



Prenatal breastfeeding self efficacy scale: validity and reliability study

Hale Uyar Hazar¹, Esin Uzar Akça²

¹Division of Midwifery, Adnan Menderes University School of Health Sciences, Aydın, Turkey

²Neonatal Intensive Care Unit, Pamukkale University Hospital, Denizli, Turkey

Cite this article as: Uyar Hazar H, Uzar Akça E. Prenatal breastfeeding self efficacy scale: validity and reliability study. *Turk Pediatri Ars* 2018; 53(4): 222-30.

Abstract

Aim: To determine the validity and the reliability of the Prenatal Breastfeeding Self-Efficacy Scale.

Material and Methods: This was a methodologic study. The sample of the research comprised 200 pregnant women who presented to the outpatient clinic of Gynecology between April and June 2015. An introductory information form and the Prenatal Breast Self-Efficacy Scale were used to collect the data. In the analysis of the data, descriptive statistics, content validity index for coverage validity, exploratory factor analysis, and confirmatory factor analysis for construct validity, and Cronbach-alfa α for reliability were used.

Results: In the explanatory factor analysis of the scale, the Kaiser-Meyer-Olkin floor number was 0.84 and the Barlett's sphericity test results were $\chi^2=1812.608$; $df=171$; $p<0.001$. The contribution of the factors to total variance was 59.06%. According to confirmatory factor analysis of the scale, the Chi-square test result was as follows: $\chi^2=254.23$ ($p<0.001$, $SD=146$). The model fit indices were as follows: $\chi^2/SD=1.74$, Root Mean Square Error of Approximation=0.06, Comparative Fit Index=0.96, Normed Fit Index=0.92, Non-Normed Fit Index=0.96, Goodness of Fit Index=0.88 and Adjusted Goodness of Fit Index=0.85. The internal consistency reliability coefficient of Prenatal Breastfeeding Self-Efficacy Scale was 0.86.

Conclusion: The Prenatal Breastfeeding Self-Efficacy Scale is a valid and reliable scale which is applicable to Turkish culture and an appropriate tool which can be used by all healthcare workers who wish to design and evaluate interventions to support breastfeeding in the prenatal period.

Keywords: Breastfeeding, self-efficacy, validity, reliability

Introduction

Breastfeeding is the primary condition for healthy nutrition. Breastmilk is a unique nutrient that fully supports a baby's development. Nursing is the healthiest way for delivering breastmilk, which is considered an unmatched nutrient for babies' nutrition (1). Many factors that are effective in initiating and continuing nursing have been mentioned in the literature. These include maternal age, familial structure, education level, economic status, status of desiring pregnancy, and experiencing health problems during pregnancy, previous experiences related to breastfeeding, employment

status, having information about breastfeeding, the person giving information about breastfeeding, the time of initiating breastfeeding, and the mode of delivery (2-9).

Another factor affecting breastfeeding is the mother's perception of self-efficacy related to breastfeeding (10). The mother's perception of self-efficacy related to breastfeeding indicates if the mother will nurse her baby, her thoughts related to breastfeeding, and her ability to handle the emotional problems faced during this process (11).

Breastfeeding self-efficacy has been associated with the mother's decision to nurse her baby and the breastfeed-

Corresponding Author : Hale Uyar Hazar E-mail: hazarhale@gmail.com

Received: 17.08.2018

Accepted: 26.11.2018

©Copyright 2018 by Turkish Pediatric Association - Available online at www.turkpediatriarsivi.com

DOI: 10.5152/TurkPediatriArs.2018.18114

ing time (12). Interventions aimed at increasing nursing adequacy during pregnancy may be helpful in increasing nursing because the majority of mothers decide how to feed their babies in the prenatal period. Breastfeeding adequacy should be evaluated during pregnancy in order to evaluate these interventions. Studies show that breastfeeding rates increase if mothers decide to nurse their babies during pregnancy (13-15). A few studies found an association between early initiation of breastfeeding and breastfeeding self-efficacy (16-21). In the study conducted by Loke et al. (22), it was reported that there was an association between the mother's breastfeeding self-efficacy and efficient breastfeeding up to six months after delivery. In the study conducted by Otsuka et al. (19), it was shown that interventions directed to increase breastfeeding self-efficacy in pregnant women in the last trimester in a baby-friendly hospital increased efficient breastfeeding rates in the first four months after delivery.

In this study, we aimed to specify the validity and reliability of the Prenatal Breastfeeding Self-Efficacy Scale (PBSES).

Material and Methods

Type of study

This study is a methodologic study.

Population and sample of the study

The population of the study consisted of the pregnant women who presented to the gynecology outpatient clinic of Pamukkale University Health Research and Application Center and Denizli Public Hospital affiliated with the Denizli Public Hospitals Administration, which are located in the center of the province of Denizli.

It has been reported that the population size should be at least 5-10-fold larger than the number of the scale items in order to perform factor analysis in validity and reliability studies conducted for scales (23). Since the number of the items in the scale to be adapted was 20, the population of the study consisted of 200 pregnant women and non-probabilistic sampling was used. The sample size targeted was reached in the study. Pregnant women who were at least primary school graduates and were in the last trimester of pregnancy (29 weeks and above) were included in the study. Women who were diagnosed as having psychological disease were not included.

