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# Cultural Competency of Clinical Students in a Caribbean Medical School

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**ABSTRACT**

We aimed to find out the clinical students' scores on cultural competencies and its different components (awareness and sensitivity, behavior, patient-centered communication, practice orientation, and self-assessment); to check the correlation between different components of cultural competency; and to examine the influence of students' demographic characteristics on their cultural competency. A 48-item Schwarz's Healthcare Provider Cultural Competence Instrument (HPCCI) comprising five scales was used to measure the cultural competency of Trinity Medical Sciences University students in clinical years. The descriptive statistics, Pearson's correlation, and multivariable regression analysis were done using SPSS. The students obtained 81.8% in overall cultural competency, 83.3% in awareness and sensitivity towards cultural competency, 75.8% in behavior, 82.6% in patient-centered communication, 83.3% in practice orientation, and 92% in self-assessment of cultural competency. A significant positive correlation was found among different scales of HPCCI with some exceptions. Age, gender, race, school semester of study, and birth country of students and their fathers were found as independent predictors for different components of cultural competency measured. The medical students' awareness/sensitivity toward cultural competence, concerning behavior, their patient-centered communication, and practice orientation skills need attention and have to be a driving point in the planning, developing, and implementing focused effective cross-culture curricula to better prepare the medical students for the benefit of diverse patients and communities they will serve.

**KEYWORDS**

Awareness; behavior; communication; cultural competency; self-assessment

## INTRODUCTION

A number of countries around the world continue to experience demographic changes and diversification, including those in the United States (Schim & Doorenbos, 2010). In these circumstances, healthcare personnel will likely serve an increasingly diverse society with widening inequality in the near future. Therefore, medical students need to become skilled in cultural competence during their training in medical school. A doctor-patient relationship reinforced by culturally sensitive healthcare personnel can result in greater patient satisfaction and better health outcomes (Giger et al., 2007; Krupat et al., 2000).

Even after statistically controlling for a range of medically relevant factors, minority and stigmatized groups around the world experience lower quality healthcare than dominant groups (Dovidio et al., 2016). Healthcare professionals' implicit biases influence diagnosis and treatment decisions and levels of care in some cases and need to be explored further (FitzGerald and Hurst, 2017). For example, Black children with respiratory infections received significantly fewer antibiotics than White children even after controlling for relevant medical and socioeconomic factors, according to an analysis of over one million clinical visits in the USA (Gerber et al., 2013). According to another study, women and African Americans were less likely to be referred for cardiac catheterization than white men, while sharing the same indications and symptoms (Schulman et al., 1999). Such cultural biases in the health sector exacerbate the problem of differential morbidity and mortality among races in a diverse population. The correct use of a culturally competent health worker, on the other hand, helped a COVID-19 ICU patient recover successfully from delirium when a lack of understanding of the patient's culture had resulted in assumptions on the part of the healthcare provider, prolonging the delirium (Lomiguen et al., 2020). This illustrates the importance of culturally competent manpower in hospitals.

A survey showed medical teachers of 11 European institutions considered the importance of incorporating and assessing cultural competence topics into the medical curriculum (Lanting et al., 2019). Cultural competence training improves the knowledge, attitudes, and skills of health professionals (Beach et al., 2005). While assessing the medical schools' curriculum in the Netherlands, cultural diversity was more prominently described in undergraduate than in postgraduate education (Paternotte et al., 2014). While some medical schools have longitudinally integrated cultural competency education into the 4-year curriculum rather than focusing on the first or second years of medical school, many medical schools include it in compulsory courses (Crandall et al., 2003; Rapp, 2006; Tervalon, 2003). In our university, Trinity Medical Sciences University (TMSU), students discuss some culturally challenging questions in their preclinical and clinical courses, however, this topic has not been explicitly included in our medical curriculum so far. Therefore, the purpose of this study was to:

- Find out the overall cultural competencies score of TMSU students in their clinical years.

- Investigate the medical students' 1. Awareness/sensitivity toward cultural competence; 2. The behavior demonstrated concerning cultural competence; 3. Patient-centered communication skills; 4. Practice orientation; and 5. Self-assessment of cultural competence and correlation between these five scales.
- Examine the influence of participants' demographic characteristics on their cultural competency.

Students' overall cultural competencies score will provide insight into our current curriculum effectiveness in this regard. Participants' scores on five different elements of cultural competence and the correlation between them will guide in planning, developing, and implementing a focused effective program or cross-culture curricula to better prepare the students for the benefit of diverse patients and communities they will serve in the future.

## METHODS

The study was conducted in an offshore Caribbean medical school "Trinity Medical Sciences University" with its preclinical part of the MD program in Saint Vincent and the Grenadines in the Caribbean and clinical part in Georgia, United States. Culturally diverse students from different parts of the world like North America, Asia, the Caribbean, and the Middle East are enrolled in medical education at this university. During preclinical years, the students get familiar with Caribbean culture and values in the local community and hospital before they advance into clinical years to be completed in Georgia. All TMSU students in their clinical years were invited to participate in this study because of accessibility and also due to the reasons of being trained in different cultures during preclinical years. After taking the informed consent, the participants were requested to respond to the online questionnaire anonymously. The clinical students who did not fill out the questionnaire completely and/or did not agree with the consent form were excluded from the study.

