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Engagement in an Online Cultural Competency Training

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Abstract

Objectives—Engagement with online cultural competency training has not been well studied. We examined knowledge, attitudes, and skills differences among medical students, physicians, and other professionals in an online cultural competency education program.

Methods—A total of 1745 participants completed up to four online modules aimed at exploring stereotype, bias, diet, and religion among African American patients with hypertension. We examined knowledge, attitudes, and self-reported skills with 17 multiple-choice questions embedded in the 4 modules. Participants received comparative responses with their peers.

Results—Between 75% and 84% of participants knew the definition of *stereotype* and <50% knew the definition of *bias* (47% students, 36% physicians, 33% others, $P < 0.001$). Most responded that minorities perceive bias (98%–100%) and believe that evidence exists showing that bias affects decision making (62%–69%). Although most perceive that religious and spiritual beliefs affect reaction to illness often (78% students, 68% physicians, 79% others, $P < 0.001$), few would ask about religious beliefs during a typical encounter (13% students, 16% physicians, 30% others, $P < 0.001$).

Conclusions—All of the participants struggled to define bias; however, most agreed that minorities perceive bias in the care they receive. We examined usage and interaction with the online content as a dimension of engagement.

Keywords

cultural competency/education; Internet; online systems/utilization

Cultural competency training is an accreditation requirement of medical schools in the United States.¹ Great importance has been placed on cultural competency because for physicians to effectively care for an increasingly diverse patient population they must be aware of the role that culture plays in shaping attitudes, values, and beliefs.^{2,3} An effective

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cultural competency education model raises awareness of the cultural norms of diverse patient groups. Research about cultural competency training suggests that it effectively sensitizes healthcare professionals to cultural differences and it may improve some clinical outcomes.⁴⁻⁶ Formats for education include lectures, workshops, and group discussions.^{4,5}

Online education offers flexibility and convenience, which helps overcome barriers to participation in traditional educational formats.⁷ Online education provides a standardized approach as compared with other delivery methods, such as lecture-based or workshop-type formats. When following the principles of adult-based education, evidence suggests that Web-based interventions are at least equally effective as traditional education formats.⁸ In fact, in a randomized trial we found that online delivery and a lecture-based cultural competency training delivery were associated with equally high cultural attitudes among first-year medical students.⁹

In the present study, we examined knowledge, attitudes, and self-reported skills differences among medical students, physicians, and other professionals in the online cultural competency education modules.⁹ Understanding usage and interaction with the online content adds a dimension of engagement¹⁰ and formative assessment for online educational interventions.

Methods

In our cross-sectional study, physicians, medical students, and other healthcare professionals completed four online modules emphasizing cultural competency concepts relevant to the care of African American patients with hypertension. The study period was 2011 to 2015.

Design, Setting, and Participants

The Cultural Competence Online for Medical Practice is available at <http://www.ccomp.cme.uab.edu>. Based on our formative evaluation,¹¹ we organized the four online modules into two groups: provider perspective (exploring bias and stereotype) and patient perspective (exploring diet and religion).

The interactive modules include case vignettes; video stories from real-life patients¹²; facts and concepts; and questions exploring knowledge, attitudes, and skills. After each question was answered, participants received dynamic comparative responses with their peers who also completed the modules. Each module took approximately 5 to 15 minutes to complete. The supplemental material shows an overview, the educational objectives, and a description of the cases.

We recruited first-year medical students enrolled at the University of Alabama at Birmingham. Module completion was a requirement of the Introduction to Clinical Medicine course (matriculating classes of 2011–2014). To track compliance, students were asked to request continuing medical education (CME) credit. Because the site is available in the public domain, we also recruited physicians and other providers using online paid advertising.¹³ Physicians had the option of requesting CME at no charge. The institutional review board at the University of Alabama at Birmingham approved the study and consent

was obtained online. The funding agency had no role in the design, implementation, and evaluation of the study.

Figure 1 shows the data flow and participants. Participants completed one or more modules in any order. We excluded participants who did not register to receive CME because we were interested in professionals in the medical field. We also excluded duplicate participants (same name or used the same Internet Protocol [IP] address) or residents (because few registered). Of note, other healthcare professionals could have registered to receive CME credit. Because the registration occurred after completion of the module, we matched responses based on unique IP addresses and last and first names.

Measures and Statistical Approach

We examined knowledge, attitudes, and self-reported skills with a total of 17 multiple-choice questions embedded in the 4 modules (bias, stereotype, diet, religion). For knowledge questions, we reported percentage of correct answers. We compared the percentage selecting “often” with all other responses (“sometimes,” “rarely,” “never”); we also compared positive responses (“yes,” “maybe”) with negative responses (“no,” “don’t know”). Combining responses followed the reporting guidelines of educational research.

We used the χ^2 test to compare responses among groups (physicians, students, and others). We used STATA 11.2 software (StataCorp, College Station, TX) for analyses and defined statistical significance at $P = 0.003$ (Bonferroni correction for multiple comparisons).

Results

Between July 2011 and June 2015, 4954 unique users participated. We excluded users who did not register for CME credit ($n = 2888$), users with duplicate name/IP addresses ($n = 293$), and medical residents ($n = 28$), which left 1745 unique user responses (Fig. 1). The Table shows the participant characteristics.

Provider Perspective

Figure 2 shows knowledge and attitudes in the providers’ perspective modules, exploring stereotype and bias. Participants were likely to know the definition of *stereotype* (75%–84%); however, <50% identified the correct definition of bias (47% students, 36% physicians, 33% others, $P < 0.001$).

