

RESEARCH ARTICLE

Psychometric properties of the Persian version of the Cultural Competence Scale in Clinical Nurses

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Abstract

Aim: Cultural competence is a crucial component of nursing competency, and a valid and reliable scale is needed to measure it. This study was conducted to investigate the psychometric properties of the Persian version of the Cultural Competence Scale among Iranian clinical nurses.

Design: A methodological design was used.

Methods: The scale was translated into Persian, and its content, face and construct validity, and reliability were examined.

Results: Two items with a content validity ratio of 0.6 were removed. In the case of the content validity index, one item with a content validity index lower than 0.70 was removed. The mean content validity index for the scale was reported as 0.99. All 31 items with an impact score index higher than 1.5 were approved. The exploratory factor analysis revealed four factors explaining 59.92% of the total variance. Cronbach's alpha and the intraclass correlation coefficient were calculated at 0.95 and 0.94, respectively.

KEYWORDS

cultural competence, factor analysis, Iran, nurses, psychometrics

1 | INTRODUCTION

Providing high-quality nursing care to patients from different cultures does not only require communicative, participatory, ethical and managerial skills; it necessitates cultural competence (Sharifi et al., 2019). Cultural competence is a complex concept that is recognized as a principal factor in patient-centred care, which is consistent with the patient's culture. Nurses' cultural competence can play a very significant role in health system efficiency worldwide (Osmancevic et al., 2020). Cultural competence can be defined as a constant, measurable and scalable process where the treatment team endeavours to work in a multicultural environment (Biles, 2020; Tang et al., 2019).

Many countries are experiencing growing cultural diversity due to migrations. By 2020, there have been about 281 million international migrants, which encompasses 3.6% of the world's population (United Nations, 2020). Such an increase in cultural diversity is considered a serious challenge for healthcare systems, while these systems should provide high-quality care to patients with different needs and various cultural backgrounds (Oikarainen et al., 2019). Therefore, as the largest group of healthcare providers, nurses should be able to communicate effectively with patients from diverse cultures. Consequently, nurses would be informed of their patient's needs and appropriate nursing practices, respectively (Lin et al., 2019). Evidence indicates that improving nurses' cultural competence can help reduce healthcare inequalities and improve

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the quality of healthcare services (Jongen et al., 2018; Sharifi et al., 2019).

In the 1980s, scholars recognized the significance of providing healthcare services consistent with the patient's culture (Sharifi et al., 2019). Since then, researchers have developed a multitude of theories and models of cultural competence (Osmanovic et al., 2020). The model for developing cultural competence introduced by Papadopoulos et al. is regarded as one of the models for developing and implementing culturally consistent healthcare services. According to this model, cultural competence refers to "the ability to provide effective health care services corresponding to patients' beliefs, behaviours and cultural needs." Cultural competence entails four dimensions: (a) cultural awareness, (b) cultural knowledge, (c) cultural skills and (d) cultural competence. This model has been modified in some studies where "cultural sensitivity" has replaced "cultural competence" (Chae & Lee, 2014). Cultural awareness refers to the awareness of one's biases against other cultures. Cultural knowledge includes paying attention to, understanding and respecting individuals' cultures with diverse cultural backgrounds. Cultural skills are regarded as the ability to collect cultural information related to the client's existing problems and perform a proper physical assessment based on the client's culture. Finally, cultural sensitivity refers to the ability to respond appropriately to different groups of people's attitudes, feelings or conditions (Botelho & Lima, 2020; Sharifi et al., 2019).

In terms of history, Iranian society has a diverse ethnic, cultural, linguistic and religious context (Saberi, 2019). Besides, there is an increasing intercultural confrontation because of the migration from two neighbouring countries, Afghanistan and Iraq, as well as the flourishing medical tourism in Iran (Amiri & Heydari, 2017; Momeni et al., 2021). Therefore, it is imperative for nurses to develop cultural competence so that they can communicate effectively with patients and improve their health status (Beykmirza et al., 2021). Consequently, it is necessary to constantly evaluate and promote nurses' cultural competence to ensure the quality of healthcare services. For this purpose, it is recommended to employ valid and reliable scales that include different aspects of cultural competence.

