

ORIGINAL RESEARCH

Evaluation of the cross-cultural health assessment as an interdisciplinary method of cultural competency education

Susan Caplan¹, Roxie Black²

1. College of Nursing, Rutgers, the State University of New Jersey, Newark, USA. 2. University of Southern Maine, Lewiston, Me, USA.

Correspondence: Susan Caplan. Address: College of Nursing, Rutgers, the State University of New Jersey, Newark, USA. Email: Susan.caplan@rutgers.edu

Received: August 23, 2013
DOI: 10.5430/jnep.v4n4p58

Accepted: September 11, 2013

Online Published: January 17, 2014

URL: <http://dx.doi.org/10.5430/jnep.v4n4p58>

Abstract

Background: Although there are numerous educational models to guide cultural competency training in health care programs, many of these remain conceptually flawed and there are few studies that examine the outcomes of training.

Purpose: The purpose of this study was to assess the effects of a multi-faceted cultural competency education module on attitudes, self-awareness, knowledge and skills of Nursing, Occupational Therapy and Athletic Training students.

Methods: The research design used a mixed methods approach, incorporating a quantitative pre- and post-class survey instrument, the Cultural Competency Assessment (CCA) instrument. A qualitative descriptive methodology using content analysis was used to analyze students' experiences of the Cultural Assessment Interview. The M-C Form C version of the Marlowe-Crowne Social Desirability scale was used to assess if the need for social desirability influenced students' responses to the CCA. Differences in pre- and post-test scores on the CCA were analyzed by paired T tests for related samples and Repeated Measures Analysis of Variance (RANOVA). For purposes of subgroup analyses, the entire sample was divided into two groups based on course enrollment, undergraduate Nursing and Occupational Therapy. Pearson's product moment correlation was used to determine if there were a correlation between the Marlowe-Crowne Social Desirability score and score on the CCA.

Results: One hundred and nine students engaged in a 6-hour cultural competency module within their regular classes. Fifty-three students completed pre- and post-test data on the Cultural Competency Assessment Instrument, while 109 completed the Cultural Assessment Interview. There was a significant change between pre-test ($M = 10.34$; *s.d.*, 1.77) and post-test ($M = 10.87$; *s.d.*, 1.77) scores on the CCA ($p = .009$) with no differences in changes by subgroup analysis. Students with low perceived competency ($M = 9.7$; *s.d.*, 1.63) scored significantly lower than students with high perceived competency ($M = 11.7$; *s.d.*, 1.68) ($p = .03$) at baseline. Qualitatively, students articulated new knowledge about the culture of their interviewee, identified their need for increased cultural competence and were surprised by their increase in self-knowledge.

Conclusion: Due to globalization and international migration, cultural competency is an essential part of the nursing curriculum. We have proposed several innovative and successful features of a brief cultural competency module that can be adopted for required nursing course work, both in the United States and internationally, including exercises in group

communication skills, experiential exercises and the Cultural Assessment. The quality of nurse/patient communication is intricately related to patient adherence to treatment and quality of care. However, much more work must be done to assess the effectiveness of cultural competency training, especially in the clinical setting.

Key words

Cultural competency, Nursing education, Occupational Therapy education, Interdisciplinary education, Educational outcomes

1 Background

Cultural competency has been defined as “the process of actively developing and practicing appropriate, relevant, and sensitive strategies and skills in interacting with culturally different persons”^[1]. Within the last decade, culturally competent health care has been identified as an essential component of improving health literacy and eliminating health care disparities^[2,3]. To achieve this end, the Institute of Medicine^[4,5] has recommended education in cultural competency for all health care providers. Health care disciplines including Nursing, Occupational Therapy, Pharmacology, Physical Therapy, Social Work, Dentistry and Medicine recognize the need for students to be knowledgeable about how to care for people of diverse cultures^[6-18]. In addition, The Joint Commission, with funding from the Commonwealth Fund, is developing accreditation requirements for hospitals to ensure that health care providers are culturally competent^[19]. However, in Nursing, there are no standardized requirements for inclusion of cultural content in the curricula. Moreover, in spite of these efforts at integrating cultural competency into curricula for at least a decade, nursing students still feel ill-prepared to conduct cultural assessments and feel uncomfortable providing care to clients of diverse backgrounds^[20,21], which speaks to the larger issue of the conceptualization of cultural competency education.

1.1 Conceptualization of cultural competency education

Education in cultural competency entails imparting a set of behaviors or skills, knowledge, attitudes or awareness, and policies that are necessary to become effective health care providers^[22,23]. To achieve these objectives, there is a growing consensus across disciplines as to what comprises cultural competence. Specifically, cultural competence in attitudes would include awareness of stereotyping and personal biases: racism, sexism, ableism, heterosexism and classism and how they relate to provider decision-making^[24]. Awareness also includes an understanding of one’s own cultural background and cultural assumptions and the development of such attitudes as curiosity, respect, openness and empathy^[25]. Competencies in cultural knowledge include knowledge of health disparities and historical factors that shape health behaviors and incidence and prevalence of particular diseases among diverse populations^[26,27]. The development of cultural skills includes competencies in communication and negotiation, including conducting an ethnographic medical interview to assess health beliefs and the social context influencing patients’ conceptualization of illness^[26].