Most of the participants responded that minorities perceive bias in the care that they receive (98%–100%) and believe that evidence exists showing that bias affects decision making (62%–69%). Approximately half of all responders believe patients are treated differently if they are not the same as their provider (44%–51%). Fewer medical students (41%) endorsed that physician beliefs and expectations affect the treatment that is provided to patients (physicians 51%, others 59%, $P < 0.001$).

Fewer than 20% of all groups believed that the physician in the vignette had enough information to conclude that the patient in the case vignette was not taking his medications. Physicians (76%), however, were most likely to attribute nonadherence as the cause of

uncontrolled hypertension (students 67%, others 58%, $P < 0.001$). All of the groups responded that communication with the patient in the vignette was affected because of differences in race/ethnicity (97%–99%) and that the physician stereotyped the patient (all 98%).

Patients' Perspective

Figure 3 shows self-reported skills and attitudes responses in the patients' perspective modules, which explored diet and religion. Most participants would discuss diet before medication adjustment (75%–80%) when blood pressure was not at goal. Others, however, would recommend the Dietary Approaches to Stop Hypertension diet more frequently (59%) as compared with physicians (51%) or students (46%, $P = 0.001$). Approximately half would inquire as to who cooks at home (47%–52%).

Regarding religion, although most perceive that religious and spiritual beliefs affect reactions to illness often (78% students, 68% physicians, 79% others, $P < 0.001$), few would ask about religious beliefs during a typical encounter (13% students, 16% physicians, 30% others, $P < 0.001$). The minority perceived that religious and spiritual beliefs negatively affect behavior and treatment decisions often (12%–27%).

Discussion

In developing the content to address cardiovascular disparities, we found four important domains in a prior study: stereotype, bias, diet, and religion.¹¹ In the current study, we examined knowledge, attitudes, and self-reported skills in the online cultural competency education modules as a measure of engagement and formative assessment.

All of the groups struggled to define bias; however, most agreed that minorities perceive bias in the care that they receive. More than half acknowledged that bias affects decision making and approximately half responded that patients often are stereotyped. Working through the case, participants uniformly recognized that the physician stereotyped the patient and that communication was affected because of differences in race/ethnicity. Differences in clinical experience likely explain the difference in responses for the question regarding nonadherence as the cause of uncontrolled hypertension and the recommendation of the Dietary Approaches to Stop Hypertension diet. Participants also acknowledged that religious and spiritual beliefs affect reactions to illness often.

Cultural competency is a required part of medical education and a variety of educational delivery methods are available. Online educational programs are increasingly being tested; for example, such programs may focus on addressing appropriate communication techniques to aid in clinical encounters in which cultural differences may play a role.

Our study adds to the literature of cultural competency education by highlighting measures of engagement and formative assessment in online education for wide-reach implementation. Engagement is defined as how the user interacts with the online material. For example, prior studies have examined the relation between Web traffic and outcomes. Web traffic has been defined as frequency of interaction (visits per day), volume (number of page views), and

engagement with the site (pages viewed per visit, cases completed, time spent, CME credit obtained), among other factors.^{10,13} Limited information is available on how participants interact with online cultural competency education programs.¹³

We acknowledge that there are limitations to our study. First, most participants were from a single academic institution; hence, they may lack representativeness. Second, because the site was available in the public domain, the professions of the “other” group of participants were unknown. Third, participants who did not register were excluded.

Cultural competency is a necessary component of medical education because it can help decrease some of the factors contributing to health disparities. Physicians, medical students, and other healthcare providers can identify stereotype and bias in clinical encounters. The results reveal that recognizing stereotype and bias in clinical practice is not the most difficult obstacle for providers, because all groups responded overwhelmingly that the physician in the case vignette stereotyped the patient. It is more likely that the challenge for healthcare providers lies in not acting on stereotypes and bias when treating patients. Challenging areas for future research include studying whether online cultural competency courses change the actions of healthcare providers with patients during clinical encounters.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Key Points

- Participants struggled to define bias and not stereotyping. Most agreed that minorities perceive bias in the care that they receive.
- We examined usage and interaction with the online content as a dimension of engagement.

Fig. 1.
Data flow, exclusions, and included participants. IP, Internet Protocol.

Knowledge

* $p > 0.10$, ** $p \leq 0.01$, *** $p < 0.001$

Attitudes

Fig. 2.

Provider perspective. Knowledge and attitudes in modules exploring stereotype (S) or bias (B). MD, Doctor of Medicine.

Fig. 3.

Patient perspective. Self-reported skills and attitudes in modules exploring diet (D) or religion (R). DASH, Dietary Approaches to Stop Hypertension diet; MD, Doctor of Medicine.

Table

Participants' characteristics (N = 1745)

Characteristic	N (%)
Participant	
Medical student	644 (38)
Physician	294 (17)
Other	787 (45)
Educational institution ^a	
Yes	902 (52)
Institution A	579 (64)
Institution B	106 (12)
Institution C	57 (6)
Other ^b	160 (18)
No	843 (48)
State	
Alabama	672 (39)
Louisiana	119 (7)
Texas	67 (4)
Maryland	57 (3)
New York	53 (3)
Illinois	47 (3)
Florida	45 (3)
Virginia	37 (2)
Pennsylvania	34 (2)
Tennessee	30 (2)
California	29 (2)
Other ^c	286 (16)
Unknown	269 (15)

^aE-mail includes an "edu" domain.^b88 other institutions.^c34 other states.