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Psychometric Evaluation of the Turkish Version of the Patients' Perceptions of Nurse' Cultural Competency Instrument

Hemşirenin Kültürel Yeterliğine İlişkin Hasta Algıları Ölçeğinin Türkçe Versiyonunun Psikometrik Değerlendirmesi

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ABSTRACT

Objective: The study aimed to examine the validity and reliability of the Turkish version of the Clients' Perceptions of Providers' Cultural Competency Instrument.

Methods: A methodological design was used. The study was conducted with 224 patients between June 1 and December 30, 2022. Data were analyzed with IBM SPSS V23 and IBM AMOS V24. The linguistic, content, and construct validity analysis were used to assess the scale's validity. The scale's reliability was achieved using Cronbach's α, item-total correlations, and test-retest. Path coefficients were calculated with Maximum Likelihood in structural equation modeling. Model fit was decided with model fit indices.

Results: According to our analysis, the final scale consisted of 19 items and 3 factors. Item-total correlations > .2 was obtained for all items. The construct validity analysis revealed that the model had a good fit; CMIN/DF=1.647, GFI= .901, CFI= .91, RMSEA= .054, SRMR= .076 and all path coefficients were significant (*P*< .001). Cronbach's alpha was found to be .81 for the scale. In addition, a good correspondence was found between the test-retest scores of all factors (*P*< .05). The patients' mean scores were 2.84 in factors 1 and 2 and 3.01 in factor 3. According to Tukey summability test, the scale was not recognized as summable (*P*< .001).

Conclusion: The instrument is a valid and reliable tool to assess the cultural competence of nurses.

Keywords: Cultural competency, nursing, patients, psychometrics

ÖZ

Amaç: Çalışmanın amacı, hemşirenin kültürel yeterliğine ilişkin hasta algılarını değerlendirme ölçeğinin Türkçe versiyonunun geçerliliğini ve güvenilirliğini incelemektir.

Yöntemler: Çalışmada metodolojik bir tasarım kullanıldı. Çalışma 1 Haziran-30 Aralık 2022 arasında 224 hasta ile tamamlandı. Veriler IBM SPSS V23 ve IBM AMOS V24 ile analiz edildi. Ölçek geçerliğinde dil, içerik geçerliliği ve yapı geçerliliği analizi kullanıldı. Ölçeğin güvenirliğinde ise Cronbach α, madde-toplam korelasyonları ve test-tekrar test analizleri kullanıldı. Yol katsayıları yapısal eşitlik modellemesinde maksimum olabilirlik ile hesaplandı. Model uygunluğuna model uyum indeksleri ile karar verildi.

Bulgular: Analiz sonuçlarımıza göre nihai ölçek 19 madde ve 3 faktörden oluştu. Tüm maddeler için madde-toplam korelasyonları > ,2 elde edildi. Yapı geçerliliği bulguları iyi model uyumu gösterdi; CMIN/DF = 1,647, GFI= ,901, CFI= ,91, RMSEA= ,054, SRMR= ,076 ve tüm yol katsayıları anlamlı bulundu (*P*< ,001). Ölçeğin Cronbach's alpha katsayısı ,81 olarak bulundu. Ayrıca tüm faktörlerin test-tekrar test puanları arasında iyi bir uyum tespit edildi (*P*< ,05). Hastaların ölçekten aldıkları puan ortalamaları ise faktör 1 ve 2'de 2,84, faktör 3'te ise 3,01 olarak elde edildi. Tukey toplanabilirlik testine göre ölçeğin toplanabilir özellikte olmadığı belirlendi (*P*< ,001).

Sonuç: Ölçek hemşirelerin kültürel yeterliğini değerlendirmede geçerli ve güvenilir bir araçtır.

Anahtar Kelimeler: Hastalar, hemşirelik, kültürel yeterlilik, psikometri

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INTRODUCTION

The essence of the nursing profession is care. The care-giving role of nurses has been in existence for many years. The most effective implementation of this role can be ensured by providing equal and correct care services to all patients. The nurse must have sufficient knowledge, skills and competence to participate in the patient's care and determine the care needs. The most important is to determine the patient's needs according to their cultural characteristics. The correct care needs of patients not evaluated in this direction cannot be determined.[1]

Cultural diversity is the most important outcome of current global change. Cultural transitions between nations, as well as within nations, have increased tremendously. Looking at the nature of migration, it is reported that migration to countries with growing economies, such as the United States, is relatively high. The most important reason for this is internal conflicts and increasing impoverishment in countries. Especially migration from the Syrian Arab Republic to Turkey, where internal conflicts are taking place, continues unabated. In this context, Turkey is the second largest transit corridor in the world. For the fifth consecutive year, Turkey has become the world's largest host country for more than 3.6 million migrants, mostly Syrians.[2] Thus, cultural diversity, as an undeniable fact, has affected many systems, especially health.