Across health care disciplines, models exist to serve as guidelines for teaching cultural competency. In Nursing, cultural competency training originated from Leininger’s Culture Care Theory^[28], one of the most prevalent teaching models. Other well-known nursing cultural competency models are Purnell and Paulanka^[29], Giger and Davidhizar^[30] and Campinha-Bacote^[31]. Giger’s 2013 book, *Transcultural Nursing*^[32] and Dayer-Berenson’s 2011 book, *Cultural Competencies for Nurses*^[33] are popular teaching texts. In Occupational Therapy, a well-known model is the Cultural Competency Model by Black & Wells^[25]. In spite of these comprehensive theoretical models, many cultural competency curricula remain conceptually flawed. Until recently, cultural competency training focused on imparting knowledge of specific characteristics of diverse cultures. This has resulted in criticism of the cultural competency movement because of the potential for stereotyping and oversimplification of the complexities of culture^[24,26]. Specific cultural characteristics do not reflect the multiple influences upon a culture, nor the subcultures within, and the knowledge imparted often fails to account for sociopolitical barriers and the differences in power between the provider and his/her patient. For example, nursing students who had received education in cultural competency reported frequent assessment of patients’ religious background, language and identity, but rarely assessed their patients’ experiences of bias and discrimination^[34]. When

cultural competency education focuses solely on self-awareness and acknowledgement of discriminatory attitudes and ethnocentrism, the larger implication of health care disparities due to institutional racism and class differences are often overlooked^[26].

An additional conceptual flaw in cultural competency education is the absence of interprofessional education (IPE). IPE has been endorsed as an essential component of education in the health professions by O'Neill and the Pew Health Commission^[35] and the Institute of Medicine^[5]. All health care professions recognize the need for cultural competency and understand the importance of interdisciplinary collaboration; however, there are few cultural competency curricula that also integrate interdisciplinary learning^[36]. Conceptual flaws in the definition of cultural competency among students in the health professions has resulted in inconsistent evaluation of cultural competency educational interventions, and a lack of standardization and uniformity of appropriate evaluation strategies^[37].

1.2 Evaluation of outcomes of cultural competency education

Of the few studies within the past 15 years that have evaluated the effectiveness of cultural competency education, changes in knowledge was the most common type of assessment. These studies found improvement in knowledge of differences in health beliefs, practice of alternative and folk medicine, spirituality and adverse effects of lack of knowledge among medical students^[38, 39]. However, changes in knowledge did not affect clinical performance^[37]. Few studies focused on changes in attitudes. Gebru, Khalaf and Williams (2008)^[40] used mixed methods to analyze a three year curriculum to promote culturally congruent care among nursing students in Sweden^[41]. Quantitative data consisted of responses to questionnaires and qualitative data consisted of open-ended responses to two different vignettes presented to students at the beginning and end of the three year program. Results indicated that at the end of the program, students gave high ratings to perceived competence to deliver health care to diverse populations and attitudes to learning became more open and inviting. Using a pre and post-test design to examine the effectiveness of an in-service program to develop empathy, Ancel (2006)^[42] found a significant increase in empathy among 263 nurses in Turkey. One of the few studies of inter-professional education (IPE) assessed changes in knowledge and attitudes among Nursing, Pharmacy, Social Work and allied health science students. A pre- and post-test comparison indicated improvement in communication skills, professionalism, team work and self-confidence^[36]. Many of the studies cited above and the few previous studies that have measured the effectiveness of cultural competency training among health professionals are methodologically flawed^[3]. In a systematic review of 64 studies of the effectiveness of cultural competency training among health professionals, Price *et al.* (2005)^[43] concluded that few of these studies adequately described the setting, participants or nature of the intervention to allow for replication. Only 13% had an intervention and control group and only 22% documented the reasons for excluding data.

The numerous measures used to assess cultural competency education such as the Multicultural Counseling Inventory^[44], the Inventory for Assessing the Process of Cultural Competence among Health Professionals (IAPCC)^[43], and the Cultural Self-Efficacy scale^[46], are lacking in validity^[37]. In an extensive literature review of 54 Cultural Competency instruments used in Medicine, Nursing, Mental Health and other professions, Kumas-Tan *et al.*^[37] concluded that the existing measures lacked validity, primarily because items on the questionnaires reflected the conceptual flaws described above in 1.1, in addition to having been normed on a white, middle class, highly educated population, without patient input as to their needs in the clinical setting.

Due to the issues with validity of the existing measures, other means of assessing outcomes of cultural competency training have been developed. These include the mock patient interview and videotaping of the interview, participant observation, student essays and journals, qualitative open-ended interviews, and questionnaires in response to vignettes. However, in essays, journals and open-ended interviews, students frequently do not report their true feelings and attitudes due to a fear of expressing socially unacceptable opinions, also known as social desirability bias. Social desirability bias is the tendency of individuals to answer questions in a manner that will be viewed favorably by others^[47]. It can take the form of over-reporting "good behavior" or under-reporting "bad" or undesirable behavior^[47]. Moreover, there is the issue

of how to validly measure changes in attitudes such as empathy, respect, and self-awareness that strongly influence behavior and effectiveness of practice in the clinical setting. The current research was designed to address some of these issues.

1.3 Purpose

This study adds several innovations that are likely to yield a greater validity to the measurement of a cultural competency educational module. These include the following innovations in design, intervention and measures used to evaluate outcomes:

- 1) A mixed methods approach to evaluation consisting of quantitative pre- and post-testing using a validated instrument to measure attitudes, awareness and skills and; a qualitative analysis of responses to a self-assessment and evaluation of perceptions of the cultural interview;
- 2) A cultural competency intervention designed to increase skills and awareness through the implementation of a cultural interview;
- 3) An intervention that consists of concurrent teaching of the module among three different disciplines, Nursing, Athletic Training and Occupational Therapy, with faculty from Occupational Therapy and Nursing evaluating outcomes;
- 4) Lastly, the incorporation of the Marlowe-Crowne measure of Social Desirability as a means to assess the validity of self-report.

The purpose of this study is to assess the effects of an interdisciplinary cultural competency education module on attitudes, self-awareness, self-report of behavior and skills. We will also explore whether the outcomes of this study vary by discipline; Occupational Therapy or Nursing.

