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Association Between Cultural Competence and Patient-Centered Communication Among Nurses in Clinical Settings: A Cross-Sectional Study

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Abstract

Background: Cultural competence is essential for the workforce and quality of care, impacting patient safety, equity, and overall health system performance. This study evaluated the relationship between cultural competence and patient-centered communication across five domains to inform policy and management in emergency care settings. The goal was to evaluate domain-specific cultural competence among emergency department nurses at two tertiary hospitals in Riyadh, Saudi Arabia. **Methods:** A descriptive cross-sectional survey was conducted with a convenience sample of 217 nurses working in emergency departments at these hospitals. Cultural competence was assessed using the validated Healthcare Provider Cultural Competence Instrument (HPCCI), which measures awareness and sensitivity, behavior, patient-centered communication, self-assessment, and practice orientation. Descriptive statistics summarized domain scores, while t-tests and ANOVA were used to analyze differences across selected demographic and professional variables ($\alpha = 0.05$). **Results:** Nurses showed relatively high cultural competence across several domains, with practice orientation scoring the highest (4.21 ± 0.50), and patient-centered communication the lowest (2.05 ± 0.83). Domain-level analysis revealed statistically significant differences by sex, age, years of experience, role, and education, though most effects were small to moderate. **Conclusion:** Emergency nurses demonstrated strengths in culturally competent practice, but patient-centered communication remains an area for improvement. Health system leaders must prioritize HPCCI-based training, ongoing professional development, and unit-level quality initiatives to foster culturally responsive, patient-centered communication and advance evidence-based workforce policies.

Keywords: cultural competence; nursing practice; patient-centered communication; Healthcare Provider Cultural Competence Instrument; Saudi Arabia

1. Introduction

Cultural competence is increasingly recognized as an essential requirement for healthcare systems globally, directly impacting the quality of care, patient safety, satisfaction, and equity [1, 1, 2]. It involves the continuous ability of healthcare providers to deliver care that respects and adapts to patients' cultural beliefs, practices, and needs. International organizations like the World Health Organization (WHO)

and the International Council of Nurses (ICN) acknowledge cultural competence as a key skill for the healthcare workforce, vital for achieving universal health coverage and patient- centered care [3, 3, 4]. In nursing, cultural competence is closely linked to communication. Effective nurse–patient communication requires more than clinical knowledge; it also demands the ability to interpret and respond appropriately to patients' culturally influenced expectations, health beliefs, and language preferences. When cultural and linguistic differences are not properly addressed, miscommunication can occur, leading to reduced patient engagement, treatment delays, misinterpretation of symptoms, and poorer health outcomes [5, 5, 5,8–11]. In Saudi Arabia, as in many Gulf countries, the nursing workforce is highly multicultural, with many nurses recruited from diverse international backgrounds [6, 6, 6,7]. This diversity enriches the workforce but also presents complex communication and care challenges, especially in high- acuity settings such as emergency departments (EDs), where quick clinical decisions and clear, culturally sensitive communication are critical [5, 7, 32]. In these settings, cultural competence and communication are closely intertwined and jointly influence the safety, timeliness, and perceived quality of care. Cultural competence is increasingly seen as a strategic necessity for healthcare systems worldwide, directly affecting the quality of care, patient safety, satisfaction, and equity [1, 1, 1,2]. It involves the ongoing ability of healthcare providers to deliver care that respects and responds to patients' cultural beliefs, practices, and needs. Major organizations such as the World Health Organization (WHO) and the International Council of Nurses (ICN) recognize cultural competence as a vital skill for the workforce, crucial for achieving universal health coverage and patient- centered care [3, 3, 4].