The questionnaire was adapted from Schwarz's Healthcare Provider Cultural Competence Instrument (HPCCI). The 48 items HPCCI measures a health care provider's cultural competence along 5 primary dimensions (see appendix): Scale 1, awareness/sensitivity toward cultural competence (11 items); Scale 2, behavioral indication concerning cultural competence (16 items); Scale 3, patient-centered communication (3 items); Scale 4, practice orientation (9 items); and Scale 5, self-assessment of cultural competence (9 items). The validity and reliability of the items within each scale of this instrument were found to have strong results when measured across a broad range of different types of healthcare providers (Schwarz et al., 2015). Participants' responses for scales 1 and 2 were recorded on a 7-point Likert scale while responses for scales 3, 4, and 5 were recorded on a 5-point Likert scale. On a 7-point scale, students' responses to awareness and sensitivity toward cultural competence varied from strongly disagree to strongly agree while their responses to the behavioral demonstration were noted from never to always. On a 5-point scale, participants' responses to patient-centered communication ranged from never to very often while their views on practice orientation and

self-assessment of cultural competence were recorded to range from strongly disagree to strongly agree. For all questions, the responses included an option of neutral/neither disagree nor agree. Negative items (# 5, 8, 31-35, 37, 39) of the instrument were scored reversely.

Apart from participants' educational background, their demographic characteristics, age, gender, country of birth (for parents as well), and racial/ethnic background were also recorded as a part of the study.

**Statistical Analysis**

SPSS version 26 was used to analyze the data. Cronbach's alpha was used to assess the instrument's dependability. Descriptive statistics were used to study the sociodemographic characteristics of the participant and the HPCCI score. The correlation among different scales of HPCCI was tested with Pearson's correlation and multivariable regression analysis was done to find out the predictors of cultural competency skills. Statistical significance was defined as a p-value of 0.05.

## RESULTS

In total 68 TMSU students in clinical years completed the questionnaire entirely and their responses were used for analysis. The participants' age ranged from 23 to 39 years with an average age of 30.5 ± 4.4 years. The sociodemographic details of the participants are shown in descriptive statistics in Table 1.

**Table 1**

*Descriptive Statistics of the Participants (N=68)*

| Sociodemographic characteristics | | N | % |
|---|---|---|---|
| Gender | Male | 36 | 52.9 |
| | Female | 32 | 47.1 |
| Country of birth | USA | 44 | 64.7 |
| | Other country | 24 | 35.2 |
| Parents' country of birth | Father | | |
| | USA | 20 | 29.4 |
| | Other country | 48 | 70.5 |
| | Mother | | |
| | USA | 24 | 35.2 |
| | Other country | 44 | 64.7 |
| Race | White | 20 | 29.4 |
| | American/Caucasian | 16 | 23.5 |
| | Caribbean | 12 | 17.6 |
| | Latino | 8 | 11.8 |
| | African American (Black) | 8 | 11.8 |
| | Indian | 4 | 5.9 |
| | Asian American | | |

Cronbach's alpha value of HPCCI in this study was found to be 0.75. The analysis revealed a significant positive correlation among different scales of HPCCI. However, the self-assessment of students was found to have no significant correlations with other scales except awareness and sensitivity. Practice orientation was found to have only a significant correlation with patient-centered communication while indicated behavior was only correlated with two scales (awareness and sensitivity, and patient-centered communication). Similarly, the total score of cultural competency did not show a significant correlation with the two scales (practice orientation and self-assessment). The correlation between different scales and the total score of cultural competency is shown in Table 2 below.

**Table 2**

*Pearson Correlation among Different Scales and Total Score of HPCCI*

| | Scale 1 (Awareness and sensitivity) | Scale 2 (Behavior) | Scale 3 (Patient centered communication) | Scale 4 (Practice orientation) | Scale 5 (self-assessment) | Total score |
|---|---|---|---|---|---|---|
| Scale 1 (Awareness and sensitivity) | 1 | .374** | .281* | .008 | .258* | .646** |
| Scale 2 (Behavior) | .374** | 1 | .586** | -.203 | .043 | .878** |
| Scale 3 (Patient centered communication) | .281* | .586** | 1 | .536** | .192 | .587** |
| Scale 4 (Practice orientation) | .008 | -.203 | .536** | 1 | .029 | .020 |
| Scale 5 (Self-assessment) | .258* | .043 | .192 | .029 | 1 | .204 |
| Total score | .646** | .878** | .587** | .020 | .204 | 1 |

Note: The numbers indicate the Pearson correlation values.

**. Correlation is significant at p< 0.01 (2-tailed).

*. Correlation is significant at p< 0.05 (2-tailed).

The HPCCI had 48 items for a range of 48 to 294 total points possible. The overall mean score of the participants was 240.5 (81.8%), which was found to be satisfactory. The scores obtained for five different scales of HPCCI are shown in Table 3.

