Journal of Transcultural Nursing
2016, Vol. 27(5) 487–495

DOI: 10.1177/1043659615582089
tcn.sagepub.com
SAGE

Validity and Reliability of the Turkish Version of the Nurse Cultural Competence Scale

Sebahat Gözüm, PhD[1], Ayla Tuzcu, PhD[1], and Nurcan Kirca, BSN[1]

Abstract

Purpose: Measuring the cultural competence of nurses is becoming an increasingly important aspect to assess the quality care for individuals in multicultural populations such as Turkey. The purpose is to adapt the Nurse Cultural Competence Scale (NCCS) into the Turkish language and to determine its validity and reliability. **Design:** A total of 235 nurses were included in the methodological study in Antalya, Turkey. The NCCS-Turkish (NCCS-T) form was used after linguistics and psychometric measurements. **Results:** Cronbach's α value was .96, which demonstrated high reliability, and item–total correlations were between .66 and .81.Test–retest reliability correlation was .90. The content validity index was .98, and the 20 items of the NCCS-T loading on one factor varied between .70 and .83, explaining 59.02% of the variance. **Conclusions:** Psychometric properties of the NCCS-T were highly reliable and valid. **Implications for Practice:** The scale can be used in the cross-cultural studies to compare nurses' cultural competency.

Keywords

cultural competence, cultural competence scale, nurses, nursing, reliability, validity, methodological study, multicultural community, Turkey

Introduction

Many people, willingly or unwillingly, migrate as a result of globalization in the world. As a consequence of this situation, multicultural population structures composed of individuals, families, and groups from different cultures have appeared in the world. In turn, as a result of these tendencies, those who provide health care services need to interact with individuals whose health beliefs, languages, and life experiences are very different than their own (Drew, 2000). In order to meet the health care needs of individuals from different cultures, the necessity for sensitivity to cultural values has arisen for the institutions and medical professionals providing services in the field of health. Since culture plays an important role in health perception, health behaviors, and responses to treatments for individuals, nurses as well as all medical personnel should improve their cross-cultural approach competence and sensitivity in order to understand individuals from different cultures.

In the literature, it has been emphasized that a valid measuring tool is required in order to evaluate the cultural competences of nurses (Emami & Safipour, 2013; Fitzgerald, Cronin, & Campinha-Bacote, 2009). For this purpose, the Nurse Cultural Competence Scale (NCCS) was developed by Perng and Watson (2012) by using the Mokken scale. An assessment instrument whose Turkish language validity and reliability has been conducted has not yet been created for the purpose of determining the cultural competence of nurses in Turkey.

This study was conducted to adapt the NCCS (developed by Perng & Watson in 2012) into Turkish and to determine its validity and reliability.

Literature Review

The Concept of Cultural Competence

Cultural competence is defined as the competence required by professional health care personnel in order to provide reliable and efficient health services for individuals from different cultural backgrounds. This competence, which is not found in human nature, is a feature that can be developed with a sense of responsibility and training (Drew, 2000;

[1]Akdeniz University, Antalya, Turkey

Corresponding Author:
Sebahat Gözüm, PhD, Department of Community Health Nursing, Faculty of Nursing, Akdeniz University, Dumlupinar Boulevard, 07058 Antalya, Turkey.
Email: sgozum@akdeniz.edu.tr

Perng & Watson, 2012). Cultural competence is a process that begins with the willingness of a person to learn cultural subjects, and progresses by incorporating the significance of culture into all care levels, and it is transformed into a process by providing the adaptation required for the services given in order to meet culture-specific needs. Raising awareness and accepting cultural differences are accepted as the first step in the process of becoming a culturally competent individual. Differences must be explored and understood; thus, barriers to seeking health care can be reduced. Explaining and understanding differences may decrease barriers for health care–seeking behavior. Understanding differences starts with awareness, and health care providers should be ready to accept differences and maintain this attitude always (Degazon, 2012). Cultural competence is a skill group that is easy to apply to people from different cultures and that can help form cultural sensitivity among health care professionals (Perng & Watson, 2012).

