RESEARCH ARTICLES

Assessing Implementation of Cultural Competency Content in the Curricula of Colleges of Pharmacy in the United States and Canada

Esther Moraa Onyoni, PharmD and Timothy J. Ives, PharmD, MPH

School of Pharmacy, University of North Carolina at Chapel Hill

Submitted July 29, 2006; accepted September 26, 2006; published 15, 2007.

Objectives. To assess the presence of curricular and organizational content related to cultural competency within colleges of pharmacy in the United States and Canada.

Methods. Curriculum committee chairs (n = 87) and student leaders (n = 54) in colleges of pharmacy in the United States and Canada were surveyed via an e-mailed assessment tool.

Results. Forty-nine (56.3%) curriculum committee chairs and 27 (50%) student leaders returned usable responses. Respondents reported that cultural competency was mentioned in 61.2% of their mission statements, and half had made curricular changes with respect to diversity within the past 5 years. Almost 94% felt the necessity to add cultural competency topics to required courses in the curriculum, and 42.9% wanted to add a course specific to cultural competency into the curriculum.

Conclusion. Curriculum committee chairs recognize the need to add curricular content related to cultural competency, but not all of the respondents have implemented changes in their college's curriculum.

Keywords: cultural competency, curricula, colleges of pharmacy

INTRODUCTION

Culture is the set of distinctive spiritual, material, intellectual, and emotional features of society or a social group. In addition to art and literature, culture encompasses language, communication patterns, lifestyles, and practices; a body of learned behaviors, value systems, traditions, and shared beliefs.¹ Cultural competency is the integration of knowledge, awareness, sensitivity, attitudes, skills, and encounters by individuals and programs to acknowledge and respect the cultural traditions of their clients and their communities.² Cultural competency evolves over an extended period through a developmental process that systematically involves both consumers and stakeholders of the community. Both individuals and organizations are at various levels of awareness, knowledge, and skills along the cultural competence continuum through acceptance of a defined set of values and principles.³ Organizations can better value diversity, conduct self-assessment, manage the dynamics of difference, acquire and institutionalize cultural knowledge, adapt to diversity and the cultural contexts of the communities they serve by supporting an organizational position of cultural

competency. Cultural competency allows organizations to demonstrate behaviors, attitudes, policies, and structures that enable them to work effectively in all aspects of policymaking, administration, practice, and service delivery.

In 2005, one third of the US population (98 million) was found to be composed of racially, ethnically, and culturally diverse groups other than single-race non-Hispanic white.⁴ According to the 2000 census, the Hispanic and Latino population, the largest and fastest growing minority group, grew from 4.5% of the population in 1970, up to 12.5%, with projections to 24.4% in 2050. African Americans/blacks composed 12.7% of the population in 2000, up from 11.8% a decade earlier. However, projections for 2050 suggest that the Hispanic population will supplant African Americans/blacks as the largest minority population in the United States. Asians, Native Hawaiians, and Pacific Islanders from many different countries and cultures composed 3.7% of the population in 2000, with projections to increase to 8% by 2050. The Native American (American Indian and Alaska native) population is also growing faster than the general population, from 2.6% in 1990 to 3.3% in 2005. Immigration contributes to increasing diversity in the United States as between 1990 and 2000, the number of immigrants to this country increased by approximately 50%.⁵ Whites tend to decrease as a population every year, and while still a majority at 75.1% in 2000, whites are expected to become a plurality by 2050.

Corresponding Author: Timothy J. Ives. Address: School of Pharmacy, Campus Box 7360, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7360. Tel: 919-843-2279. Fax: 919-966-4507. E-mail: tjives@med.unc.edu

Practicing health care professionals will be interacting with people from an increasing variety of cultural and ethnic backgrounds in the future. With a growing diversity in the country, health care practitioners increasingly need to understand and address a multiplicity of cultures, languages, values, and preferences in the patients they serve. Practitioners should attempt to identify and resolve disparities in health outcomes, an inequity that serves as a barrier to continuous quality improvement in health care across all populations.⁶ Within the profession of pharmacy, reports demonstrate significant variation in the rates of medication use by race, even when insurance status, income, age, and severity of conditions are comparable.⁷⁻⁹

In January 2006, the Accreditation Council for Pharmacy Education (ACPE) adopted its new accreditation standards and guidelines, which require a commitment to cultural competence training in the doctor of pharmacy curriculum to prepare candidates to practice in culturally diverse environments.¹⁰ This mandate portends a major shift in curricula in colleges of pharmacy, both at present and increasingly in the future.¹¹ There are few published studies, however, assessing the impact of cultural competency training programs within colleges of pharmacy.¹²⁻¹⁴

There is no clear sense of the value that cultural competency receives in colleges of pharmacy in the United States and Canada, or the present level of implementation. Study objectives were to determine the presence of organizational value statements related to cultural competency (eg, mission statements) within colleges of pharmacy in the United States and Canada, and whether content areas (eg, access to health care issues, cultural and language barriers, etc) were included in the curricula.