2 Methods

The research design was a mixed methods approach^[48], using a quantitative pre- and post-class survey instrument, and a qualitative descriptive methodology. This included a qualitative assessment of open-ended questions in response to the Cultural Assessment Interview that was used to understand students' experiences of the cultural encounter^[48,49]. The study protocol was approved by a university institutional review board.

2.1 Sampling procedures

The sample had a total of 109 students attending classes in either Occupational Therapy (Social Issues and Ethics) or Nursing (Health Assessment) on two different campuses over a period of three semesters between September 2010 and December 2011. Students attending both classes came from the following disciplines: Occupational Therapy (n = 22); Nursing (n = 76) and Athletic Training (n = 11). The purpose of the study was explained to students on the first day of class. Students were informed that their voluntary completion of questionnaires would provide information about the effectiveness of the cultural competency module. No incentives were provided and students could refuse to take part in the study and refuse to have their responses to the Cultural Assessment Interview used as part of the study. Procedures for anonymity were explained and consent forms were distributed in class. Students were asked to write the number of their consent form on their Cultural Competency Assessment instrument (CCA) and to retain their participant number for follow-up testing. Consents and CCA's were each placed in a separate sealed envelope and collected by a research assistant, who compiled a list of names of participants and their corresponding number. This was placed in a locked file cabinet. Neither faculty member was aware of participant identity or identification number. The list was recirculated by the research assistant during post-testing, so that students who had forgotten their numbers could retrieve them and mark their post-tests accordingly. The cultural assessment interviews were deidentified by eliminating the title page. The PIs

and authors of this study were also the faculty members of the course; however the study was designed to safeguard student confidentiality. The occupational Therapy faculty member analyzed Nursing and Athletic Training students' responses, while the Nursing faculty analyzed occupational Therapy students' responses. Moreover, the cultural competency module was an enhancement of standard course requirements; thus there was no breach of ethical standards in the use of students as participants.

2.2 Setting

The study was conducted in a public university in the Northeastern United States.

2.3 Intervention

The intervention consisted of two three-hour class sessions and additional assignments and discussions as a part of the required Health Assessment class (for Nursing and Athletic Training students) and the Social Issues and Ethics required class for Occupational Therapy students. The textbook used in the Health Assessment course, *Physical Examination and Health Assessment* by Carolyn Jarvis contained chapters on the Interview and Cultural Competence^[50]. One text used in the Occupational Therapy Social Issues and Ethics Course, was *Culture & Occupation: A Model of Empowerment in Occupational Therapy* by Black and Wells^[25].

The classroom portion of the cultural competency module incorporated the main components of the cultural competency curricula outlined above^[26] (including an approach to increase awareness and sensitivity, knowledge of cross-cultural issues, and the development of tools and skills). Instructional strategies included the use of experiential exercises such as the Hat Game. In this exercise, a form of role playing, students were asked to pretend that they are at a party and each student was given a hat with a stigmatizing societal label that is unknown to the wearer. The other students were asked to interact with that person as they normally would base on their assumptions about a person who had the identity of the given hat label. This exercise was designed to examine personal biases. The Cultural Object Exercise was a classroom discussion where students were asked to bring in an object that had symbolic meaning for the student. Other strategies included open-ended discussions on issues of relevance; for example, the Newsweek article "the Refugees who Saved Lewiston"^[51], generated discussion on people's perceptions and attitudes about a refugee community that was known to most students. Also included in the contents were health literacy videos, communication exercises adapted from the textbook, *Patient-Provider Communications: Caring to Listen*, Hart (2010)^[52] and videos on cross-cultural communication. The Cultural Competency Interview (discussed below in 2.4) was an assignment to aid in the development of skills in cross-cultural interviewing and self-awareness through reflections on the interview process.

2.4 Outcome measures

There were several methods of assessment of the effectiveness of the educational module that included: an analysis of classroom behaviors and comments on course evaluations and the discussion board; the CCA; the Marlowe-Crowne Social Desirability scale; and an analysis of responses to a structured cross-cultural interview, the Cultural Assessment Interview.

2.4.1 Quantitative outcome measures

- 1) Cultural Competency Assessment instrument (CCA)^[49]. The CCA is a thirty item assessment, measuring two domains of cultural competency, (a) behavior and (b) awareness and sensitivity. These domains were derived from a principal axis factor analysis. A two factor solution emerged with item loadings above .40, explaining 56% of the variance. Construct validity was supported by the results of the principal axis factor analysis and by a comparison of the mean scores of the CCA, which were significantly higher for providers who reported previous diversity training compared to those who had not received training. The CCA demonstrated adequate test-retest reliability over four months ($r = .85$, $p = .002$) among hospice workers. Among healthcare providers in non-hospice settings, the CCA had an internal consistency reliability of .89 overall (.91 and .75 for the two

subscales)^[50]. The CCA was selected because it is one of the few scales that were validated among multi-disciplinary health care providers and has broad-based questions about sensitivity that do not reflect the assumption of a dominant white majority.

- 2) The M-C Form C version^[51] of the Marlowe-Crowne Social Desirability scale^[52], consisting of thirteen items, was used to assess if the need for social desirability influences students' responses. The M-C Form C^[51], a short version of the Marlowe-Crowne Social Desirability scale, was used in this study because of its shorter length than the original 33 item scale^[52] and its greater reliability ($\alpha = .76$) compared to previously developed short versions^[53]. The instrument consists of items that are normed for a true response from the majority of people, such as "I am sometimes irked when people ask favors of me."