Data collection tools

Introductory information form

With the objective of evaluating the sociodemographic and obstetric characteristics of the group for which the PBSES was to be applied, a form consisting of a total of 12 questions (Introductory Information Form) was prepared by the investigator in accordance with the literature (24-27).

The Prenatal breastfeeding self-efficacy scale

The 20-item PBSES was developed by Wells et al. (28). This scale measures "pregnant women's status of finding information and support related to breastfeeding," "coping with concerns related to planning," "preparing milk to feed other's babies," "breastfeeding near other people," "being able to discuss breastfeeding," and "deciding to breastfeed when others do not approve." In this scale, the responses are evaluated in a five-point Likert-type scale (1: I am definitely not confident, 2: I am not quite confident, 3: I am confident, 4: I am very confident, and 5: I am completely confident). The total score that can be obtained ranges between 20 and 100 (20: lowest efficiency, 100: highest efficiency). The scale has no cut-off point. As the score obtained gets higher, the breastfeeding self-efficacy increases. The scale consists of four subgroups, including the skills and desires necessary for breastfeeding (seven items), collecting information on how to breastfeed (five items), breastfeeding near other people and sense of shame during breastfeeding (four items), and social pressure during breastfeeding (two items). The other two items are independent of the subgroups and evaluate discussing the importance of breastfeeding with the partner and confidence related to breastfeeding for two years. In the study conducted by Piñeiro-Albero et al., (29) who adapted the PBSES developed by Wells et al. (28) to Spanish culture, the investigators reported that they distributed the two independent items of the original scale (the 4th and 20th items) to subgroups by their relevance. The items that were included in each subgroup were as follows: the skills and desires necessary for breastfeeding (items 6-12, 20), collecting information related to how to perform breastfeeding (items 1-3, 5, 17), breastfeeding near other people and sense of shame during breastfeeding (items 13-16) and social pressure during breastfeeding (item 4, 18, 19). The Cronbach alpha coefficient of the original scale developed by Wells et al. (28) is 0.89.

Collection of the data

The objective of the study was explained to the pregnant women who accepted to participate in the study and informed consent was given by the women. Pri-

marily, the “Introductory Information Form” was completed during face-to-face interviews. Completing the introductory information form took 5-6 minutes. Subsequently, information about the PBSES was given and the pregnant women responded to the items included in the scale using the self-reporting method. The time required to complete the PBSES was 20-25 minutes. The data collection process was completed between April 1st, 2015, and July 31st, 2015.

The ethical aspect of the study

For adaptation of the PBSES to Turkish and use of the Turkish form, approval was obtained from the scale’s owner, Kristen Wells, by way of e-mail. Ethics committee approval for the study protocol was obtained from Adnan Menderes University Ethics Committee (53043469-050.04.04, Decision 30). The research related to human use has been complied with all the relevant national regulations, institutional policies and in accordance with the tenets of the Helsinki Declaration. Institution approval for collecting the study data was obtained from the relevant hospitals and written consents were obtained from the pregnant women included in the sample after giving information about the study.

Assessment of the data

The Statistical Package for the Social Science 16 (SPSS 16.0) package program and LISREL 9.1 Student statistical program were used for analysis of the data. Descriptive statistics were used for the analysis of descriptive data. The methods used to provide validity and reliability of the scale are shown in Table 1.

Table 1. Analysis methods used in providing validity and reliability of the Prenatal Breastfeeding Self-Efficacy Scale

Validity analyses	
Method	Statistical Methods
Content Validity	<ul style="list-style-type: none"> ➤ Consistency of expert scores • Content Validity Index ➤ Exploratory Factor Analysis
Structure Validity	<ul style="list-style-type: none"> • Kaiser-Meyer-Olkin • Barlett Sphericity Test ➤ Confirmatory Factor Analysis
Reliability analyses	
Method	Statistical Methods
Internal Consistency	<ul style="list-style-type: none"> ➤ Cronbach’s Coefficient Alpha

Results

The mean age of the pregnant women was 27.90±5.80 years; 84.0% of the participants were aged 20-35 years. Among the women who participated in the study, 32.0% were primary school graduates, 80.5% had a marriage duration of 1-9 years, 82% had moderate economic status, 68% were housewives, 45.3% were self-employed, and 87% had social security. The mean values for gravidity, parity and number of live children were 2.24±1.31, 0.81±0.80, and 0.79±0.80, respectively. Among the women, it was specified that 87.5% of the pregnancies were planned pregnancies and 89.5% were desired pregnancies.

