were reversed coded. The first subdimension, which has 7 items, is mother-child interdependency. The second subdimension, which has 5 items, is exposure and vulnerability and the third subdimensions, which has 4 items, is security and trust. The item-total score correlation of the scale is range from 0.37 to 0.82. A higher total scale score indicates that mothers have more existential breastfeeding difficulties. Permission was obtained via e-mail from Palmer, who developed the scale, in order to conduct this study.

### Translation Process

The original version of the scale was translated from English to Turkish by a bilingual expert and two specialists

in pediatric nursing who fluent in English. Researchers examined the three translations and a linguist who had not seen the scale before translated the scale from English to Turkish. The researchers confirmed that no semantic shift was noted between the original version and the version back-translated into English. Finally, a single Turkish scale was obtained.

### Content Validity Process

After the language equivalence was established, the Turkish versions of the instrument were presented to three pediatric nursing specialists, two gynecology and obstetrics nursing specialists, and two psychiatric nurse specialists to obtain their expert opinion regarding the content validity of the instrument. In order to determine the content validity of the scale, the opinions of seven experts were evaluated according to the Davis (19) technique. Content validity index (CVI) of the scale was found 1.0. After achieving a consensus among the experts, a pilot test was performed with 10 mothers. Mothers did not give any negative feedback about the instrument. The 10 mothers in the pilot study were exluded in the sample group.

### Data Collection

The mothers who met the inclusion criteria during the postpartum period (between December 2021 and April 2022) were informed about the study by the researchers and their contact information was recorded after obtaining consent from the mothers. When the targeted sample size was completed, the survey prepared using Google forms were shared with all mothers online. During the study, mothers who had questions contacted the researchers and their questions were answered.

### Statistical Analysis

The data were analyzed in the statistical package for the social sciences 21.0 program and analysis of moment structures 23.0 program was used for confirmatory factor analysis (CFA). Descriptive statistics for sociodemographic features and information about the mother's breastfeeding experience were presented as frequency, percentage, and mean. Turkish validity of the instrument was performed by exploratory factor analysis (EFA) and CFA. The suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) test and Bartlett's sphericity test. We used the CFA to determine if the item and subscale described the original scale structure and looked at the model fit values. Cronbach's alpha coefficient, split-half analysis, item-total score analysis (Pearson correlation analysis), and test-retest analysis (test-retest reliability analysis performed with 15-day intervals in our study) were used for the reliability analysis of the instrument.

### Ethical Considerations

Permission was obtained via e-mail from Palmer, who developed the scale, in order to conduct this study (18). Approval was obtained from the Non-Invasive Clinical Practices Ethics Committee of the Pamukkale University Faculty of Medicine, Department of Pediatric Nursing (approval no: E-60116787-020-143107 date: 14.12.2021). The study was performed under the guidance of the Declaration of Helsinki. Written informed consent was obtained from all mothers participating in the study after they were informed about the study.

## Results

The mean age of the mothers and their infants was 29.33±4.25 years and 9.81±4.04 weeks, respectively. Among all mothers, 94.2% belonged to a nuclear family, 5.8% had an extended family, 78.4% had a bachelor's degree, 20.1% had a high school diploma, and 1.4% were primary school graduates. Additionally, 73.4% of the mothers were primiparous and 26.6% were multiparous. All mothers, except 5%, started breastfeeding within the first 24 h of delivery, 73.4% of them exclusively breastfed their infants, 22.3% of them fed their infants with a combination of both breast milk and formula, and 4.3% of them fed their infants only with formula. A total of 6 mothers stopped breastfeeding between the first and eleventh weeks of delivery.

### Validity

### Content Validity Index

CVI of the scale was found 1.0.

### Construct Validity Analysis

EFA results showed a KMO score of 0.84 and a Bartlett's sphericity test score of $p<0.000$. The items explained 64.65% of the overall variance and were loaded on three factors with eigenvalues greater than 1.00, as in the original scale. We found that the factor loads of the items were between 0.58 and 0.85. As no factor load could be calculated for the two items in the original instrument, these two items were deleted from the Turkish version of the scale (Table I).