Along with the globalization process, as a natural result of population mobility, settlement rates of individuals from different cultural backgrounds, and accordingly, their rates of using health care institutions in Turkey have gradually increased. According to the international patient statistics published by the Turkish Ministry of Health, almost 60,000 of 156,000 international patients who arrived in Turkey in 2011 were assessed in the frame of health care for tourists, whereas the others were evaluated in the context of the health of tourists. Turkey receives patients from neighboring countries such as Germany, Turkic republics, Bulgaria, Romania, and Iraq. According to the records of Akdeniz University Hospital International Patient Unit, inpatient or ambulatory treatments were provided to 417 patients from many European and Middle Eastern countries, especially from Russia and Turkic republics in the first 10 months of 2013. Treatment and care requirements of refugees coming to Turkey because of the domestic disturbances of other countries in the region have also increased the possibilities of medical professionals meeting individuals from different cultural backgrounds. This situation has resulted in the need for cultural competence among health care professionals. The fact that nurses provide health care for individuals from different cultures with gradually increasing rates requires them to review traditional roles and values. In a study that assessed the knowledge and attitudes of nurse students and professional nurses regarding patients from different cultures (Bond, Kardong-Edgren, & Jones, 2001), it was determined that nursing programs organized before and after graduation were partly limited to accumulation of knowledge and skills regarding special cultural groups. In a study conducted by Vydelingum (2006), it was stated that minority ethnic groups were generally seen as a problem and perceived by nurses as a situation not viable as a part of their daily routine; in addition, the deficiency of the holistic care aspect of nurses trying to develop a therapeutic relationship with minorities was revealed. In a study conducted in a private hospital in Istanbul—which receives patients from mostly Middle Eastern countries—concerning the difficulties faced by nurses in caring the patients from different cultures (Yurt, Donyagı, Sen, & Oguz, 2013), it was reported that 80.9% of nurses were willing to provide health care for these patients. However, inability to speak foreign languages, cultural differences, patients' behaviors, and religious beliefs are reported to be the factors that cause difficulties for nurses in these patients' health care.

Cultural values, beliefs, and practices of patients constitute an important part of holistic nursing care. In the globalized world, nurses should adopt the necessity and responsibility of providing individual-centered health care services to all community and ethnic groups. Therefore, it is of high importance to train nurses who possess the cultural knowledge and skills needed to respond to the cultural requirements of a multicultural society (Jeffreys, 2000).

Intercultural studies in nursing are defined as transcultural nursing and various models have been introduced to demonstrate this concept. These models are structures based on the theory that explains the cultural care needs of individuals and guides nursing practices (Andrews & Boyle, 2012; Campinha-Bacote, 2002; Jirwe, Gerrish, & Emami, 2006; Purnell, 2002). Jirwe et al. (2006) used document analysis to analyze the main components of nine structures concerning cultural competence, and defined four main themes: (1) awareness of difference among people, (2) care skills for individuals, (3) unprejudiced clarity for all individuals, and (4) increasing cultural competence in a long-term and uninterrupted process.

Andrews and Boyle (2012) stated that the cultural competence of a nurse is related both to critical thinking skills and to learning competence in cognitive, emotional, and psychomotor areas. Purnell's (2002) cultural competence model defines 12 areas under the titles of individual, family, society, and global society in order to evaluate the cultural background of individuals. These areas are overview/heritage, communication, family roles and organization, work force issues, biocultural ecology, high-risk behaviors, nutrition, pregnancy and childbearing practices, death rituals, spirituality, health care practices, and health care practitioners (Purnell, 2002). The cultural competence process model in providing health care services (Campinha-Bacote, 2002) consists of five concepts: cultural awareness, cultural knowledge, cultural skills, cultural encounters, and cultural desire. The definition and meaning of cultural competence are still controversial. Some researchers (Burchum, 2002; Suh, 2004; Zander, 2007) explain the cultural competence concept by using the concept analysis technique. Suh (2004) defines the characteristics of cultural competence as skills, clarity and flexibility, cultural awareness, cultural knowledge, cultural skills, and cultural encounters. According to Burchum (2002) and Zander (2007), who formed the main philosophy of cultural competence measurements, characteristics of cultural competence are cultural awareness, cultural knowledge, cultural understanding, cultural sensitivity, cultural interaction, and cultural skills.

It is complex to assess the cultural competence of nurses; however, when the changing demographics of Turkey are considered, assessment of quality care for individuals in various groups has become an increasingly significant matter. Assessment of cultural competence in nursing practice and education has encouraged the development of instruments related to the cultural competence attributes of health care providers rather than patient perceptions of their care or their health outcomes (Loftin, Hartin, Branson, & Reyes, 2013).

Method

Design and Setting

This methodological study was conducted between July and August 2014 in the city of Antalya, located at the Mediterranean coast of Turkey. The population of Antalya is 2,158,265, and more than 10 million tourists visit Antalya every year.

Sample

Nurses working at internal medicine clinics, surgical clinics, and outpatient clinics (outpatient chemotherapy, emergency clinic, outpatient sample taking unit) of Akdeniz University Hospital were included in the scope of the study. Surgery rooms, intensive care units, and child units where communication with patients is limited were excluded from the scope of the study. The selection criteria included nurses who voluntarily participated in the study. The sample size was estimated based on the criterion that at least 10 participants per item were required for conducting an exploratory factor analysis of an instrument (Nunnally & Bernstein, 1994; Polit & Beck, 2008). Accordingly, since there were 20 items in NCCS for three variables, the study needed to include 200 subjects. Three hundred questionnaires in total were delivered to nurses for determining the final sample size. Two hundred seventy nurses returned their questionnaires, which was a response rate of 90%. Five nurses did not fully complete their questionnaires. Thus, the study was carried out with a sample size of 265.

