



An examination of Cultural Competence Training in US Medical Education Guided by the Tool for Assessing Cultural Competence Training

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Valarie Blue Bird Jernigan , *University of Oklahoma Health Sciences Center*, valarie-jernigan@ouhsc.edu

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Abstract

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Keywords

Cultural competence; cultural humility; cultural competence training; medical education; Tool for Assessing Cultural Competence Training (TACCT); systematic review

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School of Community Health Sciences
University of Nevada, Las Vegas

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Valarie Blue Bird Jernigan, University of Oklahoma Health Sciences Center

Jordan B. Hearod, University of Oklahoma Health Sciences Center

Kim Tran, University of Texas Southwestern

Keith C. Norris, University of California Los Angeles

Dedra Buchwald, Initiative for Research and Education to Advance Community Health (IREACH), Washington State University

ABSTRACT

In the United States, medical students must demonstrate a standard level of “cultural competence,” upon graduation. Cultural competence is most often defined as a set of congruent behaviors, attitudes, and policies that come together in a system, organization, or among professionals that enables effective work in cross-cultural situations. The Association of American Medical Colleges developed the Tool for Assessing Cultural Competence Training (TACCT) to assist schools in developing and evaluating cultural competence curricula to meet these requirements. This review uses the TACCT as a guideline to describe and assess pedagogical approaches to cultural competence training in US medical education and identify content gaps and opportunities for curriculum improvement. A total of 18 programs are assessed. Findings support previous research that cultural competence training can improve the knowledge, attitudes, and skills of medical trainees. However, wide variation in the conceptualization, implementation, and evaluation of cultural competence training programs exists, leading to differences in training quality and outcomes. More research is needed to establish optimal approaches to implementing and evaluating cultural competence training that incorporate cultural humility, the social determinants of health, and broader structural competency within the medical system.

Keywords: Cultural competence, cultural humility, cultural competence training, medical education, Tool for Assessing Cultural Competence Training (TACCT), systematic review

INTRODUCTION

The Institute of Medicine's seminal publication *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* documented that biases, prejudices, and stereotypes held by healthcare providers result in lower-quality healthcare provided to racial and ethnic minority populations (Smedley 2003). These findings confirmed prior reports of racial and ethnic disparities in healthcare quality and outcomes (Alexander and Cornely 1986, Allison, Kiefe et al. 1996, Mayberry, Mili et al. 2000). To address and eliminate these disparities the Liaison Committee on Medical Education (LCME), the accrediting body for US medical schools, requires that medical students demonstrate a standard level of "cultural competence" upon graduation (LCME 2004). Cultural competence is most often defined as a set of congruent behaviors, attitudes, and policies that come together in a system, organization, or among professionals that enables effective work in cross-cultural situations. "Culture" refers to integrated patterns of human behavior that include the language, thoughts, actions, customs, beliefs, and institutions of racial, ethnic, social, or religious groups. "Competence" implies having the capacity to function effectively as an individual or an organization within the context of the cultural beliefs, practices, and needs presented by patients and their communities (Cross 1989).

Studies suggest that physician training in cultural competence may reduce provider bias (Tervalon and Murray-García 1998, Stone and Moskowitz 2011) and improve patient-provider communication (Beach, Price et al. 2005, Aeder, Altshuler et al. 2007, Cha-Chi, Lagha et al. 2010). Research also suggests that cultural competence training improves patient-centered care (Shapiro, Lie et al. 2006, Seeleman, Suurmond et al. 2009, Wilkerson, Cha-Chi et al. 2010, Parisi, Ahmed et al. 2012) and increases access to high-quality care (Betancourt 2003). However wide variation in the conceptualization, implementation, and evaluation of cultural competence training programs exists, leading to differences in quality and outcomes (Robins, Fantone et al. 1998, Betancourt, Green et al. 2003, Beach, Price et al. 2005, Chun 2010, Dogra, Reitmanova et al. 2010, Gustafson and Reitmanova 2010). A 2005 systematic review of cultural competence training across all of the health professions called for more research to identify specific teaching methods and content most effective in building cultural competence (Beach, Price et al. 2005).

The Association of American Medical Colleges (AAMC), in efforts to identify and streamline the major domains of cultural competence, developed the "Tool for Assessing Cultural Competence Training or "TACCT" for medical school curricula, designed to aid medical schools in creating cultural competence curricula that comply with LCME's standards (Colleges 2006). The TACCT is a self-administered assessment tool containing two parts: 1) Domains, which allow for monitoring of overall curricular offerings (*where* teaching is occurring); and 2) Specific Components, which provide a framework for identification of education for detailed knowledge, skills and attitudes (*what* learning objectives are being met) (Colleges 2006). The TACCT is designed for medical school leaders to examine all components of their cultural competence curricula, identify gaps and redundancies, and make the best use of opportunities and resources.

