Testing the Psychometric Properties of the Managing the Emotions of Others Scale*

Başkalarının Duygularını Yönetme Ölçeğinin Psikometrik Özelliklerinin Test Edilmesi

Gözde Uysal[1] , Handan Alan[1]

[1]Department of Nursing Administration, Florence Nightingale Faculty of Nursing, Istanbul University-Cerrahpasa, İstanbul, Türkiye

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Abstract

Introduction: Managing the emotions of others involves understanding and manipulating their emotions effectively. Nurses who can manage the emotions of others can communicate and interact with patients and their relatives more satisfactorily, thus increasing the quality of care and patient satisfaction.

Aim: This study aims to determine the validity and reliability of the Turkish version of the Managing the Emotions of Others Scale (MEOS).

Method: The data were collected from 406 nurses from three hospitals, including one university, one public, and one private hospital. The scale was translated into Turkish in accordance with the World Health Organization guidelines. Content validity, construct validity, test-retest reliability, and internal consistency analyses were performed.

Results: Following the language and content validity of the scale was performed, its construct validity was assessed. The Turkish version of the MEOS retained its original 6-factor structure. The EFA factor loadings varied between 0.36 and 0.72. The CFI goodness-of-fit indices were as follows: $\chi2 = 2442.940$, df = 1104, RMSEA = 0.055, GFI = 0.81, CFI = 0.88 and IFI = 0.90. The internal consistency coefficient varied between 0.81 and 0.93 for the subscales.

Conclusion: The MEOS_TR is a valid and reliable measurement tool for Turkish nurses.

Keywords: Emotion, emotion management, emotion management of others, nursing, management in nursing.

Öz

Giriş: Başkalarının duygularını yönetmek, bireylerin duygularını anlamayı ve etkili bir şekilde yönlendirmeyi içermektedir. Hastalarının duygularını yönetebilen hemşireler hastalar ve hasta yakınları ile daha doyurucu iletişim ve etkileşim kurabilecektir. Böylelikle bakımın kalitesinde ve hastaların doyumunda da artış görülecektir.

Amaç: Bu çalışmanın amacı, Management of Other's Emotions Scale'ın Türkçe'ye uyarlanarak geçerlik ve güvenirliğini belirlemektir.

Yöntem: Veriler, bir üniversite, bir kamu ve bir özel hastanede çalışan 406 hemşireden toplanmıştır. Veri toplama aracı olarak "Kişisel Bilgi Formu" ve "Başkalarının Duygularını Yönetme Ölçeği" kullanılmıştır. Çeviri dünya sağlık örgütü yönergelerine uygun olarak gerçekleştirilmiştir. Kapsam geçerliliği, yapı geçerliliği, test-tekrar test güvenilirliği ve iç tutarlılık analizleri yapılmıştır.

Bulgular: Ölçeğin dil ve kapsam geçerliliği yapıldıktan sonra yapı geçerliliği değerlendirilmiştir. Hemşirelerde başkalarının duygularını yönetme ölçeğinin Türkçe versiyonunda, özgün halindeki 6 faktörlü yapısı korunmuştur. AFA faktör yükleri 0,36 ile 0,72 arasında, DFA uyum iyiliği indeksleri $\chi2 = 2442,940$, df = 1104, RMSEA = 0.055, GFI = 0.81, CFI = 0.88 ve IFI = 0.90'dır. Ölçeğin iç tutarlılık katsayısı alt boyutlarda 0,81 ile 0,93 arasında değişmektedir.

Sonuç: Türkçe'ye uyarlaması yapılan "Başkalarının Duygularını Yönetme Ölçeği"nin geçerli ve güvenilir bir ölçme aracı olduğu belirlenmiştir.

Anahtar Sözcükler: Duygu, duygu yönetimi, başkalarının duygusunu yönetme, hemşirelik, hemşirelik yönetimi.

