**Cultural competence assessment of healthcare clinical graduates, India**

**Parvathy Balachandran1 Devika Maya Krishna2 Chandrashekar Janakiram3\***

Parvathy Balachandran BDS

Resident,

Amrita Vishwa Vidyapeetham,

Amrita School of Dentistry,

Kochi, Kerala - 682041, India.

Email: [parvathysree7@gmail.com](mailto:parvathysree7@gmail.com)

Contact no:+918129153947

Devika Maya Krishna

BDS student

Amrita Vishwa Vidyapeetham,

Amrita School of Dentistry,

Kochi, Kerala - 682041, India.

Email: [devikrishna693@gmail.com](mailto:devikrishna693@gmail.com)

Contact no: +919447391077

Chandrashekar Janakiram PhD MDS MSc

Professor,

Amrita Vishwa Vidyapeetham,

Amrita School of Dentistry,

Kochi, Kerala - 682041, India.

Email: [sekarcandra@gmail.com](mailto:sekarcandra@gmail.com)

Contact no: +919481789572

**Corresponding author:**

Chandrashekar Janakiram PhD MDS MSc

Professor,

Amrita Vishwa Vidyapeetham,

Amrita School of Dentistry,

Kochi, Kerala - 682041, India.

Email: sekarcandra@gmail.com

Contact no: +919481789572

**Running title:** Assessment of cultural competence

**Ethics statement**

The authors do not have any financial or other competing interests to declare

**Abstract**

Cultural competence of healthcare professionals has a vital role in healthcare system. The first step towards this orientation, is the assessment of cultural competence level of clinical graduate students. Objective of the study was to assess the cultural competence of clinical graduate students of various courses in a healthcare university, Kerala, India. A cross-sectional study was conducted among 398 clinical graduate students in a healthcare university in Kerala, India. The self – administered questionnaire had 27 items adapted from various validated scales. Data analysis was done by analysis of variance (ANOVA) using SPSS software (version 20). Overall mean of the responses ranged from 2.81 (CI: 2.70 – 2.93) to 4.50 (CI: 4.43 – 4.57). ANOVA revealed statistically significant differences between the courses in competencies related to specific competencies. Our findings suggest that cultural competence of healthcare graduates can be improved by incorporating cultural competence training in the curriculum.

**Keywords**

Cultural competency; Culturally competent care; Health occupations students; Curriculum; India

**Introduction**

Health is a fundamental aspect of an individual’s life. Factors that have direct as well as indirect bearing on health and disease, therefore, must be critically evaluated and reinforced for positive outcomes. With the growing inclination towards globalization and patient centric healthcare delivery, cultural background of patients is emerging as an important domain in healthcare system. This reform also reflects the transition from the conventional paternalistic attitude of caregivers to a more patient - tailored approach.

Health is a cultural construct. Culture is defined as “a concept including knowledge, belief, arts, morals, law, custom, and any other capabilities and habits acquired by human beings as a member of society”(1) . Within the purview of healthcare system, culture refers to “the integrated form of human behavior that relates to thoughts, communications, actions, customs, beliefs, values and institutions of a racial, ethnic, religious or social group that is relevant to everyone’s health care”(2).

Culture has a profound effect on the way a layman understands his/her illness, lifestyle and wellbeing. The meaning attributed to health and diseases by the healthcare professional and healthcare seeker is often divergent causing a negative treatment experience and poor treatment outcomes(3). An important challenge to healthcare providers is provision of culturally sensitive care because patients from different cultures have specific healthcare needs and expectations(4). Additionally, the difference in comprehension and judgements among the healthcare professional and patient, owing to preconceived notions and cultural experiences, can result in implicit bias. Therefore, an integration of cultural knowledge, attitudes and skills in the health professional’s clinical practice is an effective strategy to redress these issues(5).