After all, 3 factors were modified in the model, the CFA showed a good fit for the data [$x^2=94.23$, degrees of freedom (df)=68, p=0.019, x/df 1.38] (Table II). The factor loads of the CFA model of the Turkish version of ExBreastS

| **Table I.** Factor loading and analysis of the items of the existential breastfeeding difficulty scale | | | |
|---|---|---|---|
| **Item No** | **Factor 1** | **Factor 2** | **Factor 3** |
| Item 1 | 0.647 | - | - |
| Item 2 | 0.750 | - | - |
| Item 3 | 0.859 | - | - |
| Item 4 | 0.802 | - | - |
| Item 5 | 0.822 | - | - |
| Item 6 | - | 0.807 | - |
| Item 7 | - | 0.585 | - |
| Item 8 | - | 0.754 | - |
| Item 9 | - | 0.617 | - |
| Item 10 | - | 0.686 | - |
| Item 11 | - | - | 0.782 |
| Item 12 | - | - | 0.814 |
| Item 13 | - | - | 0.859 |
| Item 14 | - | - | 0.689 |
| Eigenvalue | 5.580 | 2.053 | 1.419 |
| Variance explained | 39.855% | 14.664% | 10.133% |
| Rotation method: Varimax with Kaiser normalization | | | |

| **Table II.** Distribution of confirmatory factor analysis findings | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **$\chi^2$/df** | **RMSEA** | **GFI** | **NFI** | **RFI** | **CFI** | **RMR** | **IFI** | **TLI** |
| Model fit (modified) | 1.386 | 0.053 | 0.910 | 0.906 | 0.902 | 0.971 | 0.032 | 0.972 | 0.962 |
| Model fit (hypothetical) | 2.092 | 0.089 | 0.864 | 0.846 | 0.811 | 0.912 | 0.044 | 0.913 | 0.891 |
| Acceptance value | <5 | <0.08 | >0.90 | >0.90 | >0.90 | >0.90 | <0.08 | >0.90 | >0.90 |
| χ2: Chi-square, df: Degree of freedom, RMSEA: Root mean square error of approximation, GFI: Goodness of fit index, NFI: Normed fit index, RFI: Relative fit index, CFI: Comparative fit index, RMR: Root mean square residual, IFI: Incremental fit index, TLI: Tucker-Lewis index | | | | | | | | | |

ranged from 0.54 to 0.83 for the first factor, from 0.50 to 0.89 for the second factor, and from 0.63 to 0.88 for the third factor (Figure 1).

### Reliability

The Cronbach's alpha value was found to be with 0.87 for the total instrument, 0.71 for the mother-child interdependency subscale, 0.83 for the exposure and vulnerability subscale, and 0.83 for the security and trust subscale. The results of the statistical analysis indicated that the test-retest correlation coefficient was 0.90 ($p<0.001$) (Table III). The item-total score correlations of the scale is presented in Table IV. Item-subscale total score correlation was ranged from 0.65 to 0.88.

## Discussion

According to Davis (19) technique, the CVI score should be >0.80 (20). The CVI was >0.80 for this scale, so no scale item was removed, and all items were evaluated and necessary adjustments were made in line with the expert opinions. A high level of consensus has been reached between experts on ExBreastS.

| **Table III.** Distribution of the reliability analysis findings | | | | |
|---|---|---|---|---|
| | **Scale total** | **First sub-scale** | **Second sub-scale** | **Third sub-scale** |
| Cronbach α | 0.873 | 0.713 | 0.837 | 0.836 |
| First half of Cronbach α | 0.786 | 0.725 | 0.772 | 0.786 |
| Second half of Cronbach α | 0.814 | 0.874 | 0.615 | 0.828 |
| Spearman-Brown | 0.793 | 0.778 | 0.758 | 0.762 |
| Guttman split-half | 0.783 | 0.742 | 0.751 | 0.757 |
| Correlation between two halves | 0.656 | 0.637 | 0.603 | 0.615 |
| X ± SD<br>(Min-Max) | 23.00±8.106<br>(14-48) | 6.09±1.97<br>(5-13) | 9.36±4.42<br>(5-25) | 7.53±3.41<br>(4-18) |
| Cronbach α: Cronbach's alpha, SD: Standard deviation, min-max: Minimum-maximum | | | | |