METHODS

The study population was composed of curriculum committee chairs (n = 87) and student leaders (n = 54) at accredited colleges of pharmacy in the United States and Canada in 2004, identified by the American Association of Colleges of Pharmacy (AACP) as regular institutional members. AACP provided the most current contact information for curriculum committee chairs who identified current student leaders, such as president of the college's student council. An e-mail message sent to the pharmacy student services office identified other student leaders by asking for the current student council president's contact information.

Performed during the course of the academic year, investigators developed 2 separate survey instruments with delivery via an Internet survey database (www.surveymonkey.com), one for the curriculum committee

chairs and one for student leaders. AACP approved the surveys in concept, and provided the most current list of curriculum committee chairs and student leaders. Both survey instruments were pretested to determine construct validity with faculty members and students in the Honors program in the School of Pharmacy, University of North Carolina at Chapel Hill. The comments received led to improvements in the clarity and accuracy of the survey instrument. Questions related to performance measurement (eg, inclusion of cultural competency in the mission statement; sensitivity training for students, staff members, and faculty members; cultural competency themes in coursework; and cultural diversity in student professional organizations) were modeled after Siegel.¹⁵ Definitions of terminology used were derived from the National Center for Cultural Competence, Georgetown University.

The cover letter included study objectives, an overview of the concept, limited definitions, and an electronic link to the survey instrument. Investigators designed the electronic survey instrument for completion in less than 10 minutes, with an anonymous return to investigators through the Internet site. Investigators asked respondents to return survey instruments within 2 weeks. Those curriculum committee chairs who did not respond to the first request received a reminder in another 3 weeks. Four weeks after distributing the survey instrument to curriculum committee chairs, student leaders received their survey instrument. The AACP and the curriculum committee chairs contacted in the first survey provided the names of student leaders. Student leaders who did not respond received an e-mail reminder 2 weeks after the initial e-mail.

Both surveys contained demographic questions pertaining to the college location, affiliation, student population, ethnicity distribution, and content of the mission statement relating to cultural competency. The survey of curriculum committee chairs also assessed faculty and staff employment status in the college, and the presence of content addressing cultural competency in the core courses, elective courses and experiential learning. Open-ended questions assessed the opinions of curriculum committee chairs and student leaders on the implementation of cultural competence. The student leader survey contained questions pertaining to student age, gender, clinical experience to date, expected field of practice upon graduation, and student organization leadership. The general content areas included in the 2 survey instruments are listed in Table 1.

Aggregate data from curriculum committee chairs and from student leaders were compared. Descriptive statistics were derived from the compiled responses using Microsoft *Excel*.

Table 1. General Content Areas Included in Survey Instruments Sent to Curriculum Committee Chairs and Student Leaders at US and Canadian Colleges of Pharmacy Regarding the Incorporation of Cultural Competency Training in the PharmD Curriculum

Geographic location of college
College Affiliation: Public, Private, Religiously Affiliated
Average number of students in the college of pharmacy
Approximate number of students, staff, and faculty by ethnicity
Faculty and staff information: Full time, Non-Caucasian faculty, Multilingual faculty
Presence of a mission statement in the college of pharmacy, and in the university
Presence of cultural competency themes in the mission statement
Presence of cultural competency courses in current curriculum, with student recall of presence of subjects in the coursework: Access issues, cultural barriers, language barriers
Type of cultural competency teaching in the curriculum: Didactic, experiential, or case-based
History of sensitivity training for students, staff, and faculty
Discussion of diversity in student orientation, and within student professional organizations
Presence of a person in the college with overall responsibility of assessing cultural competency
Provision of a course specific to cultural diversity issues, or an integrated approach across the curriculum
Presence of an organized body that manages cases of bias

