

Knowledge of Cultural Competence among Third-Year Medical Students

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An increasingly diverse population and ongoing health disparities have brought national attention to cultural competence training in medical schools. However, few data exist on medical students' knowledge in cultural competence. The purpose of this study is to assess medical students' knowledge in cultural competence to identify training areas for curriculum development. All third-year medical students at a single institution during the period of November 2001 to February 2004 completed a questionnaire to assess their knowledge of cultural competence during their medicine clerkship. The 40-item questionnaire measured several domains of cultural competence: health disparities, stereotyping, exploring culture, perceptions of health and illness, and communication/language. The mean knowledge score was 55%, and no student scored >80%. Race and prior cultural training were not predictors of overall performance.

Key words: cultural competence ■ medical education ■ educational intervention

INTRODUCTION

The United States is becoming more culturally diverse.^{1,2} Minority populations share a greater burden of morbidity and mortality for many health conditions and are at risk for poor health outcomes. Cultural competence can be considered the ability to explore cultural distinctions and perceptions of health and illness with knowledge of effective cross-cultural communication and existing health disparities when working with a patient of any ethnic background. It addresses the role culture plays in shaping our attitudes, values and beliefs. Knowledge in cultural competence may be an important part of effectively delivering healthcare to a diverse patient population.

A recent Institute of Medicine report highlights the physician-patient encounter as one factor contributing to disparities in care of minorities.³ The report suggests a need for development and implementation of training programs in navigating cross-cultural interactions. This includes conveying respect, listening carefully, explaining procedures and understanding cultural beliefs as they relate to patient values, attitudes and beliefs about health and illness.

As a result of our changing demographics and the recognition of the potential impact of culture on care, there is now a national requirement that medical schools and residency training programs integrate cultural competence education into their curricula.^{4,5} However, while the conceptual underpinnings for this policy seem valid, there are limited data assessing students' existing knowledge and deficit areas in cultural competence. The purpose of this study is to assess medical students' knowledge in cultural competence. Another goal of this study is to identify specific focus areas of training leading to successful curriculum development and to explore student factors that may be associated with cultural competence knowledge.

METHODS

Study Population

All third-year medical students at a single med-

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ical school were eligible to participate in this study from November 2001 to February 2004. These third-year students were in the early stages of clinical contact with patients who have had differing cultural and racial backgrounds. For this reason, we thought this would be a particularly relevant time to assess students' knowledge of cultural competence. Additionally, their current year-long curricula allowed a segment of time for our curriculum.

Instrument Development

The four authors and a medical librarian independently performed a MEDLINE search to find all suitable reports. A search strategy using key indexing terms, such as cultural and linguistic competence, healthcare disparities, culture, acculturation, ethnicity, diversity, medical students, medical education, and multicultural, was used. The search was limited to the English language, but no time limit was applied. The titles and abstracts were reviewed to identify relevant articles. We contacted experts in the field of cultural competence for additional information or unpublished studies. Based on our review of the literature, no validated instrument on cultural competence existed at the time of this study to test student knowledge. Our literature search provided the cultural competence conceptual framework for important content domains addressed in the questionnaire and from which the questions were developed by all authors.⁶⁻¹¹ Additionally, the authors of one source¹⁰ provided us with instructions, materials and a questionnaire, from which some questions were adapted, in use at their institution. With this foundation, we then designed an assessment tool to address students' knowledge. The initial questionnaire contained 75 items, intended to measure seven domains of cultural competence: health disparities, disease incidence/prevalence, gender issues, stereotyping, exploring culture, perceptions of health and illness, and communication/language. Many of these content areas were also later highlighted in other reports.^{3,12-14} We also included questions regarding age, gender, race/ethnicity and prior cultural competence training. A larger number of questions were pilot-tested for face and content validity by administering the test to nine academic general internists with varying levels of expertise in cultural competence.

The draft questionnaire was then administered to 11 residents in a pilot test to address question comprehension, test-retest reliability and internal consistency of the questions within the selected domains. Test-retest reliability was evaluated by calculating Kappa coefficients for each questionnaire item. The internal consistency of the items within each domain was assessed by the Cronbach's α coefficient. Nonconsis-

tent items—those whose inclusion decreased their domain's α coefficient—were considered for elimination from the final questionnaire. In order to increase parsimony of the questionnaire, items that may have been redundant—namely those items which, when removed, would not result in a decrease in the Cronbach's α —were also considered for exclusion. Given that these questionnaire items were designed to measure knowledge of cultural competence rather than attitudes, reliability may be expected to be lower when respondents have low knowledge. Thus, when selecting the items for the final version of the questionnaire, the greatest emphasis was placed on maximizing comprehensibility and face and content validity while achieving a parsimonious instrument. Thus, based on resident feedback, selected results of psychometric evaluations and expert review, the questionnaire was then revised and the final version was created with 40 questions in five domains: exploring culture (Cronbach's $\alpha=0.77$), stereotyping (Cronbach's $\alpha=0.75$), perceptions of health and illness (Cronbach's $\alpha=0.54$), knowledge of health disparities (Cronbach's $\alpha=0.65$), and communication and language (Cronbach's $\alpha=0.82$).