While a growing body of literature exists on the topic of cultural competence, a review of the scientific literature produced only three published studies that describe the application of the TACCT to assess curriculum offerings and inform curriculum planning (Lie, Boker et al. 2006, Lie, Boker et al. 2008, Marzan, Fornari et al. 2009). One of the studies, conducted by Lie, Boker,

et al. 2006 as part of a curricular needs assessment, compared faculty and student perceptions of cultural competence instruction as measured by the TACCT. Both course directors and medical students were asked to indicate which of TACCT components describing knowledge, skill, and attitude about cultural competence were covered during the first three years of the curriculum. Faculty and students responded congruently about the relative degree to which cultural competence instruction occurred. Study authors concluded that the TACCT could be used to identify significant gaps in cultural competence training and inform curricular revision (Lie, Boker et al. 2006).

Another study conducted by Marzon et al. (2009) assessed cultural competency in the medical school curriculum by using an adapted TACCT designed to collect both quantitative and qualitative data. A committee trained to use the tool conducted interviews with 19 pre-clinical and 10 clinical course directors. Qualitative data were categorized by items ‘taught’ or ‘not taught.’ If content was identified as ‘taught’ course directors assessed if the content was formally evaluated. Qualitative comments were solicited throughout the interviews. The study reported that conducting face-to-face semi-structured interviews was a valuable method of collecting data on cultural competency content taught and evaluated in the curriculum. The interviews facilitated bridging gaps, addressed misconceptions, and forged future collaboration with course directors on how to teach cultural competence (Marzan, Fornari et al. 2009).

The purpose of this review is to describe and assess pedagogical approaches to cultural competence training in US medical education. We provide a narrative review of case studies of cultural competence programs found within the scientific literature. We then examine the incorporation of TACCT Domains and Subdomains within and across each of these case studies to identify gaps in curriculum content areas and opportunities for curriculum improvement.

METHODS

Two-stage narrative literature review

We conducted a two-stage narrative literature review to examine and assess pedagogical approaches to cultural competence training in US medical education and explore how the TACCT Domains and Subdomains were being used to plan and evaluate each program. The review was led by a small group of four individuals (all authors of this manuscript): two faculty members housed in the schools of medicine and public health and two graduate students in the medicine and public health (MD/MPH) program. We conducted this review as part of a larger planning initiative to identify best practices in cultural competence training and improve cultural competence training efforts within our own university medical and public health programs.

Stage 1. Narrative Review. The first stage of this narrative review aimed to produce a comprehensive synthesis of published information on cultural competence training in US medical education. In August of 2015, we conducted a literature search using the Academic Search Premier, MEDLINE, and SocINDEX databases. Articles included were those written in English and published in peer-reviewed journals between 2000 and 2015. Search terms were “cultural competence,” “cultural humility,” “medical student,” “resident,” “medical education,” and “medical curricula.” This strategy returned 103 articles; 38 that did not examine cultural competence in the context of medical education were excluded, leaving a total of 65 articles. Of these, only case studies describing the implementation of a specific training program were retained, for a final sample of 18 articles on 18 different programs.

We then used the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for reporting observational studies (Von Elm, Altman et al. 2007). The STROBE guidelines improve the quality of reporting of observational studies by providing a checklist of items that relate to the title, abstract, introduction, methods, results, and discussion sections of articles. Guided by this STROBE checklist, each of the four reviewers comprehensively reviewed each of the 18 case studies and identified and described the overall program training goal and how cultural competence was operationalized; the stage in which the cultural competence training was provided in the course of medical education (i.e. preclinical, clinical, residency); the educational methods employed; whether the cultural competence training was mandatory or voluntary; and what, if any, methods were used to evaluate the outcomes of the training.

Stage 2. Assessment of the TACCT Domains and Subdomains. Once these characteristics were documented for each of the 18 case studies we then engaged in the second stage of our review – to assess the incorporation of the TACCT Domains and Subdomains within each case study. The TACCT is a quantitative tool that consists of two parts: Domains and Specific Components (Colleges 2006). The Domains are broken into five categories: Domain I. Rationale, context, and definition; Domain II. Key aspects of cultural competence; Domain III. Understanding the impact of stereotyping on medical decision-making; Domain IV. Health disparities and factors influencing health; and Domain V. Cross-cultural clinical skills.