Health services are one of the main structures under the constitutional guarantee of countries and governments should develop sustainable policies for all people. As stated in the constitution, the state is obliged to protect the life, physical and mental health of everyone.[3] However, the fact that migrants face many problems, especially communication, creates difficulties in achieving sustainable development goals.[4] This makes it necessary to revise the provision of health care services. In the Harmonization Strategy Document and National Action Plan of the Ministry of Interior General Directorate of Migration Management[5] developed in this context, it is emphasized that health care providers should understand patients from culturally different groups and ensure their active participation in care services.[5] Therefore, it is one of the most important needs of today to be competent and sufficient in this respect to understand cultural differences in the provision of health care.

The concept of cultural competence expresses the understanding of cultural needs in healthcare. The fact that culture itself is a complex concept proves that cultural competence will be affected by all its dynamics. In multicultural societies, it is required to understand each cultural structure and provide services accordingly. This situation involves both the evaluation of the patient and the understanding of the cultural structure in the provision of healthcare services. Hence, cultural competence in health care should be addressed in a comprehensive theoretical framework. [6]

The understanding of transcultural care in health care dates back to the 1950s. Leininger, who utilized the concept of transcultural nursing, first defined nursing as the essence of care. [7] To reach this essence in cultural diversity and to contribute to the patient's well-being, nurses should understand the patient in every aspect. The development of this understanding is possible with the harmony between the caregiver and the care receiver. Harmony aims to ensure that care is meaningful, useful and adequate. Care is a very special concept embedded in culture. Therefore, Leininger emphasizes that the goals of culturally congruent nursing and culturally competent care are similar.[7] By the end of the 1990s, Purnell explained the theory and model for culturally competent health care. The important role of health care providers in providing culturally competent care within the framework of 12 domains was emphasized. Within the framework of these 12 basic domains, the necessity of addressing all aspects of cultural care with sub-headings that can be created according to the needs of society has been emphasized. [8] Schwarz et al.[9] reported that in ensuring the concept of cultural competence, health care providers should take action in three important areas: (1) the awareness/sensitivity approach, (2) the multicultural/categorical approach, and (3) the cross-cultural approach. This can help to ensure cultural competence in health care.

Culturally competent care enables the most appropriate care environment for the patient and the team in the institution where care services are provided. Protecting the patient's health, maintaining well-being, and improving, rehabilitating and increasing survival in case of illness helps to achieve the goals set by health policies. For this reason, maintaining care services with cultural competence is extremely important and necessary, especially in immigrant and multinational nations. For culturally competent care to be successful, healthcare providers need to develop these skills. Various studies have shown that it is possible to enhance cultural care competence. [10,11] In particular, trainings given to student nurses have shown positive results. [12] In Burkey et. al.[13] study, which included students from different countries, students expressed the necessity of gaining cultural competence skills through various teaching techniques in course curricula. [14,15] In their study, Burkey et al.[13] emphasized that the concept of cultural competency should be added to the course

curricula for LGBTQ individuals. Therefore, gaining culturally competent care skills as early as possible can provide the most effective results in nursing care.

Culturally competent care is not limited to care provided in terms of different cultures, languages, and ethnic origins. Recent studies have highlighted the importance of using this concept in various groups. In their study, Mohamed and Modanloo[16] addressed cultural care in elderly care and drew attention to age discrimination. Additionally, there are various studies indicating that health professionals should not ignore the culturally competent care of LGBTQ+ individuals. [17,18] These results indicate that nurses are caregivers for a wide range of populations and that acquiring skills in culturally competent care is vital today. On the other hand, the evaluation of the cultural competence of caregivers by care receivers is also prioritized in developing this concept.

It was assumed that a unilateral approach to cultural care practice in health care would not be sufficient. In addition to the competence of caregivers in this regard, it is necessary to evaluate how the patient understands this situation. According to Pacquiao et al., the most accurate people who can evaluate culturally competent care are those who receive and experience care. It was also emphasized that the most important evidence of the cultural competence of health professionals is the acceptance of this competence by the individuals (clients) receiving care.[19] An examination of the literature reveals that various studies have been conducted in which patients evaluate the cultural competence of caregivers.[19] However, the measurement tools developed are reported to be long, difficult to use, and have limitations in some areas. [9] The adaptation of a scale developed in recent years and suitable for use by various professional groups to Turkish culture was thought to meet a critical need, considering our society's cultural diversity.

AIM

The aim of this study is to conduct psychometric evaluation, validity, and reliability analysis of the Turkish version of the scale developed to determine patients' perceptions regarding the cultural competencies of the nurses who provide care to them.

METHODS

Study Design

This is a methodological study.

