

Turkish Adaptation of Mothers' Cultural Beliefs About Weaning Scale: A Validity and Reliability Study*

Annelerin Sütten Kismeye ilişkin Kültürel İnançları Ölçeği'nin Türkçe Uyarlaması: Geçerlik ve Güvenirlik Çalışması

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ABSTRACT

Aim: The aim of this study was to determine the validity and reliability of the 'Cultural Beliefs about Weaning Scale' in the Turkish population.

Method: The data of the methodologically designed study were collected by snowball sampling using online method between November 2020 and August 2022. A total of 336 breastfeeding women with children aged 6 months-2 years participated in the study. Descriptive Characteristics Questionnaire and Cultural Beliefs about Weaning Scale were used to collect data. The scale consists of 49 items and 5 subscales. In the validity and reliability analyses of the scale, language, content and construct validity, explanatory and confirmatory factor analyses, internal consistency level and item-total score correlation were evaluated.

Results: According to confirmatory factor analysis, 19 items in the original scale were removed from the scale due to low factor loadings and the remaining 30 items were found to be related to the 5-dimensional scale structure. In the factor analysis, the factor loadings of the scale items ranged between .36 and .86. The total Cronbach's Alpha Coefficient was found to be .89.

Conclusion: It was determined that the Turkish form of the Mothers' Cultural Beliefs about Weaning Scale can be used as a measurement tool with acceptable validity and reliability results.

Keywords: Cultural Beliefs, Breastfeeding, Weaning, Validity, Reliability

ÖZ

Amaç: Bu çalışmada "Sütten Kismeye İlişkin Kültürel İnançlar Ölçeği" nin Türk toplumunda geçerlik ve güvenirliliğinin belirlenmesi amaçlanmıştır.

Yöntem: Metodolojik tasarımdaki çalışmanın verileri Kasım 2020-Ağustos 2022 tarihleri arasında çevrimiçi yöntem kullanılarak kartopu örnekleme yoluyla toplanmıştır. Çalışmaya 6 ay-2 yaş arası çocuğu olan toplam 336 emziren kadın katılmıştır. Veri toplamak için Tanımlayıcı Özellikler Anketi ve Sütten Kismeye İlişkin Kültürel İnançlar Ölçeği kullanılmıştır. Ölçek 49 madde ve 5 alt ölçekten oluşmaktadır. Ölçeğin geçerlik ve güvenirlilik analizlerinde dil, kapsam ve yapı geçerliliği, açıklayıcı ve doğrulayıcı faktör analizleri, iç tutarlılık düzeyi ve madde-toplam puan korelasyonu değerlendirilmiştir.

Bulgular: Doğrulayıcı faktör analizine göre, orijinal ölçekteki 19 madde düşük faktör yükleri nedeniyle ölçekten çıkarılmış ve kalan 30 maddenin 5 boyutlu ölçek yapısı ile ilişkili olduğu görülmüştür. Faktör analizinde ölçek maddelerinin faktör yükleri .36 ile .86 arasında değişmektedir. Toplam Cronbach alfa katsayısı .89 olarak bulunmuştur.

Sonuç ve Öneriler: Annelerin Sütten Kismeye İlişkin Kültürel İnançları Ölçeği'nin Türkçe formunun kabul edilebilir geçerlik ve güvenirlilik sonuçları ile bir ölçme aracı olarak kullanılabileceği belirlenmiştir.

Anahtar Kelimeler: Kültürel inançlar, Emzirme, Sütten Kesme, Geçerlik, Güvenirlilik

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Introduction

Breastfeeding is an important maternal behavior as old as human history. Although this behavior shows some differences from culture to culture all over the world, it has continued until today and is a special process in which the bond of love between mother and baby is established, developed and strengthened.^{1,2} As natural and important as breastfeeding is, the process of ending it can be equally challenging. Weaning is very difficult for both mother and baby.³