In nursing, cultural competence is closely linked to communication. Effective nurse–patient communication requires not only clinical knowledge but also the ability to interpret and respond appropriately to patients' culturally influenced expectations, health beliefs, and language preferences. When cultural and linguistic differences are not properly addressed, miscommunication can occur, leading to reduced patient engagement, delayed treatment, misinterpretation of symptoms, and poorer health outcomes [5,8–11]. In Saudi Arabia, as in many Gulf countries, the nursing workforce is highly multicultural, with many nurses recruited from diverse international backgrounds [6,7]. This diversity enriches the workforce but also presents complex communication and care-delivery challenges—especially in high-acuity settings such as emergency departments (EDs), where quick clinical decisions and clear, culturally sensitive communication are essential [5,7,32]. In these environments, cultural competence and communication are closely interconnected and together influence the safety, timeliness, and perceived quality of care. Cultural competence is increasingly recognized as a strategic necessity for healthcare systems worldwide, directly affecting quality of care, patient safety, satisfaction, and equity [1,2]. It involves healthcare providers' ongoing ability to deliver care that respects and responds to patients' cultural beliefs, practices, and needs. International organizations such as the World Health Organization (WHO) and the International Council of Nurses (ICN) recognize cultural competence as a vital workforce skill for achieving universal health coverage and patient-centered care [3,4].

Although its importance is widely acknowledged, providing culturally sensitive care in diverse healthcare systems remains challenging. Nurses may struggle to balance institutional protocols with patients' cultural norms, overcome language barriers, or navigate differing beliefs about illness, pain, and treatment options. These challenges are often intensified in EDs, where time constraints, high patient volume, and clinical uncertainty limit opportunities for meaningful communication. Cross-cultural miscommunication in these settings has been linked to patient dissatisfaction, mistrust, reduced adherence to treatment, and an increased risk of medical errors [8,9,14]. In rapidly diversifying healthcare systems like Saudi Arabia's—where expatriate nurses compose a significant part of the workforce—cultural competence is no longer an optional "soft skill" but an essential requirement for delivering safe, equitable, and patient-centered care [6,7,33]. However, little is known about how specific areas of cultural competence affect nurses' actual communication patterns in ED practice. Global research consistently shows that culturally competent nursing care correlates with improved therapeutic relationships, increased adherence to treatment, better patient safety outcomes, and higher patient satisfaction [11–13]. Studies across various settings have examined nurses' cultural awareness, attitudes, and self-reported competence, often finding positive connections between higher cultural competence and favorable patient-reported outcomes. However, most of the existing literature focuses on general hospital or primary care settings and

frequently relies on broad, self-reported measures of cultural competence. Research that specifically investigates how cultural competence manifests in communication behaviors—such as patient-centered communication, information exchange, and relational practices—remains limited. Additionally, studies from the Gulf region, particularly those focused on emergency care in Saudi Arabia, remain relatively scarce. Existing research tends to emphasize overall competence scores or attitudes rather than detailed, domain-specific assessments related to communication patterns and workforce characteristics.

Several critical gaps exist in the current evidence. First, there is insufficient data on cultural competence and communication styles among nurses working in high-pressure clinical settings such as EDs in the Gulf region. Second, many studies do not distinguish among aspects of cultural competence—such as awareness, behavior, patient-centered communication, self-assessment, and practice orientation—thereby limiting the ability to identify specific strengths and weaknesses within the nursing workforce. Third, little is known about how demographic and professional factors—such as age, education, years of experience, or nationality—affect these domain-level profiles of cultural competence and communication. These gaps hinder health systems' ability to develop targeted workforce strategies and policies. Addressing these gaps is of immediate policy and practical importance. At the system level, incorporating cultural competence into workforce strategies supports national health reforms and accreditation standards [14-16]. In Saudi Arabia, Vision 2030 emphasizes workforce development, patient-centered care, and quality improvement—all of which depend on effective, culturally competent communication between nurses and patients. At the organizational level, integrating cultural competence into recruitment, ongoing professional development, clinical guidelines, and quality assurance has been associated with improved patient outcomes and safety metrics [13,14,16,1718]. International accreditation bodies such as the Joint Commission International (JCI) also recognize cultural competence as a key standard for patient rights, safety, and satisfaction. Understanding which aspects of cultural competence and communication are most and least developed among ED nurses can guide targeted interventions, such as simulation-based training, mentorship programs, or audit-feedback mechanisms, to improve workforce readiness and promote equitable, high-quality care.

