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ORIGINAL PAPER

Exploring cultural competence among healthcare professionals in Slovenia: a cross-sectional study

Esmina Softić[1], Mirko Prosen[2]

[1]*Faculty of Education, University of Primorska, Koper, Slovenija*
[2]*Faculty of Health Sciences, University of Primorska, Izola, Slovenia*

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Abstract

Aim: The aim of this study was to examine the cultural competence of healthcare professionals, with the aim of developing educational content on cultural competence in healthcare. *Design:* A quantitative descriptive approach with a cross-sectional design. *Methods:* The Slovenian version of the Cultural Competence Assessment Tool (CCATool) was administered to 404 participants representing various healthcare professions. *Results:* The results showed that most participants (96.2%) demonstrated cultural awareness, with significantly above-average scores across all domains ($p < 0.001$), while only 2.3% achieved full cultural competence and 1.5% were classified as culturally incompetent, with none achieving cultural safety. *Conclusion:* Incorporating cultural competency training into educational programs can significantly improve the quality of health services, help reduce health disparities, strengthen awareness of cultural diversity, and promote effective functioning in multicultural environments.

Keywords: cultural awareness, culturally responsive care, educational needs, nursing education, transcultural nursing.

Introduction

As countries around the world become increasingly multicultural, healthcare systems are facing complex and evolving challenges (Antón-Solanas et al., 2021a). Cultural beliefs significantly shape how individuals perceive health, illness, and healthcare practices (Balachandran et al., 2022). Consequently, healthcare professionals must navigate diverse cultural backgrounds, each with distinct values, customs, and understandings of health and disease (Grinberg & Nissim, 2025). The concept of cultural competence is undergoing continual refinement as healthcare systems respond to increasing cultural diversity. Traditionally associated with differences in culture, nationality, and religion, the term has expanded to encompass a broader range of identity factors, including age and gender (Ali Jaber Mohammed Haqawi et al., 2024), as well as philosophical, personal, and social beliefs (Li et al., 2023). The notion of "culture" is most frequently linked to lifestyle, religious affiliation and tradition (Antón-Solanas et al., 2021a). Although culture is widely recognized as a key determinant of health, it remains an underemphasized dimension in many healthcare settings (Balachandran et al., 2022).

A significant challenge in multicultural healthcare environments arises from the tendency of individuals to perceive their own cultural norms as inherently correct, which may contribute to cultural misunderstandings and conflicts (Antón-Solanas et al., 2021a). Cultural competence, therefore, entails not only knowledge of other cultures but also the capacity for self-awareness and critical reflection on one's own cultural background, values, communication styles, and professional behavior (Li et al., 2023). It involves recognizing and addressing discriminatory practices and health inequalities that may result from cultural ignorance (Eken et al., 2021).

Awareness of the importance of cultural competence in healthcare is increasing, but evidence shows that healthcare professionals still have limited knowledge about culturally diverse populations (González-Rábago et al., 2025). Joensuu et al. (2024) investigated the attitudes and experiences of healthcare professionals towards cultural diversity in their environment. This topic can be studied in different ways or from different perspectives.

Corresponding author: Esmina Softić, Faculty of Education, University of Primorska, Cankarjeva ul. 5, 6000 Koper, Slovenija; email: esmina.softic@gmail.com

Ličen and Prosen (2023) assessed the level of cultural competence in a sample of third-year nursing students nearly a decade after the introduction of cultural competence content into educational programs. Their findings indicate that while students generally demonstrate a high level of cultural competence, they show less sensitivity to cultural differences and often overestimate their abilities. The authors highlight the need to enhance curricula and incorporate innovative teaching methods to better prepare students for work in diverse healthcare environments.

This deficiency in cultural education underscores the responsibility of both healthcare institutions and universities to ensure the integration of cultural content into the education of future professionals, thereby promoting equitable and inclusive care practices (Antón-Solanas et al., 2021a). Barriers such as nurse workload, language differences, lack of cultural knowledge, and the persistence of stereotypes and prejudices remain key obstacles to delivering safe and culturally responsive care (Antón-Solanas et al., 2021a).

Aim

To address these issues, we conducted a quantitative descriptive study among a convenience sample of healthcare professionals in Slovenia. The aim was to obtain data that would inform the development of educational content in the field of cultural competence in healthcare. As emphasized by Tessier et al. (2021), the first step in enhancing cultural competence is its systematic assessment. By identifying the factors that influence cultural competence, healthcare providers and educators can more effectively design targeted interventions to support its development (Cai et al., 2021).

Methods

Design

This quantitative descriptive study was conducted with a cross-sectional design. The study was reported according to STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines (von Elm et al., 2008).

Sample

The study sample consisted of 404 participants with a mean age of 39.0 years (SD = 11.65). For those born outside Slovenia (n = 37), the average length of residence in Slovenia was 20.51 years (SD = 14.74). The majority of participants were female (81.9%), while men made up 17.3% of the sample. Most of the participants belonged to the professional groups of registered nurses (34.9%) and secondary school nurses / health technicians (18.8%). In terms of cross-cultural interaction, the majority of participants reported having daily contact with people from other ethnic groups (68.1%). Participants were recruited voluntarily through institutional contacts and social media, which may have introduced selection bias. Further demographic and general characteristics of the participants can be found in Table 1.