Cultural competence is defined as “the ability to understand and work effectively with patients whose beliefs, values and histories differ from one’s own” (6). Globally, efforts have been made to incorporate cultural competence in healthcare training. Training programs designed for specific courses like nursing, pharmacy(7) ,dentistry(8,9) and physiotherapy are popular in many countries. Ironically, a richly diverse and densely populated country like India has limited efforts in this vital domain(2) . An important step towards filling this existing ‘cultural gap’ in healthcare is incorporating cultural competence enhancement programmes in the curricula of healthcare professionals. For this, an assessment of the cultural competence levels of the healthcare trainees is essential.

There are limited studies that assess the cultural competence of various healthcare professionals in India. Such studies might enable comparisons between the courses and aid in developing a curriculum as per the requirement of each course. The present study was designed to address this gap in literature by assessing the cultural competence of clinical graduates of various courses in a healthcare university.

**Methods**

A cross - sectional study was conducted among the clinical graduate students in a healthcare university in Kerala, India. Since we focused on graduate trainees who had clinical postings, third year and final year students of medical, dental, nursing and pharmacy courses as well as interns of medical and dental courses were eligible for the study. The study was approved by the Institutional Ethics Committee. The study was designed as a census survey and all clinical graduate students were invited to participate.

Based on literature review ,a questionnaire was developed combining various assessment scales (4,5,10,11).Consenting participants were administered the questionnaire through online mode. A google form comprising of participant information sheet, certificate of consent, demographic details of participants and questionnaire was sent to their respective email ids and social media like WhatsApp application. A reminder was mailed after two weeks to promote participation.

The questionnaire comprised of 27 items adapted from validated scales like cultural capacity scale(4) cultural awareness scale (5) and nurse cultural competence scale (11) to assess the cultural competence levels of the study participants. A five-point Likert scale, with values for responses ranging from strongly disagree to strongly agree, was used.

**Results**

Out of the 398 participants, females constituted 86.7% and males 13.3%. Majority were dental students (34.4%) followed by nursing (28.4%), medical (25.9%) and pharmacy (11.3%) students. Demographic details of the study participants are given in Table 1. Mean age of the participants was 21.29 (SD = 1.326). 94% of participants were from Kerala. 1.5% of participants were not interested to disclose their religion.

Mean score of responses to each item was assessed (Table 2.). Overall mean score of the responses was found to range from 2.81 (CI: 2.70 – 2.93) to 4.50 (CI: 4.43 – 4.57). Statistically significant difference was not observed between the courses for most items. The reference score of the Likert scale was taken as four (representing the score if the respondent ‘agreed’ with the listed competences). Only three items had a mean score equal to or greater than four. These items were role of communication skills while interacting with patients from diverse backgrounds (4.50 ± 0.73), assisting friends or colleagues in communication with patients (4.16 ± 0.76) and identification of the care needs of patients from diverse cultural background (4.00 ± 0.68) (Table 2.).

Medical students (4.75 ± 0.56) (Table 2.) reported a higher competence related to role of communication skills while interacting with patients from diverse cultural background. Medical students showed a lower competence level (2.65 ± 0.90) than others regarding eliciting information related to patient’s beliefs or behaviors. A statistically significant difference was found between medical students and students of nursing and pharmacy courses in their competence level related to assisting friends or colleagues in communicating with patients from diverse cultural and linguistic background (Table 2.).

Nursing students (3.79 ± 0.75) were competent in fulfilling the needs of patients from diverse cultural background than their medical counterparts (3.49 ± 0.77). Nursing students (3.74 ± 0.77) had higher competence in methods for collecting health and culture related information than dental (3.26 ± 0.96) and medical students (3.19 ± 0.97). Medical (4.20 ± 0.65) and dental (4.04 ± 0.63) students felt that it was essential to identify the care needs of patients from diverse cultural backgrounds (Table2.).

Medical students (3.06 ± 0.86) were less competent in explaining the possible relationships between health beliefs and patient culture. Nursing students (3.96 ± 0.72) had a higher competence in this regard than dental counterparts (3.39 ± 0.91). Pharmacy students (3.73 ± 0.78) exhibited a higher competence than others regarding discussing the patient’s differences in health beliefs and health care knowledge (Table2.).