Research Instrument

The Personal Information Questionnaire. The questionnaire forms involving descriptive data of nurses involved sociodemographic characteristics of participants (such as age, educational status, marital status, place of residence where participants maintained the majority of their lives, the average time period for which participants had been nurses, the unit of the hospital in which they currently work) and information about their cultural background (ability to speak a foreign language, experience of previously living in a country other than Turkey, experience of studying abroad, previous short-term visits to a country other than Turkey for business or touristic purposes, previously having friends or neighbors from different cultures in their private lives, and previous experience of providing care for patients from different cultural backgrounds).

Nurse Cultural Competence Scale. The NCCS includes three subscales and a total of 20 items to evaluate the cultural skills, cultural knowledge, and cultural sensitivity of nurses. Twelve statements related to cultural skills, six statements related to cultural knowledge, and two statements related to cultural sensitivity are assessed with agreement levels of *strongly disagree* (1), *disagree* (2), *not sure* (3), *agree* (4), and *strongly agree* (5); scores vary between 20 and 100. A higher score denotes a high cultural competence. The original form of this scale, which was prepared as a Mokken-type scale and evaluated with a single dimension, has been reported to be reliable (Rho = 0.97). Mokken scale analysis is a hierarchical scaling method and is similar to Guttman scaling. Both techniques assume the existence of an underlying latent (unobservable) attribute, which is represented by a set of items related to the latent attribute (Crichton, 1999). Cronbach's alpha reliability coefficient was performed for the 20-item scale yielding .96 (Perng & Watson, 2012).

Translation and Adaptation of the Scale. After being developed by the World Health Organization, the instrument was translated and adapted in this study (World Health Organization, 2014). After receiving permission from Shoa-Jen Perng (jen@tccn.edu.tw, email; November 7, 2013) to modify the NCCS, a bilingual linguist and the author translated the scale item-by-item independently from English into Turkish. For the purpose of clarifying inadequate expressions and inconsistencies of the translation, the scale's translations were checked by a bilingual team involving six specialists. The scale then was back-translated from independently Turkish to English by another bilingual linguist. Eventually, item-by-item comparisons were investigated by the authors, one of whom (the first author) is familiar with instrument adaptation between the back-translated English version and the original English one, in order to ensure that the translation was conceptually and linguistically appropriate.

The nursing expert team members (four nursing faculty members of the community health nursing department and two nursing faculty members of the internal medicine nursing department) examined the content validity of the preliminary NCCS-T. Depending on comments made by the expert team, minor wording revisions were made in 11 items of the NCCS-T in order to match the Turkish version because of differences in the cultural and language levels. The phrase *other nursing colleagues* was translated as *colleagues* (Items 1, 2, 4, 7, and 8). The phrase *clients from diverse cultural backgrounds* was translated as *patients from different cultures* (Items 2, 3, 4, 12, 13, 14, 18, and 19). Since NCCS-T is applied to nurses working at hospitals, the *client* was translated as *patient*. For the NCCS-T, each change in wording was made based on expert review.

Data Collection

The third author administered the questionnaires to each participant between July and August 2014, at the clinics providing direct patient care (internal medicine clinics, surgical clinics, outpatient clinics). The personal Information questionnaire and the scale lasted for 5 to 10 minutes.

Pilot Study

As is in a similar methodological study (Secginli, 2012), a pilot study assessed clarity, readability, and intelligibility of the NCCS-T with 10 nurses who were not included in the main study. Results of the pilot test showed no detectable language problem. For test–retest reliability, data were collected from a subsample of 30 nurses with a 2-week interval. The scale was found to be acceptable and ready for collecting the data from the target population for use in psychometric testing.

Ethical Issues

Approval from the Ethics Committee of Non-interventional Clinical Trials of Akdeniz University Medical Faculty and permission from the administration of Akdeniz University Hospital were received in order to conduct the study.

Statistical Analysis

Data management and statistical analyses were conducted by using the Statistical Package for Social Sciences, version 18.0 (SPSS Inc., Chicago, IL) and Linear Structural Relationships (Lisrel v8.5, Scientific Software International, Inc., Lincolnwood, IL). Sociodemographic characteristics were analyzed by using descriptive statistical analyses. Twenty items of the NCCS-T were examined separately for reliability and validity. The test–retest reliability was carried out by performing Pearson's correlation test. Internal consistencies and item–total correlations were measured to assess the reliability of the NCCS-T.