Data collection

To assess cultural competence among healthcare workers in Slovenia, we used the Cultural Competence Assessment (CCA) tool, based on the model by Papadopoulos et al. (1998). The model comprises four interrelated domains – awareness, knowledge, sensitivity, and skills. Awareness of one's own values and biases forms the foundation, knowledge deepens understanding of cultural diversity, sensitivity guides respectful interactions, and skills translate these competencies into culturally safe practice. Together, they represent an ongoing, reflective process that continually improves both theoretical understanding and practical competence in clinical care (Papadopoulos, 2003). We used a Slovenian version of the questionnaire (Ličen & Prosen, 2023).

This instrument is very often used as a method of assessing cultural competence with the aim of creating tools and content in educational programs for nurses (Jansen et al., 2021; Leung et al., 2020) and establishing culturally sensitive healthcare organizations (Balachandran et al., 2022). Reliability is also indicated by the Crobach alpha coefficient, which is greater than 0.7 (Papadopoulos & Lees, 2002).

The questionnaire consists of several parts. The initial questions include demographic data, educational and employment data, and the main questions are statements about cultural awareness, cultural knowledge, cultural sensitivity and skills, which are answered using a 4-point Likert scale. At the end of each section, respondents rate their agreement with the statement using a visual analogue scale (VAS) ranging from 1 to 10. A score of 1 indicates no agreement with the statement, whereas a score of 10 indicates complete agreement. In addition, the questionnaire includes open-ended fields in which participants can provide comments on each section.

We sent the survey questionnaire to healthcare professionals in Slovenia, in the form of an online survey (www.1ka.si), via email or social media.

Table 1 Demographic characteristics of participants (N = 404)

Variable	N (%)
Gender	
male	70 (17.3)
female	331 (81.9)
Country of birth	
Slovenia	367 (90.8)
Other (Bosnia and Herzegovina, Croatia, Italy, Kosovo, Macedonia, Moldova, Serbia)	37 (9.2)
How would you define your religious beliefs?	
catholic	222 (55.0)
orthodox	22 (5.4)
muslim	25 (6.2)
atheist	84 (20.8)
agnostic	25 (6.2)
prefer not to answer	26 (6.4)
Marita status / relationship	
married or in relationship	322 (79.7)
single	82 (20.3)
Native language	
Slovene	351 (86.9)
Other (Albanian, Bosnian, Montenegrin, Croatian, Macedonian, Romanian, Serbian)	53 (13.1)
Nationality	
Slovene	344 (85.1)
Croatian	15 (3.7)
Serbian	14 (3.5)
Bosnian	19 (4.7)
Albanian	4 (1.0)
other (Macedonian, Romanian)	3 (0.7)
prefer not to answer	5 (1.2)
Have you lived in a foreign country for more than 6 months?	
yes	58 (14.4)
no	346 (85.6)
Do you have relatives living in a foreign country?	
yes	238 (58.9)
no	166 (41.1)
Was either of your parents born abroad?	
yes	109 (27.0)
no	295 (73.0)
Which occupational group do you belong to?	
nurse assistant	11 (2.7)
secondary school nurse / health technician	76 (18.8)
registered nurse	141 (34.9)
master of nursing	31 (7.7)
medical doctor	76 (18.8)
midwife	14 (3.5)
physiotherapist	11 (2.7)
occupational therapist	5 (1.2)
other (radiology engineer, dietitian, clinical psychologist, laboratory technician, laboratory engineer, pharmacist, biochemist, social worker, social pedagogue)	39 (9.7)
Level of healthcare services	
primary level	162 (40.1)
secondary level	184 (45.5)
tertiary level	44 (10.9)
other (nursing home)	14 (3.5)
How often do you interact with people from other ethnic groups?	
daily	275 (68.1)
several times a week	85 (21.0)
once a week	17 (4.2)
once a month	11 (2.7)
several times a year	12 (3.0)
never	4 (1.0)

We asked various healthcare institutions in Slovenia for help in obtaining email addresses. Participation was voluntary and anonymous. Informed consent was obtained electronically prior to completion of the questionnaire by requiring respondents to indicate agreement to participate before proceeding. At the beginning of the survey, participants were informed about the purpose of the study and the study investigators. Written instructions for completing the questionnaire were also provided. Data were collected from November 2024 to April 2025.

Data analysis

All data analyses were performed using IBM SPSS Statistics, version 29.0 (IBM Corp., Armonk, NY, USA) and Jamovi, version 2.3 (The Jamovi Project, 2021). Descriptive statistics, including means, standard deviations, medians and interquartile ranges (IQR), were calculated to summarise the demographic characteristics of the participants and the results of the Cultural Competence Assessment Tool (CCATool). The Shapiro-Wilk test for normality showed that the data were not normally distributed ($p < 0.001$ for all CCATool domains). Therefore, non-parametric statistical tests were used for further analyses. The Wilcoxon Signed Rank Test was used to compare the observed median scores for each CCATool domain and the total score with hypothesised median scores (5 for each domain, 20 for the total score). The Mann-Whitney U-test was used to analyse differences in cultural competence as a function of socio-demographic variables (e.g., gender, country of birth, experience abroad, relatives abroad, parents' country of birth). For comparisons involving more than two groups (e.g., religious beliefs, occupational groups, frequency of cultural interactions), the Kruskal-Wallis H-test was used. If significant omnibus effects were found, post hoc pairwise comparisons were performed using the Dwass-Steel-Critchlow-Fligner (DSCF) test to control for type I errors. In addition, Spearman's rank order correlation coefficients were calculated to investigate the relationships between participants' exposure to multicultural content during their studies and their cultural competence levels. The level of statistical significance was set at $p < 0.05$.