2.4.2 Qualitative outcome measure

Cultural Assessment Interview (see Table 1). The Cultural Assessment Interview was a graded classroom assignment that consists of an ethnographic interview, self-evaluation and reflection and discussion of personal experiences in comparison with published literature (see Table 1). The purpose of this exercise was to develop cultural competence through an understanding of the context of the individual's situation, including his/her cultural identity, experiences with immigration and acculturation, environmental stressors and coping mechanisms. Students worked in pairs and were expected to conduct an ethnographic interview with a person whose cultural background (including religion, sexual identity, disability status) was different from each of the students. Prior to conducting the interview, students were required to read about the culture in a source of their choice and/or the following sources: *Transcultural Nursing*, 5th Edition, by Joyce N. Giger and Ruth E. Davidhizar^[30], *Cultural Health Assessment*, Fourth Edition, Carolyn E. D'Avanzo^[54]. The interview consisted of a cultural assessment relating to cultural heritage and religious traditions, migration history (if applicable) and cultural health beliefs using the ESFT model^[26] for cross-cultural assessment. This model assesses the interviewee's Explanatory Model, Social and Environmental factors related to illness including barriers to care, Fears and Concerns about Treatment and Therapeutic Contracting to negotiate treatment. If the interviewee had not personally experienced an illness, the interviewer could inquire about a hypothetical situation or an illness within the family. Written permission was obtained from the interviewee prior to the interview. Self-reflective questions in the assignment that were used for the qualitative analysis consisted of the following:

- 1) Prior to reading these book chapters, were there any cultural traits you expected to encounter when you interviewed your client. If so, what were they?
- 2) How did your experiences during the interview differ or compare with the textbook case?
- 3) Did the person's health beliefs coincide with what the textbooks suggested?
- 4) How did you feel about the interview?
- 5) Were there any limitations you felt as a nurse or occupational therapist?
- 6) How did you convey information about treatment?
- 7) Were there any barriers to communication?
- 8) What were some of the strengths that you brought to the situation?

2.5 Data analysis

A quantitative analysis was conducted using the pre- and post-test scores of the CCA and the Marlowe-Crowne Social Desirability Scale. The qualitative analysis consisted of a content analysis of responses to open-ended questions on the Cultural assessment interview and a descriptive analysis of comments made during class and on course evaluations.

Table 1. Cultural Assessment Interview Assignment Guidelines

Course Number:	NUR 209	Course Title:	Health Assessment
<p>Cultural Assessment Oral Presentation and Paper (Due _____): The purpose of this exercise is to develop cultural competence through an understanding of the context of the individual's situation, including their cultural background, experiences with immigration and acculturation, environmental stressors and coping mechanisms. You should allow at least 1 hour for the interviews, which can take place at your clinical site or at a mutually agreed upon place.</p>			
<p>Students will work in pairs. Each student is expected to do one interview with a person whose cultural background is different than his/her own. The text (Physical Examination and Health Assessment; Jarvis) covers cultural assessment within Chapter 3 and specifically the Heritage Assessment pages 40-43. Additionally, the assigned article by Joseph R. Betancourt (2006) <i>Cultural Competency: Providing Quality Care to Diverse Populations</i>. The Consultant Pharmacist, Vol. 21, 988-995 details the ESFT Model for cross-cultural assessment, specifically outlined in Table 1, p.993. The use of open-ended questions will enable you to establish rapport and to elicit a richer response. The goal is to encourage the client to tell you their story. Start off by obtaining permission from the client to interview them. Remind them that if there are any questions that make them uncomfortable or that they do not wish to answer, they should just let you know.</p>			
<p>Before you do any interviews or read any background material, answer the following question:</p>			
<p>Prior to reading these book chapters, were there any cultural traits you expected to encounter when you interview your client. If so, what were they?</p>			
<p>Before you do any interviews, read the background material on that person's culture on e-reserves in Blackboard at the library:</p>			
<p>1) Transcultural Nursing, 5th Edition, by Joyce N. Giger and Ruth E. Davidhizar, 2008; Mosby: St. Louis, Missouri 2) Cultural Health Assessment, Fourth Edition, Carolyn E. D'Avanzo, 2008; Mosby: St. Louis, Missouri.</p>			
<p>Prior to the interview, obtain a signed consent form from the participant.</p>			
<p>You can then begin your first interview. You will repeat this assignment with someone of the same cultural background as the person in the first interview. This will be followed by the discussion.</p>			
<p>Areas to Assess (this is not an exhaustive list)</p>			
<p>1) Cultural data: a) Place of birth b) Where did he/she grow up? Did the person grow up in an ethnic enclave or were there very few people of similar cultural background. c) Language: Do you speak another language? What language is spoken in the home? What language are you most comfortable in? What language do you use to communicate with friends? d) Cultural background of parents? e) Reason for Migration: What were the person's or their parents motivations for leaving - economic, political, religious persecution. f) Ethnic Identity. How strongly identified is the person with people of similar cultural backgrounds? Did their family maintain ties to their country of origin? Do they visit relatives back home? Does he/she participate in cultural activities, residence, former/present occupation, education, date retired, marital status, children g) Social supports: family/friends close-by or did he/she leave people behind. h) Religion/spirituality - is religion/spirituality used as a coping mechanism? 2) Level of Education 3) Employment 4) Explanatory model of Health and Illness: Obtain a brief Health History—hospitalizations, surgeries, chronic illnesses, medications. a) What do they think caused their problem? b) Why do they think it started when it did? c) How does it affect you? d) What worries you the most? e) What kind of treatment do you think you should receive? 5) Social and Environmental Factors a) How do you get your medications? b) Are they difficult to afford? c) Do you have time to pick them up? d) How quickly do you get them? e) Do you have help getting them if you need it? 6) Fears and Concerns a) Are you concerned with the dosage, color, or size of pill? b) Have you heard anything about this medication? c) Are you worried about the side effects? 7) Therapeutic Contracting (Treatment) a) Do you understand how to take the medication? b) Can you tell me how you take it?</p>			
<p>How to write this up:</p>			
<p>For the discussion portion, your reference material can include the above-texts or any peer-reviewed journal article or book. (General internet references can only be used as supplementary references.)</p>			
<p>Read the section pertaining to your clients' cultural background and discuss the following questions for each other the clients. There are no right or wrong answers! I'm interested in finding out how you processed the experiences. You can use initials and combine your responses for each of the interviewees in the same paragraph. In other words, you don't have to respond separately to each question for each client.</p>			
<p>Cultural Impressions:</p>			
<p>1) Were your expectations that you stated prior to the interview met, or was the person different from what you expected? 2) How did your experiences during the interview differ or compare with the textbook case? 3) Did the person's health beliefs coincide with what the textbooks suggested? 4) Did they use similar language to describe their causal beliefs as the textbooks suggest? 5) How might you explain any differences between your own impressions and the textbook's explanation? 6) How might the acculturation experience account for differences? 7) Did your clients have concerns about treatment? Was the treatment that they were receiving congruent with their desired care? 8) Were there barriers to care? 9) How might you address these barriers to treatment? 10) How did you feel about the interviews? Were there any limitations you felt as a nurse? How did you convey information about treatment? Were there any barriers to communication? What were some of the strengths that you brought to the situation?</p>			