RESULTS

Forty-nine of the 87 curriculum committee chairs (57%) and 27 of 54 (50%) student leaders responded; 7 curriculum committee chairs (8%) formally declined to complete the survey instrument. Table 2 denotes the demographics of responding colleges and the student population. A synopsis of survey results are in Table 3. All of the respondents indicated the existence of a mission statement, but only 43 (88%) provided a copy, or indicated that it was publicly available at their web site. Of those, as noted in their mission statement, 33 (77%) declared that they both practice within their college of pharmacy, and have integrated cultural competency into the curriculum. Eleven (22%) of the colleges had a person or position given the overall responsibility of assessing cultural competency, with such titles as Chairman-Diversity Committee, Director of Cultural Competency Program, Curriculum Assistant, and Director of Assessment. Participants at various venues within the colleges (eg, staff or faculty meetings, student orientation, or preceptor training sessions) discussed cultural competency topics.

Table 2. Demographics of Student Leaders at US and Canadian Colleges of Pharmacy Regarding Incorporation of Cultural Competency Training in the PharmD Curriculum

Variable	N (%)
Location	
Northwest	4 (8.2)
Southwest	5 (10.3)
Canada	6 (12.2)
Northeast	8 (16.3)
Midwest	13 (26.5)
Southeast	13 (26.5)
College affiliation	
Public	36 (73.5)
Private	10 (20.4)
Religious affiliation	3 (6.1)
Mean number of students enrolled	
100-200	5 (10.2)
201-400	17 (34.7)
401-600	19 (38.8)
>600	8 (16.3)
SL age yrs, mean (range)	21 (18-24)
SL Gender	
Female	13 (55)
Male	10 (45)
Number of experiential clerkships completed	
1-2	19 (76)
3-4	5 (20)
>6	1 (4)
SLs anticipated future area of practice	
Clinical	6 (22.2)
Community	17 (63)
Hospital	3 (11.1)
Other	1 (3.7)

SL = student leader

Seventeen (63%) of the responding student leaders stated that pharmacy student professional organizations at their institutions had addressed issues related to cultural competency. They also felt that the student professional organizations were ethnically diverse in the colleges (67%), and 30 (56%) had policies that fostered cultural diversity in their organizations. The most common methods of cultural competency teaching offered in the pharmacy curriculum were didactic (n = 25; 51%) or case-based (n = 13; 26%) instruction, with the inclusion of topics such as cultural barriers, language barriers, and access issues. Twenty-five responding colleges (51.0%) had made curricular changes reflecting diversity

Table 3. Synopsis of Results of a Survey Regarding the Incorporation of Cultural Competency Training in the PharmD Curriculum of US and Canadian Colleges of Pharmacy

Variable	N (%)
Cultural competence terms within the Mission Statement	
No mention	19 (38.8)
One mention	26 (53.1)
Greater than 1 mention	4 (8.1)
Administration	
Presence of college budget for cultural competency activities:	12 (24.5)
Presence of an administrative position responsible for cultural competence	11 (22.4)
Curricular changes to introduce cultural competency topics in last 5 years	25 (51.0)
Documentation of Presentations of Cultural Competency Topics	
Faculty meetings	35 (71.4)
Student orientations	30 (61.2)
Student professional organizations	25 (51.0)
Preceptor training sessions	22 (44.9)
Staff meetings	14 (28.6)
Primary type of cultural competency teaching method offered in curriculum	
Didactic	25 (51.0)
Case-Based	13 (26.5)
Experiential	9 (18.4)
Unknown	2 (4.1)
Curricular Planning for Cultural Competency	
Current plans to implement new topics/courses	24 (49.0)
Current plans for sensitivity training	
Faculty	22 (44.9)
Staff	20 (40.8)
Students	30 (61.2)
Perceived need to add topics into required courses	46 (93.9)
Perceived need to add a specific required course	21 (42.9)
Perceived need for introduction in new student orientation	43 (87.8)
Professional Pharmacy Student Organizations	
Addressed cultural competency issues in their organization	17 (63.0)
Perception of SLs for having diversity within organizations	36 (66.7)

perspectives within the past 5 years. Some of the changes that had been implemented in colleges of pharmacy are presented in Table 4.

