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Evaluation of the psychometric properties of the Korean version of the Cultural Competence Assessment

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Abstract

Aim—The 25-item Cultural Competence Assessment (CCA) assesses the cultural competence of multiple types of healthcare providers. This study aimed to examine the validity and reliability of the Korean version of the CCA (KCCA) and determine the need for changes to improve its validity and reliability.

Methods—Data from 161 hospital nurses were used for the item analysis, and to assess the reliability and construct validity of the KCCA before and after the deletion of 9 items.

Results—The KCCA did not demonstrate acceptable construct validity and subscale internal reliability. We deleted 9 items with high inter-item correlations, high modification indices, and relatively lower factor loadings. The 16-item Modified KCCA showed improved construct validity, convergent and discriminant validity, and reliability.

Conclusion—While further psychometric evaluation of the Modified KCCA should be undertaken with larger samples and diverse professionals, our data provide evidence that the Modified KCCA might be a more suitable measure for use among Korean healthcare providers.

Keywords

cultural competency; psychometrics; health personnel

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CONFLICTS OF INTEREST

The authors have no conflict of interests.

AUTHOR CONTRIBUTIONS

D. C. and K. K. contributed to the conception, design of this study, perform the data collection; D. C. performed statistical analysis and drafted the manuscript; R. B. and A. Z. D. developed the CCA instrument; K. K., R. B., and A. Z. D. critically reviewed and made revisions to the paper for important intellectual content.

Introduction

Interest in healthcare providers' cultural competence is no longer limited to nations that have come to symbolize immigrant countries. Recently, in countries with a homogenous population, such as South Korea, the number of residents with diverse cultural and ethnic backgrounds has increased sharply (Flowers, 2004; Kim, 2014; Serizawa, 2007). The number of foreigners residing in Korea has increased by 40% in the past 10 years, totalling 1.7 million persons, comprising 3.3% of the country's population (Ministry of Justice, 2014). Reasons for foreigners staying in Korea vary, such as work, marriage immigration, and education. This group of residing foreigners includes medical tourists, whose main purpose is to receive medical services (Ministry of Justice, 2014).

The provision of culturally competent and safe health care to diverse groups requires respect and consideration of clients' cultural backgrounds when providing services. In most healthcare organizations, services are provided by a diverse group of personnel from different specialties, who also differ in terms of training levels and experience. However, there are limitations to the existing instruments. For example, Bernal and Froman's (1987) Cultural Self-Efficacy Scale tends to focus on knowledge of a particular ethnic group. Campinha-Bacote's (1999) Inventory for Assessing the Process of Cultural Competence (IAPCC) and the National Center for Cultural Competence's Cultural Competence Health Practitioner Assessment (CCHPA) require advanced levels of reading comprehension and are suited to specific types of healthcare personnel (Schim, Doorenbos, Miller, & Benkert, 2003). Jeffreys' (2010) Transcultural Self-Efficacy Tool and CCPHA, with more than 80 items and 129 items respectively, are complicated and time-consuming. Therefore, they are not suitable for measuring the cultural competence of diverse healthcare providers (Schim *et al.*, 2003).

Using Schim and Miller's Cultural Competence Model (CCM) as a theoretical basis (Schim & Miller, 1999), Schim and colleagues (2003) developed the Cultural Competence Assessment (CCA) instrument to measure the cultural competence of multiple types of healthcare providers. Since its development in 2003, the instrument has undergone several revisions. The current 25-item CCA consists of two subscales: the Cultural Awareness and Sensitivity (CAS, 11 items) subscale and the Cultural Competence Behaviors (CCB, 14 items) subscale. The items are rated on a 7-point Likert scale for the CAS (1 = strongly disagree to 7 = strongly agree) and the CCB (1 = never to 7 = always) subscales, with an additional item on the CAS ("no opinion") and the CCB ("not sure") subscales. Four items on the CAS subscale are negatively phrased and are reverse-scored for data analysis. Cultural competence is measured by summing the item responses, except for "no opinion" and "not sure" responses, and by dividing the score by the total number of items. Higher scores indicate higher cultural competence.

