

University of Hawai'i – West O'ahu DSpace Submission

<p><i>CITATION</i></p>	<p>Young, S., & Lu, K. (2018). Educational interventions to increase cultural competence for nursing students. <i>International Journal of Organization Theory and Behavior</i>, 21(2), 85-97. doi:http://dx.doi.org/10.1108/IJOTB-03-2018-0026</p>
<p><i>AS PUBLISHED</i></p>	<p>http://dx.doi.org/10.1108/IJOTB-03-2018-0026</p>
<p><i>PUBLISHER</i></p>	<p>Emerald Group Publishing Limited</p>
<p><i>VERSION</i></p>	<p>Modified from original published version to conform to ADA standards.</p>
<p><i>CITABLE LINK</i></p>	<p>http://hdl.handle.net/10790/5183</p>
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<p><i>ADDITIONAL NOTES</i></p>	

Educational interventions to increase cultural competence for nursing students

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Abstract

Purpose

The purpose of this paper is to analyze the study results conducted at a four-year university in Hawaii investigating the impact of providing nursing students with an educational intervention session aimed at improving cultural competence.

Design/methodology/approach

A descriptive-correlational research method was used to examine the correlations between a control group and experimental group using pre-and post-tests. The t-test for equality of means and Levene's test for equality of variances were conducted for statistical analysis on pre-and post-test scores. In addition, a power analysis was conducted due to the small sample size.

Findings

The control group receiving no intervention scored lower on the post-test in overall competency by five points, while the experimental group increased their post-score by five points after receiving the intervention; however, this increase did not change the overall cultural competence score. The results indicate that the educational intervention of a two-hour didactic, discussion and presentation did not provide as robust as what was needed to increase domain scores for the experimental group. Further, the domains of awareness, skill, knowledge, encounter and desire cannot be taught by instruction alone and should be reinforced over time.

Research limitations/implications

The study was a convenience sample and limited by the small sample size. The sample may not be representative of all senior nursing students. The study is limited to one school of nursing in Hawaii; the results may not be generalized to other populations.

Practical implications

This research provides a foundation for future curriculum development and the evaluation of nursing programs. For instance, incorporating a value-added instructional project on cultural competence into each nursing class would increase cultural competence awareness and knowledge.

Social implications

This study also emphasizes the necessity of education in cultural competence for all health professionals, which has implications for improving quality, patient satisfaction and increased health outcomes.

Originality/value

This research is unique to examining and applying an educational intervention on cultural competence for nursing students in Hawaii. This research sheds light on studying the importance of culture competence for nursing students and other health professionals. This is not a skill that can be taught in one class or only even a single immersion experience and should be acquired over time where continuing education and encounters are necessary in order to become culturally competent; this will enable health professionals to provide meaningful and appropriate care to patients.

Introduction

Culturally competent health care workers are essential in providing holistic and individualized care for patients. Health care organizations must embrace a systems-level culturally competent environment to increase quality and patient satisfaction. Specifically, early in the educational process, health care students need instruction on cultural differences and skills to communicate and recognize potential misunderstandings. Examination of educational models has demonstrated that there is

a lack of consensus on delivering cultural diversity training and the measuring of cultural competence. These can lead to lower quality of care, reduced satisfaction and a potential of health care errors due to cultural miscommunications. In an earlier study, Young and Guo (2016) found that there are numerous types of educational strategies used to improve cultural competence. Essentially, researchers agree on the importance and value that a culturally competent health care worker can bring in providing quality of care and positive outcomes. To continue our research in this area, we conducted an experimental study to examine the effectiveness of an educational intervention on cultural diversity and competence, specifically to determine if an increase in the level of cultural competence occurred after an intervention was given to nursing students in a Hawaii-based nursing BSN program. The experimental intervention consisted of a two-hour presentation on cultural competence and diversity using a power point presentation and interactive exchange. By addressing a review of educational strategies for cultural competence, our study shows the practical significance for developing future curricula that integrate cultural diversity and competence so that culturally staff can better understand cultural differences and provide more competent patient care.