2. Materials and Methods

A cross-sectional descriptive design was used to assess domain-level cultural competence among emergency department nurses and to explore differences by demographic and professional characteristics. Cultural competence and patient-centered communication were measured using the Healthcare Provider Cultural Competence Instrument (HPCCI), a self-administered scale designed to evaluate healthcare providers' cultural competence across multiple domains—including awareness and sensitivity, behavior, patient-centered communication, self-assessment, and practice orientation [18,19,23,24]. Prior studies in various healthcare settings have shown that HPCCI has good validity and reliability, including acceptable internal consistency for the main domains (Cronbach's α generally > 0.70) and support for its proposed factor structure [18,19,23,24]. In this study, the researcher confirmed strong content validity, and psychometric evaluation confirmed its construct validity through exploratory and confirmatory factor analyses, demonstrating the instrument's ability to measure leadership competencies accurately. Reliability coefficients of the HPCCI across its domains ranged from 0.85 to 0.93, indicating good consistency and stability across diverse nursing populations [39]. Permission to use the HPCCI was obtained from the developer. Internal consistency in this sample was acceptable (Cronbach's α overall = 0.91), consistent with prior studies using the HPCCI [18,19,22,23]. In this study, internal consistency reliability was assessed for each HPCCI domain using Cronbach's alpha in our sample of emergency department nurses, with coefficients as follows: awareness and sensitivity = α = .80; behavior = α = 86; patient-centered communication = α = 72; self-assessment = α = 86; and practice orientation = α = 92, indicating acceptable internal consistency in this context.

The study was conducted in the emergency departments of King Salman Hospital and King Saud Medical City, both government hospitals in Riyadh, Saudi Arabia. Eligibility criteria included registered nurses, both Saudi and non-Saudi, who were involved in direct patient care, had at least 1 year of experience, and were proficient in English. A convenience sampling method was used, which may introduce selection bias and limit the ability to generalize findings beyond similar government emergency department settings in Riyadh.

This study utilized a convenience sample of nurses from two large government emergency departments in Riyadh. Convenience sampling is susceptible to selection bias because participants who are accessible and willing to participate may differ systematically from those who are not, reducing the external validity of the results.

Additionally, both hospitals are situated in urban areas and operate within the Saudi government hospital system, so the levels of cultural competence observed here might not reflect those of nurses working in rural areas, private hospitals, or other regions of Saudi Arabia, where patient populations, resources, and organizational cultures differ. Lastly, the emergency department environment—characterized by high acuity, time pressure, and rapid patient turnover—may influence cultural competence differently than inpatient or primary care settings, further restricting the generalizability of our findings to other clinical environments. Nonetheless, the results are likely applicable to similar large, urban government emergency departments in Saudi Arabia and comparable Gulf regions.

Participants were recruited through unit managers who distributed study information and invitations to eligible nurses. Follow-up reminders were sent periodically to encourage participation. The secure online questionnaire was organized into clearly defined sections covering demographic information, cultural competence domains, and communication practices. Instructions emphasized voluntary participation and confidentiality. To ensure data quality, only fully completed questionnaires were included, while partial or ineligible responses were removed according to a predefined protocol. Data were de-identified before analysis to protect participant privacy. These steps aimed to minimize selection and response biases by promoting informed consent, maintaining anonymity, and implementing rigorous data-quality checks throughout the 27-week data collection period. Primary outcomes were HPCCI domain scores (awareness/sensitivity, behavior, patient-centered communication, self-assessment, and practice orientation). Covariates included gender, age group (25–30 vs. ≥31 years), education (associate/bachelor/master), and years of experience (<10 vs. ≥10).