2.5.1 Quantitative

The demographic and diversity experience characteristics of the entire sample was described using univariate statistics, e.g., frequencies, means and distributions. The pre and post-test of the CCA was analyzed using SPSS^[59]. Differences in pre and post test scores were analyzed by paired T-tests for related samples and Repeated Measures Analysis of Variance (RANOVA). A Gains score (the difference between pre and post-test) was calculated. For purposes of subgroup analyses, the entire sample was divided into two groups based on course enrollment, undergraduate Nursing and Occupational Therapy. Differences in mean test scores on the CCA by demographic variables was analyzed using independent Student T test for dichotomous variables and ANOVA for categorical variables. The Marlowe-Crowne Social Desirability score was obtained by deriving the total number of points from direct and reverse-scored items, with a range of 0-13; higher scores equaled greater need for social desirability. Pearson's product moment correlation was used to determine if there was a correlation between need for social desirability and score on the CCA.

2.5.2 Qualitative

All papers reporting the Cultural Assessment Interviews were de-identified and assigned numbers that designated their discipline (i.e. Nursing, Athletic Training or Occupational Therapy) and the location of their course if in Nursing, L or P. Using a simple systematic interval sampling as described by Portney and Watkins^[60] with each discipline, a random selection of twenty-six interviews was chosen for analysis. Responses to the questions above were excerpted from each paper. The co-investigators and a graduate research assistant independently coded the responses to the Cultural Assessment Interview, adding in and reviewing new codes as they arose. Codes were then reduced and eliminated to “determine the invariant constituents as described by Moustakas^[61]. Significant statements were clustered and following further analysis, were thematized.

3 Results

The purpose of this study was to assess the effects of an interdisciplinary cultural competency education module on attitudes, self-awareness, self-report of behavior and skills. We also explored whether the outcomes of this study varied by discipline.

3.1 Quantitative

Baseline data was obtained for 96 students who participated in four classes. Among the 96 students, there were 21 Occupational Therapy Students, 8 Athletic Training students and 67 Nursing students. Fourteen of the students were male (15%) and the mean age of all of the students was 29. Approximately 12 students failed to complete or return the baseline questionnaires and consent forms; one student declined to participate. The post-test was administered during the last day of classes. Due to absences and drop-out, there were fewer post-tests than pre-tests available for analysis (n = 53). Students were emailed and asked to complete the post-test questionnaire, but none were completed via email contact. Thus, the sample size for the quantitative analysis was 53. Among these students there were 32 Nursing students and 21 Occupational Therapy students, 5 (9%) were male and the mean age was 31. Twenty of these students (38%) self-identified as “American, Caucasian, White or White Southern American, or White European Descent” (see Table 2 for a description of the sample). Table 2 lists the demographic characteristics of the 53 students who completed both the pretest and posttest questionnaires.

3.1.1 Effects of cultural competency education module on attitudes, self-awareness, self-report of behavior and skills

Cultural Competency Assessment instrument. There were no differences at baseline on CCA scores by subgroups of age, grade, level of education, and previous exposure to cultural competency training, department, place of birth and total work related exposures to other groups, with the exception of perceived competency (see Table 2). Students with low perceived competency (M = 9.7; s.d., 1.63) scored significantly lower than students with high perceived competency (M =

11.7; s.d., 1.68) ($p = .03$) at baseline. There was a significant change between pre-test ($M = 10.34$; s.d., 1.77) and post-test ($M = 10.87$; s.d., 1.77) scores on the CCA ($p = .009$). The Marlowe Crowne Social Desirability scale was not correlated with pre or post-test scores on the CCA. There were no differences in changes in scores on the CCA by subgroup. Students who scored the highest on perceived competency on the pre-test ($M = 11.7$; s.d., .68) had a negative Gains score (-.088) on the post-test ($M = 11.59$; s.d., 1.74).