Participants

The research was conducted between 01 June and 30 December 2022 at a training and research hospital in Turkey, which 300 beds hospital. A total of 250 patients who met the inclusion criteria were invited to participate in the study. However, 20 patients did not want to participate and 230 volunteer patients were included in the sample. When the data of these patients were analyzed, it was determined that the results of 6 patients did not comply with the normal distribution and were excluded from the analysis. In structural equation modeling (SEM) and especially in confirmatory factor analysis (CFA) using the maximum likelihood (ML) method, the assumption of normality is quite essential. In the ML method, the assumed normal distribution plays a critical role in the reliability of parameter estimates and the validity of specific fit indices (e.g., chi-square). Data that significantly deviates from normality can harm the model's overall fit and lead to misleading results. In this study, we excluded certain participants' data from analysis due to serious violations of normality. This decision has been made based on the Mahalanobis distance. To meet the requirements of the ML method and ensure that the fit indices affected by normality provide valid results, 6 participants were excluded from the study based on Mahalanobis distance. A total of 224 participants comprised the sample for all tests. The sample size was sufficient for the 23 items using the commonly applied rule of thumb of five to 10 subjects per item.[20]

Data Collection Tools

Demographics Form: The researcher created the demographics form to obtain data about the patients' demographic features, such as age, gender, marital status, and profession. [9,19]

The Clients' Perceptions of Providers' Cultural Competency Scale: Pacquiao et al.[19] developed the scale. in 2021. The main approach to developing the scale was the World Health Organization's definition of empowerment based on Freire's pedagogy of the oppressed and Leininger's transcultural nursing theory. This revealed its difference from other scales in the literature.[9,21] Another different aspect was that it evaluated the family and the environment at the same time as the client.

The primary purpose of the scale developed within this theoretical framework is to assess the cultural competence of health care providers in care practices. In this way, it is aimed to strengthen care services. It is a 4-point Likert scale composed of 23 items: strongly agree 4, agree 3, disagree 2, strongly disagree 1 and N/A 0. The original scale is organized into 3 factors: Promotes supportive and meaningful interactions (items 1-8), Promotes connections with others (items 9-15), Acts on behalf of others (items 16-23). The author of the original study reported that Item 3

was excluded from the analysis. This is because all the answers received 0 points and this did not affect the analysis result.

The Cronbach's α values of the factors were .82, .83, and .76 respectively and the Overall instrument Cronbach's α was .89. 49.6% of the total variance was explained. [19] The scale's original language is English (Supplementary Table 1); the Turkish version is presented as a supplement in Supplementary Table 2.

Data Collection

The study data were collected by the researcher through face-to-face interviews with hospitalized patients (internal medicine, surgery, cardiology, chest diseases, urology, and orthopedics wards). The scale is suitable for completion by the patient, their family, or the researcher, as long as it is specified in the demographic section. [19] Inclusion criteria: 1 inpatients receiving inpatient treatment and nursing care for at least 24 hours at the time of the study, 2 between the ages of 18-85 years, three who could understand and speak Turkish even if their native language was not Turkish. In addition, illiterate patients (informed consent have been obtained from the patient's wife/husband or child) were also included in the study. The researcher read the questions, and the patient was allowed to answer them. Exclusion criteria: 1 patient who did not complete 72 hours post-op, 2 had severe pain, 3 were healthcare workers or students, 4 could not communicate in Turkish, 5 did not agree to participate in the study.

Before the study, the language validity phase of the scale was completed. First, the researcher and expert, an academian, translated the scale from English to Turkish. Common expressions were determined from the translation. It was decided to use the expressions closest to the original scale in the sections where there were differences. To determine the scale's content validity, the opinions of eight experts (Ph.D) were evaluated according to the Davis[22] technique. Content validity index (CVI) (This result represents the mean of all individual item content validity ratio) of the scale was found 1.0. The scale was submitted to two experts in the English department and translated from Turkish to English. The two translations were in perfect agreement. It was decided that there was no ambiguity in meaning. Minor word changes were combined into a single form with the approval of the experts. After achieving a consensus among the experts, a pilot test was performed with five patients. The 5 patients in the pilot study were excluded from the sample group.

In this study, the term 'Providers' refers to nurses, and the term 'Clients' refers to patients receiving long-term care in inpatient care institutions. The original study reported that clients can include those who receive care during acute care, long-term care, primary care, home and community health services, and health care providers, such as nurses and midwives, can be considered Providers. [19] Our study results are also suitable for evaluating other healthcare providers, especially nurses.

Data Analysis

Data were analyzed with SPSS V23 and AMOS V24 (IBM Corp., Armonk, New York, USA). The analysis results were presented as mean±standard deviation and median (minimum-maximum) for quantitative data and as frequency and percentage for categorical data. Multiple normality assumptions and the Shapiro-Wilk tests examined compliance with normal distribution.

Cronbach's α, item-total correlations (ITC) coefficient, and test-retest were utilized to test the reliability of the Clients' Perceptions of Providers' Cultural Competency (CPOPCC) Scale. Further, CFA and model fit indices were tested for construct validity.