Each Domain further contains three to seven Subdomains that enable a more granular assessment of a given curriculum. For example, under Domain II. Key aspects of cultural competence, the Subdomains are A. Epidemiology of population health; B. Patients' healing traditions and systems; C. Institutional cultural issues; and D. History of the patient.

These Domains and Subdomains can function as a blueprint for curriculum design. They also enable the identification of design flaws and features, such as the absence of educational material for a given Domain, multiple courses offering content within a single Domain, or a single course that covers most Domains. In total there are 22 items included within the Domains and Subdomains of the TACCT.

The second part of TACCT, Specific Components, allows for a detailed assessment of the learning objectives of each curriculum in terms of knowledge (e.g. defining race, ethnicity, and culture); skills (e.g. discussing race and culture in the medical interview); and attitudes (describing one's own cultural background and biases) (Colleges 2006). The Specific Components offer a framework for evaluating the quality of curricular offerings and for identifying the methods used to evaluate teaching and learning.

Thus, for each study we assessed the incorporation of the 22 TACCT Domains and Subdomains within each of the 18 programs. If enough detail was provided within a case study to assess incorporation of Specific Components (i.e. Knowledge, Skills, and Attitudes) within the Domains and Subdomains, we documented this information. The mean percentage of "yes" responses to each Domain and Subdomain was computed and compared across each of the four reviewers.

RESULTS

Program descriptions

Definition and application of cultural competence. The findings of the stage 1 narrative review are presented in Table 1. The term "cultural competence" was defined by 14 of

the 18 programs (77%), with all of the 18 programs discussing how cultural competence was applied and/or operationalized.

Table 1. Literature Review Findings of Cultural Competence Training Programs Implemented in US Medical Education, 2000-2015

Author	Year	Goal	Cultural competency defined and applied	Stage of implementation	Educational methods employed	Required (Y/N)	Evaluation Methods	Outcomes
Aeder	2007	Improve awareness, communication & negotiation skills	Cross's definition applied at interpersonal level, not system's level	Residency	Workshop (group discussion, reflection, presentation); OSCEs	Y	None	None
Anderson-Juarez	2006	Improve cultural humility, increase awareness & specific skills	Cultural humility applied through increase in self-awareness, interpersonal sensitivity, & openness to learning from patients	Residency	Interactive games, diversity panel, book discussions, simulated encounters, videos, home visits	Y	Pre- and post-assessments; observational data from trained observers	Improvement in skills (patient perception/decision making); no significant change in attitude; Residents satisfied and saw high learning value; Faculty noted barriers (time intensive, needed full-time staff, need protected time in schedule for learning)
Campbell	2011	Improve cultural competency among surgical residents with international health focus	Broadly defined as ability to understand similarities and differences, skills to communicate and interact with people across cultures	Residency	Instruction on multidisciplinary care of patients international surgical missions; presentations and discussions, practice-based learning	N	Self-report survey	Residents appreciate impact of culture on health; increased confidence in dealing with different cultures
ChaChi	2010	Increase attitude, knowledge, and skills in interpreter use for LEP patients	Cultural competence not defined but described as requiring a set of attitudes, knowledge, and skills with interpreters & LEP patients	Preclinical	Workshop(readings, demonstration, group discussion) and OSCE	Y	OSCE	2/5 th of students failed OSCE; performed poorly on assuring confidentiality & positioning; performed well on management of interaction and patient-centeredness; faculty facilitators need more training and preparation to teach and provide feedback to students
Chun	2010	Improve an existing cultural competency curriculum	Cross's definition at an interpersonal and systems	Residency	qualitative needs assessment to inform curriculum	N/A	None	None