Corresponding author / Sorumlu yazar: Gözde Uysal ▪ gzdeuysal95@outlook.com

Introduction

Emotion is a human response to events experienced or encountered. Emotion management refers to the process that enables individuals to cope with their distressing emotions and acquire new relevant skills (Kervancı, 2008). This concept was first developed by Hochschild (1983) who focused on the management of the emotions of professionals serving other humans. Emotion management involves changing the intensity of emotional experiences, recognizing different emotions, and channeling emotions to different directions (Zott and Huy, 2007). In this respect, it is extremely important how emotions are managed. For example, emotion management allows people to reduce, increase or change their fear (e.g. to joy) . Therefore, managing others' emotions is vital so that they can feel physically and emotionally satisfied or happy. There is a direct relationship between the organizational management and the emotions of employees and customers (Wharton, 2009). Therefore, organizations that can effectively manage the emotions of employees and customers can attain the highest level of success (Barutçugil, 2004).

The ability to manage emotions is more important for professional groups, especially those in healthcare (Ülger, 2018). Nurses are considered as the managers of patient's emotions more than other healthcare professionals because they care for sick individuals more closely (Kessler et al., 2015). Nurses, who are in direct contact with patients and their relatives, play a key role in managing patients' emotions.

In the healthcare sector, when the emotions of others are managed effectively and correctly, the lenght of hospital stay decreases and the success of treatment increases. In addition, it reduces the stress and anxiety levels of patients and their relatives and increases their cooperation with healthcare professionals. Otherwise, there may be a decrease in the quality of patient care and satisfaction with healthcare, and even lead to violence against healthcare workers. Effective emotion management can prevent violence in healthcare settings (Kessler et al., 2015).

Nurses frequently encounter individuals who experience many negative emotions at once, such as someone who has just been diagnosed with cancer, a woman who has just found out that she is infertile, or a patient who has just tested positive for COVID-19. Such events evoke strong emotions (including the desire to cry, anger, and fear), which can be poured out at any time. These emotions are often poured out in healthcare settings, especially in waiting rooms, patient rooms, or outpatient clinics. Healthcare professionals are often asked "What should be done when a patient is emotional?" (Quilliam, 2008). It is very important for nurses who spend more time with patients to understand and manage the emotions of patients and their relatives by knowing how and when they reach their emotional breaking points. Patients who cry out in fear, get angry, or attack people around them in healthcare settings need others to understand their emotions and help them manage these emotions. This is because people's reactions to events (crying, yelling, etc.) are not only to reduce their stress but also to have social support and overcome the distressing situation (Quilliam, 2008). Therefore, it is very important for nurses to manage the emotions of patients and their relatives in medical units such as oncology services, surgical clinics, pediatric services, emergency, and intensive care units where patients often experience emotional imbalance. Experiencing a wide variety of emotions including fear, excitement, sadness, anger, and curiosity, patients and their relatives expect healthcare workers to understand their emotions and help them.

Studies report that individuals mostly focus on understanding and managing their own emotions. However, today's lifestyles and intensified institutional competition increase the importance of managing not only one's own emotions but also the emotions of others. The ability to manage others' emotions improves organizational communication and interaction. Foreign studies emphasize the concept of managing the emotions of others, but there is a limited number of Turkish studies on the ability to manage others' feelings. Therefore, this study aimed to adapt "the Managing the Emotions of Others Scale (MEOS)", which was developed by Austin and O'Donnell (2013), into the Turkish language. The MEOS is designed to measure individuals' approaches to interpersonal emotion management such as "offering help and reassurance", "using humor and enjoyable activities to improve another's mood", mood-worsening tactics such as "criticism, negative feedback and harming confidence", use of emotional displays, such as "flattery, sulking, and inducing guilt to change another's mood, concealing emotions and poor self-assessed capabilities to change another's mood" (Austin and Vahle, 2016). The MEOS was previously adapted to Mandarin Chinese by Saklofske et al. (2015) and to Polish by Jankowski et al. (2016).

Method

Study Aim: This study aims to determine the validity and reliability of the Turkish version of the MEOS.

Research Questions:
- Is the MEOS applicable to the Turkish community?
- Is the MEOS reliable for the Turkish society?

Study Design: This is a methodological study with a cross-sectional design.