**Table 3**

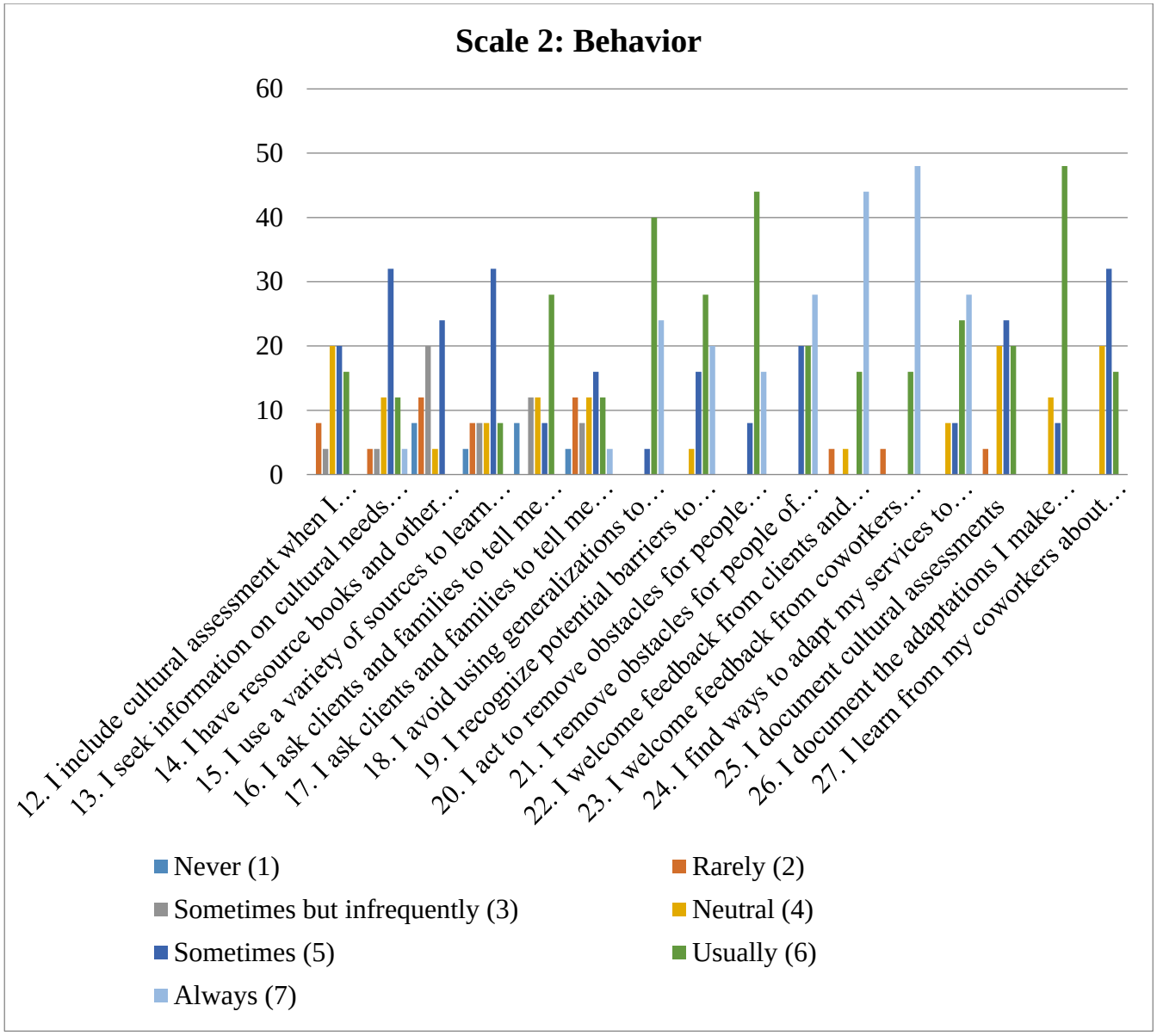
*Participants Score for Five Different Scales of HPCCI*

| Scales | Max. possible score | Mean score ± SD | Min.-Max. Score | Score % |
|---|---|---|---|---|
| **1.** Awareness and Sensitivity | 77 | 64.2±5.2 | 49-74 | 83.3 |
| **2.** Behavior | 112 | 84.9±8.5 | 66-101 | 75.8 |
| **3.** Patient-centered Communication | 15 | 12.4±1.9 | 9-15 | 82.6 |
| **4.** Practice Orientation | 45 | 37.5±2.8 | 32-42 | 83.3 |
| **5.** Self-assessment | 45 | 41.4±3.1 | 36-45 | 92 |
| Overall Score | 294 | 240.5±12.7 | 214-268 | 81.8 |

The lowest score (75.8%) for Scale 2 (Behavior demonstrated concerning cultural competency) was followed by 82.6 % score for the Scale 3 (Patient-centered Communication). In 9 out 16 items in Scale 2, participants scored less than six out of seven in Likert scale which is a major concern (Figure 1, Table 4). For other items in this scale, students' scores were satisfactory (≥6 out 7) indicating appropriate behavior in some areas. In scale 3, the score was satisfactory (≥4 out 5 in Likert scale) for two items (#28 & 29) while for one item (# 30) the score was less than 4 which needs attention (Figure 2, Table 4).

**Figure 1**

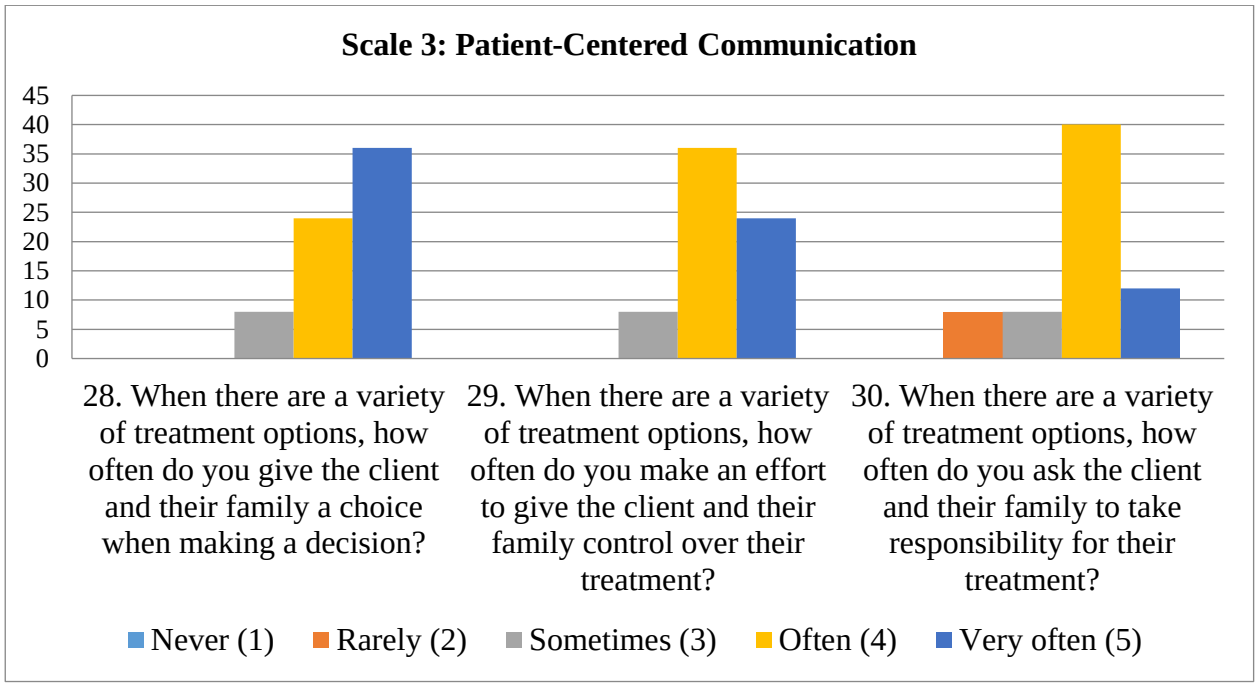
*Participants Response to Items of Scale 2 (Behavior Demonstrated Concerning Cultural Competence)*




Note: Items were scored in Likert scale 1-7, 1 being never to 7 being always.