The CCA has been applied to a wide range of healthcare providers, including nurses, nurse practitioners, nursing students, nurse assistants, nutritionists, physical therapists, occupational therapists, social work, and clerical workers (Benkert, Templin, Schim, Doorenbos, & Bell, 2011; Doorenbos & Schim, 2004; Doorenbos, Schim, Benkert, & Borse, 2005; Lin, Chang, Wang, & Huang, 2015; Marra, Covassin, Shingles, Canady, &

Mackowiak, 2010; Ohm & Rosen, 2011; Schim *et al.*, 2003; Schim, Doorenbos, & Borse, 2005; Schim, Doorenbos, & Borse, 2006a; Schim, Doorenbos, & Borse, 2006b). Although few studies have comprehensively evaluated its reliability and validity (Doorenbos *et al.*, 2005; Schim *et al.*, 2003), its reliability has been reported as high (Chae & Kang, 2013).

Most previous studies on the CCA's psychometric properties have been conducted in North America (Chae & Kang, 2013). Recently, cultural competence scales have been developed in Korea, mainly focusing on service fields such as clinical nursing (Chae & Lee, 2014), social work (Nho & Kim, 2011), and other helping professions (Choi, 2010); however, there is no Korean version of a comprehensive instrument for use with a variety of healthcare providers with different levels of expertise.

The purpose of this study was to evaluate the psychometric properties of the Korean version of the Cultural Competence Assessment (KCCA) scale and to determine the need for changes to improve its validity and reliability while retaining the KCCA's original factor structure.

Methods

This study was conducted from April 2013 to May 2013. This study was reviewed and approved by the research ethics committee of the author's institution.

Participants

Using a convenience sampling method, we recruited nurses from two nursing colleges. They were part-time students who attended Registered Nurse to Bachelor of Science in Nursing (RN-BSN) or MSN programs in the Seoul metropolitan area and Gangwon Province of South Korea. The eligibility criteria for this study were: a clinical nurse who (1) works at a hospital with more than 100 beds, and (2) has experiences of caring for patients with diverse cultural or ethnic backgrounds. Of the 241 nurses who initially responded to the field survey, data from 161 were used to examine the KCCA's psychometric properties.

Procedures and data collection

Phase I: Translation process—After obtaining authorization to use the CCA from the developer (Dr Stephanie Schim), a native Korean nursing professor translated the questionnaire from English to Korean. A nursing professor and a Korean language teacher reviewed the translated questionnaire for incomprehensible or ambiguous wording and cultural appropriateness. The Korean version was then back translated to English by a bilingual Korean nursing professor teaching in a U.S. institution. The backward translation was compared to the original version by the instrument's developer. She confirmed that the CCA had been translated accurately and that there were no changes in the instrument's meaning due to the translation process.

Phase II: Preliminary test—Preliminary testing of the KCCA was conducted on 26 nurses working in inpatient units of a general hospital. They were asked to write their opinions if they found items that were difficult to understand or needed additional

explanation. The nurses did not report any problems in understanding and completing the questionnaire; therefore, it was used without revisions in the present study.

Phase III: Field test—Nurses from the RN-BSN programs and graduate programs were invited to complete the survey in their classrooms, during the break between lectures. The researcher explained the study's purpose and procedures, and obtained the participants' written informed consent before data collection. They were informed that they were not obliged to participate in the study and could withdraw at any time. Surveys were returned in an unmarked box, to ensure participant anonymity. A total of 241 nurses responded to the field test. List-wise deletion was used in cases of missing data. We excluded 38 respondents who did not meet the eligibility criteria and 19 with missing data. Thus, responses from 185 nurses were initially analysed to evaluate the non-response options. All of the items, excluding Item 2 on the CAS subscale, contained at least one person who responded with a "no opinion" response. Items with a high frequency of "no opinion" responses included items 9 (8.1%), 5, 10, and 11 (4.9% each), and 4 (3.2%). The CCB subscale contained "not sure" responses on 9 of the 14 items; those with high frequencies of such responses included Item 21 (2.2%) and items 18 and 20 (1.6% each).