The construct validity of the CPOPCC Scale was tested by using CFA. Considering the criteria required for CFA (outliers, skewed and depressed values, missing data, etc.), 6 participants were excluded from the study. This is because the data must be suitable for normal distribution to use ML. In the Multivariate normality test, the critical value was determined to be 24.868. While it is an excellent result that this value is below 10, studies have shown that up to 20 is generally not a problem.[23] To ensure normality, participants 31, 30, 46, 86, 114 and 186 were excluded from the study according to Mahalanobis distances. After excluding these participants, the assumption of multiple normality was ensured and ML was used as the calculation method in structural equation models. Model fit indices were used to determine whether the model was within the appropriate limits. In this context, Chi-Square/degrees of freedom (CMIN(χ^2)/DF), goodness-of-fit index (GFI), comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean squared residual (SRMR) were analyzed.

The reliability of the CPOPCC Scale was tested using Cronbach's α, ITC coefficient, and test-retest. Cronbach's alpha coefficient is a measurement that has been used to assess reliability for many years. Even though some studies establish that values higher than 0.7 are ideal, some researchers consider values under .70, but close to .60, as satisfactory.[24] The scale was administered to 15 patients at 2-week intervals. The literature suggests that an interval of 10-14 days is acceptable. Extending this period indicated in the literature may tend to decrease reliability.[24] Considering the discharge plans of hospitalized patients,

this period was appropriate for our study. In comparing test-retest scores, the Wilcoxon test was utilized for non-normally distributed data, and the interclass correlation (ICC) coefficient was used to examine the agreement. The scale's test-retest results are considered reliable because they do not show a significant difference, indicating invariance over time.[24] The significance level was determined as $P < .05$ in all results.

Ethical considerations

To adapt the CPOPCC scale to Turkish culture, permission was obtained by e-mail from the authors who developed the scale. Institutional permission was obtained from the institution where the study would be conducted (approval date: 15/04/2022; approval number: E-42884709-020). Ethical approval was obtained from the Kirsehir Ahi Evran University Medical Faculty Clinical Research Ethics Committee (approval date: 05/04/2022; approval number: 2022-07/61). The purpose of the study was explained to the patients and their informed consent was obtained. Ethics approval and information consent have been obtained from the families of the illiterate patients who stayed with them. In addition, permissions were obtained for the data obtained to be published in academic studies. Ethical principles and the Declaration of Helsinki were adhered to throughout the study.

RESULTS

Participants' Sociodemographic Characteristics

Study data were obtained from 224 patients. The mean age was 48.58 years (min: 21, max: 85), and the mean duration of hospitalization was 4.66 (min: 1, max: 17) days. 65.2% of the patients were female, and 87.5% were married. The demographic features of the patients are presented in Table 1.

Table 1. The Demographic Features of The Patients (n=224)

Features	Mean±SD/ n	Median (min.- max.)/ %
Age	48.58±14	47 (21 - 85)
Sex		
Female	146	65.2
Male	78	34.8
Education		
Illiterate	24	10.7
Literate	25	11.1
Elementary school	34	15.2
Middle School	40	17.9
High school	61	27.2
Bachelor	40	17.9
Marital Status		
Married	196	87.5
Single	28	12.5
Profession		
Hausewife	97	43.3
Worker	47	21
Officer	39	17.4
Retried	18	8
Self-employment	23	10.3
Clinics		
Internal medicine	22	9.8
Surgical	50	22.3
Cardiology	43	19.2
Pulmonology	33	14.7
Urology	20	8.9
Orthopedics	56	25.1
Number of days hospitalized	4.66±3.17	4 (1 - 17)
Nationality		
Republic of Türkiye	141	62.9
Others	83	37.1