**Figure 2**

*Participants Response to Items of Scale 3 (Patient Centered Communication)*




Note: Items were scored in Likert scale 1-5, 1 being never to 5 being very often.

**Table 4**

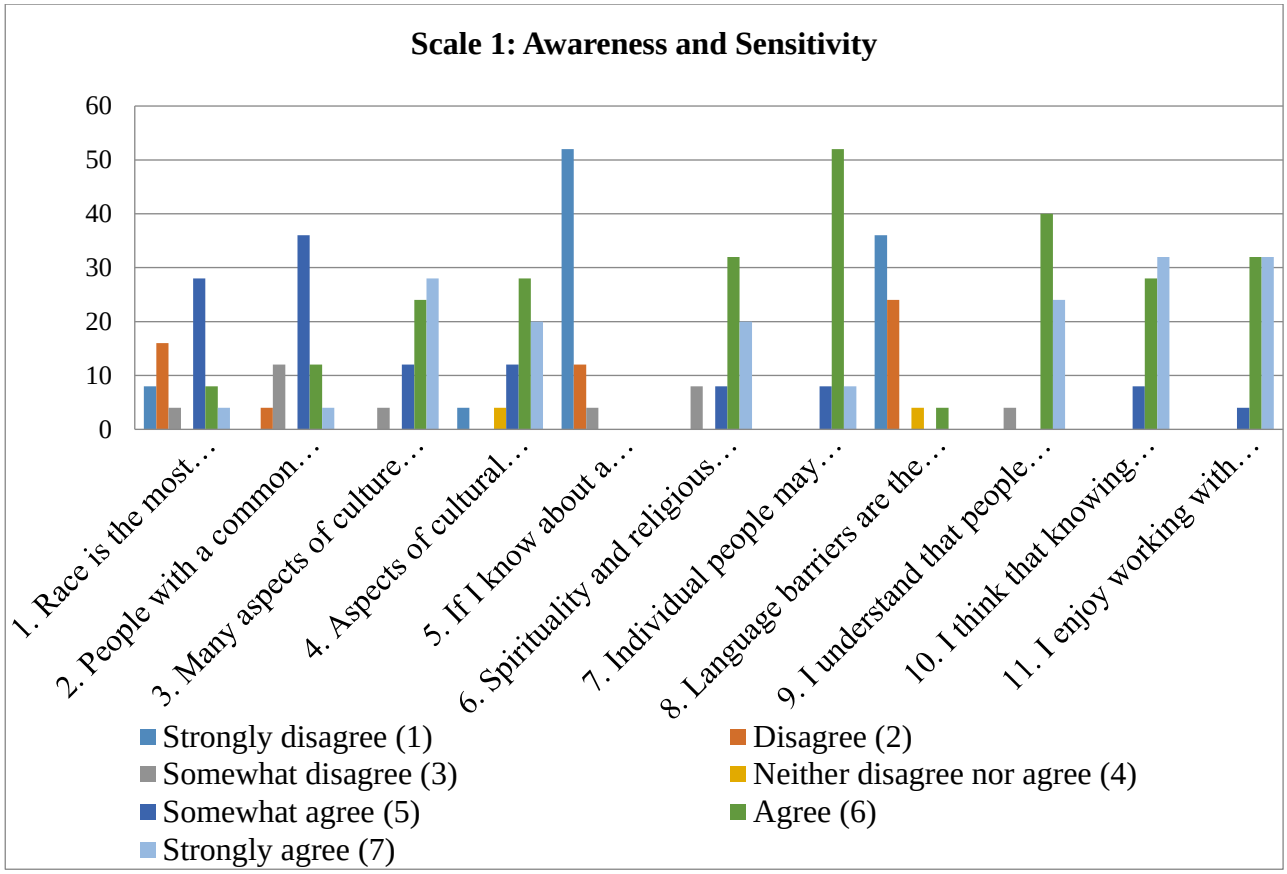
*Areas Considered for Further Improvement in Behavior and Patient Centered Communication among TMSU Students*

| Scales | Items | Maximum possible score | Mean score | Low-High score |
|---|---|---|---|---|
| Behavior | 12. I include cultural assessment when I do client or family evaluations | 7 | 4.4 | 2-6 |
| | 13. I seek information on cultural needs when I identify new clients and families in my practice | 7 | 4.8 | 2-7 |
| | 14. I have resource books and other materials available to help me learn about clients and families from different cultures | 7 | 3.3 | 1-5 |
| | 15. I use a variety of sources to learn about the cultural heritage of other people | 7 | 4.1 | 1-6 |
| | 16. I ask clients and families to tell me about their own explanations of health and illness | 7 | 4.4 | 1-6 |
| | 17. I ask clients and families to tell me about their expectations for health services | 7 | 4.1 | 1-7 |
| | 19. I recognize potential barriers to service that might be encountered by different people | 7 | 5.9 | 4-7 |
| | 25. I document cultural assessments | 7 | 4.8 | 2-6 |
| | 26. I document the adaptations I make with clients and their families | 7 | 5.5 | 4-6 |
| Patient-Centered Communication | 30. When there are a variety of treatment options, how often do you ask the client and their family to take responsibility for their treatment? | 5 | 3.8 | 2-5 |