Sample: The population of the study consisted of nurses working in three different hospitals, including one university (N:240), one public (N:280), and one private hospital (N:60), in Tekirdağ, Türkiye. These types of hospitals were selected to increase the generalizability of the study. The study inclusion criteria were as follows: being a bedside nurse, having at least one year of nursing experience, and agreeing to participate in the study. A total of 548 nurses formed the study population. Since this is a validity and reliability study of the MEOS, the sample size was determined as 5-10 times the number of items in the scale, based on the number of scale items suggested in the literature (Esin, 2018). Since the scale has 58 items, the sample was planned to include at least 290 nurses. Therefore, the questionnaire was distributed to a total of 465 nurses from three hospitals because 83 nurses were on leave or refused to participate in the study. A total of 423 nurses, including 210 nurses from the public hospital, 155 nurses from the university hospital, and 58 nurses from the private hospital filled in the questionnaire. However, those who filled in the questionnaire incorrectly and incompletely (n:17) were excluded from the study. Thus, a total of 406 nurses from different units in three hospitals constituted the sample of the study. The overall response rate was 74%.

Data Collection Process: The data were collected between November 2019 and January 2020. Nurses who agreed to participate in the study were given an informed consent form and a questionnaire in a sealed envelope, and approximately 3-4 days to fill them. Then their responses were collected during the visit to the hospital. It took approximately 20 minutes to complete the questionnaire. Nurses who agreed to participate in the test-retest phase of the study were asked to write a nickname on the questionnaire. After three weeks, the questionnaire was reapplied to these participants (n:30). The first and second applications were combined using their nicknames.

Data Collection Tools: The data were collected using a personal information form, which includes 9 questions about the personal and professional characteristics of nurses. The MEOS was developed by Austin and O'Donnell in 2013. The scale consisted of 58 items and six factors, including Enhance (15 items, α = 0.91), Worsen (13 items, α = 0.88), Conceal (7 items, α = 0.82), Inauthentic (11 items, α = 0.85), Poor Skill (5 items, α = .68) and Divert (7 items, α = 0.81). This is a five-point Likert-type scale, ranging from "I totally disagree: 1 point" to "I totally agree: 5 points". Total scale and subscale scores are obtained by taking the average of the scores obtained from each scale item.

Adaptation Process

Language validity: First, the MEOS was translated into Turkish by two independent translators who have proficiency in Turkish-English translations of health documents. By comparing their translations of the scale, each item of the scale was examined separately and a single draft of the scale was created by combining their translations (Çapık et al., 2018).

Content validity index: A total of eight Turkish experts in the field of relevant science were asked to assess the validity and appropriateness of the translation. All of them had doctoral degrees, and some of them had scale development and adaptation studies. They were asked to compare the original version and the Turkish translation of the scale and to rate each scale item as "4=very suitable, 3= fairly appropriate but slight changes are required, 2= moderately appropriate, revision of the text is required, 1= not applicable". Davis technique was used for the content validity of the scale (Grant and Davis, 1997). In this context, the ratio of experts who scored 3 or 4 for each scale item (the number of experts scored 3 or 4 / the number of all experts) was examined and the Content validity index (CVI) value of the scale was calculated as 0.98. The scale items were rearranged and finalized by the researchers in line with the opinions of the experts.

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Pilot study: A pilot study was conducted with 30 nurses to determine which of the MEOS items were appropriate or problematic in terms of language and comprehensibility. Nurses who agreed to participate in the pilot study were given the questionnaire, the researchers waited by them while they filled in the questionnaire and answered their questions about the items they had difficulty in understanding. Later, the researchers noted the items the nurses deemed problematic, and received their suggestions for these problematic items. After the pilot study, the researchers reviewed the items in line with the views of the nurses, clarified the meanings of each item, and corrected the spelling errors in the items.