Medical students (4.21 ± 0.74) utilized the help of bilingual - bicultural staff for effective patient communication than dental and nursing students. Compared to dental students, nursing students (3.75 ± 0.77) understood that patient’s religion and beliefs influence their response to disease and death (Table2.).

**Discussion**

According to Campinha – Bacote’s model of cultural competence in healthcare ,cultural competence is a lifelong process (12) . Since the participants belonged to diverse healthcare courses, states, mother tongues and religions; this study represents a comprehensive picture of cultural competence level of healthcare clinical graduates in India. Our study assessed the cultural competence of students using a self-administered questionnaire with 27 items.

We considered the value of four (corresponding to the response ‘agree’) of five-point Likert scale to be the ideal score in evaluating the responses. Out of the 27 items, only 3 items showed mean score greater than or equal to four. This was in relation to the overall responses irrespective of the course. These were the items related to competence in communication skills, language barriers and understanding care needs of patients (Table 2.).

Language barriers pose a significant challenge in communication with patients. Our study showed that medical students were comparatively competent than others in communication skills and utilizing the assistance of bilingual – bicultural staff for overcoming language barrier. However, they were less competent in eliciting patient information (Table 2.). Good communication skills have a positive impact on patient – caregiver interactions and patient satisfaction. The Institute of Medicine (IOM) report “ Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care” highlights the importance of language in improving communication with heterogeneous patients.(13). Systematic reviews recommend training of healthcare professionals to develop competent ,patient – centred communications(14).

Nursing students were found to be competent than their counterparts in collecting information and fulfilling the health care needs of multicultural patients. This competence is quite relevant in the context that certain diseases are presented by patients in a culturally appropriate manner owing to the stigma associated with them(15).This insight into the cultural aspect of symptom presentation should be followed by the healthcare providers efforts to discuss the differences in the patient’s beliefs and scientific knowledge. Such discussions enable dissipating common misbeliefs of patients. Pharmacy students were found to be competent in discussing such differences with patients(15).

Our results showed that each course was comparatively culturally competent than others in specific areas like fulfilling the needs of patients from other cultural backgrounds and understanding the influence of patient’s culture in their health beliefs. Since the 27 items of our questionnaire assessed the various aspects of cultural competence among the residents, the results suggest that there is a need for developing transcultural competence development of graduate trainees of all healthcare courses for reducing healthcare disparities concerning patients from diverse cultural backgrounds.Studies suggests that interdisciplinary cultural competence courses offered at early stages of healthcare training give better results than profession -centric training(16).

***Strengths and limitations***

This is the first study in Indian setting to compare the cultural competence of graduate students of diverse health streams within a campus. The sample consisted of participants from various states and cultures thereby providing a comprehensive assessment. Such an assessment enables review of the existing institutional policies and development of cultural competence training programmes to the residents. Deficiency of similar studies that compares the cultural competence of various healthcare streams of the same clinical setting has reduced our scope in results comparison. Such comparisons would have given a better understanding of the social and interdisciplinary implications of the proposed cultural competence curriculum integration. Social desirability bias is a possible limitation of this study.

**Conclusion**

Our study shows that the various healthcare streams had specific competencies while interacting with multicultural patients. Only three items showed an overall mean of greater than or equal to four, which was considered as the ideal score. This shows that there is a need for developing a cultural competence training programme for healthcare trainees for enhancement of their transcultural communications and healthcare services.

**Declaration of interest**

The authors do not have any financial or other competing interests to declare.

**References**

1. Kumar R, Bhattacharya S, Sharma N, Thiyagarajan A. Cultural competence in family practice and primary care setting. Journal of Family Medicine and Primary Care. 2019 Jan 1;8(1):1–4.

2. Dangmei J, Singh A. Embracing Cultural Competence to Reduce Disparities and Inequities in the Public Health Care Services of India. Asian Journal of Research in Business Economics and Management. 2017 Aug 1; 7:288–97.