The World Health Organization (WHO) defines weaning as the gradual cessation of breastfeeding and the transition to complementary feeding including solid and liquid foods other than breast milk.⁴ Mothers' views on weaning are influenced by economic, social and cultural factors, as well as many factors such as the mother's level of education, starting to work, health problems, religious factors and level of awareness.⁵⁻⁷ There are many studies on weaning practices. In their study titled "traditional practices of mothers regarding breastfeeding and breast milk", Dinç et al. stated that mothers applied traditional weaning methods such as giving additional food with a bottle, distracting with water and fruit juice, putting hair on the nipple, applying tomato paste on the breast, applying black, sending the baby to a separate house, applying pepper on the breast, taping the breast with duct tape, applying lipstick on the breast, applying petroleum jelly, putting a broom handle, applying honey and salt, applying coffee grounds, wrapping the breast with mint.⁸ Alsaç et al. also reported that almost half of the mothers stopped breastfeeding suddenly, 32.9% stopped breastfeeding by reducing, and 16.3% of the mothers terminated breastfeeding by applying bad odor to the breast or by covering the nipple.⁹ Some studies have shown that mothers use different weaning methods such as using chemicals and drugs to change the appearance of breasts and the taste of milk.^{6,10} The use of such traditional practices related to weaning can lead to trauma in the child, deprivation of the mother's feelings and love, anxiety, restlessness, sleep disturbances and less intimacy, and sadness and guilt in mothers.¹¹ Despite all these possible negative consequences of weaning on the child and mother, there are very few studies on the role of cultural beliefs in the choice of weaning method.⁶ Jannat- Alipoor et al. pointed out that studies related to weaning use forms that question cultural beliefs, but these do not provide a comprehensive evaluation. In their study published in 2020, they developed the "Mothers' Cultural Beliefs about Weaning Scale" in order to guide mothers to healthy behaviors for midwives, nurses and other health professionals who provide counseling on breastfeeding.⁶ This tool, which evaluates mothers' weaning behaviors in a sociocultural context, is recommended for use in community-based interventions.

There are many studies on traditional practices for weaning in Türkiye. In these studies, weaning methods and reasons were mostly questioned, and there is no measurement tool that comprehensively evaluates cultural beliefs on this issue. This study aimed to interpret the Cultural Beliefs of Mothers about Weaning Scale into Turkish and determine its validity and reliability.

Research question

Is the Turkish version of the Cultural Beliefs of Mothers about Weaning Scale a valid and reliable tool for assessing mothers' cultural beliefs regarding weaning?

Materials and Methods

Design

The research study was of methodological type.

Population and Sample of the Study

In scale studies, it was stated that the sample should be at least 5 to 10 times the number of scale items in the interpretation of a scale to a culture and in the evaluation of scale validity and reliability.¹² For this reason, the minimum sample size was determined as 245 people considering the scale items, 348 people were reached considering Confirmatory Factor Analysis (CFA), 12 participants were excluded since they did not complete the forms and the study was completed with 336 people. Mothers who had children aged 6 months - 2 years, who continued to breastfeed their babies, who could utilize the Internet (social media) and who agreed to participate were included in the study. Participants who were not breastfeeding, who refused to participate and who filled out the form incompletely were excluded from the study.

Data Collection

The study was carried out over the period November 2020 - August 2022. Data were collected using the snowball sampling method through an online survey. Initially, midwives who provide online breastfeeding counseling services were contacted, and permission was obtained from them to share the questionnaire on their Instagram accounts. These midwives then shared the questionnaire with their followers, enabling the researchers to reach a broader group of potential participants.

Tools

Descriptive characteristics questionnaire and Cultural Beliefs in Weaning Scale were utilized to collect the data.

Descriptive Characteristics Questionnaire: The questionnaire form was developed by the researchers to assess the descriptive information of the mothers and consisted of a total of 28 questions, including 10 questions on socio-demographic characteristics, 7 questions on fertility characteristics and 11 questions on breastfeeding characteristics.

