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Assessing Levels and Influencing Factors of Cultural Competence in Final-Year Nursing Students: A Cross-Sectional Study

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Abstract

Background: The increasing ethnic and cultural diversity of patient populations necessitates the provision of culturally competent care. Nurses play a pivotal role in delivering equitable and high-quality healthcare to individuals from diverse backgrounds, underscoring the importance of integrating cultural competence into nursing education.

Aim: This study aimed to assess the level of cultural competence and its associated factors among final-year undergraduate nursing students.

Method: In this cross-sectional study conducted between September 2023 and April 2024, a census sample of 146 final-year nursing students was enrolled. Data were collected using a two-part questionnaire: a demographic information sheet and the Medical Students' Cultural Competence Assessment Questionnaire, which measures cultural attitude, self-awareness, knowledge of health behaviors, and awareness of cultural diversity. Data were analyzed using SPSS version 25.

Results: The mean score of cultural competence was desirable (3.96 ± 0.38), with the highest scores in cultural attitude (4.35 ± 0.45) and the lowest scores in knowledge regarding health behaviors, beliefs, and physiological differences (48.0 ± 0.77). Notably, the overall cultural competence score showed no statistically significant relationship with any individual or social variables studied.

Implications for Practice: Although final-year nursing students demonstrated favorable attitudes toward culturally responsive care, gaps remain in knowledge-based domains. These findings highlight the need to strengthen undergraduate nursing curricula—particularly in areas related to culturally influenced health behaviors, beliefs, and physiological variations—to better prepare graduates for culturally diverse clinical environments.

Keywords: Culture, Cultural Competence, Cultural Diversity, Nurses, Nursing Students

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Introduction

Cultural diversity is widely recognized as a defining characteristic of contemporary societies and a significant determinant of interpersonal interactions and social structures (1). Healthcare systems increasingly serve patients from diverse cultural and ethnic backgrounds (2). Consequently, healthcare providers must possess adequate awareness of patients' cultural values, beliefs, and expectations, as well as insight into their own potential biases and assumptions, to deliver culturally appropriate care (1, 3). Without such awareness, healthcare professionals may unintentionally impose their own cultural values on patients, potentially resulting in discrimination and inequitable care. This underscores the necessity of cultural competence, particularly among nurses who maintain close and continuous contact with patients (3, 4). A culturally competent healthcare system is one that recognizes the centrality of culture, systematically evaluates intercultural interactions, understands the dynamics of cultural differences, and continuously expands cultural knowledge at all organizational levels (4). Cultural competence encompasses a combination of knowledge, attitudes, and skills that enable healthcare professionals to function effectively in cross-cultural situations (5). It involves the ability to understand the cultural backgrounds of diverse racial, ethnic, religious, and social groups; respond appropriately to their unique health-related needs; establish effective therapeutic relationships; and communicate efficiently across cultural boundaries (6). Core components include cultural awareness, attitude, knowledge, sensitivity, and communication skills (7). Leininger's Theory of Culture Care Diversity and Universality provides a foundational framework for transcultural nursing. According to this theory, culturally congruent care is achieved when nurses integrate patients' cultural values, beliefs, and lifeways into care planning and delivery (8, 9). Therefore, assessing cultural competence among final-year nursing students is essential to determine their readiness to provide culturally appropriate care.

Nurses with higher levels of cultural competence are better equipped to establish effective cross-cultural communication, accurately assess patient needs, reduce healthcare disparities, and improve clinical outcomes (3). Conversely, inadequate cultural competence may lead to misunderstandings, decreased patient satisfaction, and suboptimal care delivery (1, 10). Respecting patients' cultural and religious practices strengthens the therapeutic relationship and enhances the humanistic dimension of care (11).

Previous studies have identified several determinants of cultural competence, including educational level, work experience, postgraduate education, multicultural exposure, communication skills, language proficiency, and ethnicity (12-17). Participation in cultural competence training programs has also been associated with improved competence levels (14). However, lack of awareness and insufficient knowledge regarding culturally influenced health behaviors and beliefs remain significant barriers (18). Failure to recognize intercultural communication barriers may contribute to inequities in care and increased occupational stress among nurses (19). Given that cultural competence should be cultivated during professional training, this study aimed to assess the level of cultural competence and its associated factors among final-year undergraduate nursing students.