Numerous attempts have been made to develop cultural competency scales. Although they have been used in different studies on cultural competence, there is insufficient information about the psychometric properties of some of these scales (Osmanovic et al., 2020; Yadollahi, Ebadi, & Asadzaker, 2020; Yadollahi, Ebadi, MolaviNejad, et al., 2020). For example, some scales do not cover all the essential components of cultural competence, and some others have not been specifically designed for nurses. Also, some of these instruments placed their emphasis on a broader cultural diversity, including socioeconomic status, education, religion and sexual orientation. (Aboshaiqah et al., 2017; Chang et al., 2013; Jeffreys & Smolaka, 1996; Kosoko-Lasaki et al., 2006; Olt et al., 2010; Perng & Watson, 2012; Sealey et al., 2006).

Chae and Lee (2014) developed the Cultural Competence Scale for Clinical Nurses (CCSN) based on Papadopoulos' model, including all the necessary dimensions of cultural competence. They also assessed its psychometric properties; hence, it is regarded as a valid and reliable scale to assess nurses' cultural competence in various

clinical situations through self-assessment procedure. As well, it is the first validated scale to be developed in a multicultural society (Chae & Lee, 2014).

It is necessary to implement a valid scale in order to assess clinical nurses' cultural competence and examine the impact of interventions that aim to improve cultural competence. Although the psychometric properties of CCSN have been studied in the Korean nursing population, it is also recommended to evaluate psychometric properties for the translated versions of the scale (Chang et al., 2013). Therefore, the present study aimed to investigate psychometric properties of the Persian version of the Cultural Competence Scale among Iranian clinical nurses to provide a standard and reliable scale. Consequently, it can facilitate further research on nurses' cultural competence.

2 | METHOD

This methodological study was carried out to test the psychometric properties of the Persian version of the Cultural Competence Scale for Clinical Nurses. At first, it was translated into Persian, and then, content, face and construct validity were examined. The reliability of the translated scale was also evaluated in terms of Internal Consistency and Stability. The following section includes further details about these steps.

2.1 | Overview of the scale

The Korean version of the CCSN was developed by Chae and Lee (2014) based on Papadopoulos' model; then, the developers performed the psychometric analysis. This self-administration scale includes 33 items within four dimensions of cultural awareness (6 questions), cultural knowledge (7 questions), cultural sensitivity (12 questions), and cultural skills (8 questions). The scale is scored based on a 7-point Likert scale: for questions 1 to 14, 1 = absolutely disagree, 2 = strongly disagree, 3 = disagree, 4 = no opinions, 5 = agree, 6 = strongly agree, and 7 = absolutely agree; and for questions 14 to 33, 1 = never (0%), 2 = (10% of the occasions), 3 = (30% of the occasions), 4 = (50% of the occasions), 5 = (70% of the occasions), 6 = (90% of the occasions) and 7 = always (100%). The range of scores could vary from 33–231, with higher scores indicating a higher level of cultural competence. Given that there are a different number of questions for each dimension of cultural competence, the standardization of scores was used to compare these dimensions. For this purpose, the obtained score for each dimension should be divided by the number of questions, respectively (Chae & Lee, 2014).

2.2 | Scale translation

After correspondence with the developers of the scale, required permission to use the CCSN was obtained. They were asked to prepare an English version of the scale and provide it to the

research team. The CCSN scale was translated from English to Persian using the standard backward–forward method. In the first step, the English version was translated from English to Persian simultaneously by two independent translators who are fluent in both Persian and English. Additional comments were made to highlight challenging phrases or uncertainties. Finally, was produced one standard translation. After that, two other translators who have fluency in Persian and English independently translated the last version of the scale in Persian to English without access to the original scale. Two translations were compared, and any differences were resolved by discussion. Finally, in this process, the Persian version of the CCSN scale was developed. Moreover, the items were examined for cultural adaptation, and the necessary modifications were applied accordingly.

2.3 | Content validity

Content validity was examined using quantitative and qualitative methods. In the qualitative method, ten academic nurses were selected based on purposeful sampling. Then, these academic nurses commented on the proper choice of items, the use of appropriate terms, the observance of formal grammar and the appropriate scoring of items. Their recommendations and comments were considered as the basis for the necessary changes. Quantitative content validity was evaluated based on Lawshe's content validity ratio (CVR) as well as Waltz and Bausell's content validity index (CVI). To calculate CVR, academic nurses were asked to comment on each question based on a 3-point Likert scale of "the item is necessary," "the item is useful, but not necessary" and "the item is not necessary." Then, the content validity ratio (CVR) was calculated using the formula. Therefore, according to Lawshe's table, items with a CVR coefficient of >0.99 were considered acceptable, and their validity was confirmed. On the contrary, for the calculation of CVI, academic nurses were asked to determine the relevance of each item based on a 4-point scale: 1—not relevant, 2—somewhat relevant, 3—quite relevant and 4—highly relevant. Eventually, the number of people who chose options 3 and 4 was divided by the total number of participants. It is noteworthy that any CVI values of higher than 0.79 are regarded as appropriate, any CVI values between 0.70–0.79 are considered as they need further modification, and any CVI values of equal to and lower than 0.70 are regarded unacceptable and are removed accordingly (Polit & Beck, 2012).