Statistical Analysis: The data were analyzed by the researchers using the Statistical Package for Social Science (SPSS) 25.0 (IBM SPSS; Armonk, NY, USA) software program. In addition, the AMOS 22.0 was used for confirmatory factor analysis. The data were analyzed using Content Validity Index, Dependent Samples t-test, Pearson Correlation Analysis, Item Analysis and Confirmatory Factor Analysis, and the statistical results were considered significant at a 95% confidence interval and $p < 0.05$. The steps of the study process are presented in Figure 1.
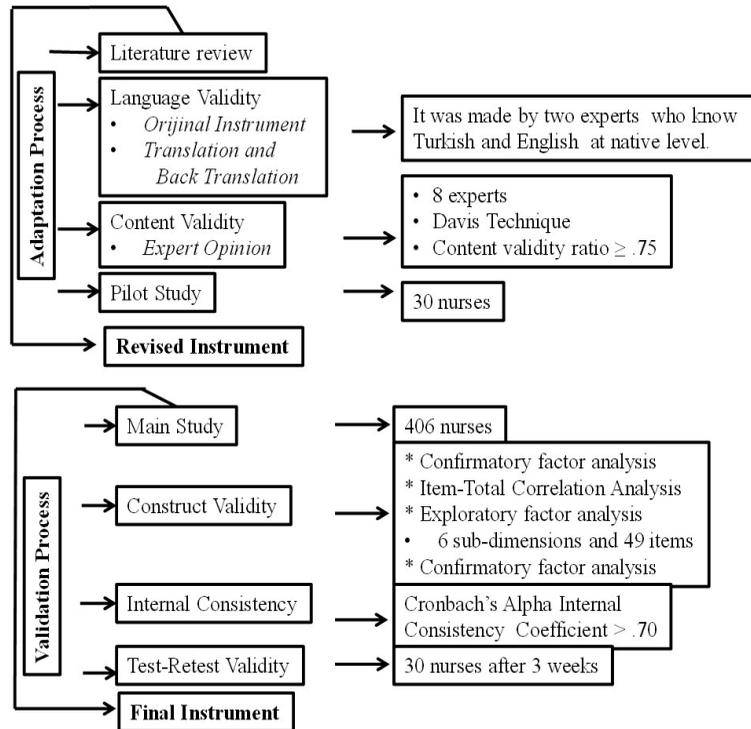
Figure 1. Study process

Ethical Considerations: Before data collection, nurses were informed about the purpose and scope of the study and a written consent was obtained from those who agreed to participate in the study. The nurses' personal information was not questioned openly, and the data collection tool was distributed to and collected from them in a sealed envelope. To conduct the study, an ethical approval was obtained from the Clinical Research Ethics Committee of a university (Date-number: 04.09.2019-133421), and institutional permissions from the hospitals where the study was conducted. In addition, a permission was obtained from the first author, Elizabeth J. Austin, via electronic mail, in order to conduct the validity and reliability study of the MEOS in Turkish.

Results

The results are presented under two main headings, including participant characteristics and psychometric measurements.

Participant Characteristics

The mean age of the nurses was 31.09 ± 8.00 years (min-max: 20-54), 84.5% of them were female, 52.7% were married, 64.0% had a bachelor's degree, 50.5% worked in public hospitals, and 42.6% were ward nurses. The majority of them had less than 5 years of professional (44.8%) and institutional (64%) experience.

Confirmatory factor analysis: A confirmatory factor analysis was performed to evaluate the appropriateness of the original structure of the MEOS, which was adapted to Turkish and consisted of 6 factors and 58 items. In this analysis, the lowest factor loading was found to be 0.46 for the first factor, 0.51 for the second factor, 0.63 for the third factor, 0.68 for the fourth factor, 0.61 for the fifth factor, and 0.59 for the sixth factor. The goodness of fit indices were as follows: $\chi 2$ = 1363.51, df = 152, RMSEA = 0.124, GFI = 0.65, CFI = 0.69 and IFI = 0.62. The revisions made in line with the suggestions did not provide sufficient improvement in the fit indices.

Item-total correlation analysis: The fit indices did not confirm the original scale structure; therefore, the scale items with poor correlation with the overall scale were eliminated. In the first analysis carried out for this purpose, items 34, 35, 38, and 51 were eliminated because their factor loadings were below 0.30. In the second item analysis, none of the remaining 54 items had a factor loading below 0.30. Thus, the analysis continued with these 54 items.

Exploratory factor analysis: The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett's test of sphericity were used to assess whether the sample was adequate and whether the factor correlation matrix was suitable for factor analysis. The values were as follows: KMO = 0.903, $\chi 2$ = 11555.596 df = 1176 and p <0.001.