An item–total correlation of >.30 and levels of ≥.70 were the required criteria. Exploratory and confirmatory factor analyses were used to determine the psychometric properties of the new instrument. A content validity index (CVI) was used in order to examine the validity. Exploratory factor analysis was performed by using the principal component method with varimax rotation, and factors having eigenvalues of >1.0 were determined for construct validity of the scales. The sample adequacy was measured by performing the Kaiser–Meyer–Olkin (KMO) test. On the other hand, the correlation matrix was examined by using Bartlett's test of sphericity. The minimum factor loading coefficient (Burns & Grove, 2009) of .30 was accepted as the criteria to retain an item in a scale. Afterwards, confirmatory factor analysis of data obtained from the NCCS-T was conducted. Structural equation modeling was the statistical technique used to analyze the proposed model structure of the NCCS. The Diagonally Weighted Least Squares method was employed and the asymptomatic covariance matrix was formed for the estimation. Various fit indices were used to determine whether the proposed model's covariance structure differed from the observed relationships or not. Goodness-of-fit indices calculated involved the Pearson chi-square (χ^2) statistic with degrees of freedom, the goodness-of-fit index, adjusted goodness-of-fit index, the comparative fit index, and the root mean error of approximation. The independent samples *t* test was used to test logical relationships. For all statistical analyses, a two-sided *p* value of <.05 was considered as statistically significant.

Results

Sample Characteristics

The average age of the participants was 30.03 (*SD* = 6.43) years, and almost all the participants were women. Most of them (85.3%) had a bachelor's degree, and the place of residence where they had lived for the longest time was the city of Antalya and its districts (78.9%). The average time period for which participants had been nurses was 8.62 (*SD* = 6.58) years, and 138 (52.1%) worked at surgical clinics (Table 1).

Reliability

Internal Consistency and Item Analysis. The scales' item means, standard deviations, item–total correlations, and Cronbach coefficients were determined. Cronbach's correlation coefficient of the 20-item NCCS-T was found to be .96, and the corrected item–total correlations of each item varied between .66 and .81 ($p < .05$; Table 2).

Stability. The stability of the NCCS-T was verified by fulfilling test–retest with a 2-week interval. The coefficient of the NCCS-T was .90 ($p < .05$; Table 3).

Validity

Content Validity Index. The extent of agreement between the expert team members was assessed by using a content validity index in the study. The members evaluated the feasibility and relevance of each item in the scale by rating them from 1 (*not relevant*) to 4 (*very relevant*) as follows: 1 = *not relevant*; 2 = *unable to assess relevance without item revision* or *item is in need of such revision that it would no longer be relevant*; 3 = *relevant but needs minor alteration*; 4 = *very relevant*. The CVI of the scale was calculated by dividing the number of items rated 3 or 4 by the total number of items, and the value greater than 80% was regarded as a standard for testing expert validity (Burns & Grove, 2009; Secginli,

Table 1. Demographic Characteristics of Participants (*N* = 265).

Characteristics	*n*	%	*M* (*SD*)
Age			30.03 (6.43)
Sex			
Female	260	98.1	
Male	5	1.9	
Educational level			
High school	9	3.4	
Associate degree	18	6.8	
Bachelor's degree	226	85.3	
Postgraduate	12	4.5	
Marital status			
Married	156	58.9	
Single	109	41.1	
The residence where they maintained their lives for the longest time			
City center of Antalya and its districts	209	78.9	
Other	56	21.1	
Average period of being a nurse			8.62 (6.58)
In the clinics the nurses worked at			
Internal medicine clinics	106	40.0	
Surgical clinics	138	52.1	
Outpatient clinics[a]	21	7.9	

[a]Outpatient chemotherapy, emergency clinic, outpatient sample taking unit.

2012). The CVI was 0.98 for the NCCS-T, which meant that the scales were feasible for further use.

Construct Validity. Explanatory factor analysis was carried out to test the construct validity of the 20-item NCCS-T. Bartlett's test and KMO measure of sampling adequacy were performed to ensure that the characteristics of the data were proper in terms of the factor analysis. The results demonstrated that the KMO test was 0.95, and the Bartlett's test was 4651.06 ($df = 190$, $p = .000$). Items were loaded on one factor for the NCCS-T, which explained 59.02% of the total variance. Twenty-item loading on one factor varied between .70 and .83, which indicated the actual correlation between each item and the factor scores (Table 2). Confirmatory factor analysis is a method based on the evaluation of fit indices, demonstrating the coherence between the data and structure. Data of the study were applied to DFA with 20 items, and results showed that $\chi^2 = 271.93$, $df = 170$, $p = .00$, goodness-of-fit index = .98, comparative fit index = .99, and root mean square error of approximation = .048. When suggested modification indices were applied, modifications of error association or omitting questions from the model were not applied since no significant improvements were observed in fit indices, and the model was accepted with the version that included a single subscale and 20 items.