Table 2. Description of the Sample (n = 53)

Variable	Mean (SD)	Pre-CCS Score
	N (%)	Mean (SD)
Age	31.6 (10.3)	N/A
Age*		
20-28	20 (38)	9.68 (1.15)
29-57	19 (36)	10.86 (1.96)
Gender*		
Female	48 (91)	10.5 (1.78)*
Male	5 (9)	8.9 (.93)
Year in Program		
Sophomore	2 (4)	9.8 (.42)
Junior	23 (43)	10.6 (2.11)
Senior	6 (11)	10.7 (2.28)
Grad	22 (42)	10.1 (1.31)
Highest Level of Education Completed		
High School, GED or Associate Degree	27 (51)	10.4 (2.07)
Bachelor Degree or Graduate Degree	26 (49)	10.2 (1.43)
Program/Dept.		
Nursing	32 (60)	10.5 (.37)
Occupational Therapy	21 (40)	10.1 (.26)
Cultural Self-Identification		
American/Caucasian or White or White Southern American/European	20 (38)	N/A
American/Caucasian/French Canadian or French Canadian/ mixed European or French Canadian/Native American/mixed European	5 (9)	N/A
European/Mediterranean or Russian or Mixed European or Italian/French	5 (9)	N/A
Religion mentioned in identification (White Christian or Caucasian/French Canadian/Christian or Irish/German/Quaker)	3 (5)	N/A
Irish or Irish/Other European	3 (5)	N/A
Working class/White/2nd and 3 rd generation or working class	2 (4)	N/A
Brazilian American or Caucasian/Hispanic	2 (4)	N/A
Native American/Caucasian	1 (2)	N/A
Unknown	1 (2)	N/A
Anglo Saxon	1 (2)	N/A
Yes	25 (47)	10.27 (1.58)
No	26 (49)	10.23 (1.92)
Perceived Cultural Competency*		
Very Incompetent to neither competent nor incompetent	13 (25)	9.7 (1.63)
Somewhat competent	29 (55)	10.1 (1.69)
Very competent	11 (21)	11.7* (1.68)
Total Work Related Exposure to Other Groups		
Low	24 (45.3)	10.2 (1.94)
High	28 (52.8)	10.6 (1.59)

* $p < .05$

3.2 Qualitative

All 96 students and 13 additional students, (n = 109) completed the Cultural Competency Interview and open-ended questions.

3.2.1 Cultural assessment interview

Three themes arose from the student responses to the Cultural Assessment Interview. These were 1) Barriers, 2) Feelings/Attitudes Experienced, and 3) c) Increasing Self-Awareness and Lessons Learned.

Barriers. Although not all students identified particular barriers to interviewing, those who did often spoke of the difficulty with understanding a person's language or accent, their lack of knowledge about the culture, their lack of interviewing skills, and their ethnocentrism and preconceptions about cultural beliefs.

There were times I'm not sure I understood exactly what she was trying to say, but I felt if I stopped her and attempted to get clarification over particular words, she would lose her train of thought. I realize this is not necessarily the best approach (Occupational Therapy, Fall, 2011).

Another student stated, "*Her English was hard to understand; we often had to repeat and clarify what she said*" (Nursing, P, Fall, 2010). Students also identified the lack of exposure and knowledge they had of the interviewee's culture as a barrier. One student stated, "*She knew so much about her country and [my] knowing more of the history would have been helpful*" (Occupational Therapy, Spring, 2011). Several students noted that their limited interviewing skills interfered with the effectiveness of the process. One student said, "*I have rarely interviewed in the past and am not as experienced as I would like to be*" (Occupational Therapy, Fall, 2011). Another candidly reported her limitations as an interviewer. She stated:

I assumed that she held biomedical beliefs about illness. I was surprised to find that without even prompting or questioning, V.T. shared her belief in the evil eye. Shocked and admittedly with inadequate tact, I said to her 'really, like, you actually believe that is the cause of health problems?' (Nursing, L, Fall 2010)

Feelings/attitudes experienced. The interview process elicited many feelings from the students, both positive and critical. Positive feelings were related to insight gained from the experience. One said, "*I felt fortunate to be sitting and listening to her words and I was humbled by my lack of knowledge in the Arab and Muslim cultures. I was so grateful for the fantastic opportunity to get to know H's story*" (Occupational Therapy, Fall, 2011). Another stated, "*I appreciated his willingness to speak openly about his culture and I am grateful to have had the opportunity to explore his culture and hear firsthand about his own experience*" (Athletic Training, P, Fall, 2011). One student stated, "*I was excited to learn about a new culture*" (Occupational Therapy, Spring, 2011).

Interestingly, more than half of the students spoke of the importance of making sure their interviewee was comfortable, and several talked about their own comfort during the process. "*My main insecurity is offending someone or making a person feel uncomfortable*" (Occupational Therapy, Fall, 2011). Another student stated, "*I tried to make her feel comfortable by talking about my own experiences with Chinese herbs and acupuncture*" (Nursing, P, Spring, 2011).

Negative or critical feelings that were also expressed included nervousness, discomfort, and dislike of the interviewee. One student felt unexpectedly slightly nervous asking her questions about her culture (Occupational Therapy, Spring, 2011). Another student stated, "*I was ashamed to be part of the healthcare world that [the interviewee] described, I felt limited in the sense that the problems she faced were way too big for me to fix on my own*" (Occupational Therapy). Not every interview was a positive experience. One student who actually completed a second interview stated, "*My first interview was a disaster. The person I interviewed was stubborn and unwilling to cooperate, largely due to language barriers and misunderstandings of a very subtle, cultural kind. That interview was incredibly uncomfortable*" (Nursing, P, Fall, 2010).

Increasing Self-Awareness and Lessons Learned. The third theme was clearly apparent in the majority of the interviews. The students wrote about their new knowledge about the various cultures of the people they interviewed. One

said, *“I learned a lot about the Native American culture and now I find it very intriguing”* (Athletic Training, P, Fall, 2011). *“It opened my eyes to a completely different culture than my own. It made me realize there are so many ways to either think of wellness or family or religion”* (Occupational Therapy, Spring, 2011). They spoke of the insights they gathered about the interviewing process, *“I feel that if I had done a broad research on his culture prior to conducting the interview...could have led to a more in-depth interview”* (Occupational Therapy, Fall, 2011). Perhaps most importantly, they gained self-awareness. One said, *“One of the things I learned about myself, is that no matter what level of cultural awareness I think I may have achieved, there is still always something to learn”* (Occupational Therapy, Spring, 2011). Another stated, *“After reflecting on my experience, I have realized something very important about myself; I am embarrassed by my lack of cultural knowledge”* (Occupational Therapy Fall, 2011). Many spoke about their interest in engaging in cross-cultural interactions and their thirst for knowledge. One student wrote, *“Cultural competence is a lifelong journey that I am willing to take”* (Occupational Therapy, Fall, 2011). They also recognized that they have a lot more to learn. One student stated:

One thing I learned about the Islamic faith is that Muslims believe in one God, the God of Abraham and Jesus, the same God most people refer to when they say ‘God.’ Even after the many times I have spoken with her about religion this never registered with me until I read over this information (Nursing, P, Fall, 2011).