Data analyses were conducted using IBM SPSS Statistics for Windows, Version 26.0 (IBM Corp., Armonk, NY, 2019). Descriptive statistics summarized participant characteristics and domain scores, while independent-samples t-tests and one-way ANOVA compared groups, applying Welch's correction when the assumption of equal variances was violated. It is important to clarify that the assumptions for parametric tests—such as normality of distributions and homogeneity of variances—were assessed before analysis through appropriate tests or graphical methods to ensure the validity of results. The handling of missing data should also be described; for example, whether cases with missing values were excluded listwise or if imputation techniques were used. Including these details enhances transparency and reproducibility by confirming that statistical assumptions were checked and missing data were managed properly. Effect sizes (Cohen's d with Hedges' g correction for two-group comparisons and η^2 for ANOVA) were interpreted using standard thresholds to supplement significance testing and provide practical insights. Findings from both descriptive and inferential analyses were integrated to develop policy-relevant recommendations for workforce planning, professional education, and quality improvement. Patterns in cultural competence domains across different demographic and professional subgroups were analyzed to identify priority areas for training, resource allocation, and organizational change. Ethical approval was obtained from the Institutional Review Board of King Saud University (KSU-HE-24-305; 21 March 2024). Participation was voluntary, with written informed consent obtained electronically. Confidentiality and anonymity were maintained; data were stored on a password-protected device accessible only to the research team.

3. Results

A total of 217 nurses completed the survey and were included in the analysis. Female nurses accounted for 74.2%, with only 25% male. Half of the participants were between 25 and 30 years old (45.2%), while a slightly larger proportion were 31 years or older (54.8%). Most participants held a bachelor's degree (58.1%), with smaller groups holding a master`s degree (22.6%) or an associate degree (19.4%). In terms of professional experience, the majority had 10 or more years of practice (80.6%), indicating a predominantly experienced nursing workforce. Participant demographics and professional characteristics are summarized in Table 1.

Table 1. Demographic characteristics of 217 nurses included in the cultural competency survey

Demographic characteristics	*N*	%
Gender		
Female	161	74.2
Male	56	25.8
Age (in years) group		
25 to 30	98	45.2
31 or older	119	54.8
Highest level of education		
Associates	42	19.4
Bachelors	126	58.1
Masters	49	22.6
Years of experience		
Less than 10	42	19.4
10 or more	175	80.6

The overall descriptive statistics for the cultural competence (HPCCI) domains are presented in Table 2, including means, standard deviations, observed ranges, and internal consistency. Practice orientation had the highest mean score (4.21 ± 0.50), while patient-centered communication scored the lowest (2.05 ± 0.83). Higher scores reflect greater competence.

Table 2: *HPCCI domain descriptive and reliability (N = 217)*

Subscales	α	Range	*M*	*SD*
Awareness and sensitivity	.80	2.56 to 5.00	3.78	.58
Behavior	.86	2.93 to 5.00	3.91	.44
Patient-centered communication	.72	1.00 to 3.00	2.05	.83
Self-assessment	.86	2.17 to 5.00	3.73	.82
Practice orientation	.92	3.00 to 5.00	4.21	.50

Note. The highest possible score for the practice orientation subscale was three. The highest possible score for all the other subscales was 5. Footnote. Higher scores indicate greater competence.

Between- group comparisons (sex, age, experience, role, education) were presented. Independent-samples t-tests were used for binary variables (sex, age group, years of experience, role), and one-way ANOVA was employed for education levels; Welch's tests were applied when assumptions were not met. Exact statistics, p- values, and effect sizes are shown in Table 3.

Sex. Male nurses scored higher in awareness/sensitivity than female nurses (4. 04 ± 0. 56 vs. 3. 70 ± 0. 57; Cohen's d = 0. 60, moderate; p <. .001). Differences in behavior, patient-centered communication, self-assessment, and practice orientation were small to trivial and not statistically significant.

Age group. Nurses aged 25–30 scored higher than those aged≥31 years in awareness/sensitivity (3. 97 ± 0. 56 vs. 3. 63 ± 0. 56; p <. .001; d = 0. 61, moderate) and in self- assessment (3. 87 ± 0. 75 vs. 3. 61 ± 0. 88; d = 0. 32, small to moderate; p =. .022). No meaningful differences were found for behavior, practice orientation, or patient- centered communication.