Mothers' Cultural Beliefs About Weaning Scale (MCBW): Developed by Zahra Jannat-Alipoor et al. (2020) to assess the role of cultural beliefs in weaning.⁶ It aims to be usable for health policies that design strategies to prevent physical and mental harm of weaning to mothers and their babies. The form includes a 5-point Likert-type scale (1: Strongly disagree, 5: Strongly agree) and the original form consists of 49 items. The Cronbach's alpha value of the original form was reported as 0.88, while it was found to be 0.89 in the present study. Items 6-17, 24, and 26 on both scales are reverse-scored. The total score ranged between 30 - 150; 30-70 points represent poor attitude, 71-110 points represent moderate attitude and 111-150 points represent positive attitude. The cut-off points used to classify the total scores were based on the original version of the scale developed by Jannat-Alipoor et al. (2020). Since the score distribution in the current sample was consistent with that of the original study, the same classification was retained to ensure comparability and interpretability.⁶ In this study, in its final form, the scale subdimensions and related items were grouped as contexts (1-9); solutions (10-17); searching for help (18-21), mother-related outcomes (22-26), and child-related outcomes (27-30).

Validity

Language Validity

The translation-back translation technique was employed to assess the language validity of the cultural beliefs about weaning form. The scale was translated into Turkish by 5 experts (4 health faculty members and 1 midwife). After the translation of the scale by the experts, the most appropriate expressions for the scale items were selected and the Turkish form of the scale was translated back into English by a linguist.

Content Validity

"Davis technique" was used to calculate the content validity index (CVI) of the scale. The scale was sent to 9 experts in the field of health (nursing, midwifery, medicine). In the Davis technique, the experts evaluate the items with four degrees (item is appropriate, item should be slightly revised", "item should be seriously revised" and "item is not appropriate"). The number of experts who rated the items as "appropriate" and "the item should be slightly revised" is divided by the total number of experts to obtain the "CVI" for the item.¹³ The value obtained should be statistically 0.75 and above. The content validity ratio (CVR) value obtained by dividing the CVI values of all items of the scale by the total number of items should be above 0.80.¹⁴ In this study, the lowest value for CVR was 0.66, and one item was excluded due to its value being below 0.75 and the recommendation of experts. The value calculated for CVI was 0.92.

Pilot study

To evaluate the comprehensibility of the scale items by women, a pilot study was conducted with 25 participants similar to the sample group. In scale adaptation studies, it is suggested to conduct a pilot study with a group similar to the target group in terms of features such as age, education, and social level.¹⁵ Women who participated in the pilot study were excluded from the analysis. No changes were made to the scale after the responses obtained.

Data Analysis

The obtained data were analyzed using SPSS 25.0 and AMOS 23.0 software. Descriptive statistical methods (number, percentage, mean, standard deviation) were utilized to assess the data. "Reliability Analysis" was performed to test the reliability of the scales and "CFA" was performed using AMOS software to test the CV.

Ethical Aspects of the Research

Zahra Jannat-Alipoor's approval was obtained through e-mail to use the MCBW scale. Besides, ethical approval was priorly received from the Ethics Committee of Ege University Medical Research Ethics Committee (Date: 20.05.2021; Decision No: E.9681). Relevant organizations granted permission to implement the research and mothers who agreed to participate in the study gave written informed consent. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Results

Participants

Upon analyzing the socio-demographic characteristics of the participant women, 88% of them were 30 years of age or older ($\bar{X} \pm SD$, 30.30 \pm 4.68), 66.4% were university graduates, 45.2% were employed, 87.2% had health insurance and 88.7% lived in nuclear families. 23.2% of the women stated that they were informed about weaning. When asked when they would like to wean their current baby, 60.7% stated that they thought about 19 months or more ($\bar{X} \pm SD$, 21.30 \pm 6.60).