Methods

This cross-sectional study was conducted between September 2023 and April 2024. Using a census approach, all eligible final-year undergraduate nursing students were invited to participate, and data were collected from 146 students who agreed to participate. The inclusion criteria included studying in the seventh and eighth semesters.

The data collection tool consisted of two sections: Demographic and Academic Characteristics: Age, gender, marital status, ethnicity, spouse's ethnicity, clinical work experience, grade point average (GPA), academic semester, place of residence, native dialect, and second-language proficiency. Cultural Competence Assessment Questionnaire: A validated 50-item instrument comprising eight subscales: Cultural attitude, Cultural orientation, Self-awareness, Awareness of cultural diversity, Knowledge of health behaviors, beliefs, and physiological differences, Knowledge of cultural perceptions (e.g., concepts of time, space, and touch), Behavioral and speech patterns, Contingent behavior. Items are rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The total raw score ranges from 50 to 250. For interpretability, mean scores ranging from 1 to 5 were calculated for total and subscale scores. The instrument demonstrated excellent internal consistency in previous validation studies (Cronbach's $\alpha = 0.96$ overall; 0.88–0.89 for subscales) (5).

Data were analyzed using SPSS version 25. Descriptive statistics (mean, standard deviation, frequency, percentage) were calculated. Multiple linear regression analysis was performed to determine factors associated with cultural competence after verifying regression assumptions.

Ethical Considerations

This cross-sectional study was approved by the Ethics Committee of Guilan University of Medical Sciences, Rasht, Iran (Ethical approval code: IR.GUMS.REC.1402.223). Written informed consent was obtained from all participants. All procedures complied with the Declaration of Helsinki (20).

Results

The mean age of the students was 23.07 ± 1.57 years. The mean duration of students' clinical training experience was 8.98 ± 8.9 months, and the mean GPA was 16.83 ± 0.88 (Table 1).

Table 1. Demographic characteristics of nursing students

Variables	N (%)
Age group	
≤24	120(87)
≥25	18(13)
Gender	
Female	68(49.3)
Male	70(50.7)
Marital status	
Single	125(90.6)
Married	13(9.4)
Clinical experience	
Yes	44(31.9)
No	94(68.1)
Academic semester	
7	77(55.8)
8	61(44.2)
Residence	
Dormitory	62(44.9)
Home	76 (55.1)

Table 2. Total score and sub-components of cultural competence of nursing students

Sub-components	95% Confidence Interval for Mean	Mean ± SD
Cultural attitude	4.43 – 4.27	4.35 ± 0.45
Cultural orientation	3.98 – 4.17	4.08 ± 0.56
Self-awareness	4.09 – 4.26	4.18 ± 0.51
Awareness of cultural diversity	3.75 – 3.98	3.87 ± 0.67
Knowledge about health behaviors, beliefs, and physiological differences	3.35 – 3.61	3.48 ± 0.77
Knowledge of the perceptions of different cultures	3.43 – 3.65	3.54 ± 0.68
Behavioral and speech habits	3.51 – 3.72	3.62 ± 0.63
Contingent behavior	4.17 – 4.33	4.25 ± 0.46
Total score	3.89 – 4.02	3.96 ± 0.38