As seen in Figure 1, factor loads of items for the model varied between .89 and .96. According to Harrington (2009), factor loads are not required to be under .30. Values .71 and above are excellent, .63 is very good, .55 is good, .45 is fine/acceptable, and .32 is poor (Figure 1). Accordingly, factor loads of NCCS-T were accepted as excellent.

Testing of Theoretical Relationships. It was determined that 64 (24.2%) participants could speak a foreign language, very few had the experience of living (4.15%) and/or working (1.51%) in a country other than Turkey, and 53.96% previously had a friend or neighbor from a different culture in their private lives. A total of 18.49% had short-term visits to a country other than Turkey for business or touristic purposes, and most of them (82.6%) had experience of providing care for international patients. In order to test theoretical relationships, *t*-test analyses were performed with cultural background variables and the scale scores. The experiences of being able to speak a foreign language ($t = 0.611$, $p = .000$), having a friend or neighbor from a different culture in their private lives ($t = -2.595$, $p = .000$), and providing care for international patients from different cultures ($t = -3.291$, $p = .00$) were all associated with the nurses' cultural competences (Table 4).

Discussion and Conclusion

Globalization connotes an infinite number of cultural interactions and makes it possible for different voices to come together. Along with the globalization process, the rates of settlement and relevant use of medical institutions have been arising among the people coming from different cultural background in Turkey. Therefore, providing training for nurses with the cultural knowledge and skills that can meet the cultural requirements of the society increasingly comes into prominence and assessment instruments that can assess the cultural qualifications of nurses are required. Accordingly,

Table 2. Factor Loadings, Item Analysis, and the Item–Total Correlations for the 20 Items in the NCCS-T (*N* = 265).

Cultural competence	The measured area	Factor loading, Factor 1a	Item mean (*SD*)	Corrected item–total correlation	Cronbach's α if item deleted
1. I can teach and guide colleagues about the differences and similarities of diverse cultures.	CSk	.762	3.63 (1.16)	.738	.961
2. I can teach and guide colleagues about planning nursing interventions for patients from different cultures.	CSk	.756	3.63 (1.02)	.734	.961
3. I can use examples to illustrate communication skills with patients from different cultures.	CK	.689	3.85 (0.89)	.661	.962
4. I can teach and guide colleagues about the communication skills for patients from different cultures.	CSk	.793	3.55 (1.08)	.773	.961
5. I can explain the influences of cultural factors on one's beliefs/behavior toward health/illness to patients from diverse ethnic groups.	CSk	.788	3.62 (1.08)	.766	.961
6. To me, collecting information on each patient's beliefs/behavior about health/illness is very easy.	CSk	.747	3.67 (0.97)	.717	.962
7. I can teach and guide colleagues about the cultural knowledge of health and illness.	CSk	.802	3.69 (1.05)	.780	.961
8. I can teach and guide colleagues to display appropriate behavior, when they implement nursing care for patients from different cultures.	CSk	.810	3.75 (1.04)	.787	.961
9. I am familiar in health and/or illness related cultural knowledge and/or theory.	CK	.830	3.68 (1.08)	.807	.960
10. I can explain the influence of culture on a patient's beliefs/behavior about health/illness.	CSk	.785	3.79 (1.00)	.756	.961
11. I can list the methods or ways of collecting health, illness, and cultural-related information.	CK	.785	3.88 (1.00)	.757	.961
12. I can compare health/illness beliefs among patients from different cultures.	CK	.765	3.79 (0.93)	.732	.961
13. I can easily identify the care needs of patients from different cultures	CK	.702	3.83 (0.84)	.664	.962
14. When implementing nursing activities, I can fulfil the needs of patients from different cultures	CSk	.707	3.89 (0.86)	.668	.962
15. I can explain the possible relationships between the health/illness beliefs and culture of patients.	CK	.815	3.70 (0.98)	.788	.961
16. I can establish nursing goals according each patient's cultural background.	CSk	.773	3.85 (0.93)	.740	.961
17. I usually actively strive to understand the beliefs of different cultural groups.	CSens	.746	3.84 (0.94)	.710	.962
18. When caring for patients from different cultures, my behavioral response usually will not differ much from the patient's cultural norms.	CSk	.749	3.90 (0.89)	.713	.962
19. I can employ the communication skills necessary for patients from different cultures.	CSk	.751	3.93 (0.85)	.718	.962
20. I usually discuss differences between the patient's health beliefs/behavior and nursing knowledge with each patient.	CSens	.793	3.78 (0.98)	.764	.961

Note. NCCS-T = Nurse Cultural Competence Scale–Turkish; CSk = cultural skills; CK = cultural knowledge; CSens = cultural sensitivity.

Table 3. Test–Retest Correlations of the NCCS-T (*N* = *30*).