Although, the scores for Scale 1 (Awareness and Sensitivity of the students towards cultural competence) and scale 4 (practice orientation of the students in terms of power/control relationship with patients) were a bit higher – 83.3%, but there are still some areas which need the academic attention (Figures 3, 4 and Table 5). In scale 1 the students scored higher (≥6 out 7 in Likert scale) in majority of the items (Figure 4). However, for the item no. 1, 2 and 6 in this scale their scores were in between 3.9 to 5.8 which can be worked on for the improvement (Table 5). For most of the items (7 out of 9) in scale 4 the students scored higher (≥4 out 5 in Likert scale) indicating in favor of positive practice (Figure 4). However, for two items (#37 & 38) of this scale the score was found to be below 4 which can be improved in the future with appropriate measures (Table 5).

**Figure 3**

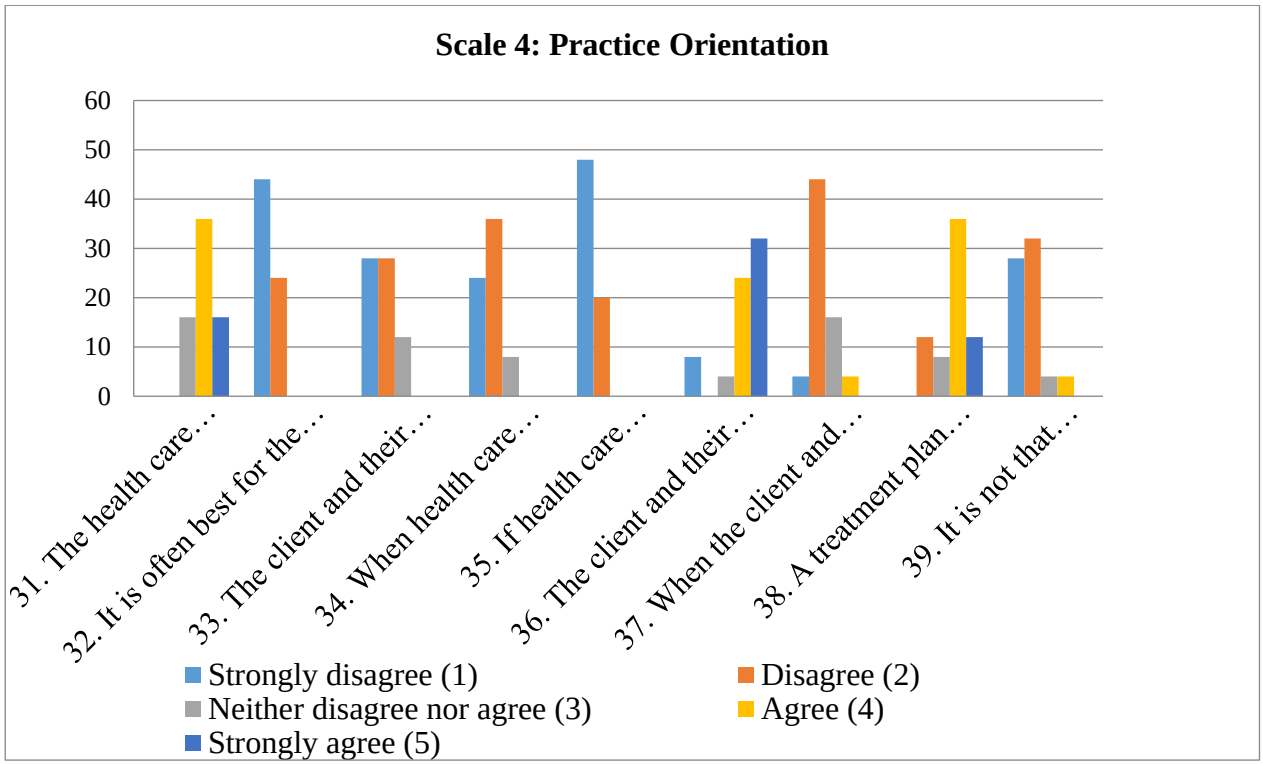
*Participants Response to Items of Scale 1 (Awareness and Sensitivity towards Cultural Competence)*




Note: Items were scored Likert scale 1-7, 1 being strongly disagree to 7 being strongly agree while items no. 5 and 8 were reverse scored.

**Figure 4**

*Participants Response to the Items of Scale 4 (Practice Orientation)*




Note: Items were scored in Likert scale 1-5, 1 being strongly disagree to 5 being strongly agree while items no. 31-35, 37 and 39 were reverse scored.