As shown in Table 2, the mean ± SD of the total cultural competence score (on a scale of 1–5) was 3.96 ± 0.38, with an observed range of 3.20 to 4.82. The 95% confidence interval for the total score was 3.89–4.02. Among the subscales, knowledge of health behaviors, beliefs, and physiological differences had the lowest mean score, whereas cultural attitude had the highest mean score (Table 2).
Overall, the level of cultural competence was moderate in 51.4% of the students, while 48.6% demonstrated a level above moderate. Analysis of the eight domains of cultural competence showed that the highest proportions of below-average scores were observed in the domains of knowledge of health behaviors and beliefs, knowledge of cultural perceptions (e.g., time, space, and touch), and behavioral and speech habits, respectively. In contrast, the lowest proportions of below-average competence were found in the domains of cultural attitude, contingent behavior, and self-awareness.
Similarly, the domains of knowledge of health behaviors and beliefs, knowledge of cultural perceptions (time, space, and touch), and behavioral and speech habits showed the highest frequencies of scores below the average level. Conversely, cultural attitude, contingent behavior, and self-awareness showed the lowest frequencies of below-average scores.
The cultural attitude domain score differed significantly by gender (p=0.047), with female students scoring higher than male students. The score for knowledge of health behaviors, beliefs, and physiological differences differed significantly according to the ethnicity of the student's spouse (p=0.029). Likewise, the score for knowledge of cultural perceptions differed significantly according to the ethnicity of the student's spouse (p=0.037). The behavioral and speech habits score was significantly associated with marital status (p=0.011), with married students obtaining higher mean scores in this domain. In addition, the contingent behavior score differed significantly by academic semester (p=0.027), with seventh-semester students scoring higher on average than eighth-semester students. No statistically significant associations were observed between the other domains of cultural competence and the individual or social variables examined (p>0.05).
In the multiple linear regression analysis, the total cultural competence score was not significantly associated with any of the individual or social variables under study (p>0.05) (Table 3).

Table 3. Factors Affected cultural competence score based on the multiple linear regression model

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.	95% Conf. Interval for B	
	B	Std. Error	Beta		Lower Bound	Lower Bound
(Constant)	4.489	0.921	—	0.000	2.667	6.311
-0.025	0.023	-0.106	0.276	-0.071	0.020	
sex	0.000	0.068	0.000	0.998	-0.134	0.135
marital status	0.123	0.122	0.096	0.317	-0.119	0.365
Ethnicity of the student's wife	-0.169	0.100	-0.224	0.094	-0.366	0.029
Clinical history	-0.087	0.075	-0.109	0.245	-0.236	0.061
Ethnicity of the student	0.138	0.090	0.178	0.129	-0.040	0.315
GPA	0.011	0.038	0.025	0.777	-0.065	0.087
academic semester	-0.068	0.131	-0.047	0.603	-0.328	0.191
Residence	0.007	0.092	0.010	0.937	-0.175	0.189

Dependent Variable: Cultural competence of the total score

Discussion

Cultural competence is an essential component of professional nursing practice, particularly in societies characterized by cultural, ethnic, linguistic, and social diversity. In nursing education, cultural competence is not only related to students' knowledge about cultural differences, but also to their attitudes, self-awareness, communication skills, and ability to provide culturally sensitive care. Therefore, assessing the level of cultural competence among undergraduate nursing students can provide useful evidence for improving nursing curricula and preparing future nurses to deliver

equitable and patient-centered care.

In the present study, the overall level of cultural competence among final-year undergraduate nursing students was generally moderate to above moderate. This finding suggests that although students had acquired a basic level of cultural competence during their education and clinical training, there is still room for improvement, particularly in the more practical and knowledge-based dimensions of cultural competence. Similar findings have been reported in previous studies. Shahriar Oladi et al. found that the mean cultural competence score among nursing students was above average, despite similarities with the present study in terms of gender distribution and mean age (21). Liu et al.'s study in Taiwan showed that the general cultural competence of nurses was above average, with the highest score in the field of cultural awareness, and there was a significant difference between the cultural competence score and the clinical hierarchy and their cultural awareness and skills (22). Majnoon et al. also reported that the cultural competence of nursing students was above average (23). In addition, Nafar et al. found that specialist nurses had an overall cultural competence level above the average, with the highest score reported in the domain of cultural awareness (24). These consistent findings may indicate that nursing students and nurses generally develop positive attitudes and a basic awareness toward culturally diverse patients through their educational and clinical experiences.

However, the level of cultural competence reported in the present study was not uniformly high across all dimensions. The highest levels of competence were observed in domains such as cultural attitude, contingent behavior, and self-awareness, whereas lower scores were found in areas related to knowledge about health behaviors and beliefs, perceptions of different cultures regarding time, space, and touch, and behavioral and speech habits. This pattern is important because it suggests that students may be more prepared at the attitudinal level than at the applied and knowledge-based levels. In other words, students may recognize the importance of respecting cultural diversity, but may not have sufficient knowledge and practical skills to translate this attitude into culturally appropriate care. This finding is consistent with the idea that cultural competence develops progressively, beginning with awareness and attitude and gradually advancing toward knowledge, communication skills, and culturally responsive clinical behavior.