3. Okoro ON, Odedina FT, Reams RR, Smith WT. Clinical Cultural Competency and Knowledge of Health Disparities Among Pharmacy Students. AJPE. 2012 Apr 10;76(3):40.

4. Cruz JP, Colet PC, Bashtawi MA, Mesde JH, Cruz CP. Psychometric evaluation of the Cultural Capacity Scale Arabic version for nursing students. Contemp Nurse. 2017 Feb;53(1):13–22.

5. Rew L, Becker H, Cookston J, Khosropour S, Martinez S. Measuring cultural awareness in nursing students. J Nurs Educ. 2003 Jun;42(6):249–57.

6. Capell J, Dean E, Veenstra G. The relationship between cultural competence and ethnocentrism of health care professionals. J Transcult Nurs. 2008 Apr;19(2):121–5.

7. Okoro O, Odedina F, Smith WT. Determining the Sufficiency of Cultural Competence Instruction in Pharmacy School Curriculum. AJPE. 2015 May 25;79(4):Article 50.

8. Holyfield LJ, Miller BH. A tool for assessing cultural competence training in dental education. J Dent Educ. 2013 Aug;77(8):990–7.

9. Alrqiq HM, Scott TE, Mascarenhas AK. Evaluating a Cultural Competency Curriculum: Changes in Dental Students’ Perceived Awareness, Knowledge, and Skills. Journal of Dental Education. 2015 Sep;79(9):1009–15.

10. Cultural Competency and Tuberculosis Care: A Guide for Self-Study and Self-Assessment | National Prevention Information Network | Connecting public health professionals with trusted information and each other [Internet]. [cited 2020 Nov 13]. Available from: https://npin.cdc.gov/publication/cultural-competency-and-tuberculosis-care-guide-self-study-and-self-assessment

11. Perng S-J, Watson R. Construct validation of the Nurse Cultural Competence Scale: a hierarchy of abilities. J Clin Nurs. 2012 Jun;21(11–12):1678–84.

12. Campinha-Bacote J. The Process of Cultural Competence in the Delivery of Healthcare Services: a model of care. J Transcult Nurs. 2002 Jul;13(3):181–4; discussion 200-201.

13. Formicola AJ, Stavisky J, Lewy R. Cultural Competency: Dentistry and Medicine Learning from One Another. Journal of Dental Education. 2003 Aug;67(8):869–75.

14. Shen MJ, Peterson EB, Costas-Muñiz R, Hernandez MH, Jewell ST, Matsoukas K, et al. The Effects of Race and Racial Concordance on Patient-Physician Communication: A Systematic Review of the Literature. J Racial Ethn Health Disparities. 2018 Feb;5(1):117–40.

15. Kundhal KK, Kundhal PS. Cultural Diversity: An Evolving Challenge to Physician-Patient Communication. JAMA. 2003 Jan 1;289(1):94.

16. Pecukonis E, Doyle O, Bliss DL. Reducing barriers to interprofessional training: Promoting interprofessional cultural competence. Journal of Interprofessional Care. 2008 Jan;22(4):417–28.

**Table 1: Characteristics of study participants**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sl No: | Variable | Subgroups | Total sample size | Proportion  (%) |
| 1 | Age | 19 | 14 | 3.5 |
| 20 | 121 | 30.4 |
| 21 | 106 | 26.6 |
| 22 | 80 | 20.1 |
| 23 | 50 | 12.6 |
| ≥24 | 27 | 6.78 |
| 2 | Gender | Male | 53 | 13.3 |
| Female | 345 | 86.7 |
| 3 | Course | Medical | 103 | 25.9 |
| Dental | 137 | 34.4 |
| Nursing | 113 | 28.4 |
| Pharmacy | 45 | 11.3 |
| 4 | Year of study | Third year | 235 | 59.0 |
| Fourth year | 111 | 27.9 |
| Internship | 52 | 13.1 |
| 5 | Domicile | Kerala | 374 | 94 |
| Tamil Nadu | 8 | 2.0 |
| New Delhi | 5 | 1.3 |
| Others | 11 | 2.8 |
| 6 | Mother tongue | Malayalam | 370 | 93 |
| Tamil | 12 | 3.0 |
| Hindi | 8 | 2.0 |
| Others | 8 | 2.0 |
| 7 | Religion | Hinduism | 307 | 77.1 |
| Christianity | 70 | 17.6 |
| Islam | 13 | 3.3 |
| Others | 2 | 0.5 |
| Not interested to disclose | 6 | 1.5 |
|  | Overall participants |  | 398 |  |

