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RESEARCH ARTICLE

Using Service-Learning Experiences to Improve Cultural Competence in Pre-Professional Dietetic Students

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Abstract

Cultural encounters were used in a senior-level undergraduate nutrition capstone course to enhance students' cultural competence attitudes and skills. The course included a service-learning component for which students met weekly with international students who were enrolled in an intensive English language program as conversation partners. The course content and structure focused on Campinha-Bacote's cultural competence model. The model includes 5 constructs: cultural awareness, cultural knowledge, cultural skill, cultural encounters, and cultural desire. This capstone, writing-intensive course included creative writing activities, discussion, journaling, and reflection papers. The 20-item *Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals-Student Version*[©] was used as the pre-post-test measure. Paired sample *t*-tests were used to calculate outcomes. A significant increase from pre-test to post-test in the total score was found ($t(18) = -6.852, p < 0.001$). Pre- and post-test scores indicated students were operating at a culturally competent level. There were significant increases in all constructs with notable increases in cultural knowledge and cultural skill constructs. A course dedicated to developing pre-professional healthcare students' cultural competence levels may better prepare them for professional practice.

Introduction

The population of the United States is becoming increasingly diverse and is expected to grow by 1.1 million through international migration between 2030 and 2060.¹ Racial and ethnic groups in the United States are more likely than White Americans to develop chronic disease such as diabetes, heart disease and cancer as well as have poor health outcomes.² With an increase in the migratory population, racial and ethnic health disparities will continue. The Kaiser Family Foundation (KFF)³ reported that 1 in 5 Black as well as Hispanic adults experienced unfair healthcare treatment due to their race or ethnicity. The KFF also found underserved groups have shorter life expectancy, higher rates of infant mortality and pregnancy-related mortality, and higher incidence of death from cancer. These findings and predictions of a diverse United States population underscore the importance of diversity training and development of cultural competence among healthcare providers.

Public health priorities focus on achieving health equity and eliminating health disparities.⁴ Aligning with this priority, educational accrediting bodies for health professions have followed suit and include standards that require programs to include content related to health disparities. For example, the accrediting body for medical schools, the Liaison Committee of Medical Education, requires medical school curriculum to include content on the principles of cultural competence and the impact of healthcare disparities.⁵ Regarding dietetics education,

the Academy of Nutrition and Dietetics⁶ has expressed a vested interest in increasing the cultural competence of practitioners in order to combat health disparities and improve the health outcomes of minority populations. In the current accreditation standards for nutrition and dietetics programs (Standard 3.3c), programs are required to provide learning activities to “ensure that students have the skills to recognize biases in self and others and embrace diversity of the human experience”.^{7(p.12)}

Cultural competence is a broad term that refers to behaviors, attitudes, and skills that allow a practitioner or agency to successfully interact with and provide treatment to a client or patient of a different cultural background.⁸ Campinha-Bacote describes the process in becoming culturally competent as ongoing and continually striving “to achieve the ability and availability to effectively work within the cultural context of the client (family, individual, or community)”.^{9(p.15)} Self-reflection can be instrumental in developing critical thinking skills and connecting key cultural concepts to complex social issues such as health disparities, hunger, poverty, etc.¹⁰ Reflection is considered a key component in service-learning, an educational experience in which students work with community organizations to meet an identified need.¹¹⁻¹² Service-learning with reflection allows students to connect course content with real-world experiences and express their thoughts and questions in a safe space. Using service-learning as a component in cultural competence training is a promising

educational method in developing students' cultural knowledge, awareness, and skills.¹³

While medical and healthcare education accrediting bodies require curriculum content to cover cultural and diversity concepts, it is not fully understood the depth of content coverage in medical school curricula.¹⁴ However, one scoping review found an improvement in knowledge, skills, and confidence in cultural competence concepts among health science undergraduate students.¹⁵ Nevertheless, didactic, passive learning – a conventional approach for knowledge transfer – is found to be an ineffective method for fully absorbing the material presented.¹⁶ On the other hand, active learning is an instructional method that engages students in a variety of activities in which students are actively or experientially involved¹⁷ such as service-learning. Therefore, the purpose of this project was to assess college senior nutrition students' level of cultural competence after participating in an active learning course with a service-learning component focusing on cultural competence.

Methods

This project was approved by The University of Southern Mississippi's Institutional Review Board. Informed consent was obtained from all students prior to data collection.