The findings of Liu et al. also support this interpretation. In their study in Taiwan, nurses' general cultural competence was above average, with the highest score in cultural awareness, and significant differences were observed between cultural competence and clinical hierarchy, as well as cultural awareness and skills (22). Similarly, Nafar et al. reported that cultural awareness was the strongest domain among specialist nurses (24). These findings indicate that cultural awareness is often more developed than cultural skills and knowledge. One possible explanation is that nursing education commonly emphasizes respect, ethics, and human dignity, but may provide fewer opportunities for students to practice culturally sensitive communication and care planning in real or simulated clinical situations.

In contrast, Geleta et al. reported a low to moderate level of cultural competence among participants (25). This difference may be due to variations in study populations, educational systems, clinical exposure, cultural diversity of healthcare settings, and assessment tools. Cultural competence may differ between students and practicing nurses because nurses' competence can be influenced by work experience, organizational culture, and repeated contact with patients from diverse backgrounds. In addition, the use of different questionnaires and classification of cultural competence domains can affect the comparability of findings.

In this study, no significant association was found between total cultural competence and demographic or academic variables, including gender, age group, academic semester, and grade point average. This finding is consistent with Kolagari et al., who reported that none of the independent variables had a significant effect on cultural competence (26). These results suggest that cultural competence may not develop automatically through academic progression or demographic characteristics alone. Instead, it requires purposeful educational interventions, structured clinical experiences, and reflective learning.

However, some studies have reported different findings. Osmancevic et al. found significant relationships between cultural competence and age, education level, and cultural diversity in education (27). Oladi et al. reported that cultural competence increased with age and was higher among students in specialized courses, although no significant difference was observed by gender (21). Nafar et al. also found significant associations between cultural competence and factors such as

work experience and intra-ethnic marriage among healthcare workers (24). These differences may indicate that cultural competence is influenced more by the quality and diversity of clinical and cultural experiences than by demographic factors alone.

The study by Havlıoğlu et al. also highlights the importance of clinical exposure. They found that nurses who cared for patients from different cultures and used languages other than Turkish while providing care had significantly higher scores in cultural competence and its sub-dimensions, including cultural skills and knowledge (28). This finding supports the idea that direct interaction with culturally diverse patients can improve practical aspects of cultural competence. Therefore, nursing education should provide students with opportunities for clinical exposure, simulation-based learning, case-based discussions, and reflective exercises focused on cultural care.

Overall, the findings of the present study suggest that although final-year nursing students had a moderate to above moderate level of cultural competence, knowledge-based and communication-related dimensions need further strengthening. Nursing curricula should move beyond theoretical instruction and include practical methods such as workshops, role-playing, simulation, reflective writing, and supervised clinical encounters with culturally diverse patients. Integrating cultural care into undergraduate nursing education and continuing professional education can help students develop the skills needed to communicate effectively with patients from different cultural backgrounds and provide culturally sensitive care.

This study has several limitations. First, it was conducted in a single educational institution in one city, which may limit the generalizability of the findings. The extent of nursing students' exposure to and interaction with individuals from diverse ethnic and cultural backgrounds may differ across regions, and such differences may influence the development of cultural competence. Therefore, the findings should be interpreted and generalized with caution in other geographical and cultural settings

Implications for practice

Given the increasing cultural diversity in healthcare settings, strengthening cultural competence within undergraduate nursing education is essential. The findings of this study indicate that although the overall level of cultural competence among nursing students was moderate to high, some domains—particularly knowledge related to health behaviors, beliefs, and cultural perceptions relevant to care—were relatively weak. Identifying these gaps may assist nursing educators and curriculum planners in developing targeted educational strategies, such as culturally focused workshops, simulation-based learning, and greater clinical exposure to diverse patient populations, to enhance students' ability to provide culturally sensitive and effective care.

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Conflicts of interest

The authors declare no conflicts of interest.

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Authors' Contributions

L.M. and M.GH. designed the study and participated in the recruitment and data collection. E.K. analyzed the data. All authors read and approved the final manuscript.

Artificial Intelligence statement

The authors did not use any generative AI tools (such as Large Language Models, chatbots, or image generators) in the creation of this manuscript or in the research process.

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