SD; Standard Deviation, Min; Minimum, Max; Maximum

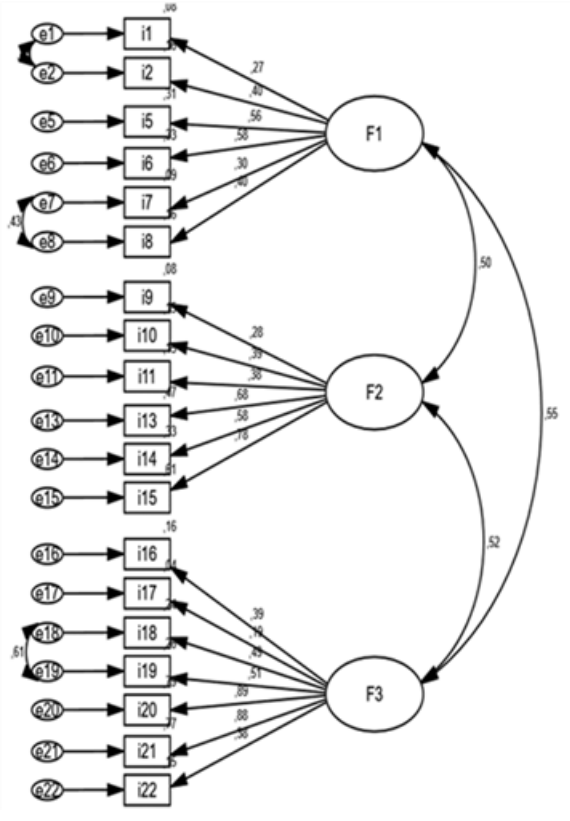
Construct Validity

CFA analysis and model fit indices were utilized to determine the scale's construct validity. As a result of the first-level CFA performed with 23 items with a total of 3 factors, the path coefficients of items i3 and i4 were removed from the model because they were not statistically significant ($P>.05$). After item removal, 3 different modification procedures were applied. After removing these items, covariance-based modifications were made between the e1-e2, e7-e8, and e18-e19 errors as part of the necessary modifications in the repeated analysis. Accordingly, model fit indices were obtained as CMIN/DF=1.796, GFI=.883, CFI=.871, RMSEA=.06, SRMR=.076. The fit indices obtained here are acceptable for the construct. However, when the ITC coefficients of each dimension of this construct are analyzed, it is necessary to remove items i12 and i23 from the scale since their ITC coefficients are lower than 0.2. After these four items were removed for these reasons, both the scale's construct validity and internal consistency were ensured. This way, there was no change in the original structure of the scale, the existing structure was preserved and four items unsuitable for the structure they were in were removed. As the removed items do not disrupt the scales' structures and the evaluations are made on a scoring rather than on an item, there is no drawback in removing these items. Stronger statistical results were obtained by removing these items. In the new results, CMIN/DF=1.647, GFI=.901, CFI=.91, RMSEA=.054, SRMR=.076 (Figure 1). All model fit indices were within acceptable limits and all path coefficients were significant (Table 2).

Table 2. Reliability Results of The Scale Items

Factors	Items	Mean	SD	Before i12 and i23 are removed[£] ITC	Before i12 and i23 are removed[£] Item removed Cronbach's α	Before i12 and i23 are removed[£] Cronbach's α	After i12 and i23 are removed[¥] ITC	After i12 and i23 are removed[¥] Item removed Cronbach's α	After i12 and i23 are removed[¥] Cronbach's α
Factor 1	i1	2.34	1.13	.347	.544	.613	.347	.544	.613
	i2	2.30	1.11	.445	.486		.445	.486	
	i5	3.19	0.56	.406	.535		.406	.535	
	i6	2.63	0.98	.378	.522		.378	.522	
	i7	3.47	0.53	.232	.582		.232	.582	
	i8	3.14	0.67	.224	.582		.224	.582	
Factor 2	i9	2.53	1.10	.231	.557	.670	.296	.625	.685
	i10	1.81	1.09	.398	.474		.401	.564	
	i11	3.14	0.51	.260	.542		.294	.596	
	i12	1.78	1.36	.177	.084				
	i13	3.25	0.57	.402	.505		.439	.552	
	i14	3.11	0.53	.466	.494		.441	.555	
	i15	3.22	0.51	.472	.496		.472	.550	
	i16	2.54	1.05	.315	.636		.358	.671	
Factor 3	i17	2.54	1.07	.235	.666	.742	.221	.726	.758
	i18	3.19	0.43	.522	.602		.522	.630	
	i19	3.24	0.51	.501	.597		.520	.621	
	i20	3.10	0.60	.625	.561		.624	.586	
	i21	3.08	0.56	.588	.574		.593	.599	
	i22	3.39	0.55	.266	.637		.286	.666	
	i23	2.70	1.04	.194	.677				

ITC; Item-Total Correlations, SD; Standard Deviation, [£]General Cronbach's α =.814, Tukey summability test (F=110.34; *P*<.001)
[¥]General Cronbach's α =.811, Tukey summability test (F=136.63; *P*<.001)



CMIN/DF=1,647, GFI=0,901, CFI=0,91, RMSEA=0,054, SRMR=0,076

Figure 1. Path Diagram of Confirmatory Factor Analysis

Reliability

To ensure the reliability of the scale items, ITC coefficient and Cronbach's α coefficients of the factors were analyzed. Cronbach's α coefficients of factor 1, factor 2 and factor 3 were 0.613, 0.670 and 0.742, respectively. When the ITC coefficients of the items were analyzed, i12 and i23 < .2 were found. These items were removed from the scale and recalculated and the correlation coefficient of all items reached >.2. ITC coefficients were evaluated within each dimension. In the final version of the scale, the Cronbach's α coefficients of the factors were .613, .685, .758, and the total Cronbach's α coefficient of the scale was .811, respectively. In this way, it was understood that the scale sub-dimensions and the whole scale were highly reliable. According to the Tukey summability test of the scale, the scale was not considered as summable (F=136.633; *P*<.001). Therefore, it was decided that each sub-dimension of the scale should be evaluated on its own (Table 3).