Results

Determining levels of competence

Based on the CCATool, the participants' level of cultural competence was assessed in four domains: cultural awareness, cultural knowledge, cultural sensitivity and cultural practice. Each domain was scored independently, and the overall level of competence was determined using predefined criteria. Due to the non-normal distribution of the data, the Wilcoxon Signed Rank Test was applied to determine whether the observed median values differed significantly from a hypothetical median value. For statistical comparison, the observed medians were tested against hypothetical median scores of 5 for each domain and 20 for the total CCATool score. The descriptive and inferential statistics are shown in Table 2.

Table 2 Descriptive and Wilcoxon Signed Rank test results for the CCATool domains and total score

Variable	N	Mdn	IQR	W	Z	P
Cultural Awareness	10	9.0	2	33888.5	14.143	< 0.001
Cultural knowledge	10	6.0	3	221191.0	9.433	< 0.001
Cultural Sensitivity	10	6.0	2	13911.0	5.908	< 0.001
Cultural Practice	10	9.0	2	31741.0	13.417	< 0.001
CCATool	40	30.0	6	32678.0	13.697	< 0.001

n – Maximum possible score (per domain = 10 points; total scale = 40 points); Mdn – Median; IQR – Interquartile Range; W – Wilcoxon Signed Rank Test statistic; Z – Test Statistic; p – Statistical Significance (comparison to a hypothetical median of 5 for domains and 20 for CCATool)

The results indicated that the participants' median scores were 9.0 for cultural awareness, 6.0 for cultural knowledge, 6.0 for cultural sensitivity, and 9.0 for cultural practice, with a total median CCATool score of 30.0. All observed median scores were significantly higher than the corresponding hypothetical medians, as confirmed by the Wilcoxon Signed Rank Test ($p < 0.001$ for all domains and CCATool).

Based on classification according to the CCATool criteria, the majority of participants (96.2%) demonstrated cultural awareness. A small proportion (2.3%) achieved the highest level of cultural competence (Practice), defined as a perfect score across all four domains. Only 1.5% of participants were classified as culturally incompetent. No participants reached the level of cultural safety.

To assess possible discrepancies between participants' perceived and measured levels

of cultural competence, each subscale also included one or two self-assessment items rated on a visual analogue scale (VAS) from 1 (lowest / negative) to 10 (highest / positive) (Table 3).

Table 3 Comparison of self-perceived and objectively measured cultural competence (Wilcoxon Signed Rank Test results)

Variable	Mdn ± SD	IQR	Z	p
Cultural Awareness	9.0 ± 1.31	2	-13.930	< 0.001
I am highly aware of my own ethnic and cultural identity.	8.0 ± 2.03	3		
Cultural knowledge	6.0 ± 1.91	3	-5.631	< 0.001
I am very well informed about the culture and social situation of the majority of my clients.	5.0 ± 2.35	3		
Cultural Sensitivity	6.0 ± 1.65	2		
I am very comfortable working with people whose beliefs, values, and Practices are different from my own.	6.0 ± 2.13	3	-1.737	0.083
I am very confident of my ability to establish trust, and show respect and empathy to all people whatever their culture.	9.0 ± 1.87	3	-11.050	< 0.001
Cultural Practice	8.0 ± 2.12	3		
I am very able to incorporate the clients' cultural beliefs into the care and treatment I provide.	8.0 ± 2.10	3	-5.650	< 0.001
I am confident in my ability to challenge racism and discrimination toward patients, caregivers, and staff.	9.0 ± 1.83	2	-5.342	< 0.001

SD – Standard Deviation; Mdn – Median; IQR – Interquartile Range; Z – Test Statistics (Wilcoxon Signed-Rank); p – Statistical Significance

To investigate possible discrepancies between participants perceived and objectively measured levels of cultural competence, Wilcoxon Signed-Rank tests were conducted comparing self-rated VAS scores with the corresponding subscale scores for cultural awareness, cultural knowledge, cultural sensitivity, and cultural practice.

For Cultural Awareness, participants' self-assessed scores (Mdn = 8.0, IQR = 3) were significantly lower than the objective subscale scores (Mdn = 9.0, IQR = 2), $Z = -13.930$, $p < 0.001$. A similar pattern was observed for Cultural Knowledge, where the self-assessed median score (Mdn = 5.0, IQR = 3) was lower than the objective score (Mdn = 6.0, IQR = 3), $Z = -5.631$, $p < 0.001$.

Mixed results were found in the area of Cultural Sensitivity. Although one self-assessment item ("I am very comfortable working with people whose beliefs, values, and practices are different from my own") did not show a statistically significant difference compared to the objective subscale score ($Z = -1.737$, $p = 0.083$), the second self-assessment item ("I am very confident of my ability to establish trust, show respect and empathy to all people whatever their culture") showed a significant difference ($Z = -11.050$, $p < 0.001$), with participants again underestimating their competence. In the case of Cultural Practice, the medians of the self-assessment were also lower than the medians of the objective subscales. Participants' scores on incorporating their clients' cultural beliefs and combating discrimination were both significantly lower than the corresponding objective scores ($Z = -5.650$ and $Z = -5.342$ respectively, both $p < 0.001$).

