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ORIGINAL ARTICLE

Spanish adaptation and validation of the Cultural Competence Assessment Tool (CCATool) for undergraduate nursing students

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Abstract

Aim: To analyse and validate a contextually adapted version of the Papadopoulos' Cultural Competence Assessment Tool (CCATool) for Spanish undergraduate nursing students.

Background: Globalization has driven and intensified international migration. Thus, nurses must treat patients of many different cultural origins. Accordingly, both cultural competence and an appropriate tool with which to evaluate it are required.

Methods: The CCATool questionnaire was adapted for use in a Spanish context and was evaluated through a questionnaire completed by 262 undergraduate nursing students. Seven days later, the same students completed the questionnaire, without any intervention, and a subgroup of 144 students completed the questionnaire for a third time after taking a course in Transcultural Care. The reliability, sensitivity and stability of the questionnaire were assessed.

Results: The reliability of the questionnaire obtained an adequate Cronbach's alpha of 0.81. Stability was assessed at seven days, using the intraclass correlation coefficient, which showed good/excellent results. Moreover, the questionnaire was able to detect the changes related to the nursing educative programme, thus highlighting a good sensitivity of the tool.

Conclusion: Cultural competence is an essential element of nurses' education, and instruction in this area should begin as soon as possible. In addition, an appropriate evaluation system is required. For this purpose, the present study describes and analyses a valid, reliable tool for use with undergraduate nursing students in Spain.

Implications for nursing and health policy: Health and education policies must be sensitive to the ethnic and cultural differences of the patients who are cared for, and address the situations that cause difficulties in care. Hospitals and health centres must offer good care to patients from diverse cultures, so one of the necessary situations is the training and evaluation of the cultural competence of health professionals.

KEYWORDS
Cultural competency, culturally competent care, health care, nursing education, nursing education research, Spain, transcultural nursing, validation studies

INTRODUCTION

With the ability to travel made easier, international migration is rising constantly. In consequence, nurses are regularly faced with patients from diverse cultural origins. Addressing this responsibility can be challenging and requires specific training (Alizadeh & Chavan, 2016). In Spain, the gross rate of international immigration in 2019 was 15.93%, which highlights the need for nurses to be trained in cultural competence and as well as with Spain's own cultural groups' highlights (National Institute of Statistics, 2019).

To date, no generally accepted definition of cultural competence has been established. Nevertheless, cultural competence has been recently described as the core skill in culturally specific, effective, safe and quality care to diverse patients. The described ability has been proposed as a gradual and continuous process (Sharifi et al., 2019).

According to the theoretical framework created by Papadopoulos et al., the necessary qualities for the development of cultural competence are: awareness, cultural knowledge and cultural sensitivity (Papadopoulos, 2006). This theoretical framework is employed in many education programmes for nurses and for the creation of tools to assess cultural competence (Chae & Park, 2018; Jansen et al., 2021).

When nurses provide health care for patients whose culture is different from their own, challenges may arise. Specifically, the care provided may be inadequate if the nurse's cultural competence is absent or not attuned to the patient's needs and values. Such a situation, moreover, can give rise to conflict, misunderstanding, mistrust, inequality and discrimination (Alizadeh & Chavan, 2016; Gaya-Sancho et al., 2021; Ramos-Roure et al., 2021).

A high level of cultural competence, on the other hand, fosters patient satisfaction (Lorié et al., 2017), reduces perceptions of discrimination or inequality in care (Eken et al., 2021), and enhances self-efficacy and adherence to the treatment plan (Castro & Ruiz, 2009).

According to these considerations, training in cultural competence for healthcare personnel is of fundamental importance to ensure the provision of appropriate care for patients from different cultures. The acquisition of this competence must be continuous, it should begin with entrance into the nursing education programme and be spread across the curriculum, i.e. during undergraduate nursing-degree studies (Choi & Kim, 2018; Evgin & Muz, 2020; Markey & Okantey, 2019).

However, just as important as the provision of training is the subsequent evaluation of its impact. In other words, the cultural competence acquired by students must be properly assessed, using an appropriate, validated tool (Filmer & Herbig, 2018).