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Coupey	2004	Increase knowledge and awareness and begin working on skills	level Cultural competence not defined but applied as ability to address wide spectrum of cultural issues affecting medical care	Preclinical	change, OSCE Workshop (presentation & hands on CAM); patient interviews; simulated patient encounter; demonstration by faculty; and medical inpatient encounter	Y	None	None
Crandall	2003	Improve knowledge, attitude, and skills using theory	Howell's levels of communication competence and Culhane-Pera's adapted Bennett model	Preclinical	Assigned readings, lectures, discussions, sessions w/ experts, critical & reflective journal, patient interviews w/ interpreters, community site visits	N	Pre-post assessment using Culhane-Pera's MAQ;	Paired t-test show significantly improved cultural competency level; $p < 0.003$, non-overlap of 81%
Genao	2009	Increase knowledge through formal training clinical students	Broadly defined and applied	Clinical	Clinical vignettes (written & video), group discussion, Q&A with faculty	NA	Pre-post assessment using Bussey-Jones 2005 test	Intervention group had more of an increase in overall knowledge of communication and health & illness ($p < 0.01$); no knowledge increase in exploring culture, disparities, or stereotyping; results were still significant regardless of previous training & race/ethnicity
Griswold	2006	Increase awareness and skill used in cross-cultural encounters	Broadly defined and applied as tolerance of people with different cultural backgrounds and more acceptance of those persons who did not speak English	Preclinical	Briefing (by multidisciplinary team about definition of culture & refugee, use of interpreters); patient encounters (with attending & translator); debriefing evaluation	N	Research team analyzed the debriefing texts	Enhanced awareness in language & communication; folk beliefs, religion, family structure, gender roles; humility & sensitivity -skills were not measured
Kaul	2010	Improve attitude and skills and reduce an observed apathy/resistance to cultural competency	Broadly defined and applied as ability to recognize and work with cultural issues that arise in medical encounters	Preclinical	Video as stimulus for group discussion, demonstration of skills by faculty and upper level students as role models	Y	Pre-post assessment using 15-item Health Belief Attitude Survey	Increased attitude that supports eliciting patient's perspective & knowledge of how perspective affects quality of care; Students stated that the session advanced their awareness, even

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								more so with upper level students as facilitators
Lie	2009	Use reflective practice to increase attitude, skills, and knowledge	Cultural competence not defined but applied to include medicine as a culture	Clinical	Written reflection (response to trigger questions that acted as the stimulus), group reflection with non-physician faculty facilitator	Y	Pre-post knowledge exam; self-reported assessment:	Increase in knowledge statistically significant; high confidence in addressing cultural issues; large percentage of students saw value of cultural competency; students valued humility, concept of culture, family roles, interpreters; did not measure behavior change
Miller	2007	Improve skills and knowledge using cross-cultural OSCE to	Broadly defined using Betancourt's model of attitude, knowledge, and skills	Preclinical	Video of diverse patients relating their experiences, small group reflection, readings about concepts and tools, OSCE with feedback	Y	Qualitative analysis of semi-structured interviews	Students had increased knowledge and awareness of the gap between knowledge and skills in caring for diverse patients; learned to elicit patient's perspective & explore sociocultural factors;
Ming-Jung Ho	2008	Demonstrate that OSCE can be used as an assessment tool to measure cultural competency	Broadly defined and applied as ability to explore patient's perspective and the sociocultural factors influencing patient care	Clinical	OSCE, objective evaluations/self-assessment surveys	N	None	Self-assessment does not measure cultural competency better than an objective OSCE performance evaluation. (self-assessment poorly predicted OSCE performance)
Morell	2002	Increase level of awareness and knowledge with concurrent decrease in resistance	Definition and application focused on race, ethnicity & religion and employed both Howell's model on level of cultural competency and Betancourt's model of improving skills, knowledge,	Clinical	Video of simulated patient encounter as stimulus, discuss and reflect with peers and a facilitator in small groups	Y	Qualitative assessment	Facilitators saw improvement in students' awareness and knowledge

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			and attitude					
Parisi	2012	Prepare participants for encounters, focusing on leadership, team building and resource management using global health simulation	Culture broadly defined as race/ethnicity and language; Cultural competence broadly defined as knowledge, experience, rapport, empathy, language proficiency, and interpreter etiquette	Unspecified	Simulations done in groups and evaluated by trained professionals, group discussion, professional videotaped simulation	N	Communication Assessment Tool (not yet validated) self-report assessment	85% felt better prepared, simulation had positive impact on perceived cultural views & comfort in working in resource poor areas; 60% of students felt patient simulation was realistic
Tanabe	2007	Create curriculum based on needs assessment involving trainees and the program director	Broadly applied using Kripalani, Bussey-Jones, Katz, and Genao's definition	Residency	Formal lecture introducing specific knowledge content and introducing medical interview tools, journal clubs discussing case-based studies	Y	None	None
Teal	2010	Test an educational intervention to promote group-based reflection among medical students about implicit bias	Cultural competence not defined; implicit bias defined as how stereotypes are activated when physicians automatically classify a patient as a member of a group and impact patient interactions	Clinical	Provocative trigger (IAT), small group reflection	N	Pre-post, open-ended question survey	Increase in number and maturity of strategies to manage biases; decrease in patient-centeredness views and some persistence of the use of suppression as a strategy to manage bias
Wilkerson	2010	Create an objective checklist of items representing patient centered care to improve teaching and evaluation of patient-centered behavior	Culture applied as race/ethnicity; Cultural competency defined as eliciting patient's personal story, exploring beliefs and preferences, communication skills, and negotiating plan of care)	Clinical	OSCE and objective evaluation	Y	OSCE	Moderate level of patient-centered care, high amount of variability among students; students were least likely to explore patient's understanding of illness or patient's explanatory model