Validity Outcomes

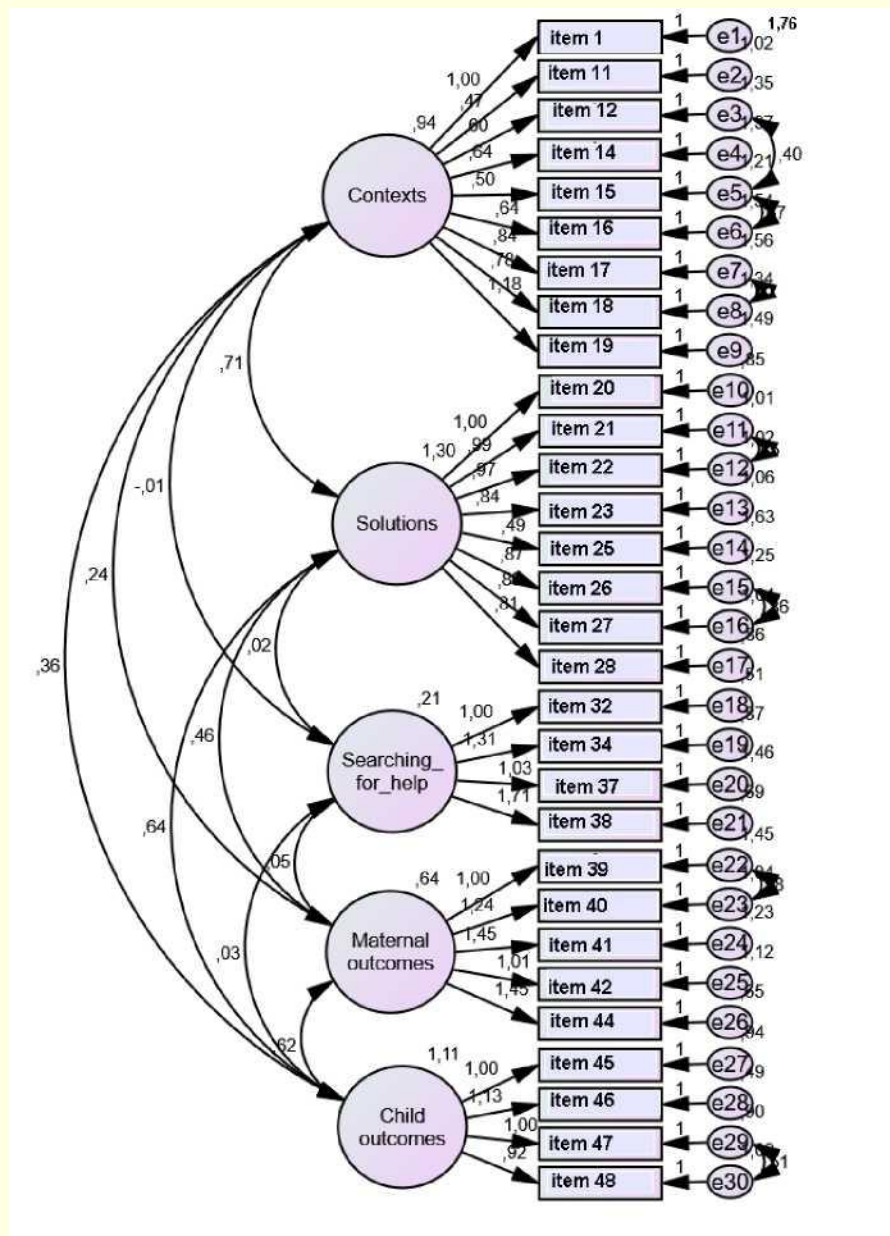
Confirmatory factor analysis

Upon analyzing the correlations among variables, the factor loadings of the items are seen to exceed 0.30 and the entire correlation relationships are significant (**Table 1**). The structure of the draft scale was confirmed with 5 factors and 30 items (**Fig. 1**).