Years of experience. Nurses with less than 10 years of experience scored higher in awareness/sensitivity (4. 13 ± 0. 68 vs. 3. 70 ± 0. 53; d = 0. 77, moderate- large; p <. 001) and in patient- centered communication (2. 33 ± 0. 52 vs. 1. 98 ± 0. 88; d = 0. 42, small to moderate; p =. 014), while those with 10 or more years scored higher in behavior (4.13. 3.70 ± 0. 41 vs. 3. 3.94 ± 0.41. 0.58; d = 0. 38, small to moderate; p =. .028). Other domains showed no significant differences.

Role. Compared to RNs, other roles showed small advantages in awareness/sensitivity (d ≈ = 0.42), behavior (d = 0.27), self-assessment (d = 0.24), and practice orientation (d = 0.28); these differences were not statistically significant. Patient-centered communication differences were trivial (d = 0. 04).

Education. There were no significant differences among groups in awareness/sensitivity, behavior, self-assessment, or practice orientation. However, patient-centered communication differed across education levels ($F = 2.60$, $p < .05$; $\eta^2 = 0.004$, small), with master's-prepared nurses reporting the highest mean.

Patterns in cultural competence identified key areas for workforce development and education. Lower scores in patient-centered communication, especially among nurses with more experience and less education, highlight the need for targeted communication training and continuous quality improvement efforts to enhance equitable, patient-focused care.

Table 3. Between-group comparisons of HPCCI domains (sex, age, experience, role, education)

All values are means ± SD. Two-group contrasts report Cohen's d (pooled SD) with qualitative magnitude. Education uses one-way ANOVA with η^2.

Factor / Comparison	Domain	Group 1 (n, M±SD)	Group 2 / 3 (n, M±SD)	Test	p	Effect size (d) or (η^2)	Magnitude
Sex (Male vs Female) ($N = 56$) Vs ($N = 161$)	Awareness & sensitivity	Male (n=56), 4.04 ± 0.56	Female (n=161), 3.70 ± 0.57	t-test -1.49	< .001	0.60	moderate
	Behavior	Male (n=56), 3.92 ± 0.42	Female (n=161), 3.90 ± 0.46	t-test -.07	ns	0.04	trivial
	Patient-centered communication	Male (n=56), 2.19 ± 0.65	Female (n=161), 2.00 ± 0.89	t-test -.54	ns	0.23	small
	Self-assessment	Male (n=56), 3.60 ± 0.76	Female (n=161), 3.77 ± 0.85	t-test .48	ns	-0.21	small
	Practice orientation	Male (n=56), 4.17 ± 0.66	Female (n=161), 4.27 ± 0.45	t-test .48	ns	-0.20	trivial
Age (25–30 vs ≥31) ($N = 98$) Vs ($N = 119$)	Awareness & sensitivity	25–30 (n=98), 3.97 ± 0.56	≥31 (n=119), 3.63 ± 0.56	t-test 1.65	< .001	0.61	moderate
	Behavior	25–30 (n=98), 3.91 ± 0.54	≥31 (n=119), 3.90 ± 0.36	t-test .05	ns	0.02	trivial