Table 4. Examples of Cultural Competence Changes Implemented in US and Canadian Colleges of Pharmacy

Addition of topics to introductory courses
Addition of didactic and case-based activities related to cultural competence to courses
Increased effort to bring discussions into every class and to prepare students for diversity in experiential activities
Integration and greater emphasis of the topic in communications courses
Plans to add Spanish for health care professionals
Plans to include cultural competence to their new curriculum

DISCUSSION

With changes in the demographics of the US population, it is important to prepare pharmacy graduates who are capable of practicing in a multicultural society. Whether it be optimizing patient adherence to, or comprehension of, prescribed regimens, or pharmacotherapeutic outcomes, pharmacists must be cognizant of barriers that impede the attainment of targeted outcomes to optimize patient health. To our knowledge, this research was the first to investigate the presence of curricular and organizational content related to cultural competency in US and Canadian colleges of pharmacy. Assemi surveyed PharmD students following implementation and evaluation of an elective course designed to provide basic cultural competency training and found that it increased PharmD students' awareness of diversity.¹² The course provided basic knowledge and skills related to cultural competency and cross-cultural communication, indicating a step towards bringing an awareness of cultural competency into the curriculum. Westberg et al documented that medication adherence-related problems were significantly more common in non English-speaking patients, further demonstrating the need for pharmacists to be able to provide culturally competent care to all patient populations.¹⁶

In this study, curriculum committee chairs recognized the need to add curricular content related to cultural competency, but not all of the respondents had implemented changes in their school's curriculum. Course objectives should attempt to foster a fuller student understanding of patients' cultural beliefs, values, and views on illness and treatment. By addressing cultural competency at new student orientations and early in the pharmacy curriculum, students will integrate caring for a more diverse patient population into their evolving professional practice philosophy. The majority of students intend to practice in a community environment, further reflecting the need for professional training that values cultural sensitivity.

Based on responses from curriculum committee chairs, plans to add cultural competency courses to the curriculum exist in slightly over half of US and Canadian colleges of pharmacy. More curriculum committee chairs reported plans to implement cultural sensitivity training for faculty and staff members and students. Having a person or position with the overall responsibility of assessing cultural competency in the college of pharmacy indicates an effort to implement cultural competency; however, only 22% of the responding colleges currently have such positions. Colleges of pharmacy need to more fully integrate cultural competency into their mission statements and strategic planning process to teach and practice it successfully. Although cultural competency was mentioned in the mission statement of every responding college, not all have implemented changes in their curricula.

Culturally competent health care is one strategy for reducing and eliminating the longstanding disparities in the health status of Americans of diverse racial, ethnic, and cultural backgrounds. Cultural competency allows delivery of equitable and high-quality health care to all patients, regardless of race, ethnicity, level of acculturation, socioeconomic status, and comprehension of illness and health care.^{17,18} Cultural competency is seen as a necessity for problem solving; policy development; legislative, regulatory, and accreditation mandates; physical health; and spiritual well-being—all in an effort to improve the quality of provided services and health outcomes to all patients served.¹⁹⁻²² To learn to provide culturally competent health care, individuals need to learn about the different cultures that they serve, with the goal of understanding them and resisting stereotypes, developing effective communication skills, and learning to use resources on behalf of the patient.²³ The Institute of Medicine offers recommendations to health care providers and students to address the racial and ethnic disparities in health care, including use of interpreter services, racially or linguistically concordant clinicians and staff members, and culturally competent health education and training tools.²⁴ These and other techniques are designed to improve communication and expand the health care provider's understanding of their patients' cultural behaviors and environment.

Colleges of pharmacy will require standardized and validated assessment tools for an ongoing objective determination of the level of implementation of cultural competency in curricula, and ultimately, for assessment to determine anticipated changes in outcomes in all populations served. A high level of interest exists in the evaluation of cultural competence in the provision of health care; however, there are few standardized evaluation measurements, as well as culturally competent

instruments.²⁵ Researching the topic of cultural competency in health care yielded more citations of studies performed within medical schools as a mechanism for providing quality care to all patients. Most of the surveys involved cultural competency training with pre- and post-training evaluation of subjects that showed training significantly improved their awareness and practice of cultural competency.

There is a growing body of evidence of the benefits of using cultural competence techniques as a strategy for reducing health disparities; however, questions remain concerning the effect of implementing curricular coursework and training on patient care outcomes and practitioner behaviors. One evaluation of the effects of cultural competency training²⁶ demonstrated significant improvement in medical student attitudes on the importance of assessing patient opinions and determining health beliefs with the introduction of 2 introductory courses focusing on the importance of providing cultural competent care to all patients.