2.4 | Face validity

Face validity was evaluated using quantitative and qualitative approaches. To determine face validity using quantitative method, impact scores of items were measured based on a 5-point Likert scale: very important = 5, important = 4, moderately important = 3, slightly important = 2, unimportant = 1. For this purpose,

the scale was sent to a group of 10 academic nurses. Then, the number of people who had chosen the scores 4 and 5 for each item (Frequency) and the total scores of each item were calculated; in addition, the average score of each item (Importance) was determined. Consequently, the impact score of each item was calculated using the following formula: impact score = frequency \times importance. An impact score of 1.5 or higher would be considered acceptable for each item. To examine face validity through a qualitative approach, 10 members of the panel of experts (via email) and 30 nurses (using face to face interviews) were asked to comment on the difficulty of items, comprehensibility of phrases and words, the appropriateness, and relevance of items, and the ambiguity and misinterpretation of items.

2.5 | Construct validity

Construct validity refers to the extent of compatibility between the measurement and the theoretical concepts (construct) of the target phenomenon. In other words, construct validity evaluates the appropriateness of the scale to measure whether the items of the scale can support theoretical and operational definitions of the concept. Construct validity is always associated with the following question: "Which structure does the scale actually measure?" (Harerimana & Mtshali, 2020). The construct validity in the present study was evaluated using exploratory factor analysis (EFA) to identify different dimensions of the scale. Moreover, Bartlett's test of sphericity was employed to determine whether the obtained correlation matrix is significantly different from zero so that it can justify the implementation of factor analysis. In other words, Bartlett's test is used to justify the need for factor analysis. The adequacy of samples was also assessed using the Kaiser–Meyer–Olkin (KMO) test. The Eigenvalue method was used to determine the number of constituent factors of the scale, and the Promax rotation was utilized to simplify and interpret the factor structure.

2.6 | Reliability

The reliability of a scale indicates the accuracy and dependability of the information obtained by that scale. Reliability is an essential criterion to assess the quality of a scale. The test–retest method was conducted on a sample of 30 nurses with a two-week time interval to evaluate the scale's stability; then, obtained scores were calculated using the intraclass correlation coefficient (ICC) test. The minimum ICC value was considered 0.75 in this study (Koo & Li, 2016). Besides, internal consistency was assessed using Cronbach's alpha coefficient on 303 nurses.

2.7 | Data collection

The statistical population included all nurses working in Imam Khomeini Hospital Complex in Tehran. Then, the sampling was performed using the random proportional method so that the adequate number of

samples from each ward should correspond with the number of nurses working in that particular ward. Then, sampling was sought by visiting those nurses according to their work schedule. The following inclusion criteria were taken into account for this study: nurses with a university degree, involved in providing direct care, having at least 6 months of clinical experience and consent to participate in the study. Comrey and Lee recommended that an acceptable sample size for exploratory factor analysis includes 300 samples (Kyriazos, 2018). Therefore, 303 nurses completed the demographic questionnaire and CCSN scale.

2.8 | Data analysis

Mean (standard deviation) was used to describe quantitative variables, and frequency (percentage) was used to describe qualitative variables. As well, the construct validity of the questionnaire was assessed by exploratory factor analysis. Data were analysed using SPSS software version 24. A mean value for each column was calculated for data imputation. Then, all missing values for that column were replaced with the statistic. The level of significance in statistical tests was considered as $p < .05$.

2.9 | Ethical considerations

The Ethics Committee of Tehran University of Medical Sciences, Tehran, Iran, approved this study (Ethical code: IR.TUMS.FNM.REC. 1399.1310). Prior to the distribution of questionnaires, participants were informed of the objectives of the research. They were then reassured about the confidentiality of the information, and informed consent was obtained. During the psychometric evaluation, only the authors of this study had access to the data. The ethical principles stated above are in accordance with those stated in the World Medical Association Declaration of Helsinki. Accordingly, questionnaires were completed by the participants from March–June 2021.