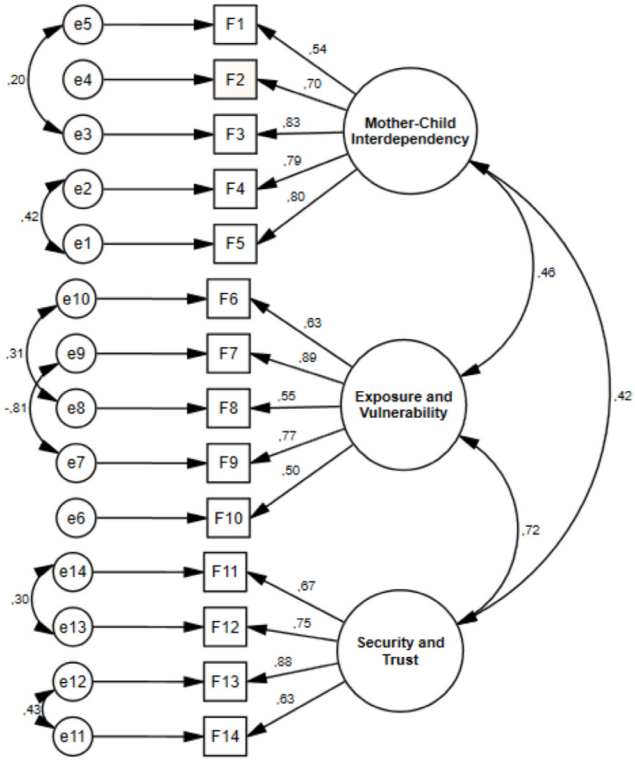


**Figure 1.** Confirmatory factor analysis results of three factor model

The KMO value was 0.84, suggesting that the sample size was sufficient for principal component analysis. Likewise, the results of Bartlett's test of sphericity ($\chi^2$=965.55, p=0.000) showed that the variables were correlated and therefore satisfactory for EFA (21).

The EFA was conducted to determine the factor structure of the scale. The 3-factor structure of the scale explained 64.65% of the overall variance. The rate of explained variance for a measurement tool with validity and reliability should be at least ≥52% (22). Previous studies indicate that the factor load of each item should be ≥0.30. Items that factor load lower than 0.30 should be removed from the instrument. (23). In the light of this knowledge, items 6 "breastfeeding my child made my earlier times with them difficult" and 7 "I have reservations about adapting to my child's signals when I breastfeed them" were romeved from the instrument. The factor loads ranged from 0.58 to 0.85. Consequently, as a result of EFA were acceptable to decide the factor structure of the instrument.

Cultural adaptation studies recommend to conduct a CFA following EFA (24). CFA aims to determine the

**Table IV.** Correlations of item total score and item sub-scale total score

| | X ± SD | Item-total score correlation (r) | Item-subscale total score correlation (r) |
|---|---|---|---|
| **Mother-Child Interdependency** | | | |
| 1. Breastfeeding my child makes me feel like a failure as a mother. | 1.33±0.78 | 0.355* | 0.747* |
| 2. I feel worthless when breastfeeding my child. | 1.15±0.35 | 0.532* | 0.654* |
| 3. Breastfeeding my child makes me feel like I am worse than other mothers. | 1.12±0.32 | 0.495* | 0.720* |
| 4. Breastfeeding my child prevents me from feeling joy for my child. | 1.28±0.72 | 0.407* | 0.730* |
| 5. I think that my child feels like I am useless when I breastfeed them. | 1.20±0.54 | 0.527 | 0.717 |
| **Exposure and Vulnerability** | | | |
| 6. I feel like I am stuck with breastfeeding my child. | 1.61±0.99 | 0.738 | 0.826 |
| 7. I am tired of getting ready to breastfeed my child. | 1.59±0.99 | 0.738 | 0.775 |
| 8. I feel like a machine when breastfeeding my child. | 1.66±1.05 | 0.713 | 0.728 |
| 9. I do not always look forward to breastfeeding my child. | 2.27±1.28 | 0.735 | 0.799 |
| 10. Breastfeeding my child makes me feel like it is my sole duty. | 2.22±1.30 | 0.616 | 0.745 |
| **Security and Trust** | | | |
| 11. Breastfeeding my child fascinates me. | 1.97±1.02 | 0.697 | 0.807 |
| 12. Breastfeeding my child makes me feel privileged. | 1.78±0.99 | 0.698 | 0.836 |
| 13. I feel confident when I breastfeed my child. | 1.78±1.00 | 0.772 | 0.889 |
| 14. I trust my body that it can produce enough milk to breastfeed my child. | 1.98±1.13 | 0.646 | 0.754 |

SD: Standard deviation, p<0.05, *p<0.01

verification of the evidence regarding the adaptation of the tool in a different culture, and the results are evaluated through fit indices (25,26). On the basis of the results of the modification in the CFA analysis, the $\chi^2$/df ratio was calculated as 1.38. This value was below 5, indicating an acceptable fit (Figure 1) (27).