I. Validity analyses of the Prenatal Breastfeeding Self-Efficacy Scale

Examination of the psycholinguistic properties of the Prenatal Breastfeeding Self-Efficacy Scale/Language adaptation

The translation of PBSES from English to Turkish was made by two linguistic scientists who knew Turkish and English at a good level. The translated PBSES was edited by the investigator. It was examined in terms of the meanings of the items by 10 faculty members who were specialists in the area of nursing in gynecology and in terms of language compatibility by a Turkish linguistic scientist. The necessary corrections were made in accordance with the feedback received. The PBSES was translated back to English by another linguistic scientist who knew English at a good level. The scale that was translated back to English was compared with the statements in the original scale and the final form of the PBSES was constituted by making the necessary corrections in accordance with the expert’s opinions.

2. Content validity

After providing language validity, the content validity method was used in order to evaluate if each item in PBSES measured breastfeeding self-efficacy. The Turkish version of the scale was presented to 10 faculty members who were experts in their areas and who had not seen the scale before. Content Validity Index (CVI), developed by Waltz and Bausell (1981), was used to evaluate the content validity as stated by Polit and Beck (30). According to this index, the experts evaluated each item with a score ranging between 1 and 4 (1= Not appropriate, 2= The item needs to be modified appropriately, 3= Appropriate, but small modifications are necessary, 4= Very appropriate). The CVI value for each item was calculated by dividing the number of experts who marked the third

Table 2. Factor design of the Prenatal Breastfeeding Self-Efficacy Scale (vertical rotation-verimax)

Items	Factor loading values			
	Factor 1	Factor 2	Factor 3	Factor 4
8	0.812			
19	0.801			
7	0.794			
18	0.786			
9	0.784			
14	0.618			
20	0.575			
17	0.469			
6	0.418			
1		0.846		
2		0.836		
3		0.809		
5		0.628		
16			0.796	
15			0.732	
13			0.31	
11				0.854
10				0.791
12				0.559
Variance explained	31.69	12.59	9.52	5.25
Total variance explained	59.06			

and fourth options by the total number of experts in order to evaluate the measurement degrees of each item. The CVI value for the scale was calculated as 0.98 when the CVI values of all items were summed and divided by the number of the items included in the scale. The data obtained showed that the content validity of the scale was adequate because the CVI should be at least 0.80 for content validity. In the study conducted by Wells et al. (28), the CVI value was found as 0.90. The CVI value obtained in this study was compatible with the CVI value obtained in the original study.

3. Construct validity

The construct validity method was used to evaluate how accurate the scale measured breastfeeding self-efficacy. The Kaiser-Meyer-Olkin (KMO) test was used to test

the compatibility of the sample size before application of factor analysis. As a result of the analysis, the KMO value was found as 0.837. In accordance with this finding, it was concluded that the sample size was ‘good’ to perform factor analysis (31).

The Bartlett Sphericity Test (BST), which was performed to examine if there was a correlation between the variables in the PBSES based on partial correlations, revealed the following results: $\chi^2=1880.258$; $df=190$; $p<0.001$. It was concluded that the data matrix in the PBSES was appropriate because the Chi-square result calculated was found to be significant. Exploratory factor analysis (EFA) was performed to evaluate construct validity because the test result was significant, which was proof for normality of the scores.

Table 3. Fit indices before and after modification

Fit indices	Before modification	After modification
Chi-square (χ^2)	391.86	254.23
Degree of freedom (df)	148	146
χ^2/df	2.64	1.74
RMSEA	0.091	0.061
CFI	0.92	0.96
NFI	0.88	0.92
NNFI	0.91	0.96
GFI	0.83	0.88
AGFI	0.78	0.85

AGFI: adjusted goodness of fit index; CFI: comparative fit index; GFI: goodness of fit index; NFI: normed fit index; NNFI: non-normed fit index; RMSEA: root mean square error of approximation

Table 4. Excellent and acceptable fit criteria related to the fit indices used in structural equality model studies

Fit indices	Excellent fit criteria	Acceptable fit criteria
χ^2/df	$0 \leq \chi^2/df \leq 2$	$2 \leq \chi^2/df \leq 3$
RMSEA	$0.00 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$
CFI	$0.95 \leq CFI \leq 1.00$	$0.90 \leq CFI \leq 0.95$
NFI	$0.95 \leq NFI \leq 1.00$	$0.90 \leq NFI \leq 0.95$
NNFI	$0.95 \leq NNFI \leq 1.00$	$0.90 \leq NNFI \leq 0.95$
GFI	$0.95 \leq GFI \leq 1.00$	$0.90 \leq GFI \leq 0.95$
AGFI	$0.90 \leq AGFI \leq 1.00$	$0.85 \leq AGFI \leq 0.90$

AGFI: adjusted goodness of fit index; CFI: comparative fit index; GFI: goodness of fit index; NFI: normed fit index; NNFI: non-normed fit index; RMSEA: root mean square error of approximation

(Bentler, 1980; Bentler and Bonett, 1980; Browne and Cudeck, 1993; Baumgartner and Homburg, 1996; Schermelleh-Engel and Moosbrugger, 2003; Marsh, Hau et al., 2006; Kline, 2011).