3 | RESULTS

3.1 | Content validity

The qualitative content validity was examined based on the academic nurses' opinions, and the necessary modifications were applied accordingly. It is noteworthy that 7 out of 10 people who were selected to assess the quantitative content validity responded. According to Lawshe's table, CVR was accepted for 31 items with a coefficient value >0.99 . However, items 8 "I know cultures or religions that require hospice which is different from that of Iranian." and 26 "I can check foreign patients' amount of intake and output (I & O) according to their diet." were omitted because the obtained CVR values were 0.6. In addition, CVI was evaluated for 33 items. As a result, item 26 was omitted because the CVI value was lower than

0.70. Eventually, the mean content validity index for the CCSN scale was reported as 0.99.

3.2 | Face validity

The remaining 31 items were examined in terms of face validity. The results of face validity by the panel of experts and participants indicated the relevance and appropriateness of these items to the subject, the proper understanding of items by respondents and the lack of ambiguity or difficulty in understanding the items. Besides, the results of quantitative face validity by the panel of experts revealed the impact score of >1.5 for all these 31 items. Hence, all the items were retained for the next steps.

3.3 | Construct validity

Exploratory factor analysis (EFA) was implemented to investigate the construct validity of CCSN. For this purpose, the sample included 303 clinical nurses; the mean and standard deviation of their age was 34.7 ± 05.14 years. The mean and standard deviation of their work experience was 9.05 ± 6.64 years. Moreover, the majority of these nurses were female (82.2%). Table 1 demonstrates such demographic characteristics. The results of the KMO test approved the adequacy of sampling for EFA (KMO = 0.92). Bartlett's test was also employed to determine whether the obtained correlation matrix is significantly different from zero. Since $\chi^2 (465) = 5805.903$, it justifies the implementation of EFA based on Promax rotation ($p < .001$).

Exploratory factor analysis results revealed four factors with eigenvalues of >1 , explaining 59.92% of the variance. The scree plot was presented in Figure 1, and Table 2 was shown the detail of the results of exploratory factor analysis of the cultural competence scale in clinical nurses. The four factors identified in the Persian version of the scale include Factor 1: cultural sensitivity including 11 items (items 14–24), representing 36.11% of the variance; Factor 2: cultural awareness including nine items (items 1, 2, 3, 4, 5, 6, 7, 9 and 10) representing 14.07% of the variance; Factor 3: cultural skills including eight items (items 25, 27, 28, 29, 30, 31, 32 and 33) representing 5.09% of the variance; and Factor 4: cultural knowledge, including three items (items 11–13) representing 4.71% of the variance.

3.4 | Reliability

Table 3 shows the reliability of the CCSN scale using Cronbach's alpha coefficient, which was reported 0.95 for the whole scale. Cronbach's alpha coefficients for the subscales of cultural knowledge, cultural awareness, cultural skill and cultural sensitivity were 0.88, 0.85, 0.84 and 0.92, respectively. In addition, the scale's obtained ICC value was 0.94 (CI95%: 0.87, 0.97), which was calculated using the two-way mixed absolute agreement method.

TABLE 1 Demographic characteristics of research participants (n = 303)

Characteristics	Frequency	
	N	(%)
Sex		
Female	249	82.8
Male	54	17.8
Educational level		
BSc.	259	85.5
MSc.	43	40.4
PhD	1	0.3
Marital status		
Single	131	43.2
Married	172	56.8
Position		
Staff nurse	283	93.4
Head nurse	20	6.6
Mother tongue is different from the Persian language		
Yes	95	31.4
No	208	68.6
Fluency in one of the foreign languages		
Yes	133	43.9
No	170	56.1
Communicating with clients with common dialects in the country		
Yes	165	54.5
No	138	45.5
Having a short or long stay abroad		
Yes	40	13.2
No	263	86.8
Passing a training course related to working with clients with ethnicity or Different cultures		
Yes	37	12.2
No	266	87.8
Experience working with clients from different ethnicities or cultures		
Yes	189	62.4
No	114	37.6
Engaged in the nursing profession in other countries		
Yes	8	2.6
No	295	97.4
Age, Mean (SD)	34.05 (7.14)	
Work experiences, Mean (SD)	9.05 (6.64)	

4 | DISCUSSION

This study aimed to investigate psychometric properties of the Persian version of the Cultural Competence Scale in Clinical Nurses and propose a valid scale to be employed in Iranian nursing research. This scale has been translated into Persian for the

first time, and the present research is the pioneering study based on this scale in Iran. It is important to note that CCSN is designed based on the modified Papadopoulos model. The Papadopoulos model provides a comprehensive definition of cultural competence highlighting all the essential dimensions of cultural competence (Chae & Lee, 2014).