Table 1. CFA results of the scale

Factors	Item no. in the original study	In this study, item no.	Factor Load	Standard Error	t	p
F1: Contexts $\alpha = 0.773$	Item 1	1	0.589	-	-	-
	Item 11	2	0.411	0.078	6.037	***
	Item 12	3	0.444	0.093	6.423	***
	Item 14	4	0.404	0.108	5.943	***
	Item 15	5	0.401	0.085	5.882	***
	Item 16	6	0.445	0.099	6.440	***
	Item 17	7	0.544	0.113	7.448	***
	Item 18	8	0.547	0.105	7.485	***
	Item 19	9	0.683	0.136	8.651	***
F2: Solutions $\alpha = 0.875$	Item 20	10	0.777	-	-	-
	Item 21	11	0.747	0.072	13.702	***
	Item 22	12	0.738	0.072	13.505	***
	Item 23	13	0.683	0.068	12.463	***
	Item 25	14	0.401	0.070	7.031	***
	Item 26	15	0.664	0.072	12.019	***
	Item 27	16	0.668	0.066	12.110	***
	Item 28	17	0.708	0.063	12.984	***
F3: Searching for Help $\alpha = 0.612$	Item 32	18	0.540	-	-	-
	Item 34	19	0.539	0.221	5.928	***
	Item 37	20	0.364	0.222	4.646	***
	Item 38	21	0.684	0.288	5.927	***
F4: Maternal Outcomes $\alpha = 0.830$	Item 39	22	0.553	-	-	-
	Item 40	23	0.697	0.102	12.188	***
	Item 41	24	0.723	0.158	9.179	***
	Item 42	25	0.606	0.122	8.266	***
	Item 44	26	0.736	-	-	-
F5: Child-Related Outcomes $\alpha = 0.863$	Item 45	27	0.862	0.080	14.231	***
	Item 46	28	0.744	0.079	12.721	***
	Item 47	29	0.681	0.080	11.602	***
	Item 48	30	0.821	0.149	9.706	***
Total Reliability $\alpha = 0.887$						