Factors that influence the cultural competence of participants

Factors related to participants' cultural competence were analysed in four domains (Cultural Awareness, Cultural Knowledge, Cultural Sensitivity, and Cultural Practice) and the total score of the CCATool. The Mann-Whitney U test was applied to examine the differences in median scores between demographic variables such as gender, country of birth, experience of living abroad for more than six months, relatives living abroad, and whether a parent was born abroad. The results are shown in Table 4.

No statistically significant differences were found in cultural competence domains or total score depending on gender, country of birth or experience of living abroad for more than six months (all $p > 0.05$). However, participants who had relatives living abroad scored significantly higher in Cultural Knowledge ($U = 6343.00$, $z = -2.917$, $p = 0.004$) and Cultural Practice ($U = 6654.50$, $z = -2.454$, $p = 0.014$) compared to participants without such relatives. In addition, participants with at least one foreign-born parent had significantly higher scores for Cultural Knowledge ($U = 5405.50$, $z = -3.225$, $p = 0.001$) and overall higher scores for Cultural Competence (CCATool) ($U = 6080.50$, $z = -1.984$, $p = 0.047$) compared to participants whose parents were not born abroad.

To further investigate the factors associated with participants' cultural competence, Kruskal-Wallis H-tests were conducted to assess

the influence of religious beliefs, occupational group and frequency of interaction with individuals from different ethnic groups in the four domains of the Cultural Competence Assessment Tool (CCATool). The results are summarised in Table 5.

Table 4 Differences in Cultural Competence according to sociodemographic factors (Mann-Whitney U Test results)

Variable		CA Mdn ± SD	CK Mdn ± SD	CS Mdn ± SD	CP Mdn ± SD	CCATool Mdn ± SD
Gender	male	9.00 ± 1.50	6.00 ± 1.97	5.00 ± 1.79	9.00 ± 2.22	30.00 ± 5.71
	female	9.0 ± 1.26	7.00 ± 1.86	6.00 ± 1.61	9.00 ± 1.71	30.00 ± 4.58
	U	5174.00	4852.50	4750.50	4608.00	4680.00
	Z	-0.232	-0.904	-1.128	-1.466	-1.257
	p	0.816	0.366	0.260	0.143	0.209
Country of birth	Slovenia	9.00 ± 1.32	6.00 ± 1.94	6.00 ± 1.66	9.00 ± 1.88	30.00 ± 5.01
	other	9.00 ± 1.21	7.00 ± 1.63	5.00 ± 1.52	9.00 ± 1.36	30.00 ± 3.77
	U	2925.50	2889.50	7.00 ± 1.63	2637.00	3015.00
	Z	-0.376	-0.459	-1.611	-1.193	-0.110
	p	0.707	0.646	0.107	0.233	0.913
Have you lived in a foreign country for more than 6 months?	yes	10.00 ± 1.10	7.00± 1.61	5.00 ± 1.51	9.00 ± 1.53	31.00 ± 3.81
	no	9.00 ± 1.34	6.00 ± 1.97	6.00 ± 1.68	9.00 ± 1.90	30.0 ± 5.09
	U	4397.00	4389.00	4606.50	4426.00	4449.50
	Z	-1.066	-1.036	-0.561	-0.982	-0.894
	p	0.286	0.300	0.575	0.326	0.372
Do you have relatives living in a foreign country?	yes	9.00 ± 1.28	7.00 ± 1.82	6.00 ± 1.71	9.00 ± 1.83	30.00 ± 4.76
	no	9.00 ± 1.35	6.00 ± 1.98	6.00 ± 1.56	8.00 ± 1.83	29.00 ± 5.05
	U	7909.00	6343.00	7855.00	6654.50	7028.00
	Z	-0.252	-2.917	-0.335	-2.454	-1.729
	p	0.801	0.004	0.737	0.014	0.084
Was either of your parents born abroad?	Yes	10.00 ± 1.06	7.00 ± 1.63	5.00 ± 1.65	9.00 ± 1.57	31.00 ± 3.73
	No	9.00 ± 1.38	6.00 ± 1.97	6.00 ± 1.66	9.001.94	29.00 ± 5.27
	U	6263.00	5405.50	6935.00	6476.50	6080.50
	Z	-1.753	-3.225	-0.462	-1.326	-1.984
	p	0.080	0.001	0.644	0.185	0.047

Mdn – Median; SD Standard Deviation; U – Mann Whiteny test; Z – Test Statistics; p – Statistical Significance; CA – Cultural Awareness; CK – Cultural Knowledge; CS – Cultural Sensitivity; CP – Cultural Practice

The results showed that religious beliefs were significantly associated with the domain of Cultural Practice ($U(4) = 13.232$, $p = 0.010$). A Dwass-Steel-Critchlow-Fligner (DSCF) pairwise post-hoc comparison revealed a significant difference between Catholics and agnostics ($W = 4.104$, $p = 0.043$), with agnostics having higher Cultural Practice scores.

In terms of occupational group, a significant difference was also found for the Cultural Practice domain ($U(6) = 12.905$, $p = 0.035$). Post-hoc DSCF pairwise comparisons revealed a statistically significant difference between nursing assistants and registered nurses ($W = 3.723$, $p = 0.016$), with registered nurses reporting higher scores for Cultural Practice. No other occupational group comparisons reached statistical significance ($p > 0.05$).