4. Exploratory factor analysis

With the objective of revealing factor design of the PBSES, principal components analysis was used as factorization method and the varimax method (maximum variability), which is one of the vertical rotation methods, was used as a rotation method. As a result of the analyses performed, 4 components with an eigenvalue above 1 were obtained for 20 items that were basically included in the assessment. As Şencan (32) stated,

Table 5. Examination of the internal consistency reliability coefficients (Cronbach alpha) of the Prenatal Breastfeeding Self-efficacy scale subdimensions and the total scale

Prenatal Breastfeeding Self-efficacy scale subdimensions	Cronbach Alpha
• Wishes	0.83
• Information collection	0.80
• Breastfeeding nearby other people	0.73
• Ability	0.73
Prenatal Breastfeeding Self-efficacy Scale total	0.86

Kim-Yin (2004) reported that the sample size should be at least 200 for an item with a factor loading of 0.40. The factor loading value in EFA was specified as 0.40 because the sample size was 200. In factor analysis, it was observed that the fourth item was overlapping. Overlapping requires occurrence of two conditions. These two conditions include a higher loading value than accepted in an item in more than one factor and a difference smaller than 0.01 between loading values in two or more factors in an item. The fourth item was removed because of overlapping and factor analysis was performed again with the remaining 19 items. The KMO coefficient was found as 0.84 and the BST results were as follows: $\chi^2=1812.608$; $df=171$; $p<0.001$. The factor design obtained as a result of excluding this item from the analysis and the factor loadings of the items are shown in Table 2. The contribution of the factors to the total variance was 31.69% for the first factor, 12.59% for the second factor, 9.52% for the third factor, and 5.25% for the fourth factor. It was found that the total contribution of the four factors specified to the total variance was 59.06% (Table 2). In multifactorial designs, a variance between 40% and 60% is accepted as sufficient (33, 34).

When the four components mentioned were evaluated considering the total variance table explained and the scree plot, it was observed that the four components made a significant contribution to variance. It was found to be compatible with the factor number expected in the theoretical structure specified in the process of development of the PBSES.

When the structure of the original scale, which consisted of four factors, was compared with the newly formed structure results, it was observed that the three items included in the Social Pressure factor in the original

scale were included in the Skills and Desires factor in the newly formed structure, an item included in the Information Collection factor was included in the Skills and Desires factor, an item included in the Breastfeeding Nearby Other People factor was included in the Skills and Desires factor, and three items included in the Skills and Desires factor were included in the Social Pressure factor.

According to these results, the factors in the newly formed structure were named with the original factor from which they received the highest number of items. As a result of factor analysis, the scale was named as Desires (9 items), Information Collection (4 items), Breastfeeding Nearby Other People (3 items) and Skill (3 items) and was reduced to a total of 19 items.

5. Confirmatory factor analysis

Confirmatory factor analysis (CFA) was performed to test the accuracy of the structure observed and the factors specified as a result of exploratory factor analysis. In other words, the compatibility of the model related to EFA was tested with CFA. Chi-square goodness of fit, root mean square error of approximation (RMSEA), comparative fit index (CFI), normed fit index (NFI), non-normed fit index (NNFI), goodness of fit index (GFI), and adjusted goodness of fit index (AGFI) were used to evaluate model compatibility in the PBSES.

As a result of analysis, a Chi-square value of ($\chi^2=391.86$, $n=200$, $df=148$, $p<0.001$) was obtained. Here, an insignificant p value is desirable. However, it has been reported that a significant p value is normal because the sample size in CFA is large in most cases (35).

Fit indices were found to be as follows: $\chi^2/df= 2.64$, $RMSEA= 0.09$, $CFI= 0.92$, $NFI= 0.88$, $NNFI= 0.91$, $GFI= 0.83$, $AGFI= 0.78$. In accordance with the CFA recommendations, modifications were performed between the 19th and 18th items and between the 9th and 8th items (Figure 1). After the modification procedure, the fit indices of the model were as follows: ($\chi^2= 254.23$, $p=.001$, $df=146$), $\chi^2/df= 1.74$, $RMSEA= 0.06$, $CFI= 0.96$, $NFI= 0.92$, $NNFI= 0.96$, $GFI= 0.88$, and $AGFI= 0.85$ (Table 3). The fit indices obtained after modification performed in the CFA of the PBSES were compared with the excellent and acceptable fit criteria shown in Table 4 (36-42) and it was observed that the four-factor structure of the model, which consisted of 19 items, was confirmed as a model.

II. Reliability analyses of the Prenatal Breastfeeding Self-Efficacy Scale

The reliability coefficients for the subdimensions of the PBSES were evaluated and shown in Table 5. The Cronbach alpha internal consistency reliability coefficients of the four main subdimensions were specified as follows: $\alpha=0.83$ for the subdimension of Desires, $\alpha=0.80$ for the subdimension of Information Collection, $\alpha=0.73$ for the subdimension of Breastfeeding nearby other people, and $\alpha=0.73$ for the subdimension of Skill. The Cronbach alpha internal consistency reliability coefficient for the entire PBSES was found as 0.86.

Discussion

The validity and reliability study of the PBSES, which was developed by Wells et al. (28), suggests that using breastfeeding self-efficacy in the prenatal period would be appropriate in specifying the opinion related to breastfeeding behavior in the postnatal period.