For root mean square error of approximation (RMSEA) and resting metabolic rate (RMR), a value <0.08 shows an acceptable fit, while a value <0.05 indicates a perfect fit. The RMSEA and RMR values of the scale obtained in this study suggested a perfect fit. For other fit indices, a value >0.95 indicates a perfect fit, and a value >0.90 indicates an acceptable fit (27). In the current study, all fit index values were >0.90. Factor loads for each item in the CFA are required to be >0.30 (28). The factor loads of all items in this study were >0.30. Results of the CFA indicated that the data were compatible with the model, the 3-factor structure of the scale was confirmed as in the original, 3 factors were associated with the scale, and all items adequately described the factors to which they belonged.

Internal consistency, two-half reliability, and test-retest methods were performed to determine the reliability of the ExBreastS. In the original ExBreastS, the internal consistency coefficients of the factors were found to be 0.89, 0.86, and 0.73, which are similar to those in our study (18). In addition, the results of the test-retest reliability analysis performed with 15-day intervals in our study suggested that the scale was highly reliable over time (r=0.90, p<0.001). The predicted reliability of a scale should be at least 0.70 (29). In line with this information, the internal consistency coefficient and the Spearman-Brown reliability coefficient suggested that the Turkish version of the ExBreastS was a reliable measurement instrument.

In the original ExBreastS, the item-subscale correlations varied between 0.45 and 0.82. Scale validity and reliability studies emphasize that item-total and item-subscale correlations should be ≥0.30 to distinguish individuals from others in terms of the measured feature (30). In line with this information, the adapted ExBreastS had sufficient item-total and item-subscale correlations.

The reasons for interrupting or terminating breastfeeding are not always just physical. In this study, a scale that deals

with issues that may cause problems for breastfeeding due to existential difficulties has been adapted to Turkish culture. All healthcare professionals, especially pediatric nurses, can use this adapted scale as a screening tool for mothers in the postpartum period. As a result of screening, mothers at high risk for problems related to breastfeeding can be detected and the encouragement of breastfeeding can be provided by healthcare professionals.

### Study Limitations

The data collected in this study were only from mothers who gave birth at a single hospital, and thus, the results of this study cannot be generalized to all Turkish women. The sociodemographic characteristics of the mothers in the sample group were similar to those of the Turkish women. Therefore, further studies are required to be performed to use this scale in mothers from different socioeconomic backgrounds and cultures and to confirm its suitability for Turkish culture.

## Conclusion

This study determined that the Turkish version of ExBreastS consisted of 3 factors similar to those in the original scale. Unlike the original scale, the Turkish version of the scale eliminated two items because they because they were not applicable in the Turkish culture. Therefore, the Turkish version of the ExBreastS consisted of a total of 14 items. The internal consistency coefficient was high both for the total scale and subscales, reflecting cultural equivalence of the scale. The findings from this study showed that the Turkish version of the ExBreastS is a valid and reliable measurement tool for screening mothers with existential difficulties during breastfeeding.

### Ethics

**Ethics Committee Approval:** Approval was obtained from the Non-Invasive Clinical Practices Ethics Committee of the Pamukkale University Faculty of Medicine, Department of Pediatric Nursing (date: 14/12/2021, approval no: E-60116787-020-143107).

**Informed Consent:** Informed consent was taken from the participants.

**Peer-review:** Externally peer-reviewed.

### Authorship Contributions

Surgical and Medical Practies: B.B., B.Ç., Concept: B.B., B.Ç., Design: B.B., B.Ç., Data Collection and/or Processing: B.B., Analysis and/or Interpretation: B.B., B.Ç., Literature Search: B.B., B.Ç., Writing: B.B., B.Ç.

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