NCCS-T	Test
Retest	$r = .904$, $p < .05$

Note. NCCS-T = Nurse Cultural Competence Scale–Turkish.

the study supports the cross-cultural validation and psychometric characteristics of the NCCS-T in Turkish nurses. Reliability of the NCCS-T demonstrated a satisfactory internal consistency (α = .96). This value is higher than the recommended acceptability value (.70) for an instrument (Polit

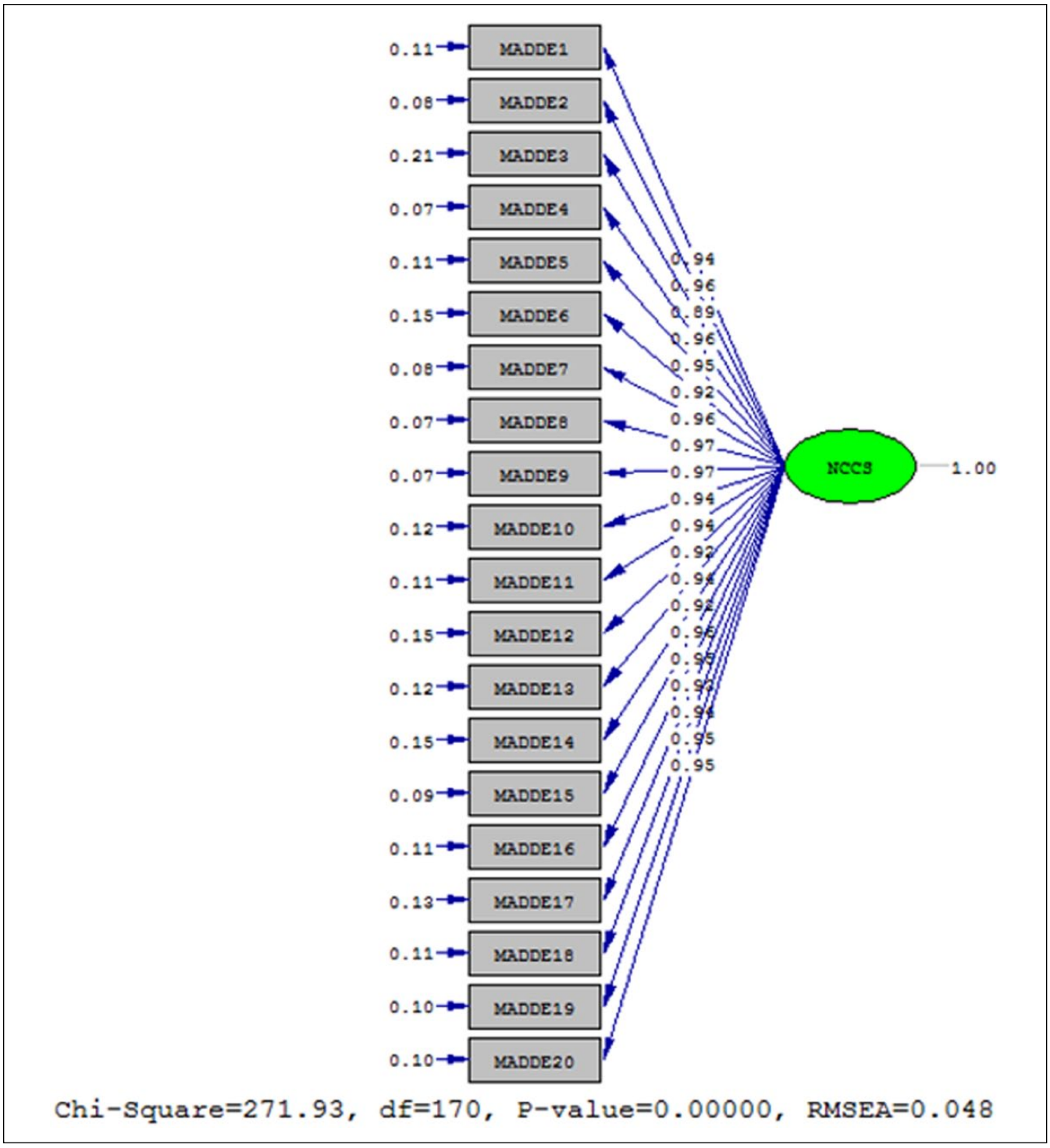

Figure 1. Factor loadings for NCCS-T.
Note. NCCS-T = Nurse Cultural Competence Scale–Turkish. χ^2 = 271.93, *df* = 170, *p* value = .00000, RMSEA = .048.

& Beck, 2008). In terms of this rule, the NCCS-T had a high internal consistency and was quite suitable for use in Turkish nurses. Internal consistency was also comparable to the consistency observed in the original version (Perng & Watson, 2012). Each item of the NCCS-T showed appropriate corrected item–total correlations (.66-.81; Nunnally & Bernstein, 1994). Test–retest score of the NCCS-T was found to be .90, which indicated a strong correlation.