Literature review

Cross (1989) defined culture as values, beliefs, customs, traditions, patterns of thinking and norms of an individual or populations. Learned behaviors, ideas and perceptions are passed down through generations. Cultural beliefs frame our thinking, decision making and perceptions of life. As unique as ethnic cultures may be, additional cultures exist within any given ethnic group. Generational attributes define cultures that may be different within the same family. Not all of those within a single ethnic group may share like customs or religious beliefs. Therefore, the health care provider may face challenges when treating several members of one family consisting of several generations. The provider needs to be skillful in eliciting a health history that is accurate and communicate a plan of care in a culturally sensitive way.

It has been established in the literature that to provide appropriate care for diverse populations in the USA, patient care providers need knowledge, skill, culturally diverse experiences and ongoing education (Institute of Medicine, 2003; US

Department of Health and Human Services, 2004; Wilson-Stronks et al., 2008). The education should begin early and be integrated in each course in nursing and medical schools and continue throughout professional practice. Research by Guo and Castillo (2011) identified communication and monitoring and feedback as key components in the provision of culturally competent care. They developed a framework for guiding health care organizations and professionals by establishing a set of culturally competent strategies to improve quality of care and patient outcomes for diverse populations. Using this framework will provide organizations with direction regarding their cultural competence efforts. Specifically, the organization must integrate cultural competence into every aspect of its existence and make it an integral part of every function, activity, program, and policy, where all levels of the organization must be involved, from the board of directors to top management to clinicians and support staff.

Models of cultural competency from Leininger (1991), Jeffreys (2006) and Campinha-Bacote (2007), three nursing theorists are well-known in the field of cultural diversity and provide differences and similarities in their models on cultural competence. A common theme exists across these theorists: the belief that cultural competence is a skill that is developed and refined over time. The Adult Learning Theory developed by Malcolm Knowles, considered an expert in the field, describes a set of assumptions on how adults learn. Adults need to know why they need to learn something, they learn experientially, adults see learning as problem solving and need to understand how a topic will be of value. Therefore, the process is of more importance in learning than what is actually taught (Knowles, 1984).

The literature shows that to provide appropriate care for diverse populations in the USA, patient care providers need knowledge, skill, culturally diverse experiences and ongoing education. The education should begin in nursing school and continue throughout professional practice. However, it is challenging to incorporate content related to cultural competence in existing already full nursing curriculum.

Furthermore, many nursing educators do not feel confident or comfortable teaching cultural competence content (Starr et al., 2011). Thus, there is a huge gap between

what is being taught and what needs to be learned. As diversity increases, making cultural competence a priority in nursing curriculum is essential so that nursing graduates will be trained to fully understand the needs of diverse patients and be able to provide more culturally competent care.

Conceptual framework

The framework of the study incorporated conceptual relations among models of cultural competence, educational requirements for health care students and federal recommendations for medical and nursing programs. Educational preparedness in cultural competency and awareness for nursing students can pave the way for ongoing learning to further develop cultural diversity skills.

Cultural competency assessment tool

The objective of the study was to determine if an educational intervention would increase the cultural competence score of Hawaii senior-level nursing students in Hawaii.

The measurement tool selected for scoring cultural competence pre and post the educational intervention was Inventory for Assessing the Process of Cultural Competency-Student Version (IAPCC-SV) (Campinha-Bacote, 2007).

The tool consisted of construct domains based on Campinha-Bacote (2007) model, The Process of Cultural Competence in the Delivery of Health Care Services and are measured by the inventory tool IAPCC-SV. The domains are measured and combined to provide a total cultural competence score. Below is a description of each domain from Campinha-Bacote (2007) model. There are five constructs, which include cultural awareness, cultural knowledge, cultural skill, cultural encounters and cultural desire.

Cultural awareness

Cultural awareness is described as the process of engaging in self-examination of personal views and biases. Specific inventory items address awareness by rating beliefs that cultural competence is a continuous learning process, the strength of a relationship between culture and health and self-awareness of stereotyping.

Cultural knowledge

Cultural knowledge involves the active process of seeking information about other cultures. Knowledge items from the inventory focus on ethnopharmacology, beliefs and worldviews of cultural groups, biological variations (skin color), disease specificity to ethnic groups and knowledge of barriers preventing ethnic groups from seeking care.

Cultural skill

Cultural skill relates to the ability to perform a cultural assessment both physically and with attention to cultural needs. The skill of eliciting physical and cultural information should be accomplished with sensitivity using awareness and knowledge of appropriate assessment tools. Cultural skill is assessed in the inventory with items addressing awareness of existing assessment tools, knowledge of specific cultural assessment tools and comfort in asking questions related to cultural background.