Data Collection

After obtaining approval from the Emory institutional review board, the questionnaire was self-administered to third-year medical students during the period of November 2001 to February 2004. Students were continuously enrolled at as they entered their internal medicine clerkship during this period. They completed the 30-minute knowledge questionnaire at the beginning of this clerkship. This questionnaire assessed baseline knowledge as part of a controlled trial evaluating the impact of an educational intervention on knowledge of cultural competence among third-year medical students. Students also received a posttest at a later time. The students were told that they were completing a questionnaire to examine their knowledge of cultural competence. Their participation was not mandatory, and there were no incentives.

Data Analysis

The questions were multiple-choice with one correct response. Each question was weighted equally. Our outcome variable of interest was knowledge score. An overall score and a score for each domain were created based on the number of correct responses in each domain. Independent variables of interest were age (<25 versus ≥ 25), race/ethnicity (white versus other racial/ethnic groups), gender and prior formal training that may have helped them to develop cultural competence (any versus none). T tests were used to evaluate the relationship between

Table 1. Cultural competence knowledge questionnaire: domains, question content and proportion of correct responses (n=256)

Question Content	Correct Response (%)
<i>I. Exploring Culture</i>	
Knowledge of cultural values' influence on patient's experience and interpretation of illness, medical intervention patients will accept, and the type of care they seek and in what order	97.7
Knowledge that adherence to a medical regimen is influenced by acculturation and physician-patient communication	12.9
Knowledge that it is important to explore sociocultural factors when there are language barriers or lack of cooperation or education	78.9
Knowledge of Tuskegee study	87.1
Knowledge of effect of Tuskegee study on African Americans' mistrust of the healthcare system	78.5
Knowledge that patients in the United States who seek traditional healers and use traditional medicines generally do not reject conventional western medicine	87.5
Knowledge that cross-cultural misunderstandings between providers and patients can lead to mistrust and frustration and is likely to have an impact on objectively measured clinical outcomes	98.0
Knowledge that cultural background, diet, religious and health practices, and language can differ widely within a given country or part of a country	98.8
Knowledge of cultural factors contributing to nonadherence	40.2
<i>II. Perceptions of Health Disparities</i>	
Knowledge that illness is the patient's experiences	33.2
Knowledge of exploratory model and negotiation	61.3
Knowledge that disease is the healthcare provider's interpretation of mental/physical condition	35.9
Knowledge of sample questions to explore explanatory models	41.4
Knowledge of influences on the patient's perception of the physician's role	10.2
Knowledge of questions exploring explanatory model of patient with headache	40.6
*Knowledge of examples of culture-based explanatory models	74.1
Knowledge of explanatory model as the patient's conceptualization of their illness	33.6
*Knowledge of other culture-bound syndromes or beliefs	34.0
Knowledge of useful techniques in cross-cultural communication and negotiation	35.9
<i>III. Stereotyping</i>	
Knowledge of stereotypes in caring for Asian-American patients	7.8
Knowledge of stereotypes in caring for Hispanic/Latino patients	14.8
Knowledge of stereotyping in a case of nonadherence	18.0
Knowledge of identifying differences between generalization and stereotyping	67.6
<i>IV. Knowledge of Health Disparities</i>	
Knowledge of rates of cardiac ischemia in Hispanic Americans	12.5
Knowledge of differing disease distributions within certain racial groups	82.0
Knowledge of racial disparities in cardiac procedures	74.2
Knowledge of factors involved in disparities (e.g., socioeconomic, referral patterns, environment)	90.2
<i>V. Communication and Language</i>	
*Knowledge of LEARN model of cultural communication	66.5
Knowledge of limited interpreter services available	75.8
Knowledge of interpretation errors when using ad hoc interpreters	35.5
* indicates multipart question—mean score across all subparts is presented	

each of the sociodemographic characteristics and both the domain scores as well as the overall score.

RESULTS

Respondent Characteristics

A total of 256 medical students completed the questionnaire. All students that were present for the first session of their medicine clerkship were provided with the questionnaire, and all completed it. The mean age was 25.6 (sd=5.3) years; 53% (n=135) were men. Students identified their race/ethnicity as follows: 67% (n=170) white, 9% (n=22) black, 14% (n=35) Asian Americans, and 11% (n=28) "other." The other category includes Hispanic/Latinos, American Indians, multiracial and other. Sixty-one percent (n=156) reported having no prior formal training.