In this study, the validity was examined with CVI value of the nursing team members and the exploratory factor analysis. The CVI value was 0.98 for the NCCS-T. This result was consistent with recommended excellent content validity and

Table 4. Cultural Backgrounds of Nurses on Their NCCS-T Scores.

Cultural background	*n*	%	*M* (*SD*)	*t*	*p*
1. Being able to speak a foreign language					
Yes	64	24.2	74.51 (10.94)	0.611	**p = .00**
No	201	75.8	75.60 (16.29)		
2. Having the experience of living in a country other than Turkey				Since the distribution is not equal, the analysis could not be conducted	
Yes	11	4.15	72.09 (8.12)		
No	254	95.85	75.48 (15.38)		
3. Having the experience of working in a country other than Turkey				Since the distribution is not equal, the analysis could not be conducted	
Yes	4	1.51	75.50 (5.56)		
No	261	98.49	75.34 (5.56)		
4. Having short-term visits to a country other than Turkey for business or touristic purposes					
Yes	49	18.49	77.42 (12.07)	−1.067	*p* = .060
No	216	81.51	74.87 (15.76)		
5. Having a friend or neighbor from a different culture in their private lives					
Yes	143	53.96	77.60 (12.49)	−2.595	**p = .000**
No	122	46.04	72.68 (17.46)		
6. Having the experience of providing care for international patients					
Yes	219	82.6	77.07 (13.46)	−3.291	**p = .000**
No	46	17.4	67.08 (19.64)		

Note. NCCS-T = Nurse Cultural Competence Scale–Turkish. Boldface indicates statistical significance.

CVI value (Burns & Grove, 2009; Polit & Beck, 2008). The exploratory factor analysis (principal component analysis) was used to establish the construct validity of the scale. As a result of this analysis, in the KMO measure the coefficient was .95, the Bartlett's test of 4651.06 ($df = 190$, $p = .000$) was indicative for excellent sampling adequacy, and the sample size was suitable for satisfactory factor analysis. All the items in the cultural competence scale were clustered into one dimension and they met the factor loadings of item criterion of .30 and above (Burns & Grove, 2009). This result was similar to that of the original NCCS (Perng & Watson, 2012). While factor loads of items collected in Factor 1 were high (.69-.83), all items in the 20-item original scale were preserved in the Turkish form (Table 2; Figure 1). These results proved that validity of items in the NCCS-T scale was strong. When Perng and Watson (2012) developed the NCCS, they identified the items under four domains: cultural awareness, cultural skills, cultural knowledge, and cultural sensitivity; however, they excluded items of cultural awareness in the psychometric assessment. Twenty items, including the other three domains, were evaluated as cultural competence. Table 2 illustrates the domain measured by each item.

In this study, the total mean score obtained by participants from NCCS-T was 75.34 ($SD = 15.16$), which indicated that the cultural competence levels of nurses were high. In the evaluation (Table 4) performed with the idea that the cultural backgrounds of nurses might affect their cultural competence, it was found that the cultural sensitivity levels of nurses, who had friends or neighbors from different cultures in their private lives, and who had previous experience of providing care for international patients from different cultures, were higher compared to those of nurses who did not have such experiences. These results were interpreted as follows: receiving stimulus related to different cultures motivates curiosity and interest for the culture in question and improves cultural competence. These results can be evaluated as evidence of the distinctiveness of the NCCS-T. In the analysis performed with the assumption that being competent in a language other than the mother tongue can support cultural competence, the cultural competence level of those who did not speak any foreign language was higher than the levels of those who did. This result, contrary to expectations, can be explained by the fact that there were translators at the hospital, where the study was conducted, for the patients from different cultures; furthermore, the nurses who could speak a foreign language generally spoke English, while patients staying at the hospital where the study was conducted usually spoke Russian and similar languages to Turkish language. Therefore, the fact that the known and spoken languages were different between nurses and patients could have affected the result. Additionally, the fact that there are a limited number of Turkish resources available for obtaining knowledge of different cultures may also have limited the influence of knowing a foreign language.

The NCCS-T was assessed as a reliable and valid tool to be used for Turkish nurses. Nurses' cultural competence was

positively affected by their capability to speak a foreign language, their status of having a friend or neighbor from a different culture in their private lives, and also providing care for international patients from different cultures.

Implications for Practice

International borders are more porous and there is increasing migration across international borders. Population movement rates are increasing—both for inevitable reasons, such as wars and famine, and for touristic purposes—the possibility of medical professionals meeting both healthy and ill individuals from different cultures has also increased accordingly. Medical institutions should be aware that individuals coming from different cultures due to war or regional disorders are affected seriously in terms of physical, mental, and social aspects and they should develop competences of nurses for care of this group of patients. In multicultural societies, the NCCS-T might be used with the purpose of evaluating the cultural competence of nurses working in medical institutions and measuring the change occurring in time. In addition, cultural competence, which is a universal value, could be measured in a multicentered way, and comparisons can be made with these instruments whose validity and reliability in different languages have been proved.