We excluded 24 nurses who answered the KCCA questions with either "no opinion" or "not sure" responses; data from 161 nurses were used to examine the KCCA's psychometric properties (Fig. 1). According to Tinsley and Tinsley's suggestions (1987), we determined that stable factor models can be found with a ratio of about 6 subjects per item.

Data analysis

The data were analysed using PASW SPSS 21.0, AMOS version 21.0 (SPSS Inc., Chicago, IL, USA) and STATA 14.0 (StataCorp LP, TX, USA). Item analysis (corrected-item-total correlations, inter-item correlations and Cronbach's alpha-if-item-deleted) was conducted. Corrected-item-total correlations and inter-item correlations of .30–.70 were considered satisfactory (Ferketich, 1991). Correlations below .30 indicated low commonality with other items, whereas correlations above .70 indicated possible redundancy, both probably indicating an unnecessary item (Ferketich, 1991). Cronbach's alpha was used to measure the internal consistency of the entire scale and subscales with a coefficient of .70–.90, indicating adequate reliability (DeVellis, 2012).

We used confirmatory factor analysis (CFA) to examine the KCCA's psychometric properties and to refine the measurement. CFA detects whether theory-based factors, determined beforehand, are present in the data (Brown, 2015; Pett, Lackey, & Sullivan, 2003). A few studies used CFA in improved shorter versions of scales when the original version failed to meet the established model fit criteria (Chen, Lai, Chen, & Gaete, 2014; Slotman, Cramm, & Nieboer, 2015; Williams & Brown, 2013). Whereas item reduction through exploratory factor analysis does not consider the original factor structure, CFA can produce a more parsimonious structural model that maintains the integrity of the original versions (Larwin & Harvey, 2012). Therefore, it was more appropriate to use CFA than exploratory factor analysis in this study.

We performed the CFA using a maximum likelihood estimator to assess the validity of the hypothesized factor structure and identify the optimal model. We evaluated the goodness-of-fit using the χ^2/df ratio, comparative fit index (CFI), Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). The model fit was considered acceptable if the χ^2/df ratio was lower than 2, the RMSEA was lower than .06, and both CFI and TLI measures were higher than .95 (Hu & Bentler, 1999).

The convergent validity was evaluated using the Average Variance Extracted (AVE). It was considered adequate if AVE $\geq .50$ (Fornell & Larcker, 1981). The discriminant validity was determined when the AVE of each construct was greater than the squared correlations (R^2) between the constructs (Fornell & Larcker, 1981).

Based on the initial evaluation (item-total and inter-item correlations, factor loadings, and modification indices), 9 items were deleted, and all tests were repeated on the modified version.

Results

Sample characteristics

As seen in Table 1, participants' mean age and work experience were 29.57 and 7.11 years, respectively. Further, 44% of the nurses had a bachelor's degree; most of them were working in medical/surgical units, followed by paediatric/women's health, outpatient, intensive care unit/operating room, and emergency room services. Majority of them ($n = 123$, 76.4%) had no experience living abroad for longer than one month. Eighty-seven (54.0%) nurses reported that they could speak a foreign language and the primary language they spoke was English. Few participants ($n = 12$, 7.5%) had received education about caring for diverse groups, and the participants' frequency of caring for diverse groups was low (59.7% reported few times per year). The most common types of diverse groups that the nurses reported caring for were medical tourism patients (27.6%), followed by migrant workers (17.7%), and marriage immigrants (12.0%) (see Table 1).

Initial psychometric properties of the KCCA

Construct validity

The results of the CFA revealed that none of the goodness-of-fit indices reached acceptable levels in the initial two-factor 25-item model (Table 2). Standardized regression weights for each item of the KCCA were above .50, except for the four negatively phrased items (e.g., "Race is the most important factor in determining a person's culture") (Table 3).

Convergent and discriminant validity

The AVE value was 0.341 for the Cultural Awareness and Sensitivity (KCAS) and 0.595 for the Cultural Competence Behaviors (KCCB), indicating good convergent validity for the KCCB but insufficient convergent validity for the KCAS. The squared correlation between the KCAS and the KCCB was 0.007. As the AVEs were more than 0.007, the constructs showed sufficient discriminant validity.