**Table 5**

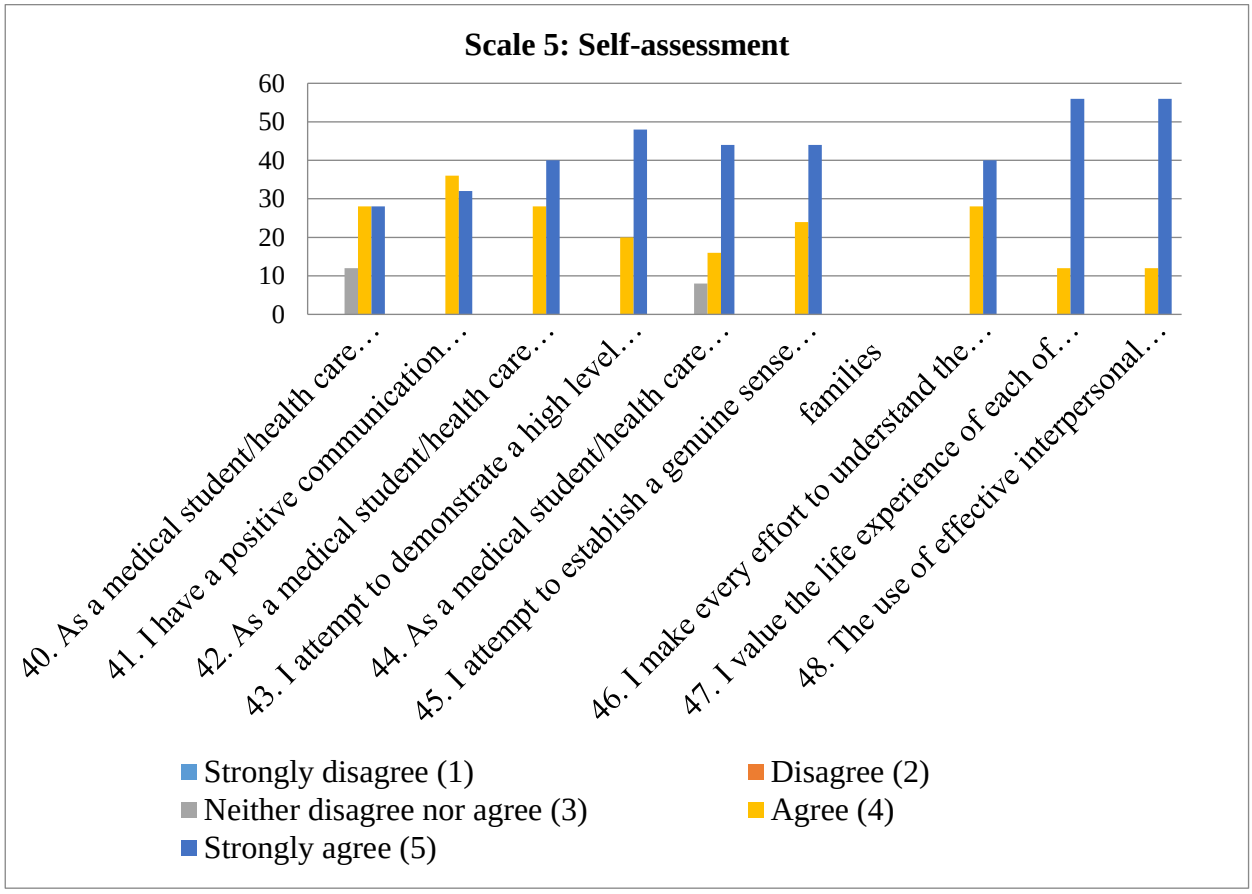
*Areas Considered for Further Improvement in Awareness and Sensitivity towards Cultural Competency and Practice Orientation among TMSU Students*

| Scales | Items | Maximum possible score | Mean score | Low-High score |
|---|---|---|---|---|
| Awareness and Sensitivity | 1. Race is the most important factor in determining a person's culture. | 7 | 3.9 | 1-7 |
| | 2. People with a common cultural background think and act alike | 7 | 4.7 | 2-7 |
| | 6. Spirituality and religious beliefs are important aspects of many cultural groups | 7 | 5.8 | 3-7 |
| Practice Orientation | 37. When the client and their family disagree with their health provider, this is a sign that the health care provider does not have the client and their family's respect and trust | 5 | 3.7 | 2-5 |
| | 38. A treatment plan cannot succeed if it is in conflict with a client and their family's lifestyle or values | 5 | 3.7 | 2-5 |

For all items of scale 5 measuring the self- assessment of the participants on their cultural competence, the students scored higher (≥4 out 5 on the Likert scale) showing confidence in their communication skills, ability to foster a friendly environment to work with a diverse group of people and establish a genuine sense of trust (Figure 5).

**Figure 5**

*Participants Response to Items of Scale 5 (Self-Assessment on Cultural Competence)*




Note: Items were scored in Likert scale 1-5, 1 being strongly disagree to 5 being strongly agree.

In a multivariable regression model, overall cultural competency and five different scales of HPCCI were treated as dependent variables while different sociodemographic characteristics of the participants were considered as the predictor variables. Table 6 presents the results from the multivariable regression models.

**Table 6**

*Predictors of Overall Cultural Competency Score and Five Different Scales of HPCCI*

| Predictor variables | Regression coefficients Overall cultural competency | Scale 1 | Scale 2 | Scale 3 | Scale 4 | Scale 5 |
|---|---|---|---|---|---|---|
| Age | -0.116 | 0.024 | 0.060 | -0.186** | 0.279** | -0.292** |
| Gender (Male)[1] | 4.757 | 1.837 | -0.489 | 1.270* | -2.302** | 4.431** |
| School Semester | -0.991 | 0.088 | -1.969** | -0.895** | 1.683** | -0.198 |
| Birth country of participants (USA)[2] | 9.285* | 6.301** | 5.662* | -0.495 | -1.135* | -1.048 |
| Birth country of father (USA)[2] | 15.776** | 2.555 | 12.594** | 1.524* | -1.700* | 0.803 |
| Birth country of mother (USA)[2] | 0.477 | -0.520 | 0.516 | 0.043 | 0.146 | 0.292 |
| Race | 2.770 | 1.762* | 1.456 | -0.606* | 0.639 | -0.480 |

Note: [1]Female is the reference group.

[2]Other countries are the reference group.

*. Coefficient is significant at p<0.05 (2-tailed).

**. Coefficient is significant at p<0.01 (2-tailed).

Based on multivariable regression analyses, the predictors of cultural competency of clinical students found in this study are as follows:

- Age: Older students had lower scores on the patient-centered communication and self-assessment of cultural competence scales in comparison with younger but showed a higher score on a practice orientation scale.
- Gender: Female students showed higher scores on the practice orientation scale in comparison with male students. Male students scored higher on the patient-centered communication and self-assessment of cultural competence.
- School semester (term) in clinical years: The upper-term clinical students had lower scores on behavior demonstrated regarding cultural competency and patient-centered communication but higher scores on the practice orientation scale in comparison with the initial term clinical students.
- The birth country of students and their parents: Students and their parents (only father) who were born in the USA showed higher scores on awareness/sensitivity and behaviors demonstrated concerning cultural competency but lower scores on the practice orientation scale in comparison with other students.

