

Assessing cultural competence and factors affecting it among nurses in tertiary care hospitals in Peshawar: A cross-sectional study

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Abstract

Objective: To evaluate the levels of cultural competence among nurses, and to identify the influencing factors.

Method: The cross-sectional study was conducted from May 10 to November 28, 2024, in Peshawar, Pakistan, and comprised nurses of either gender from both private and government tertiary care hospitals having professional experience of at least four months. Data was collected using a structured questionnaire. Data was analysed using SPSS 26.

Result: Of the 337 nurses with mean age 27.26 ± 4.81 years (range: 21-50 years), 187(55.5%) were male and 150(44.5%) were female. Overall, 317(94%) nurses showed high cultural competence, with scores ranging 76-100%, followed by 18(5.3%) having moderate cultural competence, with scores ranging 51-75%, and 2(0.6%) having low cultural competence, with scores ranging 1-50%. Factors influencing cultural competence were treating people from diverse cultural backgrounds ($p < 0.05$), and 295(87.5%) subjects noted institutional support for the development of cultural competence.

Conclusion: High level of cultural competence was noted among the nurses.

Keywords: Cultural competence, Nurses in Peshawar, Tertiary care hospitals in Peshawar, Peshawar. (JPMA 76: 1390; 2026)

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Introduction

Culture is defined as the totality of socially transmitted behavioural patterns, beliefs, values and lifeways of a particular group of people.¹ The prevailing definition of cultural competence the health sector describes it as an ongoing endeavour involving cultural awareness, knowledge, skill and encounters that emphasises healthcare providers' continuous efforts to effectively operate within their clients' cultural contexts.² Today, many countries are becoming increasingly culturally diverse as a result of migration and globalisation. The United States, for example, reported more than one million new immigrants in 2018 who originated primarily from China, India and Mexico.³ In China, there are 56 ethnic groups, with the Han people as the majority (91.5%) and 55 ethnic minorities accounting for 8.5% of the population.⁴ A study conducted in China showed that Chinese nurses self-rated cultural competence at a moderate level (mean score: 101.7 out of 145), which indicates that cultural training is necessary to improve cultural competence.⁵ Pakistan is also culturally diverse, with ethnic groups including Punjabis (44.7%),

Sindhis (14.1%), Pashtuns or Pakhtuns (15.42%, 2006 Census of Afghans in Pakistan), Mohajirs (7.57%) and Baluchis (3.57%).^{6,7} Highest rate of intra-migration out of Pakistani provinces is in Khyber Pakhtunkhwa (KP) (91%), while intermigration from Punjab to KP is 12%. Within KP, Peshawar is at top with intermigration 0.86% and intra-migration 11.51%, making it culturally diverse and suitable to check cultural competence.⁸ Cultural diversity requires health professionals to be aware of patients' cultural needs and to provide culturally appropriate healthcare services.⁹ The cultural competence of the participants in a study was in the "low to moderate" range, with relatively higher mean scores for the subscales of cultural awareness and cultural sensitivity, and relatively lower scores for the subscales of cultural knowledge and cultural skills, with the participants generally perceiving themselves as being "not culturally competent".¹⁰ Among the health professionals, it is especially important for the nurses to provide culturally competent care as they are at the forefront of the healthcare system. Nurses with high cultural competence levels can establish better cross-cultural communication with patients, which facilitates in assessing patients' needs, developing appropriate treatments, reducing healthcare disparities, and improving patient outcomes.¹¹

The current study was planned to evaluate the cultural competence of nurses, and to identify the influencing factors.

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Subjects and Methods

The analytical, cross-sectional study was conducted from May 10 to November 28, 2024, in Peshawar, Pakistan, and comprised nurses from Northwest General Hospital (NGH), Rehman Medical Institute (RMI), and the Khyber Teaching Hospital (KTH), representing both private and public tertiary care hospitals. Approval was obtained from the ethics review committee of Northwest School of Medicine, Peshawar. The inclusion criteria consisted of nurses with more than four months of working experience who were willing to participate, while nurses with less than four months of experience or those unwilling to participate were excluded. Nurses meeting the inclusion criteria from the aforementioned hospitals were approached for participation. Non-probability convenience sampling technique was used.