BACKGROUND

Various scales for assessing the cultural competence of health professionals, nurses and nursing students are currently available (Lin et al., 2017). Some are intended for specific types of professionals, but not all have been fully evaluated (Osmancevic et al., 2021). Indeed, few tools have been proposed and validated for assessing cultural competence in nursing students (Osmancevic et al., 2021; Terzoni et al., 2020) and fewer still have been adapted into Spanish (Cruz et al., 2018; Vázquez-Sánchez et al., 2021).

Of course, no instrument is perfectly suited to assess cultural competence in all contexts (Lin et al., 2017). Moreover, such assessments should be conducted progressively and targeted at specific users (such as undergraduate nursing students). Therefore, appropriate tools for this purpose should be designed and validated (Filmer & Herbig, 2018).

In the present study, we first reviewed the literature in this field, and chose for analysis the cultural competence assessment tool (CCATool), based on the theoretical model proposed by Papadopoulos (2006). A major benefit is that this tool has been validated for use in the healthcare context (Papadopoulos et al., 2004).

In adapting this kind of instrument to a different country and context, it is not sufficient to perform a simple translation of the tool, since cultural differences must also be taken into account. Accordingly, the questionnaire on which such a tool is based must be contextually adapted and then validated, according to the results obtained (Hernández et al., 2020; Valdez et al., 2021).

A properly validated tool, for use with Spanish undergraduate nursing students, will enable assessors to evaluate (continuously and progressively, if required) the cultural competence acquired and the effectiveness of the education provided in this respect. Furthermore, it will facilitate the identification and application of any changes needed to promote learning (Filmer & Herbig, 2018).

AIM OF THE STUDY

The aim of this study was to adapt the Papadopoulos' CCATool for use with Spanish undergraduate nursing students and to validate this version of the tool.

METHODS

Design and instrument

We carried out an adaptation into the Spanish language and validation study of the CCATool (Papadopoulos et al., 2004). The first part of the questionnaire contains the CCATool, while the second part has questions on the participants' sociodemographic characteristics: age, sex, country of birth, religion, mother tongue, other languages spoken and work experience.

The CCATool is based on the theoretical model of cultural competence created by Papadopoulos (2006). This instrument is composed of four subscales, presented in the following sequence: Assessing cultural awareness (10 items), assessing

cultural knowledge (10 items), assessing cultural sensitivity (10 items) and assessing cultural practice (10 items). The questionnaire also has six visual analogue scales for self-assessment, ranging from 1 = lowest / negative to 10 = highest / positive, facilitating comparison with the objective scores obtained from coding the statements made in the above four areas.

The questionnaire is open-ended, in that participants are invited to add comments/ opinions on the items addressed in each of the subscales. The estimated time required to complete the CCATool questionnaire is 10–15 minutes.

Translation and cultural adaptation of the questionnaire

Underlying our adaptation of the questionnaire is the understanding that its translation solely in terms of equivalence is not sufficient, in addition, there must be an appropriate adaptation to the target culture. In this respect, the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) and the Patient-Reported Outcomes Measurement Information System (PROMIS) recommendations were followed.

The first task addressed in the cultural adaptation was to define the concepts used in the original questionnaire. The questionnaire was then independently translated by two members of the research team. Their native language was Spanish and they also had an excellent level of English. When these translations were complete, a third researcher (another Spanish native with excellent English) reconciled the two texts to obtain a final Spanish-language version. The Spanish-language questionnaire thus obtained was then back-translated by a native English translator, who worked without access to the original version. The resulting questionnaire was reviewed by the researchers and reconciled against the original text. Thus, an expert committee, consisting of four nurses and three teachers of the nursing studies degree course, ultimately reviewed the concepts obtained and endorsed the empirical, semantic, idiomatic and conceptual sameness of the Spanish-language version obtained.

Having achieved a valid cultural adaptation of the CCA-Tool, 18 fourth-year students from the University of Malaga and 7 working nurses completed the questionnaire, in the pilot phase of this study, and were then interviewed to confirm their understanding of the questions. Following these cognitive interviews, the 25 responses were examined and evaluated, and the questionnaire was modified in accordance with the conclusions drawn from this analysis. The study researchers then conducted a final item-by-item review of the questionnaire.

Data collection

The properties of the original CCATool were validated by undergraduate nursing-degree students at the Schools of Health Sciences of the universities of Granada (Melilla Faculty) and Malaga. Study data were collected from 1 October 2020 to 1 July 2021.