Table 1. Explanatory factor analysis results of the MEOS_TR

Factor Name	Enhance	Worsen	Conceal	Inauthentic	Poor Skill	Divert	MEOS Total
Cronbach's alpha	0.93	0.92	0.82	0.83	0.81	0.89	0.77
% of explained variance	16.31	12.72	6.34	7.60	5.43	9.07	57.47

KMO =0.903

$\chi 2(1176)$ =11555.596

Bartlett's test of Sphericity (p < 0.001)

An exploratory factor analysis, performed using principal component analysis and varimax rotation, revealed that 54 items were divided into 6 factors with eigenvalues above 1, explaining 57.47% of the total variance. The percentage of the total variance explained was 16.31% for the first factor, 12.72% for the second factor, 6.34% for the third factor, 7.60% for the fourth factor, 5.43% for the fifth factor, and 9.07% for the sixth factor (Table 1).

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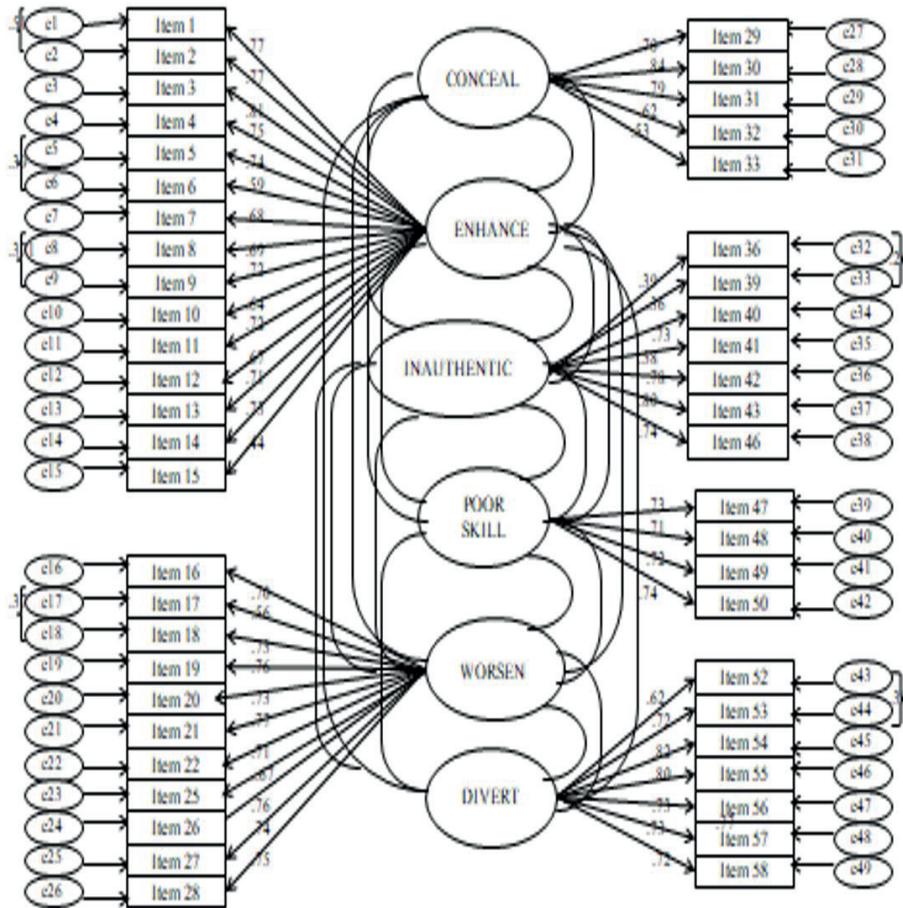
Figure 2. Path diagram of the MEOS_TR's first degree multifactor confirmatory factor analysis model

Items 23, 24, 37, 44, and 45 were also excluded from the scale during the factor analysis because they showed the characteristics of an overlapping item with high factor loadings in more than one factor at the same time. In addition, as a result of the CFA, an error covariance was assigned between e1-e2, e5-e6, e8-e9, e17-e18, e32-e33, and e43-e44 (Figure 2).