Cultural encounters

Campinha-Bacote (2007) contends cultural encounters involve the actual interactions that occur with culturally diverse patients. This construct is measured by rating willingness to learn from other culturally diverse populations. Actively seeking experiences and increasing cultural knowledge is another indicator in the assessment of this construct.

Cultural desire

Cultural desire reflects the commitment and motivation to care for diverse patients. Campinha-Bacote (2007) believes that to demonstrate cultural desire, there must be a passion to care for culturally diverse populations and a desire to achieve cultural competence.

Educational intervention

The researchers developed an outline and power point presentation to guide instruction for the intervention. The content included an introduction and explanation of the research study, origins of culture, federal mandates relating to cultural

competence in health care, as well as models of cultural competency from Leininger, Jeffreys and Campinha-Bacote. The three nursing theorists are well-known in the field of cultural diversity and provide differences and similarities in their models on cultural competence. A common theme exists across these theorists: the belief that cultural competence is a skill that is developed and refined over time. In addition, cultural terminology was reviewed along with examples of physical variations related to cultural differences. An interactive discussion provided an opportunity to review the definition of cultural competency and the role nurses and health care providers play in today's health care settings.

During the discussion, open dialogue and instruction in the use of journaling reinforced didactic material with the benefit of learning from the past. This instructional application for the students hopefully has prepared students personally and professionally to have the desire to increase knowledge and desire in cultural diversity. Students did report that reflective journaling is used in many of their classes.

Methodology

Sample and setting

A convenience sampling of senior-level students enrolled in the baccalaureate-nursing program in Hawaii were asked to participate in the study and were presently enrolled in a leadership class. A total of 104 senior nursing students were enrolled in the nursing program of which 64 students participated in this study. Completion of the IAPCC-SV was deemed to be the student's voluntary consent to participate in the study. Class I contained 25 students and the class II contained 39 students. Class I was designated the experimental group by the investigator and all 25 students chose to participate in the study. Class II designated as the control group had 24 out of 39 students who chose to participate in the study. During the post-test phase of the study, 23 students from (Class I) the experimental group and 23 students from the (Class II) control group participated by taking the post-test.

The researchers designated the control and experimental groups prior to giving the pre-test. Both groups were administered the pre-test (IAPCC-SV) inventory and not informed if they are assigned the control or experimental group. Pre-tests were obtained to establish level of knowledge and a demographic questionnaire was

attached to collect data on ethnicity, gender, age, prior cultural instruction, senior level 3 or 4 and country of birth origin.

Experimental study

An experiment with a sample of 49 senior-level nursing students was conducted to measure the level of cultural competence before and after an educational intervention held in the classroom setting. The 49 nurses had previous educational instruction in transcultural nursing theory throughout the first, second and third years of nursing study. The inventory utilized was designed by Josepha Campinha-Bacote (2007), PhD, to measure cultural competency in health care students.

Hypothesis

A hypothesis was developed, along with a theoretical framework and specific limitations of the study outlined:

Hypothesis H0.

There is no difference in the mean pre- and post-test scores of the control and experimental subjects.

H1.

The mean post-test scores of the experimental group will increase after receiving the educational intervention.

Limitations of the study

The study was a convenience sample and limited by the small sample size. The sample may not be representative of all senior nursing students.

Power analysis of the sample was calculated at 0.10, indicating that there is a 10 percent probability of detecting a relationship if one exists. This may result in a type I or type II error.

The study is limited to one school of nursing in Hawaii; the results may not be generalized to other populations.

The experimental group was instructed not to discuss the intervention with other students as to not cause dissemination to the control group. Two weeks after the intervention was given to the experimental group, both groups were given the post-test. The post-test consisted of the same inventory tool that was administered as the pre-test (IAPCC-SV). The t-test for equality of means and Levene's test for equality of variances were conducted for statistical analysis on pre-and post-test scores. In addition, a power analysis was conducted due to the small sample size.

Results

Response rate

Both groups completed a demographic survey that included age, gender, race or ethnic background, country of origin, years in the nursing school program and previous preparation in cultural diversity. The following is a description of the demographic information collected about the participants.