In Melilla, the empirical validation was carried out by students from any of the four years of the nursing-degree course, while the Malaga students were all in the second year of their course. The Transcultural Care subject is studied during the second term of this year, and this focus enabled us to evaluate the specific training provided in this field, via the students' self-assessment of the knowledge acquired.

All students in the relevant courses at the above-mentioned universities were invited to take part in this study, in the understanding that in every case their participation would be anonymous and voluntary. The exclusion criterion concerned international exchange students; those lacking Spanish-language accreditation at level C ("excellent") were excluded.

In total, 262 students took part in the study, and completed the questionnaire twice, the second time seven days after the first. Moreover, a subgroup of 144 students again completed the questionnaire after finishing the Transcultural Care studies at the University of Malaga.

During this process, none of the students raised any doubts about the questionnaire items. They were asked for feedback after completing each questionnaire on an open-ended item.

Ethical issues and permissions

This research project was approved by the Vice-Rectorate for Research and Results Transfer, Committee for Experimental Ethics (CEUMA), at the University of Malaga, as Project 643, CEUMA Registration No. 92-2020-H. The Teaching Innovation Project (PIE) No. 19-045 was funded by the University of Malaga.

Permission was obtained from the author of the CCATool to create and validate this Spanish-language version. The author also took part in the study, as a member of the research team and as a co-author.

The students were fully informed about the purposes and characteristics of the study, and written informed consent was required. Their voluntary, anonymized participation was enabled by means of an online link to the CCATool questionnaire.

Data analysis

Internal consistency was calculated according to the Cronbach's alpha score obtained, for the whole questionnaire. Bivariate analysis was carried out by applying independent samples Student's t test, to determine the difference between the assessments made and the presence versus absence of work experience in the students (i.e. the discriminant capacity of the questionnaire). The stability of the results after one week was determined according to the intraclass correlation coefficient. In addition, a bivariate correlation analysis was performed

TABLE 1 CCATool intraclass correlation coefficient (0–7 days)

Subscales	Correlation coefficient (95% confidence interval)	p	Rating
Cultural awareness	0.780 (0.718–0.828)	< 0.001	Good
Cultural knowledge	0.847 (0.804–0.881)	< 0.001	Excellent
Cultural sensitivity	0.724 (0.646–0.785)	< 0.001	Good
Cultural practice	0.692 (0.605–0.760)	< 0.001	Good

TABLE 2 Questionnaire scores before and after the transcultural care course

Subscales	Correlation coefficient (95% confidence interval)	p
Cultural awareness	0.549 (0.360–0.737)	< 0.001
Cultural knowledge	1.146 (0.915–1.377)	< 0.001
Cultural sensitivity	0.722 (0.506–0.939)	< 0.001
Cultural practice	0.181 (0.056–0.305)	0.005

between the CCATool instrument results and the students' ages.

The sensitivity to change in the scores of the subscales was determined by calculating the mean difference between the first CCATool score and that obtained after completing the Transcultural Care course, using Student's t test for paired data.

All analyses were performed using the SPSS 22.0 statistical package.

RESULTS

After implementing the cultural adaptation of the questionnaire, as described above, various modifications were made to ensure each of its concepts was faithfully represented and understandable in a Spanish context.

A total of 262 students participated in the study (82.9% females and 16.7% males), aged 18 to 49 years (mean and SD of 21.9 ± 8.3 years), with only 8.0% of students reporting prior nursing-related work experience. Their sociodemographic characteristics showed that 96.6% of the students were Spanish, with a 0.7% from Morocco, Germany and Colombia, and a 0.4% from Argentina, Romania and Nigeria.

Accordingly, Spanish was the mother tongue in 98.1% of the students, while for the remaining 1.9%, it was Tamazight, German, Romanian, English or Valencian. All students (100 %) reported English as other language spoken, followed by French (36.6%), Arabic (1.9%), German (6.1%), Portuguese (0.8%), Italian (0.8%), Japanese (0.8%), Chinese (0.4%), Romanian (0.4%) and Russian (0.4%).

Moreover, the main religion was Catholic (52.7%), followed by atheist (17.6%) and agnostic (15.6%), and, with a lower representation, Muslim (8.0 %), Evangelist (0.8 %), Jewish (0.4%) and others (1.5%).