Table 2. Factor loadings of the MEOS_TR

Factor Name	Items	Factor loadings	t	p	CR	AVE	Cronbach's Alpha
Enhance	1	0.765					
	2	0.766	19.511	0.000***			
	3	0.805	17.185	0.000***			
	4	0.752	15.855	0.000***			
	5	0.737	15.473	0.000***			
	6	0.585	11.896	0.000***			
	7	0.676	14.031	0.000***			
	8	0.691	14.359	0.000***	0.88	0.51	0.93
	9	0.724	15.146	0.000***			
	10	0.643	13.253	0.000***			
	11	0.717	14.992	0.000***			
	12	0.673	13.958	0.000***			
	13	0.705	14.701	0.000***			
	14	0.730	15.321	0.000***			
	15	0.437	8.711	0.000***			
Worsen	16	0.697					
	17	0.561	10.688	0.000***			
	18	0.727	13.752	0.000***			
	19	0.759	14.325	0.000***			
	20	0.725	13.721	0.000***			
	21	0.766	14.445	0.000***	0.84	0.66	0.92
	22	0.710	13.450	0.000***			
	25	0.666	12.639	0.000***			
	26	0.760	14.341	0.000***			
	27	0.739	13.971	0.000***			
	28	0.749	14.138	0.000***			
Conceal	29	0.698	9.645	0.000***			
	30	0.839	10.460	0.000***			
	31	0.793	10.260	0.000***	0.90	0.65	0.82
	32	0.619	9.010	0.000***			
	33	0.529					
Inauthentic	36	0.385	7.232	0.000***			
	39	0.356	6.650	0.000***			
	40	0.732	13.760	0.000***			
	41	0.581	10.925	0.000***	0.82	0.51	0.83
	42	0.778	14.568	0.000***			
	43	0.800	14.920	0.000***			
	46	0.735					
Poor Skill	47	0.732	12.936	0.000***			
	48	0.713	12.661	0.000***	0.70	0.48	0.81
	49	0.715	12.691	0.000***			
	50	0.735					
Divert	52	0.615	11.696	0.000***			
	53	0.723	13.773	0.000***			
	54	0.821	15.594	0.000***			
	55	0.804	15.294	0.000***	0.80	0.56	0.89
	56	0.727	13.853	0.000***			
	57	0.725	13.815	0.000***			
	58	0.718					

***p<0.001

With all these changes, the factor loadings of the subscales were examined, and found to be 0.44 for the first factor, ≥0.56 for the second factor, ≥0.62 for the third factor, ≥0.72 for the fourth factor, 0.36 for the fifth, and ≥0.62 for the sixth factor (Table 2).

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Table 3. Goodness of fit values of the structural model of MEOS_TR

Scale	χ2/df	RMSEA	GFI	CFI	SRMR
MEOS (six-factor model)	2.213	0.055	0.810	0.877	0.060

MEOS = Managing the emotions of others scale, df=degrees of freedom, RMSEA= Root mean square error of approximation, GFI=Goodness of fit index, CFI=Comparative fit index, SRMR=Standardized Root Mean Square Residual

The fit indices were as follows: χ2 = 2442.94, df = 1104, RMSEA = 0.06, GFI = 0.81, CFI = 0.88 and IFI = 0.90 (Table 3).

Internal consistency analysis: Cronbach's alpha analysis, a common analysis used for Likert-type scales, was performed to determine the internal consistency of the measurements obtained from the MEOS. After eliminating nine items from the 58-item scale, the analysis performed to determine the internal consistency of the 49-item scale revealed that the Cronbach's alpha value was 0.77 for the scale and varied between 0.81 and 0.93 for the subscales (Table 2).

Test-retest reliability

Table 4. The reliability coefficients of MEOS_TR calculated using re-test method

Test-retest reliability		Test-retest reliability
MEOS_TR	r=0.79	
Enhance	r=0.87	
Worsen	r=0.90	
Conceal	r=0.93	
Inauthentic	r=0.86	
Poor Skill	r=0.88	
Divert		**Test-retest reliability**
MEOS_TR		r=0.79
Enhance		r=0.87
Worsen		r=0.90
Conceal		r=0.93
Inauthentic		r=0.86
Poor Skill		r=0.88

The 58-item MEOS was administered to 30 nurses twice at three-week intervals. The correlation coefficient for the total scale was found to be r = 0.79 (p <0.001). As a result of the dependent samples t-test, no statistically significant difference was found between the two measurements in the total scale and in all subscales (t = 0.287, p = 0.325; Table 4).

Discussion

The ability to manage the emotions of others, which is a part of emotional intelligence, involves changing other people's emotions both negatively and positively (Austin and O'Donnell, 2013). Nurses are in constant communication with their colleagues, patients, patient relatives, and teammates. In hospital settings where patients and their relatives often experience emotional imbalance, they want professional staff to understand their feelings and help them. Therefore, it is very important for nurses to be able to manage the emotions of others.