An undergraduate senior-level, nutrition and dietetics capstone course was designed to enhance students' cultural competence. This 3-hour credit course was designed using the Process of Cultural Competence in the Delivery of Healthcare Services model

developed by Campinha-Bacote,¹⁸ which encompasses cultural competence into 5 unique constructs: cultural awareness, cultural knowledge, cultural skill, cultural encounters, and cultural desire. Activities and course content were developed for each construct (Figure). According to Campinha-Bacote, cultural encounters is the "foundational construct of cultural competence."¹⁹ Hence, the course included a service-learning component that allowed students to encounter another culture. The community partner for the service-learning project was the university's English Language Institute (ELI). The ELI is an intensive English program for international students. Part of the ELI curriculum included the use of conversation partners. Nutrition students were paired with ELI students as conversation partners and were required to meet once a week for 8 weeks. During the encounters, students were encouraged to engage ELI partners in a variety of topics and activities related to food and nutrition as well as health concerns in their respective countries. Examples included nutrition policy (i.e., national food guidelines), health care, food-related diseases, school food service, food traditions, reading/translating poetry, discussing books from authors from his/her country, going to a movie, grocery shopping trips, cooking recipes together, going out to eat, interpersonal communications, etc. Students were required to write 2 structured reflection papers based on their experiences during their encounters with the first paper due after the first two meetings with conversation partner and the second one due at the end of the semester.

Unstructured journal entries with purposeful prompts were incorporated throughout the semester to evoke challenging and critical reflection.¹²

Cultural Construct	Course Activity/Assignment
<i>Cultural awareness:</i> The self-examination of personal biases and assumptions related to individuals different from oneself.	<i>Identity Wheel:</i> Students reflected on aspects of their identity and their levels of diversity and placed these aspects into divided sections of a circle. The size of each section indicated its importance in the students' identity
<i>Cultural knowledge:</i> The seeking of education about different cultures and diverse groups.	<i>Narrative Recipe:</i> Students gathered information from their conversation partner about a traditional or favorite recipe and wrote a narrative, discussing how it is used, the relevance to their partner's culture, what their partner remembers about it or how it makes their partner feel, etc. <i>Current Topic Annotated Bibliography and Presentation:</i> Students chose a nutrition-related topic about the culture of their respective conversation partner. Students composed an annotated bibliography and presented a 15-minute presentation.
<i>Cultural skill:</i> A practitioner's ability to collect culturally relevant information and assess patients in a culturally sensitive manner	<i>Conversation Partner Interview:</i> Students practiced their communication skills using a semi-structured questionnaire to collect information about their partner's culture. <i>Menu for Low Socioeconomic Status, Low Literacy and/or Limited English Proficiency Audience:</i> Students visited a dollar store and created a dinner menu from the products in the store. The menu included recipes and directions using culturally appropriate design and linguistics.
<i>Cultural encounters:</i> The interaction between a practitioner and a patient or client of a different culture.	<i>Conversation Partner Meetings:</i> Students met with conversation partners approximately an hour a week for 8 weeks. Discussions ranged from traditional foods, celebrations, religion, healthcare, interpersonal interactions, hobbies, etc.
<i>Cultural desire:</i> A practitioner's willingness to engage in increasing his or her cultural competence	<i>Reflective Writing – Journal:</i> Students posted unstructured journal entries to the online learning system based on a class discussion or activity, reflecting on how the activity may impact their future practice. <i>Reflective Writing – Paper:</i> Students wrote structured reflection papers based on their experiences with their conversation partner and how the experiences impacted their cultural desire.

Figure. Cultural competence model constructs⁹ with corresponding activities and assignments in a senior-level nutrition course.

Measure

The valid and reliable *Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals-Student Version*® (IAPCC-SV)²⁰ was administered as a pre- and post-test assessment to measure students' level of cultural competence according to the 5 cultural constructs. The instrument was obtained as a pencil-paper self-assessment with 20 Likert-type items. Students could choose their level of agreement with each item, ranging from 1 (strongly disagree) to 4 (strongly agree). Total scores can range from 20 to 80 and indicate whether the student is culturally proficient (70-80 points), culturally competent (60-74 points), culturally aware (41-59 points), or incompetent (20-40 points). Students completed the 20-item instrument on the first and last day of class.