Respondents were from ten different ethnic groups and three respondents marked "other" as their ethnic origin. The three highest populations noted were from Filipino, Pacific Islander and Caucasian populations. The state of Hawaii lists Filipino, Japanese and Caucasian as the top three ethnicities for nursing in the Hawaii state report for 2007 (see Table 1: Survey return response rate).

Experimental group demographics

The experimental group revealed these top four ethnicities: Filipino (36 percent), Pacific Islander (24 percent), Caucasian (13 percent) and Korean (13 percent). Experimental participant ages ranged from under 25 to over 50 years with 72 percent less than 31 years of age. The gender was predominantly female (72 percent). Level of senior nursing status is delineated by two levels, level 3 and level 4. Level 3 refers to students that have completed 1 year of nursing studies in addition to the general pre-requisite classes. Level 4 students have completed 1.5 years of nursing classes in addition to the pre-requisites. All students were either at level 3 or level 4 that designates senior level at the University with 80 percent at level 4. In all, 92 percent of the experimental group indicated no previous education on cultural diversity.

Control group demographics

The control group's predominant four ethnicities included Caucasian (25 percent), Pacific Islander (21 percent), Filipino (13 percent) and Japanese and other both at 8 percent. Control group participants' ages were 75 percent under 31 years of age. The gender was predominantly female (79 percent). Students were at level 3 or 4 with 62.5 percent at level 4. A total of 71 percent of the control group reported not having previous instruction in cultural diversity training.

Overall level of cultural competency

Overall level of cultural competency was determined by a total score using the IAPCC-SV inventory tool. The tool consists of 20 questions measuring five domains of cultural competence. The domains are awareness, knowledge, skill, encounters and desire (Campinha-Bacote et al., 1996, 2007). The tool uses a Likert score of 1-4. A total competency score is calculated and categorized as follows: proficient (75-80), competent (60-74), aware (41-59) and incompetent (20-40).

Pre-and post-test scores for the experimental and control group are designated in Figures 1 and 2.

The overall cultural competency scores for both groups measured by the pre-test were similar. Post-test scores were different for the two groups. The control group receiving no intervention scored lower on the post-test in overall competency by five points, dropping their designation from culturally competent to culturally aware. The experimental group increased their post-score after receiving the intervention by five points. The overall competency designation of culturally competent remained unchanged as measured by the post-test.

Domain analysis

The five domains, cultural awareness, cultural knowledge, cultural skills, cultural encounters and cultural desire, that comprise cultural competence were analyzed separately for the control and experimental groups.

Each domain for the control group (Table 2: Pre-and post-domain scores) decreased in score with the largest difference of 12.7 points in cultural skill and 11 points in cultural desire. Cultural skill is assessed in the inventory with items addressing awareness of existing assessment tools, knowledge of specific cultural assessment

tools and comfort in asking questions related to cultural background. Cultural desire reflects the commitment and motivation to care for diverse patients. Campinha-Bacote (2007) believes that to demonstrate cultural desire, there must be a passion to care for culturally diverse populations and want (or desire) to achieve cultural competence.

Results of individual domains for the experimental group are listed in Table 2: Pre- and post-domain scores. Post-test scores of awareness, skill, encounters and desire decreased and the domain of cultural knowledge increased by 4 points. Although an increase of 4 points in knowledge occurred, the two-hour intervention did not improve other domain scores. The overall competency score increased by 5 points, however, this increase did not increase the overall cultural competence score enough to alter categorization. Further analysis of the results was tested by completing a paired independent samples test to determine statistical significance.

Statistical analysis

Analysis was completed using SPSS independent samples test to determine if the differences between mean scores were large enough to be statistically significant. Mean scores for the pre-test group demonstrated small variations, whereas the post-test group demonstrated a larger variation.

Descriptive statistics including sample size, mean, standard deviation and standard error for each of the five domains for each group was conducted from the pre-and post-tests. Examination of the pre-test participant scores were conducted first and the post-test participants second. The difference in the mean scores of pre-test and post-test for both groups were evaluated by the independent samples test and Levene's test for equality of variances.

Pre-test results

The results from the independent samples test (pre-test) demonstrates that Levene's test produced a p-value above 0.05 for each domain thus, the null hypothesis that the variances are equal is not rejected. No difference in the two populations was demonstrated in the pre-test.