Comparing the results of this study with other questionnaires designed to assess cultural competence, we concluded that despite many questionnaires and scales being developed to assess cultural competence, only some had been developed based on a particular model or theory. Moreover, some of these scales include a great number of items that affect the applicability of those scales (Naghizadeh et al., 2020; Yadollahi, Ebadi, & Asadizaker, 2020; Yadollahi, Ebadi, MolaviNejad, et al., 2020). For example, the Cultural Competence Health Practitioner Assessment scale has 67 items, and the Transcultural Self-Efficacy Tool (TSET) has 83 items (Jeffreys & Smoldaka, 1996; Osmancevic et al., 2020). On the contrary, some scales do not offer acceptable validity and reliability, while others do not provide enough information for all the psychometric properties. For example, the Inventory Scale for Assessing the Process of Cultural Competence Among Healthcare Professionals—Revised (IAPCC-R) was developed by Olt et al. (2010) based on the Campinha-Bacote model. The content and construct validity of this scale were then examined, which indicated weak validity. Its reliability is moderate, and its Cronbach's alpha is reported to be 0.83 (Olt et al., 2010). Some other studies showed moderate content and construct validity indices and a low-reliability index for Cultural Competence Assessment (CCA) scale (Osmancevic et al., 2020). In addition, studies on the Cultural Diversity Questionnaire for Nurses Educators (CDQNE) and the Cultural Competency Instrument (CCI) did not report any measures of reliability (Kosoko-Lasaki et al., 2006; Sealey et al., 2006).

A review of the related literature shows that all the scales are not appropriate to assess cultural competence. For example, English, Korean, Turkish, and Swedish versions of the Cultural Awareness Scale (CAS) can only measure some components of cultural competence (Osmancevic et al., 2020). Furthermore, the Cultural Sensitivity Scale only measures the cultural sensitivity dimension (Chang et al., 2013). In addition, Perng and Watson (2012) developed the Nurse Cultural Competence Scale with 20 items. It measures nurses' awareness of intercultural differences and similarities, as well as their willingness or reluctance to interact with people from other cultures and ethnicities; hence, it is a unidimensional scale (Perng & Watson, 2012). Moreover, the 11-item Individual Assessment of Cultural Competence scale is considered a unidimensional scale measuring cultural competence. Respective evaluations have reported a low content validity index and medium construct validity index for this scale (Aboshaiqah et al., 2017; Osmancevic et al., 2020).

Several scales are specifically designed to measure cultural competence in particular groups: the Transcultural Self-Efficacy Tool (TSET) (Jeffreys & Smoldaka, 1996), IAPCC-R (Olt et al., 2010), and CAS (Rew et al., 2003) to measure students' cultural competence among nursing students, the Cultural Sensitivity Scale for community health nurses

FIGURE 1 Scree plot for differentiated factors through exploratory factor analysis of cultural competence scale in clinical nurses

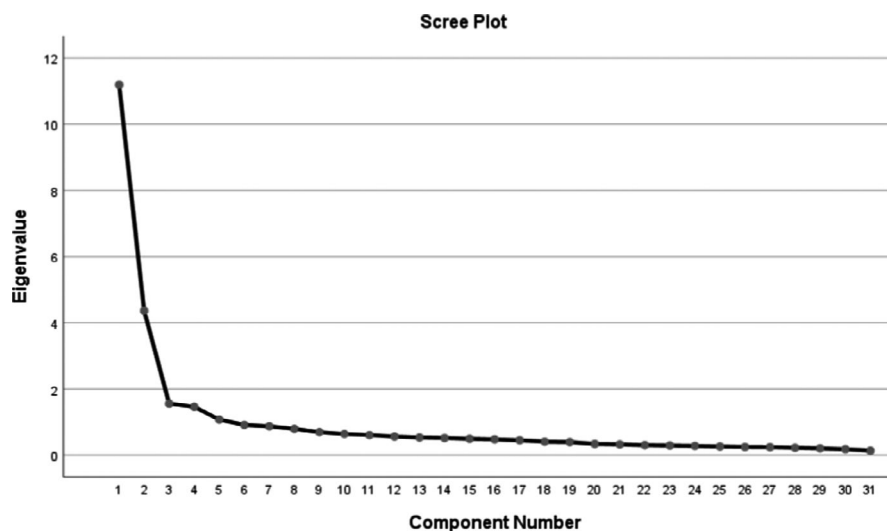


TABLE 2 Results of exploratory factor analysis of cultural competence scale in clinical nurses ($n = 303$)