**Table 2: Comparison of mean and SD between the various courses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sl No.** | **Item** | **Mean ± Standard Deviation,95% Confidence Interval** | | | | |
| **Overall**  **(n=398)** | **Medicine (n=103)** | **Dentistry (n=137)** | **Nursing (n=113)** | **Pharmacy (n=45)** |
| **1** | I have experience of living in places other than my native state | 3.35 ± 1.38  (3.21 - 3.48) | 3.51 ± 1.46  **(**3.23 - 3.80) | 3.44 ±1.48  **(**3.19 - 3.69) | 3.12 ± 1.21  **(**2.90 - 3.35) | 3.27±1.21  **(**2.90 - 3.63) |
| **2** | Knowledge about cultural differences and similarities play an important role in diagnosis and treatment planning. | 3.91 ± 0.83  (3.83 - 3.99) | 4.04 ± 0.82  (3.88 - 4.20) | 3.92 ± 0.81  (3.78 - 4.06) | 3.79 ± 0.88  (3.62 - 3.95) | 3.87±0.79  (3.63 - 4.10) |
| **3** | Cultural differences and similarities influence the patient care | 3.71 ± 0.98  (3.61-3.81) | 3.83 ± 0.92  (3.66 - 4.01) | 3.78 ± 0.97  (3.62 - 3.94) | 3.53 ± 1.08  (3.33 - 3.73) | 3.67±0.85  (3.41 - 3.92) |
| **4** | Communication skills play an important role while interacting with the patients from diverse backgrounds | 4.50 ± 0.73  (4.43 - 4.57) | 4.75 ± 0.56  (4.64 - 4.86) | 4.48a ± 0.74  (4.36 - 4.61) | 4.35b ±0.79  (4.20 - 4.49) | 4.36c±0.77  (4.12 - 4.59) |
| **5** | Assist your friends / colleagues in communicating with patients from diverse cultural and linguistic background | 4.16 ± 0.76  (4.09 - 4.24) | 4.39 ± 0.58  (4.27 - 4.50) | 4.21 ± 0.81  (4.08 - 4.35) | 3.99b±0.83  (3.84 -4.15) | 4.16c±0.76  (4.09 - 4.24) |
| **6** | I can explain the influences of culture on patient’s health / illness related cultural knowledge | 3.72 ± 0.82  (3.64 -3.80) | 3.75 ± 0.78  (3.60 - 3.90) | 3.70 ± 0.86  (3.56 - 3.85) | 3.75±0.76  (3.61 - 3.89) | 3.62±0.91  (3.35 - 3.90) |
| **7** | Eliciting information about each patient’s beliefs/behaviour about health/illness is easy | 3.14 ± 0.99  (3.05 - 3.24) | 2.65 ± 0.90  (2.47 - 2.83) | 3.20a ± 1.06  (3.02 - 3.38) | 3.44b±0.88  (3.28 - 3.61) | 3.36c± 0.80  (3.11 - 3.60) |
| **8** | Familiarity in health or illness-related cultural knowledge is important | 3.97 ± 0.74  (3.90 - 4.04) | 4.08b ± 0.80  (3.92 - 4.23) | 4.09d ± 0.59  (3.99 - 4.19) | 3.77±0.79  (3.62 - 3.92) | 3.87±0.79  (3.63 - 4.10) |
| **9** | I know the methods or ways of collecting health, illness, and cultural related information | 3.42 ± 0.92  (3.33 - 3.51) | 3.19b ± 0.97  (3.00 - 3.38) | 3.26d ± 0.96  (3.09 - 3.42) | 3.74±0.77  (3.60 - 3.89) | 3.60±0.78  (3.37 - 3.83) |