	Patient-centered communication	25–30 (n=98), 2.04 ± 0.69	≥31 (n=119), 2.06 ± 0.95	t-test -.08	ns	-0.02	trivial
	Self-assessment	25–30 (n=98), 3.87 ± 0.75	≥31 (n=119), 3.61 ± 0.88	t-test .88	.022	0.32	small
	Practice orientation	25–30 (n=98), 4.24 ± 0.41	≥31 (n=119), 4.24 ± 0.57	t-test -.02	ns	0.00	trivial
Experience (<10 vs ≥10) $(N = 42)$ Vs $(N = 175)$	Awareness & sensitivity	<10 years (n=42), 4.13 ± 0.68	≥10 years (n=175), 3.70 ± 0.53	t-test 1.67	< .001	0.77	moderate
	Behavior	<10 years (n=42), 3.77 ± 0.58	≥10 years (n=175), 3.94 ± 0.41	t-test -.84	.028	-0.38	small
	Patient-centered communication	<10 years (n=42), 2.33 ± 0.52	≥10 years (n=175), 1.98 ± 0.88	t-test .93	.014	0.42	small
	Self-assessment	<10 years (n=42), 3.67 ± 0.94	≥10 years (n=175), 3.74 ± 0.81	t-test -.19	ns	-0.08	trivial
	Practice orientation	<10 years (n=42), 4.20 ± 0.46	≥10 years (n=175), 4.25 ± 0.52	t-test -.20	ns	-0.10	trivial
Role (Other vs RN)	Awareness & sensitivity	Other (n=49), 3.97 ± 0.38	RN (n=175), 3.73 ± 0.62	t-test	ns	0.42	small
	Behavior	Other (n=49), 4.00 ± 0.54	RN (n=175), 3.88 ± 0.42	t-test	ns	0.27	small
	Patient-centered communication	Other (n=49), 2.07 ± 0.35	RN (n=175), 2.04 ± 0.93	t-test	ns	0.04	trivial
	Self-assessment	Other (n=49), 3.88 ± 0.52	RN (n=175), 3.68 ± 0.89	t-test	ns	0.24	small
	Practice orientation	Other (n=49), 4.35 ± 0.43	RN (n=175), 4.21 ± 0.52	t-test	ns	0.28	small
Education (Assoc/Bach/Mast)	Awareness & sensitivity	Assoc: 3.61 ± 0.93	Bach: 3.80 ± 0.50; Mast: 3.90 ± 0.42	ANOVA (F=.41)	ns	η^2=0.004	small/negligible
	Behavior	Assoc: 3.85 ± 0.29	Bach: 3.90 ± 0.53; Mast: 3.97 ± 0.32	ANOVA (F=.12)	ns	η^2=0.001	trivial
	Patient-centered communication	Assoc: 1.50 ± 1.38	Bach: 2.06 ± 0.64; Mast: 2.50 ± 0.41	ANOVA (F=2.60)	< .05	η^2=0.024	small

Self-assessment	Assoc: 3.47 ± 1.02	Bach: 3.81 ± 0.83; Mast: 3.71 ± 0.69	ANOVA (F=.38)	ns	η^2=0.004	small/negligible
Practice orientation	Assoc: 4.07 ± 0.40	Bach: 4.27 ± 0.57; Mast: 4.32 ± 0.39	ANOVA (F=.42)	ns	η^2=0.004	small/negligible

Notes on effect size interpretation. Cohen's d: trivial (<0.20), small (=0.20–0.49), moderate (=0.50–0.79), large (≥0.80). For ANOVA, η^2 = 0.01, 0.06, 0.14 are typically considered small, medium, and large, respectively. "ns" = not statistically significant at α = .05 (two-tailed).

4. Discussion

The study finds a consistent pattern in nurses' cultural competence: organizational structures and attitudes appear more advanced than the micro-skills needed for patient-centered communication, especially in eliciting patients' perspectives and negotiating care plans. This imbalance is important because communication is the main way cultural competence is expressed in daily practice and directly affects patient experience, safety, and equity [14,20-23]. Rather than indicating a lack of commitment to culturally responsive care, the low patient-centered communication scores reveal a persistent "knowing–doing" gap. Nurses report a relatively strong practice orientation and awareness, but struggle with the subtle behaviors needed to explore sociocultural meanings of illness, language needs, and shared decision-making at the bedside. Consistent with earlier research, this pattern is observed in systems where policies and attitudes are established. Still, time constraints, documentation demands, and limited mentoring opportunities hinder high-quality dialogue with patients. According to Campinha-Bacote's model, the results suggest that awareness and knowledge are developing, but repeated, feedback-rich encounters and structured support are still necessary to turn skills and motivation into routine practice.