Data Analysis

Paired-sample *t*-tests were calculated to examine the differences in pre- and post-test total score and scale scores related to the cultural competence constructs of the IAPCC-SV. There was no formal analysis of the journal entries or reflection papers, but relative quotes from student reflections are provided for context.

Results

Nineteen students participated in this study. The majority of students were White females ($n = 14$) with a mean age of 25.5 ($SD = 6.3$) years. A significant increase from pre- to post-test in the total score was found ($t(18) = -6.852, p < 0.001$). Pre-test mean scores [$M = 63.2$ ($SD=5.4$)] and post-test mean scores [$M = 72.3$

($SD = 3.7$)] indicated students were operating at a culturally competent level before and after course activities. While students did not move from one level of competence to another (e.g., culturally aware to culturally competent), there were significant increases in all constructs with notable increases in cultural knowledge and cultural skill constructs (Table).

The reflection papers helped students understand course content and gain new perspectives related to working with individuals from diverse cultures. One student wrote, *"The reflection papers helped me realize that I gained much more out of this project than I had originally thought. It also helped me to assess my own personal growth in regards to being culturally aware."*

Table. Pre- and Post-test Mean^a Scores by Cultural Construct and Total Score (N=19)

Cultural Construct	Pre-test Mean (SD)	Post-test Mean (SD)	P (2-tailed)
Awareness ^b	10.7 (.75)	11.4 (.61)	< .001
Knowledge ^c	13.6 (2.36)	17.0 (2.03)	< .001
Skill ^d	8.5 (1.43)	10.42 (1.22)	< .001
Encounter ^e	16.1 (1.51)	17.9 (1.31)	< .001
Desire ^f	14.4 (1.3)	15.4 (.90)	< .001
Total ^g	63.2 (5.4)	72.3 (3.7)	< .001

^a Item range: 1=Strongly Disagree to 4=Strongly Agree with one item reverse coded

^b Scale score out of 12 points

^c Scale score out of 20 points

^d Scale score out of 12 points

^e Scale score out of 20 points

^f Scale score out of 16 points

^g Total score out of 80 points

Discussion

The purpose of this study was to assess pre-professional dietetic students' level of cultural competence pre- and post-semester after participating in a service-learning project. Research indicates exposure to cultural activities can increase cultural knowledge and awareness.²¹ Furthermore, research suggests that cultural competence and diversity training for health professionals can result in better healthcare for diverse patient populations, reducing health disparities.²²⁻²³ If eliminating health disparities in healthcare systems is a national priority, then training pre-professionals in healthcare disciplines is imperative.

Previous research identified the need for more interactive and cross-cultural training to enhance cultural competence skills in health science students to prepare them for post-graduate practicums.^{13,15,24-25} Recent reviews of 109 studies^{13,15,26} explored educational strategies to increase cultural competence, assessment methods, and outcomes among students of healthcare education programs (e.g., medicine, nursing, pharmacy, dietetics, social work, etc.). Most of the studies reviewed used multi-modal approaches such as lecture^{13,15,26} combined with experiential learning (immersion,²⁶ simulation,^{15,26} service-learning).¹³ While most studies reported positive results, immersion, simulation, and

service-learning methods were more effective in increasing cultural awareness and skill^{13,26} as well as comfort levels related to working with diverse communities.¹³ Limitations noted across all 3 reviews^{13,15,26} were variation in study design (i.e., within-group, control group) intervention length, educational strategies/approaches, assessment/evaluation tools, and framework/model to guide curriculum.

Most studies in the aforementioned scoping^{15,26} and narrative¹³ reviews and other studies in the health science literature^{15,21,27-28} used a within-group pre-post-test design with a self-report evaluation. Intervention lengths varied from 10 minutes¹⁵ to 12 hours of didactic education,¹³ semester-long courses,^{13,26-27} entire degree program,¹⁵ week-long international travel or workshops,¹³ and study-abroad programs.²¹ Evaluation of learning varied widely with most studies using papers, projects, and reflections²⁶ and some using validated instruments.^{13,15,26} Few studies have used skill-based evaluations such as observation during patient encounters.^{15,28-30} Conceptual frameworks most commonly used across the 109 reviewed studies were Campinha-Bacote's Process of Cultural Competence in the Delivery of Healthcare,⁹ Purnell's Model of Cultural Competence,³¹ the Giger and Davidhizar Transcultural Assessment Model,³² and the LEARN (Listen, Explain, Acknowledge, Recommend, Negotiate) Communication Model³³; although, many studies did not use a framework. Brottman et al.²⁶ concluded that a framework or model is necessary to guide

curriculum and training. Furthermore, a systematic framework with a valid and reliable assessment can indicate the effectiveness of the intervention and result in outcomes that can be trusted.³⁴ Additionally, Jernigan et al.¹⁴ suggested standardizing methodology to allow for robust evaluation across disciplines.