There is a need to develop valid methods of student assessment and program evaluation of cultural competence that are applicable in interdisciplinary settings of practice and learning.²⁷⁻³⁰ Peña Dolhun²⁷ attempted to create a standardized tool for assessing cross-cultural education in medical schools, and found, similar to this study, great variation in teaching approaches. The Association of American Medical Colleges (AAMC) has developed the Tool for Assessing Cultural Competence Training (TACCT) to assist colleges of medicine in integrating cultural competence content into their curricula.³¹ Used in conjunction with materials that identify optimal educational methods and evaluation strategies, TACCT reflects the input of experts in cultural competence and medical education to provide validated recommendations on curriculum content. To our knowledge, a standardized evaluation tool is not available presently for use in colleges of pharmacy.

This study had certain limitations. The colleges represented by nonresponders to the survey (ie, 38) may or may not have had a history of integrating cultural competence into their institutional culture. Further, those curriculum committee chairs who formally declined to participate in the survey may have done so because of biases, personal and/or institutional, to the subject. The number of responses from curriculum committee chairs and student leaders was not sufficient to make statistically viable comparisons of perceptions and trends at US and Canadian colleges of pharmacy. The survey evaluated the presence but not the perceived quality of the cultural competence activities within US colleges of pharmacy. It did not focus on factors external to colleges of

pharmacy that influence cultural competence, such as the commitment of the entire university or that of future employers of graduates. Unlike Peña Dolhun²⁷ who asked respondents to make value judgments regarding assessment of cultural competency in the curriculum, we were interested in determining the baseline presence of cultural competency training in the curriculum of colleges of pharmacy. Also, we did not use a standardized terminology (eg, *cultural competency*, *cultural diversity topics*, *subjects of cultural diversity*, *bias*, or responses of *completely* and *moderately*) in the survey instruments that were sent to curriculum committee chairs and student leaders. Without standardization of these terms and an objective assessment tool, respondents' interpretation may have induced another level of variation. Future research should focus on the evaluation of educational methods used to optimize the pharmacist's ability to serve diverse populations.

CONCLUSION

Cultural competency training has been suggested as a promising strategy for identifying and improving the knowledge, attitudes, and skills of health care professionals at all levels of training and professional development so they might better serve all cultural sectors of society.³² This survey of the existence of cultural competency training within US colleges of pharmacy adds to the overall awareness of the issue as colleges begin to work to meet the new ACPE accreditation standards and guidelines.

ACKNOWLEDGEMENT

The authors acknowledge Susan J. Blalock, MPH, PhD, at the School of Pharmacy, University of North Carolina at Chapel Hill, for her assistance in the study.

The results of this survey were presented at the 2006 American Pharmacists Association Annual Meeting, San Francisco, Calif, March 18, 2006.