Age and experience patterns further refine this picture. Younger and early-career nurses demonstrate greater awareness and self-assessment, while more experienced nurses exhibit more consistent behavioral competence. This suggests complementary strengths rather than shortcomings: newer nurses may be more reflective and sensitive to diversity, whereas senior staff are better at translating intent into stable behaviors despite workload and organizational constraints. Instead of viewing these differences as personal flaws, they can be harnessed through mixed-experience team design, structured preceptorships, and peer coaching that intentionally pairs strong awareness with strong behavioral execution [14,23,25-27]. The minor and mostly insignificant differences by role, sex, and education level indicate a system-wide issue rather than a problem limited to specific demographic groups. Slight advantages for male nurses in awareness or for master's-prepared nurses in communication did not result in large, practice-relevant disparities. This pattern supports the need for broad, organization-level strategies—such as embedding cultural assessment prompts into admission procedures, integrating patient-centered communication behaviors into performance evaluations and quality dashboards, and offering unit-based coaching—rather than relying solely on degree-based or demographic targeting.

From a policy and workforce development perspective, the results highlight that generic cultural awareness sessions are unlikely to be sufficient. More effective strategies include simulation and scenario-based learning that allow nurses to practice difficult conversations, structured debriefing after challenging cross-cultural encounters, and leadership initiatives that ensure equitable access to training and psychologically safe feedback across roles and nationalities. Aligning these initiatives with institutional priorities—such as patient experience metrics, safety indicators, and accreditation standards—can help sustain behavior change rather than achieve temporary improvement. Overall, the findings contribute to the literature by clarifying that the main vulnerability in cultural competence is not in attitudes or structures but in how patient-centered communication is enacted. They also demonstrate how patterns related to age and experience can be reframed as opportunities for intentional team-based learning [28,30]. Based on the study objectives, the results support

a shift from viewing cultural competence as an individual trait to understanding it as a relational and organizational capability that requires development through targeted communication skills training, supportive work environments, and integrated quality improvement efforts. This perspective aims to inform concrete policies and curricula that strengthen culturally competent nursing practice and ultimately improve care for diverse patient populations [25,31-34]. To generate policy-relevant insights for workforce development, professional education, and quality improvement initiatives, the study translated statistical results into practical, workforce-relevant insights. It examined effect sizes alongside significance levels. The findings revealed that demographic and professional groups differed significantly in cultural competency and identified priority areas for workforce development, including targeted training for nurses with lower educational backgrounds or limited experience. Incorporating these findings within the context of organizational needs directly informs competency-based development, professional education, and quality improvement efforts [36, 37, 40]. Implications extend beyond generic training. At policy/management levels, embedding patient-centered communication micro-skills into standards, Key Performance Indicators (KPIs), and quality-safety dashboards can sustain gains [24, 33–35].

At the practice level, unit-based coaching, brief cultural assessment prompts, and feedback/debriefing after challenging encounters can strengthen enactment. At the workforce level, mixed-experience rostering and structured preceptorships leverage complementary strengths (awareness versus behavioral reliability). At the education level, simulation-based and scenario-driven learning (including VR) can provide safe, repeatable practice to build fluency [36,37]. Equity and empowerment: where structural empowerment is uneven (e.g., by nationality or role), organizations should ensure equitable access to training and psychologically safe feedback mechanisms to avoid reproducing disparities in competence development [24,31]. System readiness: because the effects of education by degree level were small ($\eta^2 = 0.024$ for communication; others negligible), system-wide in-service approaches rather than degree-based targeting are most efficient. As a result, these findings translate into clear policy directions for workforce development and quality improvement. Because communication deficits were system-wide and educational effects were small, organizations should prioritize universal in-service training focused on patient-centered communication micro-skills, supported by mixed-experience team rostering, structured preceptorship, and embedding cultural communication indicators into performance appraisal and quality dashboards to sustain practice change.