Test-Retest Findings

The results of the measurements of the scale at two different times are presented in Table 4. There is no significant difference between the mean scores of factor 1, factor 2, and factor 3 in the test-retest results (*P*>.05). There is also a statistically significant good agreement between the test-retest scores of all aspects (*P*<.05).

Findings related to scale score

Descriptive statistics of the scale score were analyzed, and the mean scores of the participants are presented in Table 4. The mean score of Factors 1 and 2 was 2.84, and the mean score of Factor 3 was 3.01. It is understood that the higher the score obtained from the scale, the higher the cultural competence of the nurses. The participants in this study were determined to have above-average cultural competence.

Table 3. Confirmatory Factor Analysis Results of the Scale

Items	Factors		Before items removed			After items removed		
			β¹	β²	*P*	β¹	β²	*P*
i1	<---	F1	.277	1.15	**.005**	.275	1.15	**.006**
i2	<---	F1	.405	1.65	**<.001**	.404	1.66	**<.001**
i5	<---	F1	.559	1.15	**<.001**	.557	1.15	**<.001**
i6	<---	F1	.572	2.06	**<.001**	.579	2.10	**<.001**
i7	<---	F1	.302	0.59	**<.001**	.301	0.59	**<.001**
i8	<---	F1	.404	1.00		.401	1.00	
i9	<---	F2	.283	0.77	**<.001**	.284	0.77	**<.001**
i10	<---	F2	.395	1.08	**<.001**	.387	1.05	**<.001**
i11	<---	F2	.379	0.48	**<.001**	.383	0.48	**<.001**
i12	<---	F2	.249	0.84	**<.001**	**Removed item**		
i13	<---	F2	.674	0.96	**<.001**	.682	0.97	**<.001**
i14	<---	F2	.582	0.77	**<.001**	.575	0.76	**<.001**
i15	<---	F2	.782	1.00		.784	1.00	
i16	<---	F3	.392	1.00		.394	1.00	
i17	<---	F3	.189	0.49	**.013**	.188	0.48	**.014**
i18	<---	F3	.494	0.51	**<.001**	.491	0.51	**<.001**
i19	<---	F3	.513	0.63	**<.001**	.512	0.62	**<.001**
i20	<---	F3	.888	1.29	**<.001**	.888	1.29	**<.001**
i21	<---	F3	.877	1.19	**<.001**	.879	1.19	**<.001**
i22	<---	F3	.382	0.50	**<.001**	.384	0.50	**<.001**
i23	<---	F3	.249	0.63	**.002**	**Removed item**		

F; Factor, i; Item; β1;Standardized beta, β2;Unstandardized beta coefficient

Table 4. The Test-Retest Results and the Descriptive Statistics of the Scale Score

		Mean± SD	Median (min. - max.)	Test	*P*	ICC (%95 CI) / *P*
Factor 1	**Test**	2.64±.56	2.50 (1.83 – 3.83)	-.31	.757*	.75 (.28 - .919) / **.006**
	Retest	2.68±.34	2.67 (2.17 – 3.17)			
Factor 2	**Test**	2.69±.60	2.50 (2.00 – 4.00)	-.67	.502*	.79 (.375 - .93) / **.003**
	Retest	2.57±.45	2.50 (1.33 – 3.33)			
Factor 3	**Test**	2.97±.50	3.00 (2.14 – 4.00)	.44	.662*	.70 (.115 - .9) / **.015**
	Retest	2.92±.35	2.86 (2.43 – 3.57)			

	Mean**	SD	Median	Minimum	Maximum
Factor 1	2.84	.50	2.92	1.50	4
Factor 2	2.84	.45	2.83	1.33	4
Factor 3	3.01	.42	3.00	1.57	4

SD; Standard Deviation, *Wilcoxon test, ICC (%95 CI): inter class correlation coefficient (%95 Confident Interval), **Mean of results obtained from all patients. min; Minimum, max; Maximum

DISCUSSION

Many reasons such as unpreventable wars, droughts, climate changes and living conditions have confronted us with cultural diversity.[2] This situation necessitates differences in specific policies of countries receiving migrants.[5] One of the most important of these policies is the provision and maintenance of health services. It is as important to ensure the effective use of public services as it is to treat patients, provide their care, prevent repeated admissions, and keep individual health at an optimum level. One of the ways to achieve these goals is transcultural care. Nursing services are the most important health professionals that adopt. However, the competence of nurses should be evaluated with appropriate

measurements at certain times. There is currently no study on the validity and reliability of the scale developed to assess the cultural competence of nurses in the Turkish population.

This present study, which assessed nurses' cultural competencies in respect to nursing practices, firstly ensured linguistic equivalence. Based on the literature, the CVI score should be >.80.[25] This ratio being within reliable limits, we made the necessary adjustments according to the experts' recommendations without deleting any items. After the scale was translated from English to Turkish, its psychometric properties were evaluated in Turkish speaking patients.