The outcome variable was cultural competence, measured through a self-reported questionnaire. Exposure and predictor variables included demographic factors, such as age, gender, experience and institutional affiliation, while potential confounders considered were work shift, race and type of hospital (public vs. private). To minimise bias, a structured questionnaire was used to ensure uniform data collection across the sample.

The World Health Organisation (WHO) formula¹² on estimating a single population proportion was used to calculate the sample size ($N = Z^2 P Q / d^2$) with level of confidence 95, Z 1.96, prevalence estimate (P) 0.30 based on the existing literature,¹³ Q 1, and margin of error (d) 0.05. To compensate for potential non-response, the sample size was inflated by 5%.

The self-reported questionnaire had three sections: demographic data, cultural competence assessment (five questions), and factors influencing cultural competence (10 questions). To make the questionnaire clear, understandable and context-aware, a previously-validated instrument was used³ and it was subsequently tested in a pilot sample of 20 nurses. In this phase, small linguistic changes were incorporated to cover local terms and practices in healthcare. Cronbach alpha value was used to test the internal consistency of the questionnaire, and it was found to be satisfactory (0.78). Cultural competence scores were categorised as low (1-50%), moderate (51-75%) and high (76-100%) in line with literature.^{5,14}

Data was analysed using SPSS 26. Frequencies and percentages were used to report categorical variables, whereas continuous variables were reported as mean $\pm$ standard deviation. Cultural competence scores were reported using the non-parametric measures, such as median and interquartile range (IQR). Chi-square test of

independence was used to analyse the association of categorical variables with the levels of cultural competence. Proportional confidence intervals (CIs) were computed using the exact binomial technique. The level of missing data was low (<2%) and was addressed with deletion in the pairwise phase. $P < 0.05$ was considered statistically significant.

Results

Of the 400 nurses approached, 63(15.75%) did not participate citing time constraints. Of the 337(84.25%) nurses with mean age 27.26 ± 4.81 years (range: 21-50 years) who participated, 187(55.5%) were male and 150(44.5%) were female. In terms of ethnicity, 254(75.4%) nurses were Pathan, followed by Chitrali 63(18.7%), Punjabi 12(3.6%), Hindko 4(1.2%), Saraiki 3(0.9%) and Balochi 1(0.3%). The majority of the participants had daytime shifts 252(74.8%), while 85(25.2%) had night shifts. A significant number of participants had <5 years of experience 226(67.1%), whereas 111(32.9%) had >5 years of experience. Majority of the participants were from the private sector 191(56.7%) compared to 146(43.3%) working in the public sector (Table 1).

Overall, 317(94%) nurses showed high cultural

Table-1: Demographic characteristics of the participants (n=337).

Variable	n (%)
Mean Age (years)	27.26 $\pm$ 4.81
Working Shift	
Day	252 (74.8)
Night	85 (25.2)
Gender	
Male	187 (55.5)
Female	150 (44.5)
Race	
Pathan	254 (75.4)
Punjabi	12 (3.6)
Balochi	1 (0.3)
Saraiki	3 (0.9)
Hindko	4 (1.2)
Chitrali	63 (18.7)
Experience	
Above 5 Years	111 (32.9)
Below 5 Years	226 (67.1)
Institution	
Public	146 (43.3)
Private	191 (56.7)

Table-2: Level of cultural competence among the nurses.

Levels of Cultural Competence	Frequency and Percentages
Low Cultural Competence (score: 1-50%)	2 (1%; 95% CI: 0.1-3.1%)
Moderate Cultural Competence (score: 51-75%)	18 (5%; 95% CI: 3.2-7.8%)
High Cultural Competence (scored: 76-100%)	317 (94%; 95% CI: 91.2-96.8%)

CI: Confidence interval.

Table-3: Factors influencing cultural competence [n (%)].