Seven of the 18 programs (39%) based their cultural competence training on Betancourt's model of cultural competence, which identifies attitudes, knowledge, and skills as the three components of cultural competence (Betancourt, Green et al. 2003). One program referenced Howell's "Levels of Culture Competency" and Culhane-Pera's "Model of Cultural Competency" (Culhane-Pera, Reif et al. 1997) as guiding the program's definition of cultural competence (Crandall, George et al. 2003). Both of these theoretical frameworks describe developmental stages in a graded progression of intercultural sensitivity and communication. Other programs operationalized cultural competence as the skills needed to work with patients who have limited literacy or limited English proficiency; the capacity to maintain cultural humility; and the ability to implement patient-centered care (Culhane-Pera, Reif et al. 1997, Morell, Sharp et al. 2002). Two of the 18 programs discussed how Western medicine is a culture unto itself (Kaul and Guiton 2010, Lie, Shapiro et al. 2010).

Stages and pedagogical approaches. Of the 18 programs 12 programs (67%) required cultural competence training. These 12 programs used multiple educational approaches such as personal or group reflection; lectures, presentations, readings, and clinical vignettes; experiential activities (e.g. community interviews, community site visits, international health experiences); and interactive activities (e.g., group discussion, verbal feedback from faculty, games). Cultural competence training was evenly divided across all stages of the training experience: five programs (28%) implemented cultural competence training in the preclinical stage of medical education; six (33%) in the clinical stage; and five (28%) during residency.

Program goals and outcomes. Thirteen of the 18 programs (72%) were evaluated. The evaluations assessed changes in student knowledge, skills, and attitudes.

Knowledge. Of the 18 programs, eight programs (44%) evaluated trainees' knowledge. Change in knowledge was measured by trainees' understanding of cultural humility (Morell, Sharp et al. 2002, Crandall, George et al. 2003, Lie, Boker et al. 2006); cultural sensitivity (Genao, Bussey-Jones et al. 2009); sociocultural dimensions of illness (Miller and Green 2007); and ways that provider perspectives or biases affect quality of care (Kaul and Guiton 2010, Teal, Shada et al. 2010). Seven out of eight of the programs reported an increase in knowledge.

Skills. To assess changes in skills as a result of cultural competence training six of the 18 programs (33%) administered an Objective Structured Clinical Examination (OSCE), a brief assessment of clinical skill performance with real or simulated patients (Aeder, Altshuler et al. 2007, Miller and Green 2007, Ho, Lee et al. 2008, Cha-Chi, Lagha et al. 2010, Chun 2010, Wilkerson, Cha-Chi et al. 2010). Five of these six programs (83%) reported improved patient-centered care (Cha-Chi, Lagha et al. 2010, Wilkerson, Cha-Chi et al. 2010).

Attitudes. The TACCT framework describes and operationalizes "attitudes" in a number of ways, including valuing curiosity, empathy, and respect in cross-cultural encounters; recognizing biases; and valuing the importance of social determinants in shaping health (Colleges 2006). In total, eight of the 18 case studies measured changes in attitudes, and variation existed in terms of how attitudinal changes were assessed. Five of the studies evaluated the effect of cultural competence training on a trainees confidence to work cross-culturally, with four demonstrating increased confidence (Kaul and Guiton 2010, Lie, Shapiro et al. 2010, Campbell, Sullivan et al. 2011, Parisi, Ahmed et al. 2012) and one of the programs showing no change in confidence to work cross-culturally (Juarez, Marvel et al. 2006). Other programs assessed changes in attitudes by measuring awareness of "conscious incompetence," (Morell,

Sharp et al. 2002); awareness of the gap between knowledge and skills in caring for diverse patients (Miller and Green 2007); and awareness of the roles of language, communication, folk beliefs, religion, family structure, and gender on the patient-provider interaction (Griswold, Zayas et al. 2007).