Therefore, a national literature review was conducted to determine the need for an instrument to measure emotion management in nursing. As a result, no measurement tool was found to measure the nurses' assessment and management of others' emotions in Turkey. The MEOS, developed by Austin and O'Donnell (2013), was considered suitable for Turkish nurses in terms of content and scope, considering that the scale was adapted in other languages and used in several studies. The scale was previously proved to be a valid and reliable instrument for Mandarin Chinese and Polish languages. This study was conducted to test the validity and reliability of the MEOS scale in Turkish. The study concludes that the Turkish version of the scale is a valid and reliable psychometric tool. As a result of the present study, nine items of the scale were eliminated, thus the Turkish version of the MEOS included 49 items and 6 subscales and was considered a valid and reliable tool to measure how Turkish nurses manage emotions of others.

Adaptation Process: In order to ensure the language validity of the scale, this study used the relevant recommended methods of the WHO and the International Test Commission (ITC) for the adaptation of scales developed in different languages (International Test Commission [ITC], 2018; World Health Organization [WHO], 2019). In this context, a content validity analysis was performed (Polit and Beck, 2012). Eight experts evaluated the scale items to test the content validity of the scale. The content validity indices calculated for each item must be higher than 0.80 (Rubio et al., 2003). As a result, items 2,3,6,13,16,34,40, and 54 were revised according to the suggestions of experts. In addition, since the CVI value of item 51 was very close to 0.80 and was found to be appropriate in the validity and reliability analysis, this item was not removed but only revised.

Confirmatory factor analysis: Confirmatory factor analysis is used for four main purposes, one of which is to test "measurement invariance (e.g. between groups or populations) (Flora and Flake, 2017). In this study, confirmatory factor analysis was conducted to test the structure of the original scale. In this analysis, model compatibility is determined according to various fit indices. There are many indices, and there is no absolute consensus on which ones should be reported. Chi-square/degrees of freedom, RMSEA, GFI, CFI, and IFI are the most commonly used goodness of fit indices, so these were also reported in this study. Despite some flexibility in fit indices, the generally required values are shown in Table 5 (Durmuş et al., 2018):

Table 5. Recommended goodness of fit values

	Normal	Acceptable
$x2/sd$	<2	<5
RMSEA	<0.05	<0.08
GFI	>0.95	>0.90
CFI and IFI	>0.95	>0.90

The results of this study showed that the original structure of the scale did not have an acceptable fit.

Item-total correlation analysis: Item-total correlation analysis is performed to determine the strength and consistency of the correlation between scale items. Since low item-total correlations reduce the reliability of the scale, the correlation between variables should not be negative or low (Büyüköztürk, 2017). A correlation coefficient below 0.30 indicates that the item is unacceptable, and a value above 0.40 indicates that the item has a good distinguishing feature (Durmuş et al., 2018). For this reason, four items with item-total correlations of ≤0.30 were removed from the scale.

Exploratory factor analysis: After the structure of the original scale was not confirmed by CFA, a total of 54 items remaining after the item analysis was considered as a single item pool and subjected to exploratory factor analysis to discover the factor structure of the Turkish version of the scale. Prior to conducting the factor analysis, a variety of analyses were conducted to assess the adequacy of the sample size.. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy test was used in this study. Polit and Beck (2012) have argued that a factor analysis can be performed if the KMO test result is above 0.50, and that a KMO value between 0.70 and 0.80 indicates moderate sampling adequacy, a value between 0.80 and 0.90 indicates good sampling adequacy, and a value above 0.90 indicates excellent sampling adequacy. The results of Bartlett's test, another sampling adequacy test, revealed that the correlation matrix of the scale items was sufficient for factor analysis (Polit and Beck, 2012). In the present study, the KMO value of 0.903 suggested that the sample was sufficient for factor analysis, and the Bartlett's test results showed that the items had a sufficient correlation matrix. Principal component analysis, which is the most commonly used form of exploratory factor analysis and reported to be relatively easy to interpret, was preferred in this study. In addition, a rotation technique was performed to clarify independence and interpretation during factor analysis. Varimax rotation, one of the most commonly used vertical rotation techniques, was used in the present study (Güngör, 2016). As a result of the analysis, the higher the total variance explained by the factors, the stronger the factor structure of the scale. While at least 30% of the total variance should be explained in single-factor scale analysis, this ratio should be higher in multi-factor scale structures (Hayran and Hayran, 2018). The six factors obtained in this scale explained most of the total variance. Therefore, the factor structure can be considered appropriate. Three basic criteria are taken into account in factor analysis. First, items must have high loadings for the factor to which they belong. Although there are no limits defined for factor loadings that explain the correlation of items with factors in the literature, Akgül (2005) reports that 0.30 refers to the lowest acceptable factor loading, a value between 0.30 and 0.59 to moderately acceptable factor loading, ≥0.60 to high acceptable factor loading. In this study, since the factor loadings of all scale items were above 0.30, no item was eliminated by factor analysis. Secondly, items should have high loading for on a single factor and low loadings for other factors. If this criterion is met, it may be possible to