The scale's validity criteria were evaluated by primarily examining factor structure. Compatible with the original study, it was observed that the PBSES's four-factor structure was valid for our country in this study. It was observed that including 19 instead of 20 items was more appropriate, in contrast to the original scale; the fourth item was removed because it was found to be overlapping. Four factors of the PBSES explain 59.06% of the total variance. The scale's four factor structure was supported by CFA. However, four factors of the scale's items explained 44.7% of the total variance in the original form of the scale (28). Although four factors were obtained as in the original form of the scale, two factors were named differently because some of the items included in the factors did not match up with the ones in the original form. When the structure of the original scale, which consisted of four factors, was compared with the newly formed structure results, it was observed that the three items included in the Social Pressure factor in the original scale were included in the Skills and Desires factor in the newly formed structure, an item included in the Information Collection factor was included in the Skills and Desires factor, an item included in the Breastfeeding Near Other People factor was included in the Skills and Desires factor, and three items included in the Skills and Desires factor were included in the Social Pressure factor. According to these results, the factors in the newly formed structure were named with the original factor from which they received the highest number of items. As a result

of factor analysis, the scale was named as Desires (9 items), Information Collection (4 items), Breastfeeding Nearby Other People (3 items) and Skill (3 items).

In accordance with the confirmatory factor analysis recommendations, modifications were performed between the 19th and 18th items and between the 9th and 8th items. When the model's fit indices were compared with the excellent and acceptable fit criteria after the modification procedure, the model's four factor structure, which consisted of 19 items, was confirmed as a model. It was observed that CFA analysis was not performed in the scale's original structure and the model was not appropriate according to the acceptable fit criteria of the indices obtained in model 1, in which a four-factor structure was examined, and in model 2 in which the single-factor structure was examined in the study conducted by Pinheiro-Albero et al. (29). However, it was concluded that the PBSES had a good structure validity according to both EFA and CFA in this study.

Information related to the reliability of the PBSES was obtained using internal consistency coefficient. Generally, the lowest Cronbach alpha internal consistency coefficient is 0.70 (31, 34). When the analysis results were evaluated according to this criterion, it was observed that the Turkish version of the scale had a high internal consistency similar to the original form, which had a Cronbach alpha value of 0.89, and similar to the study conducted by Pinheiro-Albero et al. (29).

In the validity and reliability analyses performed to adapt the PBSES to Turkish culture, it was concluded that each item had high breastfeeding self-efficacy and the CVI value in content validity, one item in the original scale showed overlapping, and should be removed from the Turkish version of the PBSES. The structure observed with CFA as a result of EFA and the factors specified were accurate and the PBSES was structurally valid. The Cronbach alpha internal consistency reliability coefficients showed that the Turkish version of the scale was reliable at a sufficient level and therefore, the Turkish version of the PBSES was valid and reliable and could be used in our country.

It is important to evaluate breastfeeding self-efficacy before delivery. Self-efficacy is an important determinant of breastfeeding behavior. It can be concluded that breastfeeding self-efficacy before delivery might give an idea about breastfeeding behavior after delivery because women decide how to feed their babies before

delivery. Thus, the PBSES can be used by all healthcare workers including mainly midwives and nurses.

It should be accepted that mothers' breastfeeding self-efficacy can be increased before delivery and thus, more women can be enabled to initiate breastfeeding. Evaluation of breastfeeding self-efficacy in the prenatal period would provide convenience in determining the content of interventions directed to encourage breastfeeding and in evaluating the efficiency of the interventions planned in the prenatal period to increase breastfeeding. Therefore, the PBSES is an appropriate tool for all healthcare workers including midwives and nurses. In addition, the PBSES is recommended to be used in individual research studies, postgraduate theses, and doctoral theses.

A limitation of this study was the fact that the sample of the study was composed of pregnant women who presented to gynecology outpatient clinics of two public hospitals in Denizli. It is difficult to state that the sample used fully represented the Turkish culture because different sociocultural groups live in the province of Denizli. It is important to conduct further studies to test the psychometric properties of the scale in samples representing different groups in Turkey.

The strong aspect of the study was the fact that the scale was composed of short and understandable sentences. Therefore, it is thought that application and evaluation of the scale is easy for researchers.

Ethics Committee Approval: Ethics committee approval was received for this study from the Ethics Committee of Adnan Menderes University School of Medicine (53043469-050.04.04-30).

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Author Contributions: Concept - H.U.H., E.U.A.; Design - H.U.H., E.U.A.; Supervision - H.U.H., E.U.A.; Data Collection and/or Processing - E.U.A.; Analysis and/or Interpretation - H.U.H., E.U.A.; Literature Review - H.U.H., E.U.A.; Writing - H.U.H., E.U.A.; Critical Review - H.U.H., E.U.A.