Always	Often	Sometimes	Rarely	Never
Factor 1: How often do you treat patients of different cultures?				
144 (42.7)	100 (29.7)	72 (21.4)	11 (3.3)	9 (2.7)
Factor 2: Is it more difficult to engage with/treat people from a different culture than your own?				
53 (15.7)	53 (15.7)	124 (36.8)	59 (17.5)	48 (14.2)
Factor 3: Do you think your cultural background makes some patients from different cultural backgrounds uncomfortable?				
47 (13.9)	46 (13.6)	76 (22.6)	74 (22.0)	94 (27.9)
Factor 4: Do you think that some patients of different cultures feel anxious/nervous around you during treatment?				
49 (14.5)	50 (14.8)	86 (25.5)	63 (18.7)	88 (26.1)
Factor 5: Are you fluent in English and Urdu when dealing with patients from other cultures?				
Yes	293 (86.9)			
No	43 (12.8)			
Factor 6: In your opinion, do you think that teaching undergraduate nursing students about cultural competency will bring betterment in the healthcare sector in the future?				
Yes	302 (89.6)			
No	35 (10.4)			
Factor 7: Do you think your institution has helped you build cultural competence skills?				
Yes	295 (87.5)			
No	42 (12.5)			
Factor 8: Have you taken any formal education regarding cultural competence (workshop or online webinars, etc.)?				
Yes	191 (56.7)			
No	146 (43.3)			
Factor 9: Do you have any experience of working in a multicultural setup before?				
Yes	221 (65.6)			
No	116 (34.4)			
Factor 10: Do you prefer watching dramas, films or documentaries in English/Urdu?				
Yes	305 (90.5)			
No	32 (9.5)			

competence, followed by 18(5.3%) having moderate cultural competence, and 2(0.6%) having low cultural competence (Table 2). The overall median score of the sample was 22.00 (IQR: 3.00).

The subjects identified 10 factors that influenced their cultural competence (Table 3).

Exposure to patients from different cultures and to English/Urdu media was significantly associated with cultural competence ($p < 0.05$) (Table 4).

Discussion

In the current study, 94% of the nurses scored between 76% and 100%, indicating that most of them had a high level of cultural competence. This high degree of proficiency may be attributed to the result of nursing education and practice, and incorporation of cultural competence training.^{14,15} The fact that <1% of the sample showed signs of inadequate cultural competence highlighted how successful these initiatives had been.

A study in 2021 found that the majority of nurses displayed moderate cultural competence with the average score of 101.7 and the total score ranged 29-145.⁵ The majority of the current participants (42.7%) consistently handled patients from diverse cultures, which may explain the

higher score in the study. Other possible explanations include variations in institutional policy, training opportunities, and cultural exposure. Literature suggests that frequent interaction with culturally varied populations promotes cultural sensitivity and communication skills, which is consistent with the improved competence levels that were likely a result of the exposure to diverse patients.¹⁶

Červený M et al. in 2020 showed that 5% of the nurses were categorised as culturally incompetent, which contrasts with the <1% of nurses in the current study.¹⁷ The differences in access to cultural competence training and the overall emphasis on cultural competence in the healthcare curriculum could account for this variance. In areas where there are less established training programmes or opportunities for cross-cultural encounters, nurses may find it difficult to acquire the skills needed to effectively manage cultural differences.

Similar to a 2018 study, which found no significant correlations for demographic factors, like age, gender, or years of experience, with the levels of cultural competence, the demographic characteristics of the nurses in the current study did not directly correlate with their level of cultural competence.¹⁸ The average age of the current participants was 27.26 years, and 67.1% of them had <5 years of experience. A significant percentage of these individuals nevertheless showed high levels of cultural competence in spite of their minimal professional experience, indicating that younger nurses and those who are just entering the field are probably getting the necessary training in this area early in their careers.

The findings of the study provide an understanding of the factors impacting cultural competency among healthcare practitioners. The frequency of treating patients from other cultures had a significant association with cultural competence levels ($p < 0.001$). This accords with current literature emphasising the necessity of regular intercultural exchanges in developing competence.¹⁹ The respondents with high cultural competence were more inclined to serve patients from diverse cultures "always" or "often," supporting the theory that increased exposure leads to better ability to cope with patients with different cultures.²⁰

Table-4: Association of different factors with cultural competence [n (%)].