Reliability and Item Analysis

The mean scores and standard deviations for the complete KCCA's and two subscales have been presented in Table 4. Cronbach's alpha was .87 for the entire KCCA, .64 for the Korean version of the KCAS, and .95 for the KCCB, which indicated good reliability for the entire scale, but insufficient reliability for the subscales (DeVellis, 2012) (Table 4). The range of Cronbach's "alpha-if-item-deleted" coefficients was .85 to .89. The scale's item-total correlations were $-.25$ to $.77$, with low corrected item-total correlations for the KCAS subscale and more desirable correlations for the KCCB subscale, except for 4 items ($> .70$), indicating redundancy (Ferketich, 1991) (Table 3). As for the inter-item correlations, the correlation coefficients between items 12 and 13 ($r = .72$), 14 and 15 ($r = .86$), and 16 and 17 ($r = .76$) were above $.70$. In addition, the KCCB subscale had inter-item correlations of above $.70$ ($r = .72$ to $.92$) for 6 items (items 20, 21, 22, 23, 24, and 25).

Psychometric properties after deleting nine items (Modified KCCA)

Construct validity

Deletion of the four negatively worded items (items 1, 2, 5, and 8), which performed poorly, did not substantially change the results ($\chi^2/df = 3.57$, CFI = .81, TLI = .79, and RMSEA = .13). We then removed an additional 5 items (items 12, 14, 16, 21, and 25) with high inter-item correlations, high modification indices, and relatively lower factor loadings. After deleting the 9 items, the two-factor 16-item model (Modified KCCA) had a better fit (Table 2). Standardized regression weights of each item of the Modified KCCA were above $.50$ (Table 3).

Convergent and discriminant validity

The AVE value was 0.472 for the KCAS and 0.604 for the KCCB, indicating improved convergent validity for both constructs but still insufficient convergent validity for the KCAS. The squared correlation between the KCAS and the KCCB was 0.010, indicating sufficient discriminant validity.

Reliability and item analysis

The mean scores and standard deviations for the entire Modified KCCA scale and each of its subscales have been presented in Table 4. Cronbach's alpha was .88 for the entire Modified KCCA, .86 for the KCAS, and .93 for the KCCB. The item-total correlations of the 16 items ranged from $.23$ to $.76$ (Table 3). The inter-item correlations of all the items were $> .30$ and $< .70$, except for 3 items with inter-item correlations $> .70$ ($r = .76$ for items 20 and 23; $r = .74$ for items 20 and 24; and $r = .74$ for items 23 and 24), which we retained because these items measured different content areas. The entire KCCA strongly correlated with the entire Modified KCCA ($r = .96$).

Discussion

Due to a growing culturally and ethnically diverse population in South Korea, the cultural competence of healthcare providers has become one of the essential phenomena in nursing research in South Korea (Chae & Lee, 2014; Noh & Kim, 2011). Although the CCA has

been used in North America for more than a decade, its validity and reliability has not been tested in South Korea. This study was the first report of its Korean version's psychometric properties and it suggested changes to improve its validity and reliability.

Previous studies on the CCA confirmed two factors (CAS and CCB) through an EFA (Doorenbos et al., 2005; Schim et al., 2003). In this study, the two-factor 25-item KCCA did not fit the model. After deleting the relatively poorly functioning 9 items, the two-factor 16-item Modified KCCA produced the best model fit, although the CFI, TLI, and RMSEA indices did not meet optimal values (Hu & Bentler, 1999). Given the small sample size, which increases the likelihood of incorrectly rejecting true models (Hu & Bentler, 1999), the Modified KCCA demonstrated an acceptable model fit and parsimony.

Discriminant validity of two subscales was proven in the original as well as the modified version. However, low convergent validity was observed for the KCAS subscale in the original version. This may suggest that a set of items on the KCAS presume to measure more than one construct (Hair, Black, Babin, Anderson, & Tatham, 2006). The Modified KCCA showed improved but slightly insufficient convergent validity.