p<0.05



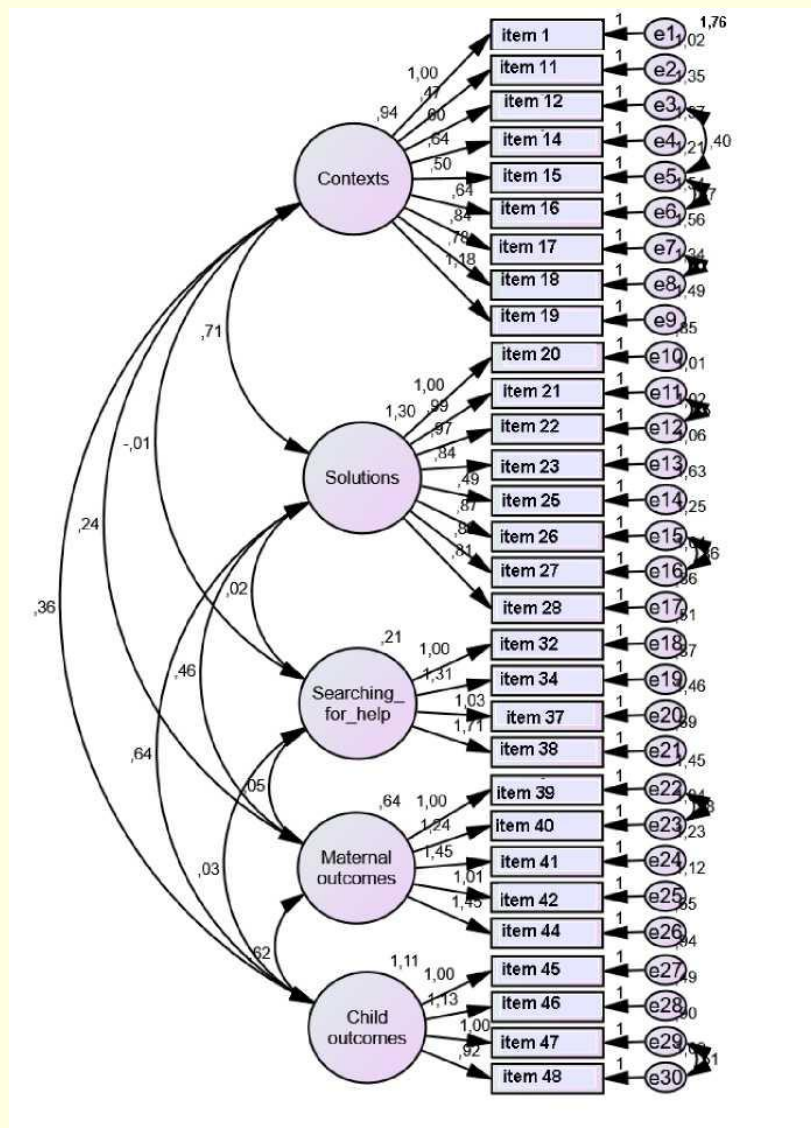


Figure 1. Model of the first level multifactor CFA of the scale

According to CFA, 19 items were excluded due to low factor loadings (2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 24, 29, 30, 31, 33, 35, 36, 43, 49) and the remaining 30 items were associated with the 5-dimensional scale structure (Table 1). While improving the model, the variables that decreased the fit were determined and new covariance was generated between the residual values with high covariance. In the recalculation, the accepted values for the fit indexes were obtained (Table 2).

Table 2. Goodness of fit values of the structural model of the scale

	Structural Model Values	Recommended Values
CMIN/DF	4.114	≤5
RMSEA	0.069	≤0.08
GFI	0.980	≥0.80
AGFI	0.946	≥0.80
CFI	0.988	≥0.80
TLI	0.974	≥0.80
IFI	0.988	≥0.80
SRMR	0.027	≤0.10

Reliability Outcomes

The reliability coefficient (RC) for the overall scale was found to be 0.887 and it was found to have a good reliability. Cronbach's Alpha values exceeding 0.60 reveal that the used scales are reliable and have good Item Correlation (IC). The correlation of all items in the scale is above 0.30 (**Table 3**).

Table 3. Findings associated with the Item Correlation analysis of the scale

Factors	Statements	Total Item Correlation	Cronbach's Alpha Value When the Item is Deleted
F1: Contexts $\alpha=0.773$	1. Weaning becomes more difficult when the child is breastfed for longer.	0.457	0.752
	2. The infant should be weaned at a certain age.	0.325	0.768
	3. If the mother's milk supply is low, the infant should be weaned at any age.	0.465	0.751
	4. The mother's profession has an impact on weaning.	0.334	0.771
	5. An infant must be weaned at any age if underweight	0.472	0.750
	6. If the infant is not inclined to supportive feeding, it should be weaned.*	0.496	0.746
	7. The infant must be weaned if the mother has any illness or disease.*	0.503	0.744
	8. The infant must be weaned if the mother is taking any medication*	0.529	0.741
	9. If the mother becomes pregnant, the child must be weaned.*	0.532	0.739
	10. Using methods that the child dislikes, such as pouring bad-tasting medicines or syrups that the child does not like into the breast, can help with weaning.*	0.709	0.851
F2: Solutions $\alpha=0.875$	11. Employing conventional and common methods such as painting the breast or pouring pepper on it can help with weaning*	0.720	0.849
	12. Using frightening methods such as drawing on the breast, painting it red or sticking objects on it can help with weaning*	0.717	0.850
	13. Creating distance between mother and infant is an effective method for weaning*	0.617	0.861
	14. Expressing milk and feeding the infant with stored milk is a good method for weaning*	0.364	0.886
	15. Distracting the infant by pretending that the breast is sore or injured is effective in weaning*	0.640	0.858
	16. Telling milk is spoiled is effective for weaning*	0.642	0.858
	17. Giving milk that causes bad breath in the child is effective in weaning*.	0.664	0.856
	18. The mother should take into account the instructions of a pediatrician for weaning.	0.402	0.512
F3: Searching for Help $\alpha=0.612$	19. Studying relevant books can help mothers find the appropriate weaning method.	0.375	0.515
	20. Weaning needs the help and cooperation of family members	0.385	0.603
	21. Training from healthcare professionals is essential for weaning.	0.463	0.442
	22. The mother may feel guilty following weaning.	0.598	0.804
F4: Maternal Outcomes $\alpha=0.830$	23. Mom may feel depressed following weaning	0.711	0.772
	24. Weaning causes a deep emotional distance between mother and infant.*	0.634	0.795
	25. Weaning causes a sense of maternal pride	0.523	0.823
	26. Weaning causes severe emotional disturbance in the mother*	0.679	0.781
	27. Weaning is a mental jolt for the infant.	0.618	0.863
F5: Child-Related Outcomes $\alpha=0.863$	28. Weaning can cause physical problems such as anorexia, diarrhea, sleep disorders or weight loss in the infant.	0.734	0.816
	29. Weaning can lead to unwanted habits for the child, such as thumb sucking, nail biting and aggression.	0.767	0.802
	30. Weaning can cause psychological reactions in the child such as fear, anxiety, stubbornness and irritability	0.729	0.818