Frequency of interaction with individuals from different ethnic groups was found to be significantly associated with the domain of Cultural Sensitivity ($U(5) = 11.709$, $p = 0.039$). A pairwise post-hoc comparison using the DSCF test revealed a statistically significant difference between participants who interacted with individuals from different ethnic groups several times a week and those who interacted only a few times a year ($W = 4.157$, $p = 0.039$). In particular, participants who interacted more frequently showed a higher level of cultural sensitivity. No other group differences achieved statistical significance ($p > 0.05$).

No statistically significant differences were found between the other domains (cultural awareness, cultural knowledge and cultural practice) or for the CCATool total score in relation to religious beliefs, occupational group or frequency of cultural interactions ($p > 0.05$).

The participants stated that they had come into contact with multicultural content to a moderate extent during their studies ($M = 5.02$, $SD = 3.19$, range = 1–10). To analyse the relationship between the extent of exposure to multicultural content

Table 5 Differences in Cultural Competence by religious beliefs, occupational group, and frequency of intercultural interaction (Kruskal-Wallis Test results)

Variable		CA Mdn ± SD	CK Mdn ± SD	CS Mdn ± SD	CP Mdn ± SD	CCATool Mdn ± SD
How would you define your religious beliefs?	catholic	9.00 ± 1.42	6.00 ± 2.01	5.00 ± 1.76	8.50 ± 1.96	29.50 ± 5.26
	orthodox	9.00 ± 1.35	7.00 ± 2.03	5.00 ± 2.18	9.00 ± 2.74	30.00 ± 5.82
	muslim	10.00 ± 0.78	7.00 ± 1.81	6.00 ± 1.49	9.00 ± 0.92	31.00 ± 3.16
	atheist	10.00 ± 1.24	7.00 ± 1.87	6.00 ± 1.45	9.00 ± 1.50	30.00 ± 4.66
	agnostic	9.00 ± 0.99	7.00 ± 1.18	6.00 ± 1.18	8.00 ± 1.65	32.00 ± 2.70
	U	4.906	7.539	2.072	13.232	8.200
	df	4	4	4	4	4
	p	0.297	0.110	0.723	0.010	0.085
Which occupational group do you belong to?	nurse assistant	9.00 ± 1.35	6.00 ± 1.98	6.00 ± 1.76	7.50 ± 1.13	28.00 ± 4.18
	secondary school nurse	9.00 ± 1.63	6.00 ± 1.97	5.00 ± 1.79	8.00 ± 2.30	28.00 ± 4.76
	registered nurse	9.00 ± 1.26	7.00 ± 2.00	6.00 ± 1.68	9.00 ± 1.59	30.00 ± 4.95
	master of nursing	10.00 ± 0.94	6.00 ± 1.60	5.00 ± 1.98	8.00 ± 1.68	30.00 ± 4.55
	medical doctor	9.00 ± 1.10	7.00 ± 1.65	5.00 ± 1.34	10.00 ± 1.57	31.00 ± 4.24
	midwife	9.00 ± 1.09	6.00 ± 2.17	6.00 ± 1.93	8.00 ± 2.12	30.00 ± 4.85
	physiotherapist	9.00 ± 1.93	7.00 ± 2.64	5.00 ± 1.13	10.00 ± 0.57	30.00 ± 7.13
	U	7.858	8.588	6.119	12.905	8.466
	df	6	6	6	6	6
	p	0.249	0.198	0.410	0.035	0.206
How often do you interact with people from other ethnic groups?	daily	9.00 ± 1.28	6.00 ± 1.89	6.00 ± 1.65	9.00 ± 1.85	30.00 ± 4.86
	several times a week	9.00 ± 1.43	7.00 ± 1.75	5.50 ± 1.58	9.00 ± 1.94	30.50 ± 4.96
	once a week	10.00 ± 1.30	5.00 ± 2.63	6.00 ± 1.29	9.00 ± 1.62	29.00 ± 4.52
	once a month	9.50 ± 1.10	6.50 ± 2.06	5.00 ± 1.77	8.00 ± 1.76	30.50 ± 4.92
	several times a year	10.00 ± 1.49	8.00 ± 1.89	7.00 ± 1.70	10.00 ± 1.49	35.00 ± 5.50
	never	9.50 ± 0.70	4.50 ± 2.12	4.00 ± 1.41	9.50 ± 0.70	27.50 ± 4.50
	U	2.953	5.806	11.709	5.842	6.310
	df	5	5	5	5	5
	p	0.707	0.326	0.039	0.322	0.277

Mdn – Median; SD Standard Deviation; U – Kruskal-Wallis test; df – Degrees of Freedom; p – Statistical Significance; CA – Cultural Awareness; CK – Cultural Knowledge; CS – Cultural Sensitivity; CP – Cultural Practice

and cultural competence, Spearman's rank-order correlation coefficients were calculated. A significant, albeit weak, positive correlation was found between exposure and the overall CCATool score ($\rho = 0.207$, $p < 0.001$), suggesting that greater exposure was associated with higher levels of cultural competence.

In terms of individual domains, significant weak positive correlations were found between exposure and cultural knowledge ($\rho = 0.189$, $p = 0.002$), cultural sensitivity ($\rho = 0.196$, $p = 0.002$), and cultural practice ($\rho = 0.154$, $p = 0.013$). No significant correlation was found with cultural awareness ($\rho = 0.107$, $p = 0.084$), suggesting that exposure to multicultural content may be associated with higher levels of cultural knowledge, cultural sensitivity, and cultural practice, although these associations were weak.