The internal consistency of the entire scale was good; however, the Cronbach's alpha was too low for the KCAS subscale and too high for the KCCB subscale (DeVellis, 2012). These results are consistent with those found in previous studies (Benkert et al., 2011; Schim et al., 2005, 2006a; Schim et al., 2003; Starr & Wallace, 2009, 2011). After deleting 4 negatively worded items from the KCAS and 5 items from the KCCB, the Cronbach's alpha increased by .01 for the Modified KCCA, and markedly increased by .22 for the Modified KCAS.

Internal consistency is affected by how strongly the items correlate with one another as well as by the number of items in the scale (DeVellis, 2012). However, the reliability of the entire scale and the KCAS subscale improved after the deletion of 9 items. The correlations between the entire scale and subscales of the KCCA and Modified KCCA were strong ($r = .96$), suggesting that use of the Modified KCCA to measure cultural competence of healthcare providers is appropriate.

The mean scores of the KCAS and Modified KCAS were higher than those of the KCCB and Modified KCCB. These results are supported by previous reports of a higher mean score on the CAS than on the CCB (Lin *et al.*, 2015; Starr & Wallace, 2009, 2011, in press). The definition of CCB is based on the results of contact experiences with diverse groups, improvement of awareness, and refinement of sensitivity (Doorenbos et al., 2005). Therefore, the theory assumes that CAS precedes the nurse's capability to engage in CCB.

The reasons for not supporting reliability and validity of the original 25-item version may be explained by two factors. First, the items with low correlations on the KCAS subscale decreased the reliability and validity of the scale. In our initial item analysis, none of the KCAS items, except for Item 7, reached an acceptable level (.30–.70) (Ferketich, 1991). The items with item-total correlations below .30 might have measured different constructs than the other items (Ferketich, 1991). Negative item-total correlations were found for the four negatively worded items in the KCAS subscale after they were reverse-scored, which drastically decreased the reliability (Pett et al., 2003).

The negatively worded items were used to avoid acquiescence/agreement bias; however, previous studies have reported that these items confuse the respondents, leading to less consistency in responses and weaker item-total correlations, thereby lowering the scale's reliability (DeVellis, 2012; Roszkowski & Soven, 2010; Solís Salazar, 2015). Moreover, negative items tend to be more intercorrelated, thus impairing the scale's validity (Solís Salazar, 2015). The same problem was observed in the present study.

It was known that negative items are even more problematic when used in the translated scales (Han, Kim, & Weinert, 2002; Wong, Rindfleisch, & Burroughs, 2003). Wong et al. (2003) examined the Material Value Scale among adults from the United States, Singapore, Thailand, Japan, and Korea. They found that East Asians interpreted negative items differently than did Americans. Rather than representing opposite ends of the same construct, respondents considered that positive and negative items were not related (Wong et al., 2003). Similarly, Han et al. (2002) evaluated the Korean version of the Personal Resource Questionnaire on Korean adults, and found that the negative items were intercorrelated and validity was impaired.

In this study, Korean nurses might not have interpreted the negative item, "Race in the most important factor in determining a person's culture", as the scale developers may have intended. The reason for the problems could be either due to carelessness or problems in understanding the content (Roszkowski & Soven, 2010). Given that only a few of the nurses in our sample had undergone cultural competence education, we suspected that respondents did not carefully reflect on the unfamiliar survey questions. Another problem may be the influence of cultural norms. In Asian countries, agreeableness is usually considered as an important social norm, which may influence respondents to agree to both negative and positive items (Wong et al., 2003).

Second, redundant items on the KCCB subscale caused unnecessarily high reliability and decreased model fit. In contrast to the KCAS, all items on the KCCB subscale had an item-total correlation of above .30, and 6 items exceeded .70. The inter-item correlation coefficients of the same 6 items were greater than .70, suggesting redundancy (Ferketich, 1991). For example, the participants might interpret Item 14, "I have resource books and other materials available to help me learn about people from different cultures", and Item 15, "I use a variety of sources to learn about the cultural heritage of other people", as repetitive questions. After deleting 5 redundant items on the KCCB, we observed an improvement in the subscale reliability and model fit.