The t-test for equality of means was used to determine whether there was a difference in the mean scores of cultural competency of the participants in the pre-test group. The p-value for each domain was >0.05 thus, the null hypothesis that the means are equal is not rejected.

The Levene's test produced a p-value above 0.05 for each domain thus, the null hypothesis that the variances are equal is not rejected. No difference in the two populations was demonstrated in the pre-test.

Post-test results

The results from the independent samples test (post-test) demonstrated that Levene's test produced a p-value >0.05 for all domains. Thus, the null hypothesis that the variances are equal is not rejected. A significant difference was not demonstrated in the two populations for the post-test. The t-test for equality of means provides the answer as to determination of a difference in the mean scores of cultural competency in the participants of the post-test group. The p-values for the domains of awareness, knowledge and skill are <0.05 thus, the null hypothesis, that the means are equal for the two groups on post-test, is rejected. Referring to the Group Statistics (post-test), each of these domains has a lower mean score in the control group post-test. The domains of encounter and desire are $>$ than 0.05. Thus, the null hypothesis for these two domains, that the means are equal, is not rejected.

Power analysis

A power analysis was calculated post hoc to validate the accuracy of findings. The α level (p-level) was set at 0.05. Power is used to test the probability of rejecting the null hypothesis when it is actually false and detecting a difference if one exists. Table 3: Post hoc statistical power analysis demonstrates the factors used to calculate the observed power for this study at 0.102 or 10 percent. Effect size is a measurement of the difference between the sample and the population. A small effect size was determined for this study. The final factor is the directionality of the statistical test. For this study, a two-tailed (nondirectional) test was used to ensure that differences, greater or lesser, were captured.

Reliability testing of IAPCC-SV

Reliability testing of the IAPCC-SV was conducted using the coefficient α (Cronbach's α). It is recommended that all of the items on the scale measure the same characteristic for consistency when examining internal consistency. The scale contained one item that was considered negative and reverse coding was applied. Table 4: Standard statistical scale displays a standard statistical scale providing values and interpretation of coefficient α measurements.

Interpreting results of reliability testing

The output reliability analysis for the IAPCC-SV is displayed in Table 4: Standard statistical scale. The five domains of cultural awareness, cultural knowledge, cultural skill, cultural encounters, cultural desire and overall cultural competency were measured.

Reliability statistics

The reliability statistics section displays the value of the coefficient α for the subscale for each domain. The coefficient α for each domain varied from poor to good. Domains of awareness (0.36) and encounters (0.36) measured poor, the domain of skill measured fair (0.71), knowledge measured marginal (0.62), and desire measured (0.71) marginal. The α coefficient for overall cultural competency measured (0.84), which is designated as good. Previous results on the IAPCC-SV have been published with a Cronbach's α of 0.783 from a study conducted with nursing students at Bellarmine University Lansing School of Nursing and Health Sciences (Fitzgerald et al., 2009). The actual study was released later in 2009. Although the overall Cronbach's α for this study measured 0.84, the individual domains scored low. This may be attributed to the lower sample size of this study. Another consideration for lower subscale scores may be attributed to the population taking the IAPCC-SV. Interpretation of the questions by differing ethnic groups may have had an effect on the results. There was a variation in the ethnicity participating in this particular study as demonstrated in the demographic survey.

Discussion, recommendations and conclusion

Discussion

Health care providers and health care administrators have unique opportunities to interact with diverse populations. Each patient encounter is an opening to learn and experience another point of view. Linguistic differences and health care beliefs are prime components that contribute to misunderstandings of treatment plans between provider and patient. Federal agencies recognize the need for increasing cultural competency and training for health care personnel. Medical schools and nursing programs need to require training and evaluation of that training, as is currently the practice for other courses or elements within curricula.

The educational intervention of a two-hour didactic, discussion and presentation did not provide as robust an intervention as what was needed to increase domain scores for the experimental group. The Adult Learning Theory developed by Malcolm Knowles (1984) states adults need to know why they need to learn something and they learn best experientially. Although the researchers reviewed the importance of cultural competency, a short timeframe of 2 hours does not cover the content in depth of why the subject is important or provide time for exercises in experiential learning or more detailed content from theorists. Knowles (1984) further described a theory of andragogy as the means or process of learning. He further contended that the focus should be on process rather than the actual content that is taught. Teaching strategies such as case studies, self-reflection and evaluation, role-playing and simulations are best used alongside didactic, lecture and discussion when teaching. These were not used in the two-hour intervention due to time constraints.