The reliability of the data obtained, as measured by the intraclass correlation coefficient, is presented in Table 1. The CCATool questionnaire had good discriminant capacity, with older students obtaining higher scores. In this respect, the following values were obtained for the subscales: cultural awareness $r = 0.168$, $p = 0.008$; cultural knowledge $r = 0.195$, $p = 0.002$; cultural sensitivity $r = 0.242$, $p < 0.001$; cultural practice $r = 0.130$, $p = 0.40$). The following values were obtained for the students with work experience: cultural awareness $r = -0.62$, $p = 0.003$; cultural knowledge $r = -0.92$, $p = 0.02$; cultural sensitivity $r = -0.93$, $p < 0.001$; cultural practice $r = -0.40$, $p = 0.041$.

The questionnaire results reflected the changes produced among the students who received specific teaching in this field via the transcultural care classes Table 2). We conclude, therefore, that this Spanish version of the CCATool presents good sensitivity.

Internal consistency, measured by Cronbach's alpha (0.809) was acceptable. Item-by-item assessments of the questionnaire data are presented in Table 3.

DISCUSSION

In producing the cultural adaptation of the questionnaire, several changes had to be made during the process in order to ensure a full understanding of the Spanish-language version, but the concept indicated by the tool was maintained at all times. Following the pilot study with healthcare nurses and fourth-year nursing students, only one word had to be modified, and while the final questionnaire was being completed by the 262 students, no further explanations were requested.

The adaptation had good internal consistency, producing a Cronbach's alpha score of 0.809. The item-by-item assessment showed that in no case would the elimination of any item significantly increase the internal consistency. Thus, the culturally validated CCATool is well suited for use among Spanish university students as it has been previously reported in other populations (Papadopoulos et al., 2004; Vasiliou et al., 2013).

The CCATool questionnaire also showed good discriminant capacity, the older students obtained significantly higher scores for cultural competence, as did those with work experience. Similarly, a previous study showed a positive association of the cultural competence, assessed through the CCATool, and the frequency of interacting with different cultures (Repo et al., 2017).

The stability of the questionnaire was determined by analysis of the intraclass correlation coefficient between the results obtained from the first questionnaire results and those from the second, seven days later. This coefficient indicates that each of the subscales presented good stability, while that for cultural knowledge is excellent (Hazra & Gogtay, 2016). Sensitivity to change was measured from the results obtained before and after the students took the Transcultural Care course (6 credits). The difference was significant in all the subscales,

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TABLE 3 Statistics for all questionnaire items

Questionnaire item	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted
Cultural awareness				
Item 1	157.972	119.370	0.296	0.789
Item 2	159.208	119.760	0.129	0.796
Item 3	158.840	116.555	0.303	0.788
Item 4	158.549	118.515	0.189	0.793
Item 5	158.882	117.965	0.205	0.793
Item 6	158.243	117.234	0.426	0.785
Item 7	158.389	119.610	0.266	0.790
Item 8	158.132	117.290	0.394	0.786
Item 9	158.000	117.958	0.452	0.786
Item 10	158.118	118.329	0.362	0.787
Cultural knowledge				
Item 1	158.236	115.440	0.429	0.784
Item 2	158.104	117.870	0.395	0.786
Item 3	158.938	122.549	0.002	0.802
Item 4	158.382	117.203	0.392	0.786
Item 5	158.958	111.733	0.467	0.780
Item 6	158.049	117.123	0.513	0.784
Item 7	159.528	113.566	0.327	0.787
Item 8	158.965	119.460	0.145	0.795
Item 9	158.153	116.214	0.629	0.782
Item 10	160.250	124.762	−0.087	0.807
Cultural sensitivity				
Item 1	158.917	115.014	0.367	0.785
Item 2	159.257	121.479	0.048	0.800
Item 3	158.660	118.282	0.222	0.791
Item 4	158.215	117.751	0.435	0.786
Item 5	158.056	118.011	0.440	0.786
Item 6	160.271	127.374	−0.198	0.809
Item 7	158.694	116.270	0.312	0.788
Item 8	157.965	117.950	0.498	0.785
Item 9	159.097	121.963	0.034	0.800
Item 10	158.861	117.267	0.258	0.790
Cultural practice				
Item 1	157.896	121.772	0.168	0.792
Item 2	158.028	118.097	0.470	0.785
Item 3	158.556	118.053	0.230	0.791
Item 4	158.035	118.677	0.457	0.786
Item 5	158.215	117.415	0.493	0.784
Item 6	158.264	116.755	0.491	0.784
Item 7	158.278	118.118	0.448	0.786
Item 8	158.160	117.310	0.414	0.785
Item 9	158.542	118.432	0.259	0.790
Item 10	158.243	119.654	0.256	0.790

which shows that the questionnaire has a very good sensitivity to change.