Factor & Category	Categories	Low	Moderate	High	Total	p-value
Frequency of treating patients from different cultures						< 0.001
	Always	0 (0.0)	4 (2.8)	140 (97.2)	144 (100)	
	Often	0 (0.0)	5 (5.0)	95 (95.0)	100 (100)	
	Sometimes	1 (1.4)	7 (9.7)	64 (88.9)	72 (100)	
	Rarely	1 (9.1)	2 (18.2)	8 (72.7)	11 (100)	
	Never	0 (0.0)	0 (0.0)	9 (100.0)	9 (100)	
Difficulty engaging/treating patients from different cultures						> 0.05
	Always	0 (0.0)	3 (5.7)	50 (94.3)	53 (100)	
	Often	0 (0.0)	4 (7.5)	49 (92.5)	53 (100)	
	Sometimes	1 (0.8)	7 (5.6)	116 (93.6)	124 (100)	
	Rarely	1 (1.7)	2 (3.4)	56 (94.9)	59 (100)	
	Never	0 (0.0)	2 (4.2)	46 (95.8)	48 (100)	
Perception that owns cultural background makes patients uncomfortable						> 0.05
	Always	0 (0.0)	3 (6.4)	44 (93.6)	47 (100)	
	Often	0 (0.0)	3 (6.5)	43 (93.5)	46 (100)	
	Sometimes	1 (1.3)	5 (6.6)	70 (92.1)	76 (100)	
	Rarely	1 (1.4)	3 (4.1)	70 (94.5)	74 (100)	
	Never	0 (0.0)	4 (4.3)	90 (95.7)	94 (100)	
Patients feel anxious/nervous during treatment						> 0.05
	Always	0 (0.0)	3 (6.1)	46 (93.9)	49 (100)	
	Often	0 (0.0)	4 (8.0)	46 (92.0)	50 (100)	
	Sometimes	1 (1.2)	5 (5.8)	80 (93.0)	86 (100)	
	Rarely	1 (1.6)	3 (4.8)	59 (93.6)	63 (100)	
	Never	0 (0.0)	3 (3.4)	85 (96.6)	88 (100)	
Fluency in English and Urdu						> 0.05
	Yes	1 (0.3)	15 (5.1)	277 (94.6)	293 (100)	
	No	1 (2.3)	3 (7.0)	39 (90.7)	43 (100)	
Teaching cultural competence to undergraduate nursing students						> 0.05
	Yes	1 (0.3)	16 (5.3)	285 (94.4)	302 (100)	
	No	1 (2.9)	2 (5.7)	32 (91.4)	35 (100)	
Institutional support in building cultural competence						> 0.05
	Yes	1 (0.3)	15 (5.1)	279 (94.6)	295 (100)	
	No	1 (2.4)	3 (7.1)	38 (90.5)	42 (100)	
Formal education/training in cultural competence						> 0.05
	Yes	1 (0.5)	12 (6.3)	178 (93.2)	191 (100)	
	No	1 (0.7)	6 (4.1)	139 (95.2)	146 (100)	
Experience working in a multicultural setup						> 0.05
	Yes	0 (0.0)	10 (4.5)	211 (95.5)	221 (100)	
	No	2 (1.7)	8 (6.9)	106 (91.4)	116 (100)	
Preference for English/Urdu media						0.044
	Yes	2 (0.7)	16 (5.2)	287 (94.1)	305 (100)	
	No	0 (0.0)	2 (6.3)	30 (93.7)	32 (100)	
Frequency of treating patients from different cultures						< 0.001
	Always	0 (0.0)	4 (2.8)	140 (97.2)	144 (100)	
	Often	0 (0.0)	5 (5.0)	95 (95.0)	100 (100)	
	Sometimes	1 (1.4)	7 (9.7)	64 (88.9)	72 (100)	
	Rarely	1 (9.1)	2 (18.2)	8 (72.7)	11 (100)	
	Never	0 (0.0)	0 (0.0)	9 (100.0)	9 (100)	
Difficulty engaging/treating patients from different cultures						> 0.05
	Always	0 (0.0)	3 (5.7)	50 (94.3)	53 (100)	
	Often	0 (0.0)	4 (7.5)	49 (92.5)	53 (100)	
	Sometimes	1 (0.8)	7 (5.6)	116 (93.6)	124 (100)	
	Rarely	1 (1.7)	2 (3.4)	56 (94.9)	59 (100)	
	Never	0 (0.0)	2 (4.2)	46 (95.8)	48 (100)	
Perception that owns cultural background makes patients uncomfortable						> 0.05
	Always	0 (0.0)	3 (6.4)	44 (93.6)	47 (100)	
	Often	0 (0.0)	3 (6.5)	43 (93.5)	46 (100)	
	Sometimes	1 (1.3)	5 (6.6)	70 (92.1)	76 (100)	
	Rarely	1 (1.4)	3 (4.1)	70 (94.5)	74 (100)	
	Never	0 (0.0)	4 (4.3)	90 (95.7)	94 (100)	

Continued on next Column

Table-4: Continued from previous column.