Discussion

Research on cultural competence is essential since it provides a basis for understanding how healthcare professionals perceive and respond to cultural diversity in clinical settings. By increasing cultural awareness, the data collected can inform the development of educational materials focused on cultural competence in the healthcare sector. Such insights are essential for reducing disparities in care, improving communication with patients from diverse backgrounds, and promoting more equitable healthcare outcomes.

In our study, most participants demonstrated high levels of cultural awareness, although many underestimated their own competence in building trust, demonstrating respect, and showing empathy when interacting with patients from diverse cultural backgrounds. While self-reported comfort with patients from diverse cultural backgrounds was generally consistent with objective measures,

participants reported significantly lower confidence in establishing trust, demonstrating respect, and demonstrating empathy. Similarly, self-reported abilities to incorporate patients' cultural beliefs and to address discrimination were significantly lower than objectively measured performance. The fact that only a very small proportion of participants achieved full cultural competence and none achieved cultural safety highlights both the complexity of these competencies and a potential discrepancy between perceived and actual abilities in professional practice.

High cultural awareness is associated with an individual's recognition of their own cultural values, biases, and the influence these have on behavior, and is grounded in self-reflection and internal understanding. However, even when individuals demonstrate high levels of cultural awareness, they may still struggle to translate this understanding into practice. This discrepancy may result in reduced application of culturally competent and culturally safe care.

Cultural awareness has been linked to younger age, fewer years of professional experience, higher education levels, participation in specialized training, multilingualism, the work environment, and clinical experience with refugees (Urbanavičė et al., 2025). However, other studies have found no such associations (Cai et al., 2021; Červený et al., 2024; Osmancevic et al., 2023). Our findings support those of Grinberg and Nissim (2025), who reported that cultural competence increases with education and clinical experience.

In our sample, registered nurses scored highest in the domain of cultural practice, which we attribute to more frequent interactions with individuals from diverse ethnic backgrounds. The importance of higher education for cultural competence has been confirmed in other studies (Cai et al., 2021; Osmancevic et al., 2023; Urbanavičė et al., 2025), while Wang et al. (2022) associate higher cultural competence with senior job positions, noting that such positions do not always require higher academic qualifications.

Direct interaction with culturally diverse individuals appears to significantly enhance cultural competence. Participants with personal experience of living abroad or with family members from other countries demonstrated significantly higher scores in cultural knowledge and practice. The same pattern was observed among those whose parents were born outside Slovenia.

Communication is a key component of cultural competence, and while verbal communication is commonly emphasized, non-verbal communication must not be overlooked. Grinberg and Nissim (2025) similarly highlight that multilingualism among healthcare professionals should not be seen merely as an advantage but as an essential element of cultural competence. Sagarra-Romero et al. (2024) point out that language barriers are not the only challenge, cultural misunderstandings may lead to aggressive behavior, manipulation, psychological or physical violence, and conflict. These are often rooted in communication breakdowns, lack of adaptation, and the presence of stereotypes and prejudices (Ali Jaber Mohammed Haqawi et al., 2024).

The majority of participants demonstrated cultural awareness, while no participants achieved the level of cultural safety. This finding highlights a discrepancy between cultural awareness and its practical application, suggesting that knowledge and sensitivity alone may be insufficient to ensure culturally safe care. It highlights the critical need for structured education, skill building, and ongoing support, and emphasizes that the development of cultural safety is a progressive and dynamic process that requires both individual reflection and organizational commitment (Arruzza & Chau, 2021).

A systematic review of nursing curricula is therefore warranted to identify current approaches and gaps in cultural content (Antón-Solanas et al., 2021b), with the aim of supporting earlier integration of cultural competence training in nursing education (Grinberg & Nissim, 2025). Further empirical research is needed to evaluate the effectiveness of different teaching strategies and their impact on clinical outcomes and patient satisfaction across cultural groups (Antón-Solanas et al., 2021b). Continuous professional development in cultural communication is also recommended, as it may enhance healthcare professionals' confidence and competence in providing care to culturally diverse patients (Theodosopoulos et al., 2024).

Traditional educational methods, such as case studies and clinical simulations, are often considered insufficient for developing cultural competence. Antón-Solanas et al. (2021a) suggest incorporating role-playing, simulations with patients from diverse cultural backgrounds, and additional content on communication and conflict resolution. Given the pace of technological development, digital learning content should also be included, as recommended by Arruzza and Chau (2021).

Media, internet sources, and formal training are key contributors to cultural knowledge that shape healthcare professionals' approaches to patient care (Červený et al., 2022).

Education has been shown to positively influence cultural knowledge, attitudes, skills, and understanding of cultural competence (Arruzza & Chau, 2021). Our findings also indicate that frequent contact with individuals from different cultural backgrounds is associated with higher levels of cultural sensitivity.

According to Antón-Solanas et al. (2021a), knowledge gaps can be bridged through an empathetic, respectful, and open attitude, as well as a willingness to adapt one's clinical practice. Ultimately, ensuring cultural competence is not a privilege but a fundamental right and necessity for equitable healthcare (Grinberg & Nissim, 2025).

Quantitative research on this topic yields statistically significant results; however, the observed associations are weak. Depending on the research question, it may therefore be important to also examine practical relevance. Future studies are recommended to employ mixed-methods approaches to enhance the depth and applicability of the findings.