- Student's race: The Caribbean and White American/Caucasian students were the top scorer for awareness/sensitivity toward cultural competence and patient-centered communication respectively.

## DISCUSSION

This study assessed the self-reported cultural competency of our clinical students and explored the areas in which school can help them to better learn the skills of respecting and valuing other cultures for gaining patients' respect and trust in the future. The reliability of the instrument used to measure cultural competency, HPCCI, was found acceptable. There were correlations between different scales with some exceptions. Using a jigsaw analogy, Schwarz JL et al. emphasized the interconnection and significance of the elements that make up the idea of cultural competency (Schwarz et al., 2015). However, our study failed to show the significant correlation among total score, practice orientation, and self-assessment that catechize the inclusion of these two scales in the measurement of cultural competency. The overall score on cultural competency among students was found to be satisfactory. However, our study revealed areas of improvement in some aspects of awareness and sensitivity of students, their patient-centered communications, practice orientation, and special attention to several aspects of behavioral issues.

Recognizing the effects of racism and cultural insensitivity in medicine, reform in medical education started across the United States in the late 1960s (Ludmerer, 1999). The Liaison Committee on Medical Education (LCME) established the following cultural competency criteria in 2000: "The faculty and students must demonstrate an understanding of how people of diverse cultures and belief systems perceive health and illness and respond to various symptoms, diseases, and treatments. Medical students should learn to recognize and appropriately address gender and cultural biases in health care delivery while considering first the health of the patient (Association of American Medical Colleges, 2005)." Despite multiple efforts from various sectors, problems associated with race and culture in medical practice continues. The majority of participating medical programmers agree that the training provided to medical students is insufficient in terms of cultural competency for future careers in the healthcare system in their countries (Sorensen et al., 2019).

Awareness and sensitivity refer to the health care provider's awareness of and receptivity to cultural expressions, attitudes, and behaviors of various patient groups, including variations in language, religion, dietary preferences, familial patterns, and medical procedures. Healthcare professionals' behaviors are seen as the outward expression and evidence of their views and beliefs (Schwarz et al., 2015). The most crucial element in establishing someone's culture is their race. People from similar cultural backgrounds think and behave similarly, and many cultural groups place a high value on their spirituality and religious beliefs. To teach our students about other people's cultural history, it is crucial to give them access to a variety of resources. We

need to help them identify potential cultural barriers and gather data on the cultural needs and expectations of the patients. Health professionals' attitude toward the patient-provider power dynamics in a particular provider's practice is referred to as "practice orientation" (Krupat et al, 2000). Patient-centered communication techniques involve gathering information about patients' feelings, beliefs, and expectations and incorporating them into the conversation (Cooper et al., 2003). Encouraging our students to incorporate the patient's and their family's lifestyles or values in the treatment plan and inviting them to share the responsibility of their treatment will improve our students' practice orientation and patient-centered communication.

These areas of cultural competency have to be emphasized in our clinical courses in different formats. These could be in the form of lectures, workshops, case discussions in groups, role play, etc. First-year medical students at the University of California, San Francisco (UCSF) participate in a diversity workshop to increase their awareness of their own and their peers' cultural backgrounds and to foster or reinforce respect and tolerance for others' differences (Goldstone et al., 2000). A presentation on cultural diversity and spirituality is presented to first-year medical students at the University of Arkansas for Medical Sciences, as well as when they begin their Introduction to Clinical Medicine course (Deloney et al., 2000). To encourage cultural diversity in medical education, several elements must be taken into account, including curriculum design and development, student experience, faculty development, and institutional support (Dutta et al., 2021). The findings of our study support the need for the educational system to tackle this issue more seriously and adopt fresh strategies for its solution. When evaluating the effects of studying and working in a culture that is different from one's own, gender should also be taken into consideration (Monrouxe et al., 2022). It might be beneficial to provide representative case studies, talk about social and structural variables that affect health outcomes, and encourage students to consider their own unconscious biases (Forrest et al., 2022).

Our study indicated the following realities about factors to be considered as predictors of the cultural competency of clinical students:

- Overall cultural competency of medical students cannot be predicted by their age, gender, semester of study, race, and birth country of their mother. Students whose father was born in the USA scored higher than others in overall cultural competency score.
- Awareness and sensitivity of medical students towards cultural competency cannot be predicted by their age, gender, semester of study, and birth country of a student's parents. Students born in the USA and Caribbean students scored higher than others on this scale.
- The behavior of medical students concerning cultural competency cannot be predicted by the age, gender, race, and birth country of a student's mother. Students whose father

was born in the USA scored higher than others on this scale. Surprisingly, students' scores were found to be decreasing with the progression of the school semester of the study.

- Patient-centered communication among medical students can be predicted neither by their birth country nor by the birth country of their mother. Male students compared to females, and White American/Caucasian students compared to others scored higher on this scale. Like the behavioral component, the student's scores on this scale were also found to be decreasing with the progression of the school semester of the study.
- The practice orientation of medical students cannot be predicted by their race and the birth country of their mother. This scale score was found to be increasing with participants advancing in age and semester of the study. Interestingly, female students compared to males, and the students whose parents (only father) were born outside the USA compared to others scored higher on this scale.
- Self-assessment of cultural competence cannot be predicted by medical students' race, semester of study, and country of birth (students or their parents). Male students scored higher than females and the score was found to be decreasing with the advancing age of the students on this scale.