Program incorporation of the TACCT Domains and Subdomains

The incorporation of the TACCT Domains and Subdomains across the 18 programs is presented in Table 2. The four reviewers demonstrated a high level of concordance (intra class correlation coefficient = 0.89 across all items) in their perceptions about the incorporation of the TACCT Domains. Overall, 16 of the 18 programs (89%) addressed at least one aspect of Domain I (Rationale, context, and definition). The next most commonly addressed Domains were Domain II (Key aspects of cultural competence), and Domain V (Cross-cultural clinical skills), which were both addressed by 12 of the 18 programs (67%). Fewer than half of the programs (n=7 or 39%) reported addressing Domain III (Understanding the impact of stereotyping on medical decision-making). Only four of the 18 programs (22%) addressed Domain IV (Health disparities and factors influencing health).

Wide variation was observed in the frequency with which Subdomains were addressed. The most frequently addressed Subdomain was Domain I, Subdomain A (Definition of cultural competence), which was addressed by 14 of the 18 programs (78%). Expectedly, the Subdomains least frequently addressed were those of Domain IV (Health disparities and factors influencing health) which was the least frequently addressed Domain. Additionally, only one program addressed Domain II, Subdomain A (Epidemiology of population health).

Table 2. Assessment of TACCT Domains addressed in US medical education programs, 2000-2015

Domain I	Rationale, Context, and Definition	Subdomain	N (out of 18 programs)	%
		A. Definition of cultural competence	14	77.8
		B. Definitions of race, ethnicity, and culture	7	38.9
		C. Clinicians' self-assessment and reflection	13	72.2
		Total	16	88.9
Domain II	Key Aspects of Cultural Competence	A. Epidemiology of population health	1	5.6
		B. Patients' healing traditions and systems	9	50.0
		C. Institutional cultural issues	4	22.2
		D. History of the patient	9	50.0
		Total	12	66.7
Domain III	Understanding the Impact of Stereotyping on Medical Decision-Making	A. History of stereotyping	2	11.1
		B. Bias, discrimination, and racism	7	38.9
		C. Effects of stereotyping	5	27.8
		Total	7	38.9
Domain IV	Health Disparities and Factors Influencing Health	A. History of health-care discrimination	1	5.6
		B. Epidemiology of health-care disparities	1	5.6
		C. Factors underlying health-care disparities	3	16.7
		D. Demographic patterns of disparities	1	5.6
		E. Collaborating with communities	2	11.1
		Total	4	22.2
Domain V	Cross-Cultural Clinical Skills	A. Differing values, cultures, and beliefs	12	66.7
		B. Dealing with hostility/discomfort	4	22.2
		C. Eliciting a social and medical history	10	55.6
		D. Communication skills	12	66.7
		E. Working with interpreters	6	33.3
		F. Negotiating and problem-solving skills	9	50.0
		G. Diagnosis and patient-adherence skills	10	55.6
		Total	12	66.7

DISCUSSION

This study identifies gaps in content areas and opportunities for curriculum improvement while building upon on a previous systematic review that called for greater research on teaching methods and educational content most effective in achieving cultural competence (Beach, Price et al. 2005). Our findings support previous studies that have shown great variation in cultural competence training across medical schools leading to differences in program quality and outcomes (Robins, Fantone et al. 1998, Betancourt, Green et al. 2003, Beach, Price et al. 2005, Colleges 2006, Chun 2010, Dogra, Reitmanova et al. 2010, Gustafson and Reitmanova 2010). The appropriateness of cultural competence training as a strategy to eliminate racial and ethnic disparities in healthcare remains poorly understood. We conclude that more research is needed, primarily in four areas, which are detailed below.

Standardized and required curricula

Of the 18 programs included in this review 12 programs (67%) mandated cultural competence training. This represents an increase from a previous review conducted in 1999 which reported that 41% of cultural competence training programs included in the review were

mandatory (Loudon, Anderson et al. 1999). In addition, cultural competence training is more evenly spread across various stages of medical training compared to the 1999 review which reported cultural competence training was concentrated in the preclinical years (Loudon, Anderson et al. 1999). These findings suggest an increased recognition of the importance of cultural competence training and underscore the need for more standardized and rigorous training designs and evaluation.