Research such as ours may support the introduction of interventions aimed at improving cultural competence among healthcare professionals and, consequently, the quality of patient care from a holistic perspective. Education and training in this area should be integrated into the mandatory curricula for both future and practicing healthcare professionals. Simulation-based learning and structured group discussions may be particularly useful in facilitating the exchange of experiences among participants.

The effectiveness of such interventions, as well as changes in healthcare professionals' attitudes toward cultural competence, should be evaluated longitudinally and considered in relation to patient satisfaction and healthcare quality indicators. In addition to cultural knowledge and communication training, curricula may also benefit from the inclusion of de-escalation techniques, patient interaction skills, and clear guidelines for managing care in cross-cultural contexts. The involvement of interpreters and other cultural mediators may further support the delivery of culturally appropriate care.

Limitations of the study

This study has several limitations that should be considered when interpreting the results. First, the cross-sectional design captures data at a single point in time, which does not allow for causal inferences about the development of cultural competence. Second, although the sample size was relatively large (N = 404), the distribution of participants by gender, education, and occupational profile was uneven, limiting comparability across subgroups and reducing the generalizability of the findings. In addition, participants were recruited through available email contacts and participated voluntarily, which may have introduced selection bias by attracting individuals with an existing interest in intercultural topics. Third, the use of a self-report-based CCATool may have introduced response biases, including social desirability and subjective over- or under-estimation of one's own competence. Future research should consider calculating optimal sample sizes and using longitudinal designs to improve the validity, reliability, and applicability of the results. It would be advisable to use mixed research methods, as this would allow quantitative data to be compared and / or supported by qualitative data.

Conclusion

Cultural sensitivity, knowledge, and skills that enable high-quality and equitable health care for patients from diverse backgrounds are essential components of cultural competence. The development of these competencies is influenced by various factors and contributes to improved interpersonal understanding, communication, and patient satisfaction. The integration of cultural competence into educational programs can positively affect the quality of health services and may help reduce health inequalities.

Ethical aspects and conflict of interest

Ethical approval was obtained from the Commission of the University of Primorska for Ethics in Human Subjects Research (Approval No: 4264-16-3/2022). Participants confirmed their participation and agreement to the terms by clicking on the consent question before completing the questionnaire. Anonymity was fully guaranteed.

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

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Author contributions

Conception and design (ES, MP), data analysis and interpretation (ES), manuscript draft (ES), critical revision of the manuscript (MP), final approval of the manuscript (MP).

References

Ali Jaber Mohammed Haqawi, A., Shahbal, S., Hakami, M. O. A., Ali, A. A. H., Oraigy, K. M. M., Sharahili, F. A., Almalki, F. A., Alanazi, Y. O. H., Sahly, E. M., Ibrahem, T. H., & Gasi, T. O. H. (2024). The influence of cultural competence on nursing: a comprehensive review preserving the future of the nursing profession. *International Crisis and Risk Communication Research*, *7*(S9). 2139–2154. https://doi.org/10.63278/jicrcr.vi.1274

Antón-Solanas, I., Tambo-Lizalde, E., Hamam-Alcober, N., Vanceulebroeck, V., Dehaes, S., Kalkan, I., Kömürcü, N., Coelho, M., Coelho, T., Casa Nova, A., Cordeiro, R., Sagarra-Romero, L., Subirón-Valera, A. B., & Huércanos-Esparza, I. (2021a). Nursing students' experience of learning cultural competence. *PLoS ONE*, *16*(12), e0259802. https://doi.org/10.1371/journal.pone.0259802

Antón-Solanas, I., Huércanos-Esparza, I., Hamam-Alcober, N., Vanceulebroeck, V., Dehaes, S., Kalkan, I., Kömürcü, N., Coelho, M., Coelho, T., Casa-Nova, A., Cordeiro, R., Ramón-Arbués, E., Moreno-González, S., & Tambo-Lizalde, E. (2021b). Nursing lecturers' perception and experience of teaching cultural competence: a European qualitative study. *International Journal of Enviromental Research and Public Health*, *18*(3), 1357. https://doi.org/10.3390/ijerph18031357

Arruzza, E., & Chau, M. (2021). The effectiveness of cultural competence education in enhancing knowledge acquisition, performance, attitudes, and student satisfaction among undergraduate health science students: a scoping review. *Journal of Educational Evaluation for Health Professions*, *18*(3). https://doi.org/10.3352/jeehp.2021.18.3

Balachandran, P., Karuveettil, V., & Janakiram, C. (2022). Development and validation of cultural competence assessment tool for healthcare professionals, India. *Frontiers in Public Health*, *10*. https://doi.org/10.3389/fpubh.2022.919386

Cai, D., He, W., & Klug, D. (2021). Cultural competence among nurses and its influencing factors: a cross-sectional study. *Nursing & Health Sciences*, *23*(2), 411–418. https://doi.org/10.1111/nhs.12821

Červený, M., Abrmanová, M., & Tóthová, V. (2024). Cultural challenges: exploring nurses' experiences in clinical practice across two European countries. *Kontakt*, *26*(3), 233–237. https://doi.org/10.32725/kont.2024.031

Červený, M., Kratochvílová, I., Hellerová, V., & Tóthová, V. (2022). Methods of increasing cultural competence in nurses working in clinical practice: a scoping review of literature 2011–2021. *Frontiers in Psychology*, *13*, 936181. https://doi.org/10.3389/fpsyg.2022.936181