Acknowledgements: This study was carried out as procurement of the data collection tool used in the master's thesis titled "The Relationship Between Breastfeeding Self-Efficacy in Pregnancy and Feeding Infants with Exclusive Breastfeeding in The Second Month After Birth" by the Adnan Menderes University Institute of Health Sciences, Department of Midwifery. We would like to thank to the philologists who have translated

the scale from English to Turkish and from Turkish to English, expert academicians for their expert opinions, all the pregnant women who agreed to participate in the study during the examination of the psycholinguistic features of the scale.

Conflict of Interest: The authors have no conflicts of interest to declare.

Financial Disclosure: The study was supported by Adnan Menderes University Scientific Research Projects (Project code: ADÜ-BAP-ASYO-15012).

References

1. İnce T, Kondolot M, Yalçın SS, Yurdakök K. Annelerin emzirme danışmanlığı alma durumları. *Çocuk Sağlığı ve Hastalıkları Dergisi* 2010; 53: 189-97.
2. Bodur S, Taş F, Çevik Ü, Kurşun Ş. Primipar annelerin bebek sağlığı konusundaki bilgi düzeyine hemşire ve ebelein katkısı. *Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi* 2003; 6: 0-18.
3. Creedy DK, Dennis CL, Blyth R, Moyle W, Pratt J, De Vries SM. Psychometric characteristics of the breastfeeding self-efficacy scale: Data from an Australian sample. *Res Nurs Health* 2003; 26: 143-52. [CrossRef]
4. Kurtuluş YE, Tezcan S. Bebeklerin beslenme alışkanlıkları, çocukların ve annelerin beslenme durumu. *Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü, Türkiye Nüfus ve Sağlık Araştırması* 2003. Ankara, 2004.s. 141-53.
5. Snawky S, Abalkhail BA. Maternal factors associated with the duration of breastfeeding in jeddah saudi arabia. *Paediatr Perinat Epidemiol* 2003; 7: 91-6.
6. Kavuncuoğlu S, Akın MA, Aldemir H. Bebek dostu hastanede emzirme eğitimi ve anne sütü ile beslenmeye etkisi. *Ege Pediatri Bülteni* 2005; 12: 147-50.
7. Kumar D, Goel NK, Mittal PC, Misra P. Influence of infant-feeding practices on nutritional status of under-five children. *Indian J Pediatr* 2006; 73: 417-21. [CrossRef]
8. Forster DA, McLachlan HL. Breastfeeding initiation and birth setting practices: a review of the literature. *J Midwifery Womens Health* 2007; 2: 273-80. [CrossRef]
9. Can E, Süleymanoğlu S, Aydınöz S, Meral C, Karademir F, Özkaya H. Bir Eğitim Hastanesinde anne sütü ve D vitamini bilincinin değerlendirilmesi. *Çocuk Sağlığı ve Hastalıkları Dergisi* 2008; 8: 37-9.
10. O'Campo P, Faden RR, Gielen AC, Wang MC. Prenatal factors associated with breastfeeding duration: recommendations for prenatal interventions. *Birth* 1992; 19: 195-201. [CrossRef]
11. Küçüköğlü S, Aytakin A, Ateşeyan S. Yenidoğan yoğun bakım ünitesinde bebeği yatan annelerin bebeklerine anne sütü verme eğilimleri ile emzirme öz yeterliliklerinin karşılaştırılması. *Balikesir Sağlık Bilimleri Dergisi* 2015; 4: 71-8.
12. Meedya S, Fahy K, Kable A. Factors that positively influence breastfeeding duration to 6 months: A literature review. *Women Birth* 2010; 23: 135-45. [CrossRef]
13. Akyüz A, Kaya T, Şenel N. Annenin emzirme davranışının ve emzirmeyi etkileyen durumların belirlenmesi. *TSK Koruyucu Hekimlik Bülteni* 2007; 6: 331-5.
14. Forster DA, McLachlan HL. Breastfeeding initiation and birth setting practices: a review of the literature. *J Midwifery Womens Health* 2007; 2: 273-80.
15. Hannula L, Kaunonen M, Tarkka MT. A systematic review of professional support interventions for breastfeeding. *J Clin Nurs* 2008; 7: 1132-43. [CrossRef]
16. Dennis CE. Identifying predictors of breastfeeding self-efficacy in the immediate postpartum period. *Res Nurs Health* 2006; 9: 256-68. [CrossRef]
17. Wutke K, Dennis C. The reliability and validity of the polish version of the breastfeeding self-efficacy scale-short form: translation and psychometric assessment. *Int J Nurs Stud* 2007; 44: 1439-46. [CrossRef]
18. Gregory A, Penrose K, Morrison C, Dennis CL, MacArthur C. Psychometric properties of the Breastfeeding Self-Efficacy Scale-Short Form in an ethnically diverse U.K. sample. *Public Health Nurs* 2008; 25: 278-84. [CrossRef]
19. Otsuka K, Dennis CL, Tatsuoka H, Jimba M. The relationship between breastfeeding self-efficacy and perceived insufficient milk among Japanese mothers. *J Obstet Gynecol Neonatal Nurs* 2008; 37: 546-55. [CrossRef]
20. Aluş Tokat M, Okumuş H, Dennis CL. Translation and psychometric assessment of the Breast-feeding Self-Efficacy Scale Short Form among pregnant and postnatal women in Turkey. *Midwifery* 2010; 26: 101-8. [CrossRef]
21. McCarter-Spaulding DE, Dennis CL. Psychometric testing of the breastfeeding self-efficacy scale-short form in a sample of black women in the United States. *Res Nurs Health* 2010; 33: 111-9. [CrossRef]
22. Loke AY, Chan LK. Maternal breastfeeding self-efficacy and the breastfeeding behaviors of newborns in the practice of exclusive breastfeeding. *J Obstet Gynecol Neonatal Nurs* 2013; 42: 672-84. [CrossRef]
23. Taşancıl E. Tutumların ölçülmesi ve Spss ile veri analizi (3.Baskı) Ankara: Nobel; 2006.
24. Aluş Tokat M. Antenatal dönemde verilen eğitimin annelerin emzirme öz-yeterlilik algısına ve emzirme başarısına etkisi. *Doğum ve Kadın Hastalıkları Hemşireliği Doktora Tezi: Dokuz Eylül Üniversitesi Sağlık Bilimleri Enstitüsü, İzmir* 2009.s. 120-30.
25. Durmuş N. 0-2 Yaş arası bebeklerin, annelerinin gebelik ve perinatal dönemlerinin, sosyodemografik özelliklerinin ilk altı ay sadece anne sütü ile beslenmeye etkisi. *Tıp-ta Uzmanlık Tezi. Haydarpaşa Numune Eğitim ve Araştırma Hastanesi Aile Hekimliği, İstanbul* 2009.s. 28-31.
26. Gürol S. Annelerin emzirme yeterlilik durumları ile meme başı ağrısı/travması arasındaki ilişkinin belirlenmesi. *Yüksek Lisans Tezi: Ege Üniversitesi Sağlık Bilimleri Enstitüsü, İzmir* 2011.s. 1-134.
27. Örsdemir C. Doğum sonu dönemde annelerin emzirmeye ilişkin bilgileri ve emzirme davranışlarının belirlenmesi. *Yüksek Lisans Tezi: Yakın Doğu Üniversitesi Sağlık Bilimleri Enstitüsü, Lefkoşa* 2011.s. 129.

