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Abstract: *The purpose of this study was to measure the process of cultural competence over time in a group of Health Science Faculty teaching nursing and other allied health students. Faculty (n=28) were administered the Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals (IAPCC) prior to a cultural competence workshop, immediately after the workshop, and again at three months, six months and 12 months. The mean scores increased significantly with each administration of the IAPCC from the pretest administration (52.17) to the 12 month administration (59.71) demonstrating new knowledge related to cultural competence as a process.*

Key Words: *Cultural Competence, Health Science Faculty, Longitudinal Study*

A LONGITUDINAL STUDY OF CULTURAL COMPETENCE AMONG HEALTH SCIENCE FACULTY

The increase diversity of patient populations in the United States demands a diverse healthcare workforce to provide optimal cultural competent care. A major thrust of the nursing profession is to increase the diversity of the nursing workforce. In 2007 the diversity among the 38.1 million foreign-born living in the United States has increased (U.S. Department of Commerce, 2009). The ideal workforce would be one that mirrors the population in both the nation and in Georgia. A University located south of Atlanta in Georgia has had an increasing enrollment of racial and ethnic minority students with disadvantaged backgrounds. *U.S. News & World Report* ranking of colleges in 2006 identified the University four out of the last five years as having the most diverse student population among comprehensive baccalaureate-level colleges and universities in the southeastern U.S. other than historically black colleges. With the diversity of the university and the patient population served, it is

imperative that health sciences and nursing faculty have skills in cultural competence. Needed skills in cultural competence for faculty and practitioners in diverse disciplines has been documented in the literature (Ndiwane, et. al., 2004; Teasley, 2005; Leishman, 2004; Armour, et. al., 2004). Most of the studies related to measuring cultural competence among faculty have been cross-sectional studies that take place at a single point in time or pre and post administrations. Therefore there is a need to conduct longitudinal studies measuring cultural competence over time. This study purported to determine the change in cultural competence among faculty teaching courses in a School of Health Sciences after a cultural competence workshop and to determine their cultural competence at three, six, and 12 months.

REVIEW OF LITERATURE

Researchers have utilized a variety of tools in the mental health, social work and nursing profession to measure the constructs of cultural competence (Bernal & Froman, 1987; D'Andrea, et al., 1991; Leininger, 1994; Lees, et al., 2002). Grant (2003) developed a quasi-experimental study to examine the effectiveness of a teaching strategy, the *Cultural Awareness Program*, on RN-BSN students. The IAPCC was used in a pretest and posttest design format to identify RN-BSN students' levels of cultural competence. Half of the group was given the IAPCC before the *Cultural Awareness Program* began to determine the pre-treatment level of

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cultural competence. After completion of the program, all students were given the IAPCC to determine the effectiveness of the teaching strategy. Data were analyzed using the independent samples t-test and dependent samples t-test. There was a statistically significant increase in the level of cultural competence of all the participants.

Campinha-Bacote's (1994) IAPCC instrument has been shown to be a reliable tool for measuring cultural competence. Using the IAPCC for a pretest and posttest in an educational setting is helpful to assess the effects of cultural competence training, courses, or content delivery within a course. Grant (2003) utilized the IAPCC and found that a cultural awareness training program for registered nurses had a significant impact on the level of cultural competence of nursing students. Pretest scores demonstrated that all participants were at a low level of cultural awareness. The posttest scores demonstrated a higher level of cultural awareness with 25% of the participants demonstrating cultural competence. Doutrich and Storey (2004) used the IAPCC to measure RN-BSN students' progress toward cultural competence while enrolled in a community health theory course. The instrument was administered at the beginning of the course and again at the end of the semester. The level of cultural competence increased significantly from the pre-test scores ($F=8.37$; $df=9$; $p=.018$). Sargent, Sedlak and Martsolf (2005) administered the IAPCC to first year and fourth year nursing students and the nursing faculty and compared the scores between the three groups. Analysis of variance revealed statistically significant differences between the 3 groups ($f=43.915$; $df=259$; $p<.0001$). The results supported the idea that cultural competence can be increased by including structured cultural content in nursing curricula.