Eken, H. N., Dee, E. C., Powers, A. R., & Jordan, A. (2021). Racial and ethnic differences in perception of provider cultural competence among patients with depression and anxiety symptoms: a retrospective, population-based, cross-sectional analysis. *The Lancet Psychiatry*, *8*(11), 957–968. https://doi.org/10.1016/s2215-0366(21)00285-6

González-Rábago, Y., Lanborena, N., & Rodríguez-Álvarez, E. (2025). Barriers to healthcare for racialised populations in Europe: a scoping review of reviews. *International Journal for Equity in Health*, *24*, 212. https://doi.org/10.1186/s12939-025-02577-1

Grinberg, K., & Nissim, S. (2025). Cultural competence among nursing students: exploring differences across academic stages. *BMC Nusing*, *24*, 640. https://doi.org/10.1186/s12912-025-03246-y

Jansen, M., Lund, D., Baume, K., Lillyman, S., Rooney, K., & Nielsen, D. (2021). International clinical placement – experiences of nursing students' cultural, personal and professional development; a qualitative study. *Nurse Education in Practice*, *51*, 102987. https://doi.org/10.1016/j.nepr.2021.102987

Joensuu, R., Suleiman, K., Koskenranta, M., Kuivila, H., Oikarainen, A., Juntunen, J., Goh, Y. S., Liaw, S. Y., & Mikkonen, K. (2024). Factors associated with the integration of culturally and linguistically diverse nurses into healthcare organisations: a systematic review of quantitative studies. *Journal of Nursing Management*, *2024*(1), 5887450. https://doi.org/10.1155/2024/5887450

Leung, D. Y. L., Chan, E. A., Wong, A. K. C., Reisenhofer, S., Stenberg, M., Pui Sze, C., Lai, K. H., Cruz, E., & Carlson, E. (2020). Advancing pedagogy of undergraduate nursing students' cultural awareness through internationalization webinars: a qualitative study. *Nurse Education Today*, *93*, 104514. https://doi.org/10.1016/j.nedt.2020.104514

Li, S., Miles, K., George, R. E., Ertubey, C., Pype, P., & Liu, J. (2023). A critical review of cultural competence frameworks and models in medical and health professional education: a meta-ethnographic synthesis: BEME Guide No. 79. *Medical Teacher*, *45*(10), 1085–1107. https://doi.org/10.1080/0142159x.2023.2174419

Ličen, S., & Prosen, M. (2023). The development of cultural competences in nursing students and their significance in shaping the future work environment: a pilot study. *BMC Medical Education*, *23*(1), 819. https://doi.org/10.1186/s12909-023-04800-5

Osmančević, S., Großschädl , F., & Lohrmann, C. (2023). Cultural competence among nursing students and nurses working in acute care settings: a cross-sectional study. *BMC Health Services Research*, *23*, 105. https://doi.org/10.1186/s12913-023-09103-5

Papadopoulos, I. (2003). The Papadopoulos, Tilki and Taylor model for the development of cultural competence in nursing. *Journal of Health, Social and Environmental Issues*, *4*, 5–7.

Papadopoulos, I., & Lees, S. (2002). Developing culturally competent researchers. *Journal of Advanced Nursing*, *37*(3), 258–264. https://doi.org/10.1046/j.1365-2648.2002.02092.x

Papadopoulos, I., Tilki, M., & Taylor, G. (1998). *Transcultural care: a guide for health care professionals*. Quay Books.

Sagarra-Romero, L., Ramón-Arbués, E., Huércanos-Esparza, I., Kalkan, I., Kömürcü, N., Vanceulebroeck, V., Dehaes, S., Coelho, M., Casa-Nova, A., & Antón-Solanas, I. (2024). Cultural competence of undergraduate student nurses: a multicenter study. *Revista Latino-americana de Enfermagem*, *32*, e4230. https://doi.org/10.1590/1518-8345.7070.4230

Tessier, A., Croteau, C., & Voyer, B. (2021). Exploring the usability of the andragogical process model for learning for designing, delivering and evaluating a workplace communication partner training. *Journal of Workplace Learning*, *33*(8), 577–590. https://doi.org/10.1108/JWL-10-2020-0163

Theodosopoulos, L., Fradelos, E. C., Panagiotou, A., Dreliozi, A., & Tzavella, F. (2024). Delivering culturally competent care to migrants by healthcare personnel: a crucial aspect of delivering culturally sensitive care. *Social Sciences*, *13*(10), 530. https://doi.org/10.3390/socsci13100530

Urbanavičė, R., El Arab, R. A., Austys, D., Skvarčevskaja, M., & Istomina, N. (2025). The cultural competence of nurses and its relationship to socio-demographic factors: a cross-sectional survey. *BMC Nursing*, *24*, 497. https://doi.org/10.1186/s12912-025-03124-7

von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., Vandenbroucke, J. P., & STROBE Initiative. (2008). The strengthening of the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. *Journal of Clinical Epidemiology*, *61*(4), 344–349. https://doi.org/10.1016/j.jclinepi.2007.11.008

Wang, R., Wu, Y. Y., Duan, G. X., Liang, C., Tan, L., Pu, Y., Dong, L., & Xu, H. (2022). Critical cultural competence of clinical nurses in China: A cross-sectional survey. *Journal of Nursing Management*, *30*(4), 1042–1052. https://doi.org/10.1111/jonm.13590