Only two of the 18 programs examined as part of this review described using a standardized training curriculum with objectives, activities, and associated evaluation measures informed by theory (Morell, Sharp et al. 2002, Crandall, George et al. 2003). These programs emphasized the need to determine the level of competence and the learning objectives appropriate to each stage of training so that basic concepts could be introduced during the preclinical years and then put into practice during clinical training. Dissemination and implementation studies examining the application of the TACCT would likely promote greater standardization. Further, documentation of the use of TACCT might also be tied to accreditation standards and be subject to regular appraisals. Standardized training programs that incorporate rigorous evaluations will allow for more complete assessment of the role of cultural competence training on patient health outcomes.

Defining and measuring outcomes

Measuring the outcomes of cultural competence training is challenging, particularly given the lack of standardization and diversity of programmatic approaches. Of the 18 case studies included in this review, most programs (13 or 72%) were evaluated to assess changes in knowledge, skills, and attitudes of trainees – an approach that is useful and widely accepted (Betancourt, Green et al. 2003). However, when applied too narrowly it might encourage the false perception that providers can become experts in a given culture's beliefs and behaviors (Tervalon and Murray-García 1998, Beach, Price et al. 2005, Johnston and Herzig 2006, Seeleman, Suurmond et al. 2009). Additionally, while these 13 programs used pre- and post-training measures to assess changes in behaviors, attitudes, and skills, none reported following up with participants to assess if the desired changes persisted.

While cultural competence training has been linked to intermediate outcomes, such as improvements in provider knowledge, attitudes, and skills (Dogra, Reitmanova et al. 2010) and reductions in provider bias towards racial/ethnic minority patients (Tervalon 2003, Stone and Moskowitz 2011), no program included within this review examined the impact of cultural competence training on patient health outcomes (Beach, Price et al. 2005, Juarez, Marvel et al. 2006, Kripalani, Bussey-Jones et al. 2006). A lack of validated evaluation tools has been proposed as a primary reason for this gap (Beach, Price et al. 2005, Campbell, Sullivan et al. 2011). A literature review conducted by Lie et al. (2011) found only seven articles – all judged to be of low to moderate quality – that used validated criteria to evaluate the effect of cultural competence training on patient outcomes (Lie, Lee-Rey et al. 2011). Pooled data revealed no effect to moderate benefit (Lie, Lee-Rey et al. 2011). Future research should assess the benefits of extended training in cultural competence in relation to its costs, both for trainees and for patients. In this regard, patient health outcomes would provide a significant measure.

Provider barriers and resistance to training

Studies suggest that resistance among faculty and students to cultural competence training is an important obstacle (Weissman, Betancourt et al. 2005, Juarez, Marvel et al. 2006, Park, Betancourt et al. 2006, Tanabe 2007, Chun 2010). Reasons cited for the resistance include

the time- and labor-intensive nature of the training in the context of stretched schedules (Weissman, Betancourt et al. 2005, Juarez, Marvel et al. 2006, Park, Betancourt et al. 2006, Tanabe 2007, Chun 2010), the lack of institutional commitment or full-time funding to support training (Juarez, Marvel et al. 2006, Tanabe 2007, Dogra, Reitmanova et al. 2010), student apathy (Miller and Green 2007), and the lack of culturally competent role models (Weissman, Betancourt et al. 2005, Thompson, Haidet et al. 2010). According to one study, students in a cultural competence program perceived that attending physicians and residents had less cultural competence than they themselves did (Thompson, Haidet et al. 2010). Along with the adoption of universal definitions and outcome measures, these factors must be addressed before implementing cultural competence training.

Another obstacle is the lack of integration of cultural competence into biomedical models (Whitehead, Kuper et al. 2012). Because a fundamental aspect of cultural competence is accepting and working with patients' perceptions of their health and illness, it requires students and faculty to examine their own beliefs about how medicine is taught and practiced. Some trainees view cultural competence as a "soft science," and accord it less value than basic science or clinical knowledge (Shapiro, Lie et al. 2006). Strategies for overcoming this resistance have included using upper-level students as role models and facilitators for group discussions (Kaul and Guiton 2010) and involving students and residents in planning their cultural competence curricula (Robins, Fantone et al. 1998, Juarez, Marvel et al. 2006). Following the theory of diffusion of innovations, others have suggested identifying a "champion" to reduce resistance and increase the credibility of cultural competence training (Kripalani, Bussey-Jones et al. 2006). Instituting mandatory training in cultural competence, in the setting of more substantive cultural competence pedagogy, would emphasize its importance and validity for medical education.