The Process of Cultural Competence in the Delivery of Healthcare Services⁹ model was used in 14 of the reviewed studies.^{13,26} As suggested by Brottman,²⁶ this model was used as a framework in the present study to guide the course structure and activities to educate and train students in cultural competence. The students in this study had been exposed to cultural competence activities throughout their curriculum, and thus, it was not surprising that students were operating on a culturally competent level. Similarly, McAuthor et al.²⁴ found that students who participated in cultural activities throughout their dietetics curriculum had higher knowledge and attitude scores compared to those who had limited exposure to cultural activities. While the total scores did not indicate cultural proficiency, each construct scale score as well as the total score increased at post-test. This outcome is understandable, as research has shown a one-time intervention and/or participation in various activities throughout the curriculum does not equate to cultural proficiency.^{13,15} Findings from this study are similar to a study with graduate students participating in nutrition counseling class. Bauer and Bai²⁷ found significant differences across constructs with the exception of the desire construct of

the Campinha-Bacote model, with total scores indicating cultural competence.

Research has confirmed the value of service-learning or immersion-type activities in the development of cultural competence.^{13,26} In the present study, the service-learning activities resulted in reciprocal benefits. Students gained invaluable experience interacting with the ELI partners relative to the cultural knowledge, skill, and encounters constructs of the model and in return, helped ELI students with their English language skills. Students were not only conversation partners, but they also often shared meals together, went grocery shopping, and/or participated in social activities. Many students developed deeper connections or friendships with their partner beyond their conversation partner meetings. It was anticipated that student scores in the encounters construct would have increased to the next level from pre- to post-test due to the interactions – or encounters – with the ELI students. However, scores at post-test indicated cultural competence, the same as the pre-test but higher. This finding may be evidence of an inherent limitation of a self-reporting evaluation instrument for which students may perceive themselves at a higher level of competence than they are in reality. Qualitatively, the encounters with conversation partners were a strategic learning opportunity that students wrote about in their reflections as “challenging”, “valuable”, and/or “good” experiences. One student wrote, *“This [experience] was valuable. I learned how to be a good listener and how to initiate conversations without*

being awkward,” while another wrote, *“Good experiences. Will undoubtedly bring benefits in later practice.”* The reflection activities in this course were used for making connections between the course content and the service but also to appraise students’ opinions of the service-learning activity.²⁶

Strengths and Limitations

The strengths of this study included 1) a course design using an evidence-based framework and experiential and active learning as well as challenging and critical reflection methods; and 2) the utilization of a valid and reliable instrument demonstrating pre-test reliability with a .79 Chronbach’s alpha. This result supports previous studies that showed reliabilities ranging from .66 to .84.³⁵⁻³⁶ However, the present study was limited by the small sample size and lack of diversity among student participants, which was similar to Bauer’s and Bai’s²⁷ study and studies with dietetic students.¹³ The setting for this study was South Mississippi, and results may not be generalizable to other student populations. Further research should be considered with multiple classes or classes with a larger number of students and the opportunity to observe students’ cultural skills in conjunction with a valid, self-reporting instrument. Lastly, a follow-up or longitudinal study would be beneficial in determining cultural competence post-graduation when students are in supervised practice or are working in the field.

Conclusion

The development of cultural competence is a stepwise, life-long process. One-time interventions do not make for a culturally competent practitioner. Cultural competence education and training should extend into practicum experiences and has been recommended as a continuing education requirement.¹³ Results of this study revealed that students recognized their biases, became more culturally aware, and embraced diversity, which aligns with the nutrition and dietetics accreditation standard.⁷ Methods of this study could be used to inform faculty of a

course structure and activities designed for training students on cultural concepts and competence. A semester-long course with a service-learning component that is dedicated to developing undergraduate nutrition and dietetics students' cultural competence may have a greater impact on their cultural competence level versus isolated activities across the curriculum. Furthermore, guided encounters with other cultures within the course structure provides opportunities for students to interact in real-life situations they may not get within the confines of the classroom.

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Conflicts of Interest Statement

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