In addition, we would like to discuss the response set of the KCCA. Before the psychometric properties of the KCCA were tested in the present study, we analysed the non-response ("no opinion" or "not sure") items. To distinguish neutral responses from non-responses, Schim et al. (2003) included "no opinion" and "not sure" in the responses, so that cultural competence would be calculated from the items other than those that could be answered with non-response options.

In this study, 13.26% (24 nurses) answered either "no opinion" or "not sure". However, no previous study had analysed non-response options, owing to which the frequencies could not

be compared. We assume that the reason for choosing these options might have been related to the nurses' lack of knowledge about the related topic, difficulty in deciding on a response, or because the item was vague or difficult to understand. In case a respondent selected non-response options to numerous items, interpreting the respondent's cultural competence using the measured value could be problematic. Saris and Gallhofer (2007) indicated that if more than 10% of the study participants select the non-response options, the response set might not be appropriate for the population studied. Furthermore, if participants pick the "others" response, it is difficult to analyse the data meaningfully (Grove, Burns, & Gray, 2013). Therefore, additional items eliciting reasons for choosing non-response options and a clear guideline to determine the data obtained from the answers are needed.

Limitations

This study is limited by the small sample size and the fact that it consisted only of nurses who worked in hospitals. Future studies are necessary using larger samples, including a multitude of different healthcare providers with variability in specialty areas, training levels, and experience.

Given that more than 10% of the respondents selected the non-response options in the field test; therefore, an in-depth examination of respondents' understanding of the items needs to be conducted. Future studies using cognitive interviews, instead of a survey, should be attempted to reveal how respondents understand the question and arrive at an answer.

Conclusion

In summary, the original 25-item KCCA did not demonstrate acceptable construct validity, convergent validity, and subscale reliability. After deleting the relatively poorly functioning 9 items, the 16-item Modified KCAS showed improved construct validity, convergent and discriminant validity, and reliability. Negatively worded items, especially in the translated version, performed poorly and decreased the scale's reliability and validity. While further psychometric evaluation of the Modified KCCA should be undertaken with larger samples and diverse professionals, our data provide evidence that the Modified KCCA might be a more efficient and suitable measure for use among Korean healthcare providers.

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Figure 1. The KCCA translation and evaluation process

Note. KCCA = Korean version of the Cultural Competence Assessment

Table 1

General characteristics of the participants

(N = 161)			
Characteristics	Category	N (%)	Mean (SD)
Age (years)			29.57 (4.75)
Education	Associates degree	89 (55.3)	
	BSN	72 (44.7)	
Work experience (years)			7.11 (4.40)
Clinical unit	Medical/Surgical	78 (48.4)	
	Pediatric/Women's Health	18 (11.2)	
	Outpatient	13 (8.1)	
	ICU/OR	12 (7.5)	
	Emergency Room	9 (5.6)	
	Miscellaneous	21 (19.3)	
Lived abroad more than one month	Yes	38 (23.6)	
	No	123 (76.4)	
Foreign language spoken	Yes	87 (54.0)	
	No	74 (46.0)	
Received education on caring for foreign patients	Yes	12 (7.5)	
	No	149 (92.5)	
Frequency of caring for diverse groups *	1–2 times per week	20 (12.6)	
	1–2 times per month	44 (27.7)	
	A few times per year	95 (59.7)	
Types of diverse groups †	Medical tourism patients	76 (27.6)	
	Migrant workers	49 (17.8)	
	Marriage immigrants	33 (12.0)	
	Koreans nationals abroad	32 (11.6)	
	US armed forces in Korea	31 (11.3)	
	International students	14 (5.1)	
	Miscellaneous	40 (14.5)	

Note. ICU = Intensive Care Unit; OR = Operating Room

* included missing values

† included multiple responses.