| **10** | Comparison of the health or illness beliefs among patients with diverse cultural background plays an important role in patient care | 3.91 ± 0.69  (3.84 - 3.98) | 3.96 ± 0.79  (3.81 - 4.12) | 3.97 ± 0.59  (3.97 - 4.07) | 3.84 ± 0.69  (3.71 - 3.97) | 3.78 ± 0.67  (3.58 - 3.98) |
| **11** | Identifying the care needs of patients with diverse cultural backgrounds is essential | 4.00 ± 0.68  (3.94 - 4.07) | 4.20b ± 0.65  (4.08 - 4.33) | 4.04d ± 0.63  (3.94 -4.15) | 3.80 ± 0.77  (3.65 - 3.94) | 3.93 ± 0.45  (3.80 - 4.07) |
| **12** | When implementing healthcare activities, I can fulfil the needs of patients from diverse cultural backgrounds | 3.69 ± 0.76  (3.61 - 3.76) | 3.49b ±0.77  (3.34 - 3.63) | 3.74 ± 0.75  (3.62 - 3.87) | 3.79 ± 0.75  (3.65 - 3.93) | 3.73 ± 0.75  (3.51 - 3.96) |
| **13** | Possible relationships between the health/illness beliefs and culture of the patients can be easily explained | 3.42 ± 0.857  (3.34 - 3.51) | 3.06a ± 0.861  (2.89 - 3.23) | 3.39d ± 0.909  (3.23 - 3.54) | 3.69b ± 0.721  (3.56 - 3.82) | 3.71c ±0.661  (3.51- 3.91) |
| **14** | Patient’s cultural background is important in establishing healthcare goals | 3.80 ± 0.88  (3.71 - 3.89) | 3.93 ± 0.89  (3.76 - 4.11) | 3.72 ± 0.92  (3.56 - 3.87) | 3.85 ± 0.78  (3.70 - 4.00) | 3.62 ± 0.88  (3.33 - 3.92) |
| **15** | When caring for patients from different cultural backgrounds, my behavioural response will not usually differ much from the patient’s cultural norms | 3.52 ± 0.93  (3.42 - 3.61) | 3.47 ± 1.05  (3.26 - 3.67) | 3.49 ± 0.97  (3.32 - 3.65) | 3.49 ± 0.80  (3.34 - 3.64) | 3.78 ±0.77  (3.55 - 4.01) |
| **16** | I usually discuss differences between the patient’s health beliefs/behaviour and health care knowledge with each patient | 3.24 ± 1.02  (3.14 - 3.34) | 3.10c ± 0.91  (2.92 - 3.28) | 3.20e ± 1.07  (3.02 - 3.38) | 3.23f ± 1.09  (3.03 - 3.43) | 3.73±0.78  (3.50 - 3.97) |
| **17** | Inability to speak the language of the dominant culture (Malayalam) has no impact on the ability of patients to communicate effectively in their language | 2.81 ± 1.15  (2.70 - 2.93) | 2.22abc± 1.16  (2.00 - 2.45) | 2.72d ± 1.15  (2.52 - 2.91) | 3.27 ± 0.89  (3.10 - 3.43) | 3.33e±0.98  (3.04 - 3.63) |
| **18** | Utilize the help of bilingual-bicultural staff to communicate about treatments and other related events to patients of diverse linguistic background | 3.93 ± 0.75  (3.86 - 4.01) | 4.21 ± 0.74  (4.07 - 4.36) | 3.93a ± 0.73  (3.80 - 4.05) | 3.69b ± 0.75  (3.55 - 3.83) | 3.93 ± 0.58  (3.76 - 4.11) |
| **19** | For improved communication with patients and their families who are less proficient in Malayalam, I attempt to learn and speak key words of their language | 3.97 ± 0.72  (3.90 - 4.05) | 4.08 ± 0.76  (3.93 -4.23) | 3.93 ± 0.73  (3.80 - 4.05) | 3.95 ± 0.69  (3.82 - 4.08) | 3.96 ± 0.64  (3.76 - 4.15) |