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investigate factor structures independent from each other. How much difference can be ignored is controversial, but the factor loadings are expected to be as high as possible. The difference between two high-factor loadings should be at least 0.10 (Büyüköztürk, 2017). In this study, five items were removed from the scale during the factor analysis because they had high factor loadings for more than one factor at the same time, and the analysis was continued with 49 items.

Confirmatory factor analysis was performed again to evaluate the consistency of the newly obtained structure of the scale. Since the factor loadings of the items were well above 0.30, which was previously determined as the threshold value, no item was eliminated in this step. Error covariance between items indicates that the model gradually loses its confirmatory properties. However, this does not negate the validity of the established model. In this study, covariance assignment was made for the items that significantly affected the structure of the model and had theoretically similar meanings. After revisions during the CFA, the model showed a good fit for CFI and IFI, an acceptable fit for χ2 / df and RMSEA, and a nearly acceptable fit for GFI.

Internal consistency analysis: The Cronbach's alpha coefficient, which is widely used in Likert-type scales, was calculated to determine the internal consistency of the measurements obtained from the scale. If the alpha coefficient showing the internal consistency of the measurements varies between 0.60 and 0.79, the scale is considered to have normal reliability, if it varies between 0.80 and 1.00, the scale has high reliability (Flora and Flake, 2017). The Cronbach's alpha coefficient indicated a normal reliability for the total scale and high reliability for the subscales.

Test-retest reliability: Criterion validity is determined by continuously applying a scale developed in two ways and with equivalent qualities to the same group at the same time or intermittently at two different times and then testing the relationship between the score sets through Pearson correlation analysis (Durmuş et al., 2018; Koo and Li, 2016). Durmuş et al. (2018) report that a correlation coefficient value between 0.50 and 0.69 indicates a moderate correlation, a value between 0.70 and 0.89 indicates a high correlation, and a value between 0.90 and 1.00 indicates a very high correlation. In this study, measurements obtained from the same participants at different times were found to be highly correlated.

Conclusion and Recommendation

The original structure of the Managing the Emotions of Others Scale, which was developed by Elizabeth J. Austin (2013) and consisted of 58 items and 6 factors, did not have acceptable compatibility for nurses. In this study, a valid and reliable version of this scale was developed, which consisted of 49 items and 6 factors, and was suitable for nursing samples. The content of the scale developed in this study seems to be sufficient to measure the nurses' ability to manage the emotions of others. As there was no specific Turkish tool to measure the nurses' ability to measure to manage the emotions of others, this study adapted the MEOS to Turkish and recommends using the MEOS-Turkish to measure nurses' ability to manage the emotions of patients and their relatives.

The MEOS-Turkish can be used regularly to measure the nurses' ability to manage the emotions of patients and/ or their relatives, especially in oncology, intensive care, geriatrics, and pediatric units of hospitals. As a result of these measurements, nurse managers can carry out activities that increase or develop nurses' ability to manage the emotions of patients and/or their relatives. In this way, quality targets such as increased quality of care enhanced patient satisfaction and reduced medical errors and conflicts can be achieved by empathizing with patients and/or their relatives in medical services. While there is an increasing number of international studies on nurses' ability to manage the emotions of others, there has been no Turkish study on this subject. Therefore, nurses and academics can contribute to the Turkish literature on the management of others' emotions by nurses in Turkey by using this scale.

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