*Reverse scored items

Mothers' Cultural Beliefs in Weaning Scale scores

The lowest score that can be obtained from the scale is 30 and the highest score is 150. The mean scale score was 100.98 ± 9.03 (min=74, max=127). The comparison of the mean scale scores by the sociodemographic characteristics of the participants is shown in Table 4. Significant results were obtained between the scale scores according to age, education, employment status, health insurance, and time of

weaning ($p < 0.05$).

Table 4. Distribution of the participants by their socio-demographic characteristics

	Variables	N (336)	M(SD)	F-t/p
Age ($\bar{X} \pm SS$, 30.30 \pm 4.68)	29 and below	40 (11.9)	97.47 \pm 9.62	-2.536/0.012*
	30 years and older	296 (88.1)	101.37 \pm 8.88	
Education status	Primary education	58 (17.2)	96.70 \pm 9.06	11.411/0.000*
	High school and equivalent	55 (16.4)	97.83 \pm 10.03	
	University	223 (66.4)	102.10 \pm 8.50	
Employment status	Yes	152 (45.2)	102.54 \pm 9.17	3.849/0.000*
	No	184 (54.8)	98.76 \pm 8.77	
Presence of health insurance	Yes	293 (87.2)	101.05 \pm 8.81	3.099/0.000*
	No	43 (12.8)	96.48 \pm 10.38	
Family type	Nuclear	298 (88.7)	100.68 \pm 9.10	0.984/0.326
	Extended	38 (11.3)	99.03 \pm 8.81	
Attendance to training on weaning	Attended	78 (23.2)	101.25 \pm 8.34	0.874/0.383
	Did not attend	258 (76.8)	100.22 \pm 9.38	
The time to consider weaning the current baby	Less than 12 months	62 (18.5)	97.79 \pm 9.94	7.135/0.001*
	12-18 months	70 (20.8)	98.54 \pm 8.67	
	19 months and over	204 (60.7)	101.95 \pm 9.10	

* $P < 0.05$

Discussion

Weaning is the process of gradually reducing and terminating breastfeeding.¹⁶ Breastfeeding practices, including weaning, are considered a complex pattern of behavior influenced by many factors such as individual, cultural and social variables.¹⁷ As well as starting breastfeeding, ending breastfeeding is an important period and requires the use of a special approach.¹⁸ The original instrument developed by Zahra Jannat- Alipoor was found to be adequate to measure a woman's cultural attitude towards weaning.⁶ In this context, it is thought that this scale will guide healthcare professionals in terms of providing qualified care to a woman who is at the stage of terminating breastfeeding. This study demonstrated that the Turkish translation and cultural adaptation of the MCBW scale is psychometrically appropriate and is a reliable and valid tool for assessing cultural attitudes towards weaning.