This study has some limitations that must be acknowledged when explaining the findings. First, the use of a cross-sectional design limits the ability to infer causality between demographic or professional characteristics and levels of cultural competence. Second, reliance on self-reported data may introduce response bias, including social desirability effects and overestimation of competence, particularly in patient-centered communication. Third, although the sample size was sufficient for statistical analysis, participants were drawn from a specific national and institutional context, which may restrict the generalizability of the results to other healthcare systems or cultural settings. Fourth, the lack of qualitative or observational components limited the depth of understanding of contextual influences and the behavioral expressions of competence. Finally, potential confounders such as institutional support, workload, or prior cultural training were not controlled. Future research employing longitudinal, multisite, and mixed-method approaches is recommended to address these limitations and enhance external validity, thereby deepening the understanding of cultural.

5. Conclusion

This descriptive cross-sectional study found that nurses reported relatively strong cultural competence in awareness, sensitivity, behavior, self-assessment, and practice orientation. At the same time, competencies related to patient-centered communication were comparatively underdeveloped, as evidenced by the lowest mean score among the HPCCI domains. Differences between groups based on sex, age, experience, role, and education were generally small to moderate, suggesting that shared professional and organizational environments have a greater influence on cultural competence than demographic factors alone. Overall, the findings highlight a gap between cultural awareness and intention and the consistent application of culturally

responsive, patient-centered communication in practice. Based on these results, healthcare organizations should focus on targeted interventions that directly improve the weakest domain identified—patient-centered communication. Structured cultural communication training could be incorporated into ongoing education programs, using scenario-based learning, role-playing, and formative feedback, with clear, measurable outcomes such as improved HPCCI patient-centered communication scores, patient satisfaction ratings, and indicators of treatment adherence and equity in care. Nurse leaders can support these efforts by encouraging reflective practice sessions, debriefings of challenging intercultural encounters, peer coaching focused on observable communication behaviors, and monitoring unit-level trends in communication-related indicators over time.

At the policy level, integrating cultural competence and patient-centered communication metrics into performance appraisal systems, accreditation standards, and quality dashboards would align incentives with the specific skills identified as underdeveloped in this workforce. Future research should explore the long-term effects of such targeted communication strategies on professional performance and patient outcomes, including satisfaction, adherence, and equitable healthcare delivery, using longitudinal and mixed-method approaches to capture both measurable changes and detailed contextual insights. In summary, this study contributes to nursing practice and cultural competence research by demonstrating that nurses' basic cultural attitudes and practice orientations are relatively strong. At the same time, patient-centered communication remains an important area for improvement. It also identifies clear, measurable goals for education, leadership, and policy efforts to improve culturally responsive care in diverse healthcare environments.

Abbreviations

HPCCI	Healthcare Provider Cultural Competence
CSES	Cultural Self-Efficacy Scale
KPI	Key Performance Indicator

Declarations

Ethics approval and consent to participate

Ethical approval for this descriptive cross-sectional study was obtained from the Institutional Review Board of King Saud University (KSU-HE-24-305 on March 21, 2024). Written informed consent was obtained from the participating nurses before the study commenced. The consent form included details on the nature, purpose, and other relevant aspects of this descriptive cross-sectional study before participants were recruited. Participants were informed that their participation was voluntary and that they had an equal opportunity to participate. Additionally, they were assured that their data would be kept confidential and their anonymity preserved. Participant information was stored on a password-protected computer belonging to the researcher.

Consent for publication

The author confirms that the work described has not been published before and is not under consideration for publication elsewhere.

Availability of data and materials

The datasets analyzed during the current study are not publicly available due to ethical restrictions.

Competing interests

The author confirms that there are no conflicts of interest to declare regarding this article.

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Author`s contribution

The author confirms sole responsibility for the following: study conceptualization, data curation, formal analysis (SPSS version 26.0), data collection, creating methodology, project management, preparation, visualization, writing-original draft, reviewing & editing, critical review, publication process, and post-publication stages.

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