3.2.2 Results of analysis of student responses to faculty facilitated discussions and comments on course evaluations

In each of the three Health Assessment classes, approximately one third of the Nursing and Athletic Training students raised objections to the culturally competency curriculum via anonymous feedback in the discussion section of Blackboard, in the classroom and via the course evaluations. The most common critiques were that there was too much time and too much emphasis devoted to cultural competency, and the inclusion of cultural competency content took away from classroom time that should be devoted to the hands-on skills that they would really need in Nursing. One student said *“When I graduate, I’m going to get a job on Peak’s Island and that’s all White, so I don’t need to be learning this”* (Nursing, P, Spring, 2011.)

Nursing and Athletic Training students expressed some concerns related to the self-awareness exercises. The request to bring in a cultural object for one of the exercises was met with some resistance *“I don’t know what to bring in, we don’t have specific traditions in our family, we’re just American”* (Athletic Training, P, Fall, 2011). The Occupational Therapy students commented on how much they had learned about their classmates. Several said that they would like to use this exercise with their clients.

The article in Newsweek, *“How the Somalis Saved Lewiston,”* discussed how the influx of Somali immigrants had revitalized the impoverished Maine mill town. Many of the students were from the area of Lewiston or knew of people from Lewiston, and all were familiar with the events depicted. Responses to an anonymous clicker question, *“Do you agree with the premise of the article that the Somalis saved Lewiston?”* indicated a class that was evenly divided between agreement and disagreement. Of those who agreed, most students said that they enjoyed the diversity and the recent regeneration of Lewiston. Of those who disagreed, some volunteered that the state’s resources were limited and residents couldn’t afford to support all of the Somalis. One of the students stated that she had a friend who worked in a dentist’s office who said that the *“Somali children get braces and her children can’t afford to get braces.”*(Nursing, P, Spring, 2011).

3.3 Differences in attitudes, self-awareness, self-report of behavior and skills between Nursing, Athletic Training and Occupational Therapy students

Results of the quantitative analysis showed no difference in scores on the CCA entire scale or subscales (awareness/sensitivity and behavior) by student discipline (Occupational Therapy or Nursing). The qualitative analysis of responses to the Cultural Assessment Interview revealed that Nursing and Athletic Training students were better at responding to objective questions than Occupational Therapy students, whereas Occupational Therapy students were more capable of

responding to self-reflective open-ended questions. Although all groups were generally able to discuss their personal strengths, it was noted that the quality of the responses from Occupational Therapy students was richer and more complete than those of the other students. When asked about what lessons were learned, about half of Occupational Therapy students said nothing about the interview process while the majority, approximately, 85% wrote in some depth about what they had learned about themselves. Nursing and Athletic Training students tended to speak more about what they learned about the interviewing process. Only a very few spoke of what they had learned about themselves. This lack of self-reflection is evidenced by one student's comments: "*My first interview was a disaster. She was stubborn and unwilling to cooperate. That interview was incredibly uncomfortable.*" Responses to classroom self-awareness exercises yielded similar differences. Some Nursing and Athletic Training students were reluctant to engage in the exercises and challenged the usefulness of the exercises to meet their professional learning needs, whereas Occupational Therapy students fully participated in the self-awareness exercises.

4 Discussion

Although Nursing and other disciplines acknowledge the essential need for education in cultural competency, the results of training and the consistency of the curriculum and quality of these programs are not well known^[26, 57]. The foremost question this study sought to explore of cultural competency was, "Is it teachable and if so, how do we know that our teaching is effective?"

There were several limitations to this study. The post-test completion rate was only 55%. However, this is similar to the results of Genao *et al.*^[38] where only 45% of the students completed both pre- and post-tests. The post-test was administered during the last day of class when there was high level of absenteeism. Completion of the post-test may have also been hindered by factors outside of the investigators' control. In contrast to other IPE offerings^[38], which are usually elective, Health Assessment was a requirement for both Nursing and Athletic Training students. Historically, Athletic Training students did not feel the life-span approach of the Nursing Health Assessment course was relevant to their learning needs and thus, their attendance and motivation to participate in the cultural competency educational module may have been affected by these pre-existing negative attitudes. A second limitation to the design of the study was that although students were taught by faculty from Nursing and Occupational Therapy, it was not possible to have interaction among these students. A frequent limitation in the creation of IPE is the coordination of student schedules and faculty teaching load. The Occupational Therapy students, Athletic Training students and Nursing students each had courses scheduled on different days of the week, at different times, and for the most part, on different campuses. Lastly, the delivery of the educational intervention by faculty who were also investigators could have influenced students' responses to the self-reflective questions on the Cultural Assessment Interview.