Overall, the results obtained from our validation of the Spanish-language version of the CCATool show it is valid and reliable for use with undergraduate nursing students. Despite the fact that nurses are required to be culturally competent in order to provide and adapt care effectively according to the community's characteristics, nursing policy in cross-cultural care is sometimes scant (Cruz et al., 2017). In this line, nursing education interventions focused on cultural competence and care have been proposed as a useful tool for improving the quality of care provided to culturally diverse patients (Evgin & Muz, 2020).

Therefore, the CCATool can be a useful tool in evaluating those needed interventions of cultural awareness-based approaches (Shepherd et al., 2019), helping to improve educational nursing programmes (Leung et al., 2020), and reducing health disparities among diverse patient populations (Abrishami, 2018). Moreover, our results showed the need for interpreters and cultural mediators, since most of the nursing students were able to communicate in Spanish and English, but not in other languages; however, health and social policies do not support properly this need.

Limitations

The questionnaire was validated in the context of university nursing students. Most of the respondents were female and had Spanish as their mother tongue. Therefore, a limitation can be the generalizability to other countries and other groups. The study results obtained might vary if a higher proportion of male students were included, or if more students had a different mother tongue. Future studies of the questionnaire should take account of these possibilities.

IMPLICATIONS FOR NURSING AND HEALTH POLICY

The first priority for nurses is to provide good healthcare. When their patients are from diverse cultures, nurses must possess not only technical and personal competence but also cultural competence. Proficiency in this respect will foster trust among patients, enhance their satisfaction with the care received and avoid treatment discrimination.

Therefore, health and education policies must be sensitive to the ethnic and cultural differences of the patients who are cared for and address the situations that cause difficulties in care. Hospitals and health centres must offer good care to patients from diverse cultures, so one of the necessary situations is the training and evaluation of the cultural competence of health professionals. Moreover, according to our findings, nursing policy actions in Spain are encouraged to include foreign languages training and provide interpreters in nursing practice.

The development of cultural competence should begin during undergraduate studies, as part of the nursing degree, and its evaluation requires an appropriate tool, in order to assess the outcomes of the teaching provided. Such a tool would also help teachers evaluate the performance of their students and facilitate innovations and changes (Leung et al., 2020; Marja & Suvi, 2021). The use of an appropriate tool to assess students' cultural competence will help teachers develop effective curricula; however, cultural competency is mandatory and continuing education is required also along with the professional nursing career.

However, the most important aspect is that education in cultural competence and evaluation of nursing education improve the nursing care provided to persons from diverse cultures, thus, improving care efficiency and patient outcomes.

CONCLUSION

Cultural competence is an essential aspect of nurses' education and should begin as soon as possible, in conjunction with an appropriate system for its evaluation. The tool described in this study is shown to be valid and reliable for use with undergraduate nursing students in Spain. In conclusion, nursing policies are encouraged to implement educational programmes regarding cultural competence and foreign languages, since governments must implement efficient strategies to adapt care to culturally diverse patients. Cultural competence leads to a better care administration, decreasing expenses and the return of patients for repeat care. Moreover, cultural competence leads to greater work satisfaction and happiness of nurses, improving work atmosphere and also impacting the quality of care and patients' satisfaction.

CONFLICTS OF INTEREST
No conflict of interest has been declared by the authors.

AUTHOR CONTRIBUTIONS
Study design: MAVS, ACV, CC; data collection: MAVS, MASO, MGG; data analysis: ACV, CC; study supervision: MAVS; manuscript writing: MAVS; critical revisions for important intellectual content: ACV, MASO, MGG, IP, CC.

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PERMISSIONS
Permission was requested and obtained from the author of the CCATool to create and validate this Spanish-language version.

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