CFA analysis was performed to determine the construct validity of the scale. I3 (I was provided an interpreter when I requested it) and i4 (I was provided with information and educational materials that were easy to understand in my preferred language) were excluded from the scale because their path coefficients were not significant. These results were thought to be due to the fact that all of the patients included in the study spoke Turkish.

Item 12 (I was connected with resources (e.g. health information, support, services, etc.) available in my community) and i23 (My spiritual and religious needs were met) were excluded because they were not within the model fit index limits. It is thought that i12 may have been perceived as similar to some items (e.g. i11 and i13), which may have led to this result. I23 may have been perceived as identical to i15. It may also be due to the fact that all patients participating in the study were Muslim and did not have negative thoughts about religious/spiritual care. All results of the remaining 19 items and 3 factors were significant and within the appropriate limits. In literature, fit indices should be higher than .90, RMSEA should be lower than .080, and χ^2 /df should be lower than 5. [26,27] Construct validity was supported according to the CFA results we obtained in our study.

Cronbach's α and ITC coefficient were examined to test the scale's reliability. To determine whether the items were discriminatory or not, ITC and item-subdimension total score correlations were examined. While ITC> .2 is recommended, approaching +1 is considered quite positive.[28,29] Therefore, in the first stage, items with < .2 were removed from the scale and ensured that all items were within the appropriate and significant limits. All correlation coefficients were found to be significant at the < .001 level. Therefore, each item in the scale is essential. Similar results were obtained in the study in which the scale was developed, and the scale item with < .2 was excluded from the analysis. [19] Similarly, the Philippines version of the scale reported an ITC coefficient of > .2. [17]

Homogeneous distribution of Cronbach's α coefficients is important in determining the internal consistency of the scale. If deleted Cronbach's α all items in our study had values ranging between .48-.72. The Cronbach's α coefficients of the sub-dimensions were .61, .68 and .75. The total Cronbach's α value of the scale was .81. In addition, Cronbach's α coefficients in the Philippines version of the scale were reported as .87, .81, and .61 for the sub-dimensions and .89 for the overall instrument. [17] These results were similar to the results of the original scale[19] and Filipino version. [17] In the literature, a value <.40 indicates that this value is not reliable, while a value above it is considered acceptable. Therefore, our scale items are within acceptable limits. Besides, it is stated in the literature that Cronbach's α varying between .60 and .80 indicates a fairly reliable scale and that Cronbach's α varying between .80 and 1.00 indicates a highly reliable scale.[20] Based on this information, it was revealed that our scale sub-dimensions and total value were highly reliable.

Another test of reliability in scale adaptation studies is time invariance. The scale is re-administered to the same participants within an appropriate period to demonstrate this. While the literature reports that repeated administration 2-3 weeks apart is sufficient, the most appropriate time is decided according to the study design.[24] In our study, the test-retest results that we performed two weeks apart indicated that the scale was time-invariant. For this, there should be no significant difference between the two measurements. In our study, no significant difference was found between the two measurements of all factors (*P*>.05). The results of the test-retest procedure indicate that the instrument's stability was good, as the ICC reached the recommended values ≥.70.[30] All three factors were above this value, indicating a good compliance.

These results showed that the scale, which was developed to assess the cultural competence of nurse of patients receiving care and psychometrically measured in the Turkish population, is valid and reliable for utilization. The scale has a comprehensive use in terms of assessing individuals receiving care both in the acute and long term as well as in and out of hospital. Therefore, it will contribute to the literature as an important measurement tool that will provide an advantage of use in these periods when our cultural diversity is increasing.

Limitations of the Study

Cultural adaptations vary in language, meaning, and lifestyle. This may prevent scales from producing the desired results in the society to which they are adapted. Based on adaptation studies, scale development studies

appropriate to one's culture and society can be planned later.

This study has several limitations. First, it was performed with patients only at one hospital. Second, some items were removed from the scale because they did not have values that were appropriate to the original scale. Third, the scale cannot be evaluated as a total score. Fourth, the foreign patients who participated in the study spoke enough Turkish to understand and express the questions. However, they may not have enough vocabulary to describe their more detailed and specialized care needs. Therefore, the study can be conducted with patients whose native language is different in the presence of an interpreter. In addition, all nurses in the hospital where the study was conducted were of Turkish nationality and had a similar cultural structure. This situation caused the clients to address a limited group in evaluating the care competence of nurses. Considering the increasing employment of foreign national providers in health services, there is a need for further studies in which both providers and clients can be compared. In this study, only nurses were considered as providers. It would be beneficial to conduct future studies with professional groups such as midwives, doctors, physiotherapists and dieticians. Another limitation of the study is that patients who received short-term care were evaluated. The long-term care of patients may affect their opinions. Therefore, it is recommended that future studies be conducted with patients who have received care for longer periods.