Alternative approaches

Cultural humility is an alternative approach to cultural competence that emerged in medical pedagogy in the late 1990s and has yet to be formally integrated in contemporary curricula. In contrast to the notion of cultural competence, cultural humility posits that one can never be fully competent in another person's culture. Instead, one must undertake a lifelong commitment involving self-evaluation, self-critiquing, and redressing power imbalances (Tervalon and Murray-García 1998). Such an approach offers real potential to create long-term individual and structural changes in the way healthcare is delivered (Rajaram and Bockrath 2015). Training in this approach could involve reflective practices to increase cultural humility, promote cultural sensitivity, and mitigate biases. For example, after facilitators introduce an inciting event, individual and group reflection might reveal biases (Shapiro, Lie et al. 2006, Seeleman, Suurmond et al. 2009). Identifying and confronting biases is often difficult and emotional for trainees; therefore, the training required for facilitators to give appropriate feedback and guidance is a notable limiting factor (Morell, Sharp et al. 2002, Dogra, Reitmanova et al. 2010, Glick, Fernandez et al. 2010, Lie, Shapiro et al. 2010).

Another alternative well-recognized concept is "structural competency," which addresses institutional biases and emphasizes the importance of examining the structural determinants of physician-patient interactions, such as the health care delivery systems, location of clinics (e.g. proximity to trusted communities), hours of clinic operation, urban and rural infrastructures, and even the very definitions of illness, health, and culture (Gustafson and Reitmanova 2010, Dykes and White 2011, Ortega and Coulborn 2011, Whitehead, Kuper et al. 2012, Metzl and Hansen 2014). Students can benefit from understanding cultural competence at the organizational level

by discussing diversity, at the systemic level through monitoring and quality improvement, and at the clinical level through cultural competence training.

Lastly, our review found that domains such as health disparities and factors influencing health, as well as the epidemiology of population health, are not as incorporated into cultural competence training as other domains. However these domains encompass the social determinants of health that address the broader issues around patient care and health equity (Health 2015). Indeed cultural competence requires a critical understanding of the underlying socio-political and economic processes of power, privilege and institutional racism that create, support and maintain existing health disparities (Rajaram and Bockrath 2015). Rajaram and Bockrath (2015) outline how the concept of cultural competence can be made more robust by incorporating concepts such as Public Health Critical Race praxis and cultural humility to more fully tackle the impact of structural inequities on health disparities, arguing that, without a focus on these underlying social determinants of health, cultural competence cannot fulfill its role in eliminating health disparities (Rajaram and Bockrath 2015).

Limitations

This review has several limitations. First, although three large databases were searched, the review was limited to articles published between 2000 and 2015. Expanding the search to include a broader timeframe might have yielded more results; however, the timeframe was selected to yield the most contemporary and updated data representative of current practice. Second, only indexed studies were reviewed. The exclusion of non-indexed studies could have led to potential publication bias. Additionally, only 18 programs were included in this review, a small sample of the 172 total accredited medical schools in the US (Colleges 2006). Lastly, the self-administration of the TACCT, which is how the TACCT is designed to be implemented, would likely generate much more complete information. This review uses the TACCT simply as a guide to assess information available in the current scientific literature.

CONCLUSION

The AAMC aims to develop a physician workforce free of biases and capable of addressing the health needs of racial and ethnic minorities (Boelen 1995, Crandall, George et al. 2003, Price, Beach et al. 2005). This is an important goal given that more than half of the US population will consist of non-White racial groups and non-European ethnicities by 2043 (Bureau 2012). No single race or ethnicity will be the majority. As of 2011, however, non-Hispanic Whites comprise 75% of the physician workforce and 61% of medical school faculty (Colleges 2006). The significant socioeconomic and racial differences between physicians and their patients, combined with the difficulties of defining, applying, and assessing cultural competence in medical education and practice, make assessing the effectiveness of such trainings an ongoing challenge.

The healthcare system urgently needs healthcare providers who not only recognize health disparities and understand the sociocultural determinants of health (e.g., race/ethnicity, culture, gender, age, sexual orientation, socioeconomic status, health access and physical disability) but also have the necessary skills to address and eliminate them. If training in cultural competence is informed by the concept of cultural humility, which views cultural competence as a complex, lifelong process, then educational programs must provide such training at every stage, from medical school to continuing medical education. These programs must also take steps to address the effects of structural bias, including stigma and inequality, on health and healthcare at the

physician-patient interface as well as at the organizational and community level. Lastly, standardization of these training methods would be beneficial to the healthcare community as it would allow for rigorous evaluation across programs and increase the effectiveness of training.

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