Dimensions	Items	Item content	% of variance	Factor loading			
				1	2	3	4
Cultural sensitivity	14	I am interested in providing nursing care suitable to foreign patients' cultures	36.11	0.470			
	15	I believe that caring for foreign patients is an excellent opportunity to understand different cultures		0.722			
	16	Although caring for foreign patients requires relatively more time, I willingly want to care for them		0.813			
	17	Although there are cultural and linguistic differences, I believe I can form a therapeutic trust relationship		0.571			
	18	When I care for foreign patients, I wonder what it would be like to be in their situation		0.701			
	19	I am curious about what inconvenience foreign patients experienced or what expectations they had after visiting Korean hospitals		0.884			
	20	Although conversing with foreign patients takes a lot of time, I try to listen with patience		0.684			
	21	When caring for foreign patients, I try to greet them or make basic conversations in their language		0.541			
	22	I am interested in encountering different cultures		0.794			
	23	I want to receive education or training to provide effective care for foreign patients		0.828			
24	I want to participate in multicultural events held by the community outside the hospital	0.742					
Cultural awareness	1	I am aware that culture affects perceptions about health and disease	14.07	0.876			
	2	I am aware that health care behaviors can differ according to culture		0.955			
	3	I am aware that ways to express disease symptoms can differ according to culture		0.797			
	4	I am aware that beliefs on the cause of a disease and treatment can differ according to culture		0.689			

TABLE 2 (Continued)

Dimensions	Items	Item content	% of variance	Factor loading			
				1	2	3	4
	5	I am aware that a foreign patient's native health care environment can influence their nursing expectations			0.741		
	6	I am aware of how my cultural background affects my perception of foreign patients			0.569		
	7	I know cultures or religions in which the nurse's gender restricts nursing behavior			0.440		
	9	I know the cultural differences in the distance between patients and nurses that they both perceive as comfortable			0.450		
	10	I know that the meaning of physical contact can differ according to culture			0.580		
Cultural skill	25	I understand foreign patients who do not follow the hospital's treatment procedure because of their religious beliefs or customs	5.09			0.469	
	27	When caring for foreign patients, I keep a distance that they will feel comfortable in their culture				0.805	
	28	When explaining important information to a foreign patient, I try to provide it through documents in their language				0.723	
	29	I can search for information about the culture of foreign patients I encounter often				0.704	
	30	I can create a therapeutic trust relationship with foreign patients so that open conversations about medical history are possible				0.786	
	31	I can appropriately use verbal and nonverbal (tone, body language, etc.) communication with foreign patients				0.800	
	32	I can comfortably communicate with foreign patients with a translator				0.683	
	33	When unable to gain help from a translator, I can utilize necessary resources for communication with foreign patients, including translating tools or pain assessment tools				0.873	
Cultural knowledge	11	I know that the sensitivity of pain after operations or treatment procedures can differ according to culture	4.71				0.815
	12	I know that the endurance of fasting differs according to culture					0.798
	13	I know how the decision-maker for treatment differs according to culture					0.616

TABLE 3 Cronbach's alpha coefficient of cultural competency scale in clinical nurses ($n = 303$)

Dimensions	The number of items	Reliability (Cronbach's alpha coefficient)
Cultural knowledge	11	0.88
Cultural awareness	9	0.85
Cultural skill	8	0.84
Cultural sensitivity	3	0.92
Cultural competence	31	0.95

(Chang et al., 2013) and the CDQNE Scale for nursing educators (Kosoko-Lasaki et al., 2006). Therefore, these scales may not be appropriate to employ for the clinical nursing population.

This study examined different psychometric properties of the CCSN scale, including content validity, face validity, construct validity and reliability (internal consistency and stability).