Table 2

Results of the models' fitness tests, Average Variance Extracted (AVE), and squared correlations (R^2) of the Original and Modified KCCA

	Goodness-of-fit indices				
	χ^2/df	CFI	TLI	RMSEA	AVE R^2
Original KCCA	3.60	.75	.72	.13	
KCAS					.341 .007
KCCB					.595
Modified KCCA	1.97	.93	.92	.08	
KCAS					.472 .010
KCCB					.604
Reference	2	.95	.95	.06	.50

Note. KCCA = Korean version of the Cultural Competence Assessment; KCAS = Korean version of the Cultural Awareness and Sensitivity subscale; KCCB = Korean version of the Cultural Competence Behaviors subscale; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; AVE = Average Variance Extracted; R^2 = squared correlations between the constructs.

Table 3

Factor loadings and item analyses of the KCCA and the Modified KCCA

Items	KCCA		Modified KCCA	
	Factor loadings	Item-total correlations	Factor loadings	Item-total correlations
<i>KCAS</i>				
1. Race is the most important factor in determining a person's culture. (R)	-.41	-.18	–	–
2. People with a common cultural background think and act alike. (R)	-.40	-.24	–	–
3. Many aspects of culture influence health and healthcare.	.63	.23	.57	.33
4. Aspects of cultural diversity need to be assessed for each individual, group, and organization.	.65	.16	.62	.25
5. If I know about a person's culture, I don't need to assess their personal preferences for health services. (R)	.20	-.25	–	–
6. Spiritual and religious beliefs are important aspects of many cultural groups.	.65	.18	.63	.23
7. Individual people may identify with more than one cultural group.	.56	.33	.56	.41
8. Language barriers are the only difficulties for recent immigrants to Korea. (R)	.23	-.21	–	–
9. I believe that everyone should be treated with respect no matter what their cultural heritage.	.72	.21	.73	.28
10. I understand that people from different cultures may define the concept of cultural heritage in different ways.	.77	.26	.79	.32
11. I think that knowing about different cultural groups helps direct my work with individuals, families, groups, and organizations.	.82	.25	.84	.32
<i>KCCB</i>				
12. I include cultural assessment when I do individual or organizational evaluations.	.64	.62	–	–
13. I seek information on cultural needs when I identify new people in my work or school.	.69	.65	.66	.60
14. I have resource books and other materials available to help me learn about people from different cultures.	.69	.57	–	–
15. I use a variety of sources to learn about the cultural heritage of other people.	.76	.65	.75	.60
16. I ask people to tell me about their own explanations of health and illness.	.70	.66	–	–
17. I ask people to tell me about their expectations for health services.	.75	.69	.75	.63
18. I avoid using generalizations to stereotype groups of people.	.76	.70	.77	.66
19. I recognize potential barriers to service that might be encountered by different people.	.66	.63	.68	.63
20. I remove obstacles for people of different cultures when I identify barriers to service.	.87	.73	.86	.70
21. I remove obstacles for people of different cultures when people identify barriers to me.	.87	.74	–	–
22. I welcome feedback from clients about how I relate to people from different cultures.	.77	.74	.78	.72
23. I find ways to adapt my services to individual and group cultural preferences.	.85	.77	.87	.76

Items	KCCA		Modified KCCA	
	Factor loadings	Item-total correlations	Factor loadings	Item-total correlations
24. I document cultural assessments if I provide direct client services.	.88	.77	.84	.73
25. I document the adaptations I make with clients if I provide direct client services.	.85	.76	–	–

Note. KCCA = Korean version of the Cultural Competence Assessment; KCAS = Korean version of the Cultural Awareness and Sensitivity subscale; KCCB = Korean version of the Cultural Competence Behaviors subscale; R = Reverse-scored items. Items in bold are the items included in the modified version of the KCCA.

Table 4

Descriptive statistics and Cronbach's alphas of the KCCA and the Modified KCCA

	Number of Items	Mean (SD)	Cronbach's alpha
KCCA	25	4.45 (0.65)	.87
KCAS	11	5.14 (0.54)	.64
KCCB	14	3.91 (1.15)	.95
Modified KCCA	16	4.85 (0.75)	.88
KCAS	7	6.01 (0.71)	.86
KCCB	9	3.95 (1.15)	.93

Note. KCCA = Korean version of the Cultural Competence Assessment; KCAS = Korean version of the Cultural Awareness and Sensitivity; KCCB = Korean version of the Cultural Competence Behaviors.