Several specialists (Campinha-Bacote, 2007; Jeffreys, 2006; Leininger, 1991; Ryan et al., 2000) suggest that cultural competence is learned over time and short-term educational workshops may add to cultural knowledge; however, becoming culturally competent entails a deeper understanding and a process of learning another culture. Although this experiment may have provided information on the importance of cultural competency, cultural competence models and an overview of ethnopharmacology, it can only be viewed as providing information. A more in-depth educational program building on the content that was provided could initiate the process of learning cultural competency. Adding immersion experiences into the curriculum would provide experiential learning. Research studies by Larsen and Reif

(2011) and Carpenter et al. (2011) suggest immersion experiences as the necessary component in providing cultural experiences that facilitate cultural competence. Journaling on experiences, sharing viewpoints and knowledge of federal requirements are just a beginning. A detailed semester-long course providing education for cultural competence is suggested. Workshops can provide new information in transcultural nursing and be a valuable adjunct to cultural competency classes.

Potential applications

An alternative method for increasing education for cultural competency in an already stretched nursing curriculum can be approached as a cultural inclusion project for each nursing class. At the University, all graduating BSN students are required to have met expectations to provide culturally competent nursing care to promote improved health outcomes for diverse populations. These expectations revolve around knowledge, beliefs, values and skills, in which the student applies in each nursing class. Based on the demographic score, measuring prior cultural competence and diversity instruction, 82 percent of students responded that they had received no previous cultural instruction. A value-added instructional project could be incorporated into each nursing class. Instructors might have students engage in culturally focused scenarios using vignettes made by the students, research media, movies or television, for example, to share in class centered around cultural differences in communication. In addition to the traditional classroom discussion and instruction, the projects could supply the human factor needed for cultural understanding. The projects would be based on the focus for that particular nursing class, such as pharmacology, basic nursing assessments, nutrition, maternity practices and death and dying experiences. Incorporation of this approach could be a solution to the already tight nursing curriculums. The key component would be a requirement of consistency among instructors. The hands-on learning for a project can be meaningful and applicable to professional situations in the health care field.

Recommendations

The US Department of Health and Human Services Office of Minority Health continues to recommend development and updating of cultural competence standards. The Liaison Committee on Medical Education has recommended development of culturally competent medical education standards. The American Academy of Nursing and the American Association of Colleges of Nursing offer

direction for schools of nursing to incorporate culturally competent curricular development (Giger et al., 2007). The literature includes studies revealing how miscommunication of health care providers and culturally different families may result in poor outcomes. Although the transcultural program is not specifically included in the nursing curriculum, there is a policy in place to bring the concepts into each nursing class. Nursing education may need to fully explore including required classes on cultural competence to add to the nursing curriculum, thus providing an intense instruction for those not taking additional classes from the transcultural nursing certificate program. Students participating and providing cultural projects for each nursing course introduced an alternative approach. This would provide a constant thread in providing education and bringing cultural competence into a more prominent position for all courses. The research study has attempted to address that incorporation of two solutions than can be an adjunct in the process of providing education on cultural competence.

As for a systems perspective, the result of not paying attention to the cultural diversity of community needs can lead to fractured quality of services (Anderson et al., 2003). Providing the combination of necessary services such as linguistically appropriate communication for the community served and ensuring staff are aware of the variation in beliefs can increase quality and improve health outcomes. Anderson et al. (2003) recommend ensuring an organization is prepared to cover cultural needs with programs in place to recruit staff reflective of cultural diversity of the community served and education in provider self-awareness to better understand perception of client symptoms and ensure accuracy of diagnosis. Interventions such as recruiting individuals who comprehend the full spectrum of culturally competent care and use of services to enhance care and communication will increase quality outcomes.

In this study, we focused on the local diverse ethnic cultures of Hawaii and that of health care providers. In the experimental intervention, a broad overview of cultural competence was provided through didactic lecture, presentation and discussion. We discovered that the domains of awareness, skill, knowledge, encounter and desire cannot be taught by instruction alone. Further, we recommend that they should be reinforced over time.