REFERENCES

1. Universal Declaration on Cultural Diversity, United Nations Educational, Scientific and Cultural Organization, Paris, October 2001. <http://unesdoc.unesco.org/images/0012/001271/127160m.pdf>
2. Smith LS. Concept analysis: cultural competence. *J Cult Diversity*. 1998;5:4-10.
3. Cross TL, Bazron BJ, Dennis KW, Isaacs MR. Towards a culturally competent system of care: a monograph of effective services for minority children who are severely emotionally disturbed. National Technical Assistance Center for Children's Mental Health, Child Development Center, Georgetown University, Washington DC 1989.
4. Annual Population Estimates and Estimated Components of Change for the United States and States: April 1, 2000 to July 1, 2005. Population Estimates Program, Bureau of the Census, Department of Commerce, Washington, DC, May 2006.
5. Jefferys K. Characteristics of diversity legal permanent residents: 2004. Office of Immigration Statistics, US Department of Homeland Security, Washington, DC, December 2005.
6. US Department of Health and Human Services. Healthy People 2010: Understanding and Improving Health. 2nd ed. Washington, DC: US Government Printing Office; November 2000.
7. Khandker RK, Simoni-Wasila LJ. Differences in prescription drug utilization and expenditures between blacks and whites in the Georgia Medicaid population. *Inquiry*. 1998;35:78-87.
8. Todd KH, Deaton C, D'Adamo AP and Goe L. Ethnicity and analgesic practice. *Ann Emerg Med*. 2000;1:1-16.
9. Briesacher B, Limcangco R, Gaskin D. Racial and ethnic disparities in prescription coverage and medication use. *Health Care Financing Rev*. 2003;25:63-72.
10. Accreditation Council for Pharmacy Education. Accreditation standards and guidelines for the professional program in pharmacy leading to the doctor of pharmacy degree. Chicago, Ill; February 2006.
11. Zweber A. Cultural competence in pharmacy practice. *Am J Pharm Educ*. 2002;66:172-6.
12. Assemi M, Cullander C, Hudmon KS. Implementation and evaluation of cultural competency training for pharmacy students. *Ann Pharmacother*. 2004;38:781-6.
13. Westberg SM, Bumgardner MA, Lind PR. Enhancing cultural competency in a college of pharmacy curriculum. *Am J Pharm Educ*. 2005;69(5):Article 82.
14. Evans E. An elective course in cultural competence for healthcare professionals. *Am J Pharm Educ*. 2006;70(3):Article 55.
15. Siegel C, Haugland G, Chambers ED. Performance measures and their benchmarks for assessing organizational cultural competency in behavioral health care service delivery. *Admin Policy Ment Health*. 2003;31:141-70.
16. Westberg SM, Sorensen TD. Pharmacy-related health disparities experienced by non-English-speaking patients: impact of pharmaceutical care. *J Am Pharm Assoc*. 2005;45:48-54.
17. Betancourt JR, Green AR, Carillo JE, Park ER. Cultural competence and health care disparities: key perspectives and trends. *Health Aff*. 2005;24:499-505.
18. Brach C, Fraser I. Can cultural competency reduce racial and ethnic health disparities? A review and conceptual model. *Med Care Res Rev*. 2000;57(Suppl 1):181-217.
19. Fitzsimmons DS, Eyring AR. Valuing and managing cultural diversity in the work place. *Am J Hosp Pharm*. 1993;50:2404-7.
20. Shaw-Taylor Y, Benesch B. Workforce diversity and cultural competence in healthcare. *J Cult Diversity*. 1998;5:138-46.
21. The compelling need for cultural and linguistic competence. National Center for Cultural Competence, Center for Child & Human Development, Georgetown University, Washington, DC. <http://www11.georgetown.edu/research/gucchd/nccc/foundations/need.html>. Accessed 05.07.2005.
22. Cross TL. Culture as a resource for mental health. *Cult Divers Ethnic Divers Psych*. 2003;9:354-9.
23. Leishman J. Perspectives of cultural competence in health care. *Nurs Stand*. 2004;19:33-8.
24. Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, Institute of Medicine. Smedley BD, Stith AY, Nelson AR, editor. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC, The National Academies Press, 2002.

American Journal of Pharmaceutical Education 2007; 71 (2) Article 24.

25. Fortier JP, Bishop D. *Setting the Agenda for Research on Cultural Competence in Health Care: Final Report*. Brach C, editor. Rockville, MD. US Department of Health and Human Services Office of Minority Health and Agency for Healthcare Research and Quality, 2003.
26. Crosson JC, Deng W, Brazeu C, Boyd L, Soto-Greene M. Evaluating the effect of cultural competency training on medical student attitudes. *Fam Med*. 2004;36:199-203.
27. Peña Dolhun E, Muñoz C, Grumbach K. Cross-cultural education in US medical schools: development of an assessment tool. *Acad Med*. 2003;78:615-22.
28. Loudon RF, Anderson PM, Gill PS, Greenfield SM. Educating medical students for work in culturally diverse societies. *JAMA*. 1999;282:875-80.
29. Reynolds PP, Kamei RK, Sundquist J, Khanna N, Palmer EJ, Palmer T. Using the PRACTICE mnemonic to apply cultural competency to genetics in medical education and patient care. *Acad Med*. 2005;80:1107-13.
30. Doorenbos AZ, Schim SM, Benkert R, Borse NN. Psychometric evaluation of the cultural competence assessment instrument among healthcare providers. *Nurs Res*. 2005;54:324-31.
31. *Medical Education and Cultural Competence: A Strategy to Eliminate Racial and Ethnic Disparities in Health Care*. Division of Diversity Policy and Programs, Association of American Medical Colleges, Washington DC, Association of American Medical Colleges, 2005.
32. Beach MC, Price EG, Gary TL, et al. Cultural competence: a systematic review of health care provider educational interventions. *Med Care*. 2005;43:356-373.