28. Wells KJ, Thompson NJ, Kloeblen-Tarver AS. Development and psychometric testing of the prenatal breast-feeding self-efficacy scale. *Am J Health Behav* 2006; 30: 177-87. [\[CrossRef\]](#)
29. Pineiro-Albero RM, Ramos-Pichardo JD, Oliver-Roig A, et al. The Spanish version of the prenatal breast-feeding self-efficacy scale: reliability and validity assessment. *Int J Nurs Stud* 2013; 50: 1385-90. [\[CrossRef\]](#)
30. Polit DF, Beck CT. The content validity index: are you sure you know what's being reported? Critique and recommendations. *Res Nurs Health* 2006; 29: 489-97. [\[CrossRef\]](#)
31. Büyüköztürk Ş. Sosyal bilimler için veri analiz el kitabı. 14. Baskı. Ankara; Pegem Akademi Yayıncılık; 2014.s.179-94.
32. Şencan H. Sosyal ve Davranışsal ölçümlerde güvenilirlik ve geçerlik. 1. Baskı. Ankara: Seçkin Yayıncılık; 2005.s. 156-90.
33. Tavşancıl E. Tutumların ölçülmesi ve spss ile veri analizi, 4. Baskı. Ankara; Nobel Yayın Dağıtım; 2010.s. 16-61.
34. Büyüköztürk Ş. Veri analizi el kitabı. 8. Baskı. Ankara: Pegem Akademi Yayıncılık; 2007.s. 167-82.
35. Çokluk Ö, Şekercioğlu G, Büyüköztürk Ş. Sosyal bilimler için çok değişkenli istatistik spss ve lisrel uygulamaları. 3. Baskı. Ankara; Pegem Akademi; 2014.s.177-246
36. Bentler PM. Multivariate analysis with latent variables: Causal modeling. *Annu Rev Psychol* 1980; 31: 419-56. [\[CrossRef\]](#)
37. Bentler PM, Bonett DG. Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin* 1980; 88: 588-806. [\[CrossRef\]](#)
38. Browne MW, Cudeck R. Alternative ways of assessing model fit. In: Bollen, KA, Long, JS, (eds). *Testing structural equation models*. Newbury Park, CA: Sage; 1993.p. 136-62.
39. Baumgartner H, Homburg C. Applications of structural equation modeling in marketing and consumer research: A review. *International Journal of Research in Marketing* 1996; 13: 139-61. [\[CrossRef\]](#)
40. Schermelleh-Engel K, Moosbrugger H. Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online* 2003; 8: 23-74.
41. Marsh HW, Hau KT, Artelt C, Baumert J, Peschar JL. OECD's brief self-report measure of educational psychology's most useful affective constructs: Cross-cultural, psychometric comparisons across 25 countries. *International Journal of Testing* 2006; 6: 311-60. [\[CrossRef\]](#)
42. Kline RB. *Principles and practice of structural equation modeling*. New York: The Guilford Press; 2011.p.204-386.
43. Ebrinç S. Psikiyatrik derecelendirme ölçekleri ve klinik çalışmalarda kullanımı. *Klinik Psikofarmakoloji Bülteni* 2000; 10: 109-16.