Based on findings of our study, the following recommendations are provided:

In retrospect, a larger sample size (calculated at 62 participants) was needed to achieve a power of at least 80 percent. A larger sample may be obtained by including junior and senior students.

Although this researcher felt a control group was necessary to validate the experiment there were no significant differences between the two groups. Hence, a quasi-experimental group might present a larger sample and provide the power of 80 percent to better assess the effects of future interventions.

The experimental intervention or any other cultural competence intervention should provide more and varied in-depth training, consisting of additional sessions over a semester. Additionally, various methods of adult learning should be applied in any intervention. Integrating cultural education into each course should be a standard and a process of utilizing a cultural project for each class can coincide with the individual nursing course. The didactic presentation and discussion presented for this study provided an overview of different models and theories of cultural competence and diversity. A one-time presentation cannot provide all of the needed information. Experience provided by an immersion exercise can be brought into the classroom from the transcultural nursing certificate program for discussion on issues from everyday customs to health and illness interpretation. As students realize the importance of recognizing cultural cues and communication differences, suggestions from instructors and peers can be invaluable. Reflective journaling can be of great help in identifying feelings related to other cultures. Tools such as this can provide insight that at first glance might not be straight forward.

Pre-and post-testing should continue to evaluate students' level of competency before and after educational interventions. The inventory tool needs to be tested for relevance in testing a multicultural population.

Conclusion

The findings of this study, while not statistically significant, are important to emphasize the importance and necessity of education in cultural competence. Expertise within the institution can broaden the cultural education experience throughout the four-year program. Cultural competence is not a skill taught from one class or only even a single immersion experience. Research indicates that the skill is

acquired over time and continuing education, and encounters are required to become culturally competent.

Additional studies are recommended to investigate methods to include cultural education throughout a nursing program and strategies to evaluate changes in cultural competence. Two areas for examination and discussion include the experimental design and the educational intervention. The current study provides a foundation for future curriculum development and evaluation of program. Implications for health care organizations promoting a systems approach to cultural competence can improve quality, client satisfaction and increase positive health care outcomes.

A special thank you to the Hawaii Pacific University and nursing participants in the research study. In addition, the authors want to thank and acknowledge Nursing Professor Henny Breen and Professor Peter Look for providing time from their busy curriculum to allow time to conduct this important research. A special thank you to Dr ReNel Davis for sharing her passion and expertise on transcultural nursing and cultural competency. Finally, appreciation to Dr Josephina Campinha-Bacote for permission to use her proprietary inventory tool for Assessing the Process of Cultural Competency-Student Version for this research study.

Figure 1

Overall competency scores (experimental)

[Figure omitted. See PDF]

Figure 2

Overall competency scores (control)

[Figure omitted. See PDF]

Table 1: Survey return response rate

Group	Baseline survey response rate	Post-experimental response rate
Control	96% (<i>n</i> =24)	92% (<i>n</i> =23)
Experimental	100% (<i>n</i> =25)	92% (<i>n</i> =23)

Table 2: Pre-and post-domain scores

Domains	Awareness	Knowledge	Skill	Encounter	Desire
<i>Panel A: control group average</i>					
Pre-survey	86.3	67.6	71.3	75.0	82.5
Post-survey (no intervention)	77	62.2	58.6	67.6	71.5
Difference in score	-9.3	-5.4	-12.7	-7.4	-11.0
<i>Panel B: experimental group average</i>					
Pre-survey	87.0	69.6	72.0	79.2	88.0
Post-survey	82.0	73.6	71.0	74.0	82.75
Difference in score	-5.0	+4.0	-1.0	-5.2	-5.25

Table 3: Post hoc statistical power analysis

<i>a</i> level	0.05	Also known as <i>p</i> -value/or type 1 error rate
Effect size	0.2	Effect sizes of 0.2, 0.5 and 0.8 considered small, medium, large
Total sample size	49	The total number of valid cases 49 subjects in both groups
Two-tailed/nondirectional hypothesis observed	0.102	Observed power of 10%

Table 4: Standard statistical scale

Cultural domains	Coefficient α	Adequacy
Awareness	0.36	Poor
Knowledge	0.62	Marginal
Skill	0.71	Fair
Encounters	0.36	Poor
Desire	0.71	Fair
Overall competency	0.84	Good

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