The purpose of this study was to assess the effects of an interdisciplinary cultural competency education module on attitudes, self-awareness, self-report of behavior and skills. There is some evidence from this study that attitudes, self-awareness, self-report of behavior and skills improved as a result of the intervention. Scores on the CCA, which measured awareness/sensitivity and behavioral intent, improved and they were not significantly influenced by social desirability bias. This change may have been partially due to testing effects whereby the administration at baseline of the CCA served as a primer and raised awareness of the competencies that were expected. Initially, at baseline, perceived competency was associated with pre-test scores. Students lacking in the perception that they could successfully navigate the cross-cultural encounter scored lower on the CCA than students with greater perceived competency. However, the association between perceived self-competency and CCA scores was not present in the post-test, indicating that by the end of the course, low perceived competency was no longer a factor in CCA scores. The experience of conducting the Cultural Assessment Interview addressed several factors that have been shown to hinder students' perceptions of cultural competency including lack of experience with other cultures and lack of experience with cultural assessment tools^[21]. Responses to the open-ended self-reflective questions on the Cultural Assessment Interview, "how did you feel about the interviews?" validated the changes that were indicated on the CCA in that students overwhelmingly described the interview

as a positive learning experience. Thus, our exercise in controlled exposure to the cultural encounter using a standardized cultural assessment tool was a successful educational strategy.

Similar to other research findings^[36] there was no difference by discipline in scores on the CCA. However, qualitatively, Occupational Therapy students demonstrated greater depth and self-insight in their responses. This may reflect the emphasis on self-awareness throughout the Occupational Therapy coursework and/or the greater emphasis on rote learning in Nursing school. It is also possible that the undergraduate liberal arts exposure of the vast majority of Occupational Therapy students contributed to greater self-analytic skills. In spite of the value of Nursing as a caring profession, communication skills and empathy among Nursing students has been shown to be low^[42], which could be a contributing factor in the paucity of in-depth analysis seen on the responses to the Cultural Assessment interview.

A major benefit of the Cultural Assessment Interview was the knowledge gained about the complexity of the cultural encounter. Individuals who had high perceived cultural competency at baseline actually had an overall decrease in CCA scores. Studies have indicated that people tend to overestimate their level of competence^[62]. Therefore, the experience of the Cultural Assessment Interview may have created the capacity for self-criticism, one measure of self-awareness^[63]. Other studies support the finding that increasing self-awareness leads to a knowledge of one's lack of skills^[64-66]. Nevertheless, the few studies (including this one) indicating improvement in cultural competency may be prematurely self-congratulatory. The bases of cross-cultural care are attitudes such as humility, empathy, curiosity, respect, sensitivity^[26], and cultural desire^[45]. Comments made in class and in the course evaluations indicated a lack of motivation to learn about people of diverse cultures broadly defined. Some Nursing students were clearly resentful of the amount of emphasis placed on learning cultural competency. This belief of the lack of relevance of cultural competency due to a desire for more didactic objective clinical learning and the perception that objective clinical content is more practical is consistent with previous research^[21, 26]. Reeves and Fogg^[21] noted that factors that promoted cultural competency among nursing students were previous exposure to diverse cultures while growing up, and during Nursing school, and a desire to learn about other cultures. Maine is currently the Whitest state in the nation^[67], resulting in limited exposure of some of the state's residents to people of other cultural and racial backgrounds. Many students voiced that their identity was American and that White people who speak English are of the same cultural background and had no culturally distinguishing characteristics. These students voiced the incorrect assumption that culture is possessed solely by minority groups; and dominant groups are seen as not having a culture^[35]. Perhaps this lack of diverse exposures growing up and within the nursing program contributed to some of the less optimistic findings in this study. Some students perceived increasing diversity to be threatening and demonstrated a lack of empathy for the experiences of refugee populations (in this case the Somalis). The openly negative attitudes expressed by some students lead us to the more fundamental question underlying cultural competency education posed by Campinha Bacote, "*Cultural desire, is it taught or caught?*"^[68]. Are attitudes such as empathy, self-awareness, openness, curiosity and desire effectively taught or does the student need to bring these qualities to the table prior to entering into a health profession? Are these qualities inherent personality traits or degree of Emotional Intelligence, as has been suggested by other researchers?^[63] If one believes these attitudes can be taught, then we need to adopt innovative assessment methods. Self-awareness generalizes to success in many aspects of life such as leadership capabilities, effective communication and strong working relationships^[68]. In business management and psychology, self-awareness has been measured by the 360 degree method, a multi-source, multi-rater system^[69]. Self-awareness competence is defined as the degree to which a person sees himself the way others see him or her and the extent to which a person's self-assessment of strengths and weaknesses is congruent with the way other people see him/her. Variations of this method could be applied to the assessment of self-awareness in Nursing and other health care disciplines.

Another major concern with evaluating cultural competency training is whether what we are teaching translates into better interactions in the clinical realm. Methods to assess if cultural competency objectives are met consistently in clinical practice might include: medical record review that documents the effects of appropriate cross-cultural interviewing and

treatment negotiation according to cultural beliefs^[26], patient satisfaction questionnaires that specifically address cultural competency, structured interviewing by faculty, structured clinical examinations, and case presentation^[26].

Due to globalization and international migration, cultural competency is an essential part of nursing curriculum. Although, nursing is considered a caring profession, we cannot assume that nurses do not reflect the beliefs and values of the mainstream society. In almost all cultures, there are groups of people who are viewed as different and suffer the consequences of discriminatory attitudes in health care. We have proposed several innovative and successful features of a brief cultural competency module that can be adopted for required Nursing course work, both in the United States and inter-nationally, including exercises in group communication skills, interdisciplinary training experiential exercises, and the Cultural Assessment Interview. In sum, although the results of this study are mixed, for most students, the cultural competency module contributed to changes in attitudes, awareness and skills. Future research could determine whether or not institutional climate and support for IPE contributes to a successful learning experience. In addition, more research is needed to assess the effectiveness of cultural competency content. Research methods should employ novel means to assess changes in attitudes. Moreover, little is known about whether cultural competency education contributes to greater effectiveness in clinical care. Areas of future research should evaluate whether cultural competency training will translate into improved patient-provider communication, greater satisfaction with care and greater adherence to care.

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