EK 1: PRENATAL BREAST-FEEDING SELF-EFFICACY SCALE

Please read the following statements and answer circling the number closest to your feelings. It is important to know (remember) that there is no right or wrong answer in answering these questions. We are interested in how much you are relied of yourself about your breastfeeding.

1: I am definitely not confident 2: I am not quite confident 3: I am confident 4: I am very confident 5: I am completely confident

1. I can find the answers to problems I may encounter while breastfeeding my baby	1	2	3	4	5
2. I can find the information I need about breastfeeding my baby	1	2	3	4	5
3. If I have questions about breastfeeding my baby, I know whom I can ask	1	2	3	4	5
4. I can talk about the importance of breastfeeding my baby with my husband	1	2	3	4	5
5. I can talk about breastfeeding my baby with health workers	1	2	3	4	5
6. I can organize my day according to the times I need to breastfeed my baby	1	2	3	4	5
7. I can find time for breastfeeding my baby even if I am busy	1	2	3	4	5
8. I can breastfeed my baby even when I am tired	1	2	3	4	5
9. I can breastfeed my baby even when I am feeling depressed	1	2	3	4	5
10. I can draw milk manually or through use of a breast pump	1	2	3	4	5
11. I can milk my breast and prepare my milk for someone else to feed my baby	1	2	3	4	5
12. I can breastfeed my baby even if it causes a little discomfort	1	2	3	4	5
13. I can breastfeed my baby without any feelings of shame	1	2	3	4	5
14. I can breastfeed my baby while my husband is present	1	2	3	4	5
15. I can breastfeed my baby while my family or friends are present	1	2	3	4	5
16. I can breastfeed my baby even when people I do not know are present	1	2	3	4	5
17. I can call a breastfeeding consultant when I have problems with breastfeeding	1	2	3	4	5
18. I would breastfeed my baby even if my husband did not want me to do it	1	2	3	4	5
19. I would breastfeed my baby even my family did not want me to do it	1	2	3	4	5
20. I can breastfeed my baby for two years	1	2	3	4	5

EK 2: PRENATAL EMZİRME ÖZ YETERLİLİK ÖLÇEĞİ

Lütfen aşağıdaki ifadeleri okuyunuz ve sizin hislerinize en yakın olan numarayı daire içine alarak cevaplayınız. Bu soruların cevaplandırılmasında doğru veya yanlış cevapların olmadığını bilmeniz (hatırlamanız) önemlidir. Biz emzirmeye ilişkin kendinize ne kadar güvendiğinizle ilgileniyoruz.

1: Kesinlikle emin değilim 2: Biraz eminim 3: Eminim 4: Çok eminim 5: Tamamıyla eminim

1. 1. Bebeğimi emzirirken karşılaştığım sorunlar hakkında ihtiyacım olan bilgileri bulabilirim	1	2	3	4	5
2. Bebeğimi emzirmekle ilgili ihtiyacım olan bilgiyi bulabilirim	1	2	3	4	5
3. Bebeğimi emzirmekle ilgili sorularım olursa bunları kime soracağımı biliyorum	1	2	3	4	5
4. Bebeğimi emzirmem hakkında sağlık çalışanları ile konuşabilirim	1	2	3	4	5
5. Günümü, bebeğimi emzirme saatlerime göre düzenleyebilirim	1	2	3	4	5
6. Meşgul olsam da bebeğimi emzirmek için zaman bulabilirim	1	2	3	4	5
7. Yorgun olduğum zaman bile bebeğimi emzirebilirim	1	2	3	4	5
8. Üzgün olduğum zamanlar da bile bebeğimi emzirebilirim	1	2	3	4	5
9. Elle ya da süt sağma pompası yardımıyla süt elde edebilirim	1	2	3	4	5
10. Başka birinin bebeğimi besleyebilmesi için sütümü sağıp hazırlayabilirim	1	2	3	4	5
11. Biraz rahatsızlığa neden olsa bile bebeğimi emzirebilirim	1	2	3	4	5
12. Utanma duygusu olmaksızın bebeğimi emzirebilirim	1	2	3	4	5
13. Eşim yanımdayken bebeğimi emzirebilirim	1	2	3	4	5
14. Ailem ya da arkadaşlarım yanımdayken bebeğimi emzirebilirim	1	2	3	4	5
15. Tanımadığım insanlar yanımdayken (bile) bebeğimi emzirebilirim	1	2	3	4	5
16. Emzirmeyle ilgili problemlerim olduğunda bir emzirme danışmanını arayabilirim	1	2	3	4	5
17. Eşim emzirmemi istemese bile bebeğimi emziririm	1	2	3	4	5
18. Ailem emzirmemi istemese bile bebeğimi emziririm	1	2	3	4	5
19. Bebeğimi iki yıl boyunca emzirebilirim	1	2	3	4	5