| **20** | Attempts to understand any familial conversations of patient about their cultural practices that may influence the treatment and related healthcare services | 3.72 ± 0.81  (3.64 - 3.80) | 3.78 ± 0.90  (3.60 - 3.95) | 3.64 ± 0.85  (3.49 - 3.78) | 3.69 ± 0.77  (3.55 - 3.83) | 3.89 ± 0.53  (3.73 - 4.05) |
| **21** | Understands that some patients prefer communications by word to written communications | 3.78 ± 0.78  (3.70 - 3.85) | 3.90 ± 0.75  (3.76 -4.05) | 3.72 ± 0.70  (3.60 - 3.84) | 3.73 ± 0.89  (3.56 - 3.89) | 3.78 ± 0.64  (3.59 - 3.97) |
| **22** | Avoidance of imposing values that conflict with those of cultures other than mine | 3.46 ± 0.91  (3.37 - 3.55) | 3.42 ± 1.02  (3.22 - 3.62) | 3.41± 1.02  (3.24 - 3.58) | 3.54 ± 0.71  (3.41 - 3.67) | 3.53 ± 0.76  (3.31 - 3.76) |
| **23** | Understand that people from different cultural background has varying degree of acculturation into the dominant culture | 3.76 ± 0.70  (3.69 - 3.83) | 3.87 ± 0.71  (3.74 - 4.01) | 3.71 ± 0.72  (3.59 - 3.83) | 3.72 ± 0.66  (3.59 - 3.84) | 3.78 ± 0.67  (3.58 - 3.98) |
| **24** | Recognise and respect the cultural and ethnic influence on the male female roles (e.g., decision making) | 3.79 ± 0.77  (3.72 - 3.87) | 3.69 ± 0.83  (3.53 - 3.85) | 3.74 ± 0.87  (3.60 - 3.89) | 3.91 ± 0.61  (3.80 - 4.02) | 3.89 ± 0.61  (3.71 - 4.07) |
| **25** | Despite your professional or moral differences, accept that patients and their families are the ultimate decision makers in healthcare services and events that impact their lives | 3.90 ± 0.87  (3.81 - 3.98) | 3.98 ± 0.91  (3.80 -4.16) | 3.94 ± 0.96  (3.78 - 4.10) | 3.89 ± 0.63  (3.78 - 4.01) | 3.58±0.99  (3.28 - 3.87) |
| **26** | Understand that response to illness, disease and death is influenced by religion and beliefs of the patient | 3.51± 0.95  (3.41 -3.60) | 3.50 ± 0.98  (3.30 - 3.69) | 3.31d± 1.07  (3.13 - 3.49) | 3.75 ± 0.77  (3.61 - 3.90) | 3.51 ± 0.79  (3.27 -3.75) |
| **27** | Accept that concepts of health, wellness and preventive care differ with culture | 3.79 ± 0.86  (3.70 - 3.87) | 3.79 ± 0.91  (3.61 -3.97) | 3.77 ± 0.91  (3.62 - 3.93) | 3.82 ± 0.79  (3.68 - 3.97) | 3.73 ± 0.78  (3.50 - 3.97) |

a - Mean difference between MBBS and BDS is statistically significant

b - Mean difference between MBBS and Nursing is statically significant

c - Mean difference between MBBS and BPharm is statistically significant

d - Mean difference between BDS and Nursing is statistically significant

e - Mean difference between BDS and B Pharm is statistically significant

f - Mean difference between Nursing and BPharm is statistically significant