The scales used in scientific studies should be reliable and valid to be used in other studies.^{14,19} The Davis technique was employed to assess the content validity (CVR-CVI) of the scale. In the literature, the CVI value obtained with the Davis technique is recommended to be 0.80 and above.²⁰ In this study, For CVR, one item was excluded from the scale because it was below 0.75 and with the common opinion of all experts. The CVI value obtained for all remaining items is 0.92. In the original study, this value was 0.93. As a result, the scale was found to be sufficient in terms of CVI and a form that reflects women's cultural attitudes towards weaning.^{6,21,22}

Exploratory Factor Analysis (EFA) and CFA were conducted together in more than half of the studies to determine the CV of the scales interpreted into Turkish culture.²³⁻²⁶ However, while the studies that used only CFA constitute a small portion of the scale studies examined.²⁷⁻²⁹ it was observed that only EFA was used in a smaller proportion.³⁰ However, in the literature, since the theoretical basis of a scale developed in a different culture was previously explained in the EFA, it is recommended to proceed directly to the CFA stage that there is no need to conduct EFA again.^{12,31} In this direction, CV was tested with CFA in our study. Factor loadings are expected to exceed 0.40.^{32,33} According to the results obtained from CFA, 19 items in the original scale were excluded due to low factor loadings. The remaining 30 items revealed a 5-factor structure consisting of context, solutions, searching for help, maternal outcomes, and child-related outcomes. Jannat-Alipoor's study shows a 5-

factor structure with 48 items, and the number of items in this study was not parallel.⁶ No other study adapting the original scale to other languages was found in the literature review. Therefore, it is thought that repeating the factor structure with sample groups of different sizes and in different countries would be beneficial in terms of improving the scale structure and scientifically.

In scale adaptation studies, in order to improve the fit indexes in the model, it is suggested to generate new covariances for those with high covariance among the scale items that decrease the fit.³⁴ In this study, the items that decreased the fit were identified and new covariances were generated. Then, in all repeated fit index tests, the values recommended in the literature were achieved.³⁵ The findings show that the model is acceptable.

Cronbach's Alpha was estimated to determine the reliability and the Reliability Coefficient (RC) for the overall scale was found to be 0.89. When a scale has a coefficient between 1.00-0.80, it is interpreted as having high reliability.³² A similar result was obtained with the value found in the original study (0.88). Considering these values, the Item Correlation (IC) of the scale, which is an important determinant of reliability, was found to be sufficient. In addition, the item-total correlation coefficients of all items in the scale were determined to be positive and greater than 0.30, as recommended in the literature.²² This result shows that women understand the items correctly and can answer them objectively, and also shows that the discrimination level is high.

The minimum and maximum possible scores of the scale are 30 and 150, respectively. In this study, the average score obtained was 100.98 ± 9.03 . According to the cut-off points defined for the scale (30–70: poor attitude, 71–110: moderate attitude, 111–150: positive attitude), this result indicates that the women had a moderate attitude towards weaning. This finding suggests that women need more information to improve their attitudes towards weaning and to prevent early termination of breastfeeding. The low rate of education on weaning among the women included in the study reinforces this result. In a study conducted in Türkiye assessing the knowledge and practices of mothers pertaining the termination of breastfeeding, it was found that 10.9% of the women received training on weaning from a healthcare professional and approximately 64% of them terminated breastfeeding before 18 months. This suggests that there is a lack of knowledge on this subject and that mothers do not receive adequate professional support regarding the process of termination of breastfeeding.

Conclusion

The results of the study showed that the Turkish version of the Cultural Beliefs about Weaning Scale had sufficient reliability and validity. The IC coefficients and validity values were consistent with the values obtained in the original study. Therefore, it can be said that the scale has the characteristics of determining the cultural beliefs of breastfeeding mothers about weaning in Türkiye. It is thought that the scale will fulfill an important need in future studies and will guide healthcare professionals in evaluating the mother's educational needs and selecting the proper intervention during the weaning process. It is accepted by all health authorities that breastfeeding should last until at least 2 years of age and it is essential that mothers are encouraged to do so. Termination of breastfeeding at the right time and in the right way is also an important component of this process. In particular, it may enable community health workers monitoring the breastfeeding process to evaluate mothers holistically and improve the quality of care.

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Ethical Approval

Ethical approval was priorly received from the Committee of Ege University Medical Research Ethics Committee (Date: 20.05.2021; Decision No: E.9681).

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Emine Serap Çağan: Concept, design, analyses and interpretation, literature search, writing-review, editing.

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