The tool was approved with 31 items in terms of face and content validity; hence, two items were removed compared with the original version. It is noteworthy that Chae & Lee did not perform face validity in the original version. Content validity was assessed only by the

content validity index, which was reported as 0.96 for the scale level. Exploratory factor analysis was used to evaluate the construct validity. The purpose of the EFA is to summarize the variables into some factors. It should be asserted that there is one factor that corresponds to each variable; however, factors that represent the greatest portions of variance are extracted at the end (Polit & Beck, 2012). In this study, four factors with acceptable factor load values were obtained in the main scale, including cultural sensitivity (11 items), cultural awareness (9 items), cultural skills (8 items) and cultural knowledge (3 items). There were some differences between the number of items for each factor in the Persian version of this scale compared with the original scale. For instance, item 25 "I understand foreign patients who do not follow the hospital's treatment procedure because of their religious beliefs or customs." Was included in the cultural sensitivity subscale in the original scale, but it was considered in the cultural skills subscale in the Persian version. In addition, item 7 "I know cultures or religions in which the nurse's gender restricts nursing behavior," item 9 "I know the cultural differences on the distance between patients and nurses that they are both perceive as comfortable." and item 10 "I know that the meaning of physical contact can differ according to culture" that belonged to cultural knowledge subscale in the original version were transferred into cultural awareness subscale in the Persian version of CCSN.

The reliability of the Persian version of CCSN was reported as excellent, Cronbach's alpha coefficient for the 33-item K-CCSN scale was reported 0.932, and Cronbach's alpha for subscales ranged from 0.879–0.905 (Chae & Lee, 2014), which are consistent with the coefficients obtained in the present study. The numerical value of the ICC index obtained from the test–retest method indicates the excellent reliability of the scale. In their study, Chae & Lee tested the reliability of the original version using internal consistency using only Cronbach's alpha (Chae & Lee, 2014). According to the present study's findings, it can be concluded that the CCSN scale provides optimum validity and reliability in the study population.

5 | LIMITATIONS

One of the limitations of this study was the lack of evaluation of criterion validity; hence, researchers recommend that future studies investigate this type of validity. Besides, the construct validity investigation was conducted on nurses of a referral hospital in Iran's capital city. It is noteworthy that their level of cultural competence might be different from the competence of nurses working in local hospitals. Also, the Persian version of the scale was translated from the developer's English translation instead of the Korean version.

6 | CONCLUSION

Given that the quality of healthcare services is a serious concern of health systems and nurses are regarded as the main group of

healthcare providers, the findings of the present study are considered important and valuable. On the contrary, valid assessment of nurses' cultural competence provides the ground for the evaluation of the effectiveness of various interventions in promoting their cultural competence and, consequently, the quality of nursing care. The proposed Persian version of CCSN can be used as a valid and reliable scale to examine nurses' cultural competence.

7 | RELEVANCE TO PRACTICE AND MANAGEMENT

Caring for culturally diverse clients is a neglected area of nursing education, research and practice in societies including Iran. However, multiculturalism is a global phenomenon, and cultural competence is considered an essential nursing capacity. These results have implications for both nursing management and clinical nursing. The current study has obtained acceptable results regarding psychometric properties of the CCSN when used among nurses. The CCSN should be used in additional studies, including nurses in different cities and public and private hospitals. In the original version, the CCSN scale was used to evaluate cultural competence among clinical nurses. Therefore, this scale could be used in nursing practice as a guide in altering the competence development strategies for clinical nurses to match the requirements of the improved health system. The CCSN may be helpful in nursing management as an evaluation tool for exploring competence among nurses. The assessment of the CCSN may assist clinical managers and nursing educators in selecting intervention areas for continuous professional development to enhance the provision of culturally competent care. In addition, CCSN may assist in the content development of intervention programmes and the effectiveness evaluation of such programmes to improve the cultural competence of nurses.

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CONFLICT OF INTEREST

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

AUTHOR CONTRIBUTIONS

RN contributed to the study's conception and design. Material preparation and data collection were performed by NS and RD. Data analysis was performed by RN. RN and NS contributed to the interpretation of data. The first draft of the manuscript was written by NS, and RN commented on the draft and all authors read and approved the final manuscript.

ETHICAL APPROVAL

The study was evaluated and approved by the Research Ethics Committees of School of Medicine Tehran University of Medical Sciences (Ethical code: IR.TUMS.FNM.REC.1399.1310).

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author, [Reza Negarandeh], upon reasonable request.

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