Acknowledgments

The authors would like to thank Dr. Shoa-Jen Perng and Dr. Roger Watson for developing such an instrument and providing the opportunity to translate and adapt it into other cultures and languages. Also, special thanks to Dr. Cantürk Çapık for supporting the confirmatory factor analysis of the study.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

Andrews, M. M., & Boyle, J. S. (2012). *Transcultural concepts in nursing care* (6th ed.). Philadelphia, PA: Lippincott, Williams & Wilkins.

Bond, M. L., Kardong-Edgren, S., & Jones, H. E. (2001). Assessment of professional nursing students' knowledge and attitudes about patients of diverse cultures. *Journal of Professional Nursing*, *17*, 305-312.

Burchum, J. L. (2002). Cultural competence: An evolutionary perspective. *Nursing Forum*, *37*(4), 5-15.

Burns, N., & Grove, S. K. (2009). *The practice of nursing research appraisal, synthesis, and generation of evidence* (6th ed.). St. Louis, MO: Saunders.

Campinha-Bacote, J. (2002). The process of cultural competence in the delivery of healthcare services: A model of care. *Journal of Transcultural Nursing*, *13*, 181-184. doi:10.1177/10459602013003003

Crichton, N. (1999). Information point: Mokken Scale analysis. *Journal of Clinical Nursing*, *8*, 380-388.

Degazon, CE (2012). *Cultural diversity in the community*. In P. Stanhope (Eds.), *Public Health Nursing* (pp. 140–162). Missouri: Elsevier.

Emami, A., & Safipour, J. (2013). Constructing a questionnaire for assessment of awareness and acceptance of diversity in healthcare institutions. *BMC Health Services Research*, *13*, 145. doi:10.1186/1472-6963-13-145

Fitzgerald, E. M., Cronin, S. N., & Campinha-Bacote, J. (2009). Psychometric testing of the Inventory for Assessing the Process of Cultural Competence among Healthcare Professionals: Student version (IAPCC-SV). *Journal of Theory Construction & Testing*, *13*, 64-68.

Harrington, D. (2009). *Confirmatory factor analysis*. New York, NY: Oxford University Press.

Jeffreys, M. R. (2000). Development and psychometric evaluation of the Transcultural Self-Efficacy Tool (TSET): A synthesis of findings. *Journal of Transcultural Nursing*, *11*, 127-136. doi:10.1177/104365960001100207

Jirwe, M., Gerrish, K., & Emami, A. (2006). The theoretical framework of cultural competence. *Journal of Multicultural Nursing & Health*, *12*(2), 6-16.

Loftin, C., Hartin, V., Branson, M., & Reyes, H. (2013). Measures of cultural competence in nurses: An integrative review. *Scientific World Journal*, 2013, 289101. doi:10.1155/2013/289101

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

Perng, S. J., & Watson, R. (2012). Construct validation of the nurse cultural competence scale: A hierarchy of abilities. *Journal of Clinical Nursing*, *21*, 1678-1684. doi:10.1111/j.1365-2702.2011.03933.x

Polit, D. F., & Beck, C. T. (2010). *Essentials of nursing research: Appraising evidence for nursing practice* (7th ed.). Philadelphia, PA: Lippincott, Williams & Wilkins.

Purnell, L. (2002). The Purnell model for cultural competence. *Journal of Transcultural Nursing*, *13*, 193-196.

Secginli, S. (2012). Mammography Self-Efficacy Scale and Breast Cancer Fear Scale: Psychometric testing of the Turkish versions. *Cancer Nursing*, *35*, 365-373. doi:10.1097/NCC.0b013e3182331a9a

Suh, E. E. (2004). The model of cultural competence through an evolutionary concept analysis. *Journal of Transcultural Nursing*, *15*, 93-102. doi:10.1177/1043659603262488

Vydelingum, V. (2006). Nurses' experiences of caring for South Asian Minority ethnic patients in a general hospital in England. *Nursing Inquiry*, *13*(1), 23-32.

World Health Organization. (2014). *Process of translation and adaptation of instruments*. Retrieved from http://www.who.int/substance_abuse/research_tools/translation/en/

Yurt, S., Donyagı, D., Sen, S., & Oguz, P. (2013, June). *The difficulties experienced in the care of foreign patients*. Paper presented at the second National Transcultural Nursing Congress, Antalya, Turkey.

Zander, P. E. (2007). Cultural competence: Analyzing the construct. *Journal of Theory Construction & Testing*, *11*(2), 50-54.