Factor & Category	Categories	Low	Moderate	High	Total	p-value
Patients feel anxious/nervous during treatment						> 0.05
	Always	0 (0.0)	3 (6.1)	46 (93.9)	49 (100)	
	Often	0 (0.0)	4 (8.0)	46 (92.0)	50 (100)	
	Sometimes	1 (1.2)	5 (5.8)	80 (93.0)	86 (100)	
	Rarely	1 (1.6)	3 (4.8)	59 (93.6)	63 (100)	
	Never	0 (0.0)	3 (3.4)	85 (96.6)	88 (100)	
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	No	1 (2.3)	3 (7.0)	39 (90.7)	43 (100)	
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	Yes	1 (0.3)	15 (5.1)	279 (94.6)	295 (100)	
	No	1 (2.4)	3 (7.1)	38 (90.5)	42 (100)	
Formal education/training in cultural competence						> 0.05
	Yes	1 (0.5)	12 (6.3)	178 (93.2)	191 (100)	
	No	1 (0.7)	6 (4.1)	139 (95.2)	146 (100)	
Experience working in a multicultural setup						> 0.05
	Yes	0 (0.0)	10 (4.5)	211 (95.5)	221 (100)	
	No	2 (1.7)	8 (6.9)	106 (91.4)	116 (100)	
Preference for English/Urdu media						0.044
	Yes	2 (0.7)	16 (5.2)	287 (94.1)	305 (100)	
	No	0 (0.0)	2 (6.3)	30 (93.7)	32 (100)	

However, there were no significant relationship between difficulty engaging with patients from other cultures ($p>0.05$) or whether respondents' cultural background made patients uncomfortable ($p>0.05$). These findings contradict those of a previous study that found perceived impediments, such as discomfort in cross-cultural encounters, to have a detrimental impact on competence ($p<0.001$).²¹ There was no significant correlation found between fluency in English and Urdu ($p>0.05$), challenging the assumption that language proficiency is a key determinant of cultural competence.²² Teaching cultural competence to undergraduate nursing students did not have a significant influence on the healthcare industry ($p>0.05$). This contradicted research that supports for formal education as a vital component of cultural competence training.²³ However, prior intercultural experience showed a significant association with cultural competence ($p=0.044$), implying that hands-on experience in varied situations is a more influential element in establishing cultural competence.²⁴ Overall, the current study demonstrated that direct intercultural experience, rather than formal training or language fluency, was more important for building cultural competency in healthcare settings.

Even with the high reported levels of competence, there are still certain difficulties in communicating with patients from different cultural origins, with 15.7% of the current nurses saying they had trouble interacting with patients from different cultures on a regular basis, and 36.8% reporting trouble doing so occasionally. These results are

comparable to those of a 2022 study, which revealed that one of the major barriers to achieving cultural competence was differences in culture and ethnic backgrounds.²⁵

An essential component of a nurse's capacity to provide culturally appropriate care is language competence.²⁶ In the current study, 86.9% of the nurses said they could communicate with patients from a variety of backgrounds because they were fluent in both Urdu and English. The fact that healthcare in Pakistan is bilingual — both English and Urdu are commonly spoken — may account for the higher rate in the study.

The study's dependence on self-reported data, which could introduce bias since individuals might overestimate their cultural competency, is one of its main limitations. Perceived cultural competence may differ from patient-reported experiences and self-reported competence may not reflect actual clinical behaviour. Furthermore, because the study was limited to a single area, its findings may not be applied to other contexts with distinct cultural dynamics. To improve representativeness, multi-site studies with a range of healthcare settings should be the emphasis of future research. To evaluate the long-term effects of formal cultural competence training on patient outcomes, longitudinal studies are also recommended. A more thorough assessment of cultural competence in nursing practice might be obtained by including patient feedback or direct observation techniques.

Conclusion

The cultural competency among the nurses was high, with critical elements, such as frequency of treating patients of other cultures and prior intercultural experience, playing a significant role. Even with these advantages, there were still difficulties in regularly interacting with patients from different cultural backgrounds.

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IK & MMA: Concept, design, data collection analysis, interpretation, drafting, revision, final approval and agreement to be accountable for all aspects of the work.

NQ: Supervision, expert guidance, writing, scientific integrity, review, final approval and agreement to be accountable for all aspects of the work.

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