Most of these predictors of cultural competency were found to be non-modifiable. In advanced terms of clinical years, the low score of students in behavior and patient-centered communication skill despite higher scores in practice orientation is a serious matter of concern. This could be the effect of inadequate reinforcement of cultural competency in the courses, and burnout in higher terms which has been proven to be increasing with the training level in medical school (Dyrbye and Shanafelt, 2016). The other associated factors and approaches to improve these areas of cultural competency need to be explored.

**Limitation of study**

All of the scales used to measure cultural competency are self-reports. Students might have answered the questions that they believed will make them look good to others (social desirability bias). Having a clinical preceptor evaluating especially the behavior demonstrated by the students concerning cultural competency would have been ideal. Also, the small sample size limits this study's generalizability.

**Conclusion**

In the era when patient-centered health care is being advocated, the need to equip future doctors with cultural competency skills is even more important. The medical students' awareness/sensitivity toward cultural competence, concerning behavior, their patient-centered communication, and practice orientation skills need attention and have to be a driving point in the planning, developing, and implementing focused effective cross-culture curricula to better prepare the students for the benefit of diverse patients and communities they will serve. Especially, practice orientation and patient-centered communication scales gained a lot of

points from both sides, overachievement, and underachievement, where five out of seven predictors respectively indicated the correlation with these cultural competency scales.

The study indicates the need to develop our university guidelines and assessment to minimize the biases in health care delivery and explore the role of cultural competencies in increasing transcultural knowledge of medical students, generous expression of their beliefs and attitudes towards others and respect patient's feelings and belief in their communication and clinical practice.

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**Conflict of Interest**

The authors have no conflict of interest to declare.

**Ethical Approval**

This study was approved by the Institutional Review Board of Trinity Medical Sciences University, St. Vincent and Grenadines (Ref. No. 148/22)

**Consent**

Students included in this study provided informed consent to participate before completing the questionnaire.

**Authors' contributions**

D.K.S. conceptualized and designed the study, contributed to data collection, and the writing of the original draft and final version of the manuscript; Y. M. designed the study and assisted in drafting the manuscript, and reviewed the manuscript. J. I. designed the study, assisted in data collection, and reviewed the manuscript. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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**Appendix**

The items of five different HPCCI scales are mentioned in the appendix.

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## APPENDIX

**Healthcare Provider Cultural Competence Instrument (HPCCI)**

**Items**

**Scale 1: Awareness and Sensitivity**

1. Race is the most important factor in determining a person's culture.
2. People with a common cultural background think and act alike.
3. Many aspects of culture influence health and health care.
4. Aspects of cultural diversity need to be assessed for each individual, group, and organization.
5. If I know about a person's culture, I do not need to assess their personal preferences for health services.
6. Spirituality and religious beliefs are important aspects of many cultural groups.
7. Individual people may identify with more than 1 cultural group.
8. Language barriers are the only difficulties for recent immigrants to my country/ United States
9. I understand that people from different cultures may define the concept of "health care" in different ways.
10. I think that knowing about different cultural groups helps direct my work with individuals, families, groups, and organizations.
11. I enjoy working with people who are culturally different from me.

**Scale 2: Behavior**

12. I include cultural assessment when I do client or family evaluations.
13. I seek information on cultural needs when I identify new clients and families in my practice.
14. I have resource books and other materials available to help me learn about clients and families from different cultures.
15. I use a variety of sources to learn about the cultural heritage of other people.
16. I ask clients and families to tell me about their own explanations of health and illness.
17. I ask clients and families to tell me about their expectations for health services.

18. I avoid using generalizations to stereotype groups of people.
19. I recognize potential barriers to service that might be encountered by different people.
20. I act to remove obstacles for people of different cultures when I identify such obstacles.
21. I remove obstacles for people of different cultures when clients and families identify such obstacles to me.
22. I welcome feedback from clients and their families about how I relate to others with different cultures.
23. I welcome feedback from coworkers about how I relate to others with different cultures.
24. I find ways to adapt my services to my clients and their families' preferences.
25. I document cultural assessments.
26. I document the adaptations I make with clients and their families.
27. I learn from my coworkers about people with different cultural heritages.

**Scale 3: Patient-Centered Communication**

28. When there are a variety of treatment options, how often do you give the client and their family a choice when making a decision?
29. When there are a variety of treatment options, how often do you make an effort to give the client and their family control over their treatment?
30. When there are a variety of treatment options, how often do you ask the client and their family to take responsibility for their treatment?

**Scale 4: Practice Orientation**

31. The health care provider is the one who should decide what gets talked about during a visit.
32. It is often best for the client and their family that they do not have a full explanation of the client's medical condition.
33. The client and their family should rely on their health care providers' knowledge and not try to find out about their condition(s) on their own.
34. When health care providers ask a lot of questions about a client and their family's background, they are prying too much into personal matters.
35. If health care providers are truly good at diagnosis and treatment, the way they relate to client and their family is not that important.
36. The client and their family should be treated as if they are partners with the health care provider, equal in power and status.
37. When the client and their family disagree with their health provider, this is a sign that the health care provider does not have the client and their family's respect and trust.
38. A treatment plan cannot succeed if it is in conflict with a client and their family's lifestyle or values.
39. It is not that important to know a client and their family's culture and background to treat the client's illness.

**Scale 5: Self-Assessment**

40. As a medical student/health care provider, I understand how to lower communication barriers with clients and their families.
41. I have a positive communication style with clients and their families.
42. As a medical student/health care provider, I am able to foster a friendly environment with my clients and their families.
43. I attempt to demonstrate a high level of respect for clients and their families.
44. As a medical student/health care provider, I consistently assess my skills as I work with diverse groups of clients and their families.
45. I attempt to establish a genuine sense of trust with my clients and their families.
46. I make every effort to understand the unique circumstances of each client and her or his family.
47. I value the life experience of each of my clients and their families.
48. The use of effective interpersonal skills is very important in working with my clients and their families.