Finally, since this study used nonprobability sampling, only patients who volunteered to participate were included. This situation limits generalizability. Therefore, it is recommended that a multicenter study be conducted with patients of various cultural backgrounds**.**

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Supplementary Table 1. Clients' Perceptions of Providers' Cultural Competency (CPOPCC) Instrument

The scale can be filled in by the patient himself/herself, his/her family or the researcher, provided that it is stated in the demographic section. Please answer all questions completely.

		Strongly Agree	Agree	Disagree	Strongly Disagree	N/A
		4	3	2	1	0
Promotes Supportive and Meaningful Interactions	**1.** I was able to practice important routines and traditions related to my health.					
	2. I was comfortable sharing private and personal information with my provider.					
	3. I was provided an interpreter when I requested.*					
	4. I was provided with information and educational materials that were easy to understand in my preferred language.*					
	5. I was understood and comforted after speaking with my care provider.					
	6. I had enough time to talk to my provider.					
	7. I was treated with respect.					
	8. I was consulted regarding my care.					
Promotes Connections with Others	**9.** The provider acted on my behalf with others on the care team.					
	10. The provider was interested in knowing about my family and community.					
	11. My friends or family were involved in my care.					
	12. I was connected with resources (e.g. health information, support, services, etc.) available in my community.*					
	13. Other people I consider important participated in my care.					
	14. I was asked to provide input into my care					
	15. I received care that fit my beliefs, work, and family					
Acts on Behalf of Others	**16.** The provider worked with me to identify my needs and goals.					
	17. I am confident in my ability to get care for myself when needed.					
	18. My family and friends have access to recourses to help me.					
	19. I can get help whenever I need it.					
	20. My provider understood my needs.					
	21. The provider was directly involved in my care.					
	22. The care I received helped me feel better and comfortable.					
	23. My spiritual and religious needs were met.*					

Note: It is suitable for use by healthcare professionals such as nurses, doctors, midwives, physiotherapists and dietitians as caregivers.
*Removed item

Supplementary Table 2. Hemşirenin Kültürel Yeterliğine İlişkin Hasta Algıları Ölçeği

Ölçek demografik bölümde belirtilmek kaydıyla hastanın kendisi, ailesi ya da araştırmacı tarafından doldurulabilir. Lütfen tüm soruları eksiksiz yanıtlayınız.

		Kesinlikle Katılıyorum	Katılıyorum	Katılmıyorum	Kesinlikle Katılmıyorum	Gerekli değil
		4	3	2	1	0
Destekleyici ve Anlamlı Etkileşimleri Geliştirir	**1.** Sağlığımla ilgili önemli rutinleri ve gelenekleri uygulayabildim.					
	2. Hemşiremle özel ve kişisel bilgileri rahatça paylaştım.					
	3. İstediğimde bana bir tercüman sağlandı.*					
	4. Tercih ettiğim dilde anlaşılması kolay bilgi ve eğitim materyalleri sağlandı.*					
	5. Hemşiremle konuştuktan sonra anlaşıldım ve rahatladım.					
	6. Hemşiremle konuşmak için yeterli zamanım vardı.					
	7. Bana saygıyla davranıldı.					
	8. Bakımımla ilgili bana danışıldı.					
Başkalarıyla İletişimi Geliştirir	**9.** Hemşire, bakım ekibindeki diğer kişilerle birlikte benim adıma hareket etti.					
	10. Hemşire ailem ve topluluğum hakkında bilgi sahibi olmakla ilgilendi.					
	11. Arkadaşlarım veya ailem bakımda yer aldı.					
	12. Toplumdaki mevcut kaynaklarla bağlantı kurdum (örneğin sağlık bilgisi, desteği, hizmetleri vb.)*					
	13. Önemli gördüğüm diğer insanlar bakımıma katıldı.					
	14. Bakımımla ilgili bilgi vermem istendi.					
	15. İnançlarıma, işime ve aileme uygun bakım aldım					
Başkaları Adına Hareket Eder	**16.** Hemşire ihtiyaçlarımı ve hedeflerimi belirlemek için benimle birlikte çalıştı.					
	17. Gerektiğinde kendime bakabilme yeteneğime güvenirim.					
	18. Ailem ve arkadaşlarım bana yardımcı olacak kaynaklara erişir.					
	19. Ne zaman ihtiyacım olsa yardım alabilirim.					
	20. Hemşirem ihtiyaçlarımı anladı.					
	21. Hemşire doğrudan bakımımla ilgilendi.					
	22. Aldığım bakım daha iyi ve rahat hissetmeme yardımcı oldu.					
	23. Manevi ve dini ihtiyaçlarım karşılandı.*					

Not: Bakım vericiler olarak hemşireler, doktorlar, ebeler, fizyoterapistler ve diyetisyenler gibi sağlık profesyonellerinin kullanımı için uygundur.
*Ölçekten çıkarılan maddeler