Knowledge Scores

The mean overall score was 55%; 22.1 out of a possible score of 40 (sd=3.3, range 13–32). The median score was 55%, indicating that half of the students had overall knowledge scores of <55% correct. The question content and percentage of correct responses are shown in Table 1. In specific content areas, mean scores were as follows: exploring culture 76%, stereotyping 27%, perceptions of health and illness 45%, knowledge of health disparities 65%, and communication and language 63% (Table 2).

Bivariate analyses revealed significant differences neither in overall knowledge score based on race/ethnicity (p=0.49), gender (p=0.70), age (p=0.19) or prior cultural training (p=0.24), nor in individual domain scores.

DISCUSSION

In this study examining cultural competence knowledge in medical students, we found that the mean knowledge score was 55%, and no student scored above 80%. The content areas of stereotyping and patient perceptions of health and illness, where students had the lowest scores, may represent content areas for emphasis in cultural competence curriculum development. Importantly, race and prior cultural training were not

predictors of overall performance. Our results are consistent with a recent report of low baseline knowledge scores in second-year medical students.¹³

Discussion about the implementation of formal curricula in cultural competence in medicine dates back to the 1960s. Yet the pedagogy of cultural competence in medicine is still at its first steps. For example, of the 122 medical schools in the United States, 85% have integrated training in cultural competence within existing courses or electives. Only 9% of the medical schools have separate curricula specifically addressing cultural competence, and 6% have no training in cultural competence at all.¹⁵ Our findings of limited baseline knowledge in cultural competence support the need for curricula in this area, highlight areas for emphasis and support the importance of cultural competence education for all students regardless of background.

As we face continued disparities in health, the skills needed to care for a diverse population have the potential to improve health outcomes, decrease health disparities and improve overall satisfaction for the patient and the healthcare provider.¹⁶⁻²⁰ Even while the case for cultural competence is building, much work remains to be done in generating the tools with which cultural competence can be taught and evaluated among healthcare providers. While more recent literature suggests that cultural competency training may improve student attitudes and awareness of diversity and cross-cultural issues,^{21,22} it is not clear whether formal focused training, an integrated curriculum or some other method would be the most effective pedagogical approach to building cultural competence knowledge and skills. As we move forward, the need for effective curricula and measurement tools to assess these curricula becomes critical to developing national standards applicable to all medical schools, residency programs and other health-related institutions. Here, we present an instrument that may be helpful in assessing knowledge in cultural competence in medical students and measuring changes as they move through a curricular intervention.

However, our findings should be interpreted in light of the limitations of our study. We performed this study at a single institution with third-year medical students.

Table 2. Overall and domain scores for cultural competence knowledge questionnaire (n=256)

	Number of questionnaire items per domain	Range of number of correct responses per domain	Domain score as a %*: Mean (s.d.)
Exploring culture	9	3-9	76 (11.6)
Perceptions of health and illness	16	0-13	45 (14.0)
Stereotyping	4	0-4	27 (21.4)
Knowledge of disparities	4	0-4	65 (18.8)
Communication and language	7	1-7	63 (16.2)
Overall knowledge score	40	13-32	55 (8.2)

* Numbers of correct responses were converted to percent scores before calculating mean domain and overall scores

Our study may not be generalizable to students at different institutions, different levels of training, house-staff or other physicians. The number of students of different races and ethnicities did not allow us to perform important subgroup analyses (e.g., among different minority groups). In addition, our survey did not address working with diverse colleagues or assessment of patients' acculturation. And importantly, this study addressed knowledge but was not designed to address cultural competence skills, attitudes or behaviors.

In conclusion, we found students beginning their medicine clerkship had limited knowledge of cultural competence, especially in the domains of patient perceptions of health and illness and stereotyping. We also found that race, gender, prior training and age were not important predictors of performance. We believe that knowledge of cultural competence is one of the first steps in providing culturally competent care. Further research will need to determine whether students are able to improve knowledge of cultural competence, apply that knowledge in clinical settings and whether improved health outcomes, decreased racial disparities, improved patient-physician satisfaction and improved patient compliance are measurable results of the application of this knowledge.

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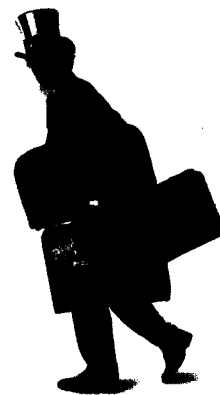
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