Campinha-Bacote (2003) revised the IAPCC to measure the newest construct of cultural desire by adding five additional questions and changing the name to the IAPCC-R (revised). Researchers have used the revised instrument to explore cultural competence of educators. For example, the IAPCC-R was modified and administered to health educators to assess their cultural competence and the Cronbach alpha established internal consistency reliability of the instrument at .85 in two studies. The results provided a way for the authors to identify strategies that the health educators could use to enhance their cultural competency. (Luquis & Perez, 2005; Luquis & Perez, 2006).

The cultural competence of baccalaureate nursing faculty teaching in areas with and without large numbers of immigrants was measured using the IAPCC-R (Kardong-Edgren, 2007). The Cronbach alpha for the instrument in this study was high ($\alpha=.85$). The results in part indicated that faculty were culturally competent and those faculty who were teaching in areas that had more immigrants reported higher mean scores on the IAPCC-R.

In summary, both the IAPCC and IAPCC-R have been used to measure cultural competence in a variety of groups of educators and students. None of the studies reviewed, however, have performed repeated measures of cultural competence in the same sample

over a significant time period other than pre and post testing. The lack of longitudinal studies limits knowledge related to cultural competency as a process rather than a onetime measure. Therefore this study looked at cultural competence as a process which provides new knowledge related to cultural competence.

CONCEPTUAL FRAMEWORK

The Culturally Competent Model of Care put forth by Campinha-Bacote (1994) provided the framework for this study. She emphasizes that cultural competence is a process that is fostered by genuinely seeking cultural encounters. The model has four major concepts: cultural awareness, culture knowledge, cultural skill, and cultural encounters. Cultural awareness relates to those cognitive processes that enable health care providers to appreciate and become sensitive to clients with diverse cultural practices and an understanding of problem solving strategies of clients' cultures.

Cultural knowledge is the process whereby health care providers seek and obtain a sound educational foundation about various cultural world views. She contends that "one's world view can be considered a paradigm or way of viewing the world and phenomena in it" (p.204).

Cultural skill is the ability of health care providers to collect relevant cultural data about clients' health histories and presenting problems. In addition, health care providers must learn to conduct cultural assessments and perform culturally based physical assessments. Finally, cultural encounters represent the process which encourages health care providers to engage directly in cross-cultural interactions with clients from culturally diverse backgrounds." The model does not suggest that cultural competence can be achieved by gaining achievement in the four major concepts of cultural awareness, culture knowledge, cultural skill, and cultural encounters but rather that cultural competence is an ongoing process. The School of Health Sciences faculty was unanimous in their desire to develop new competencies to assist them to prepare graduates to function as culturally-competent practitioners in an increasingly diverse health-care environment.

Research Questions

There were three research questions in this study that focused on the level of cultural competence among faculty preparing students for health careers, the relationship between members' cultural competence before and after a cultural competence training session, and the cultural competence level of faculty members at three months, six months and one year.

Participants

A population of healthcare educators was studied. The sample consisted of 28 health science faculty (most [78%] were nursing faculty) in a southern university in the U.S. Other participants included dental hygiene faculty (11%) and three (11%) health care management faculty.

Cultural Competence

The concept cultural competence was measured using the Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals (IAPCC) developed by Campinha-Bacote (1994). The instrument is a 20-item, 4-point Likert scale instrument that measures the constructs of cultural awareness, cultural knowledge, cultural skill, and cultural encounters. Some examples of the items measured using the IAPCC include: *Cultural competence mainly refers to one's competency concerning different ethnic groups; I feel that cultural competence is an ongoing process; I am knowledgeable in the area of ethnic pharmacology; I am aware of the cultural limitations of existing assessment tools that are used with ethnic groups; It is more important to conduct a cultural assessment on ethnically diverse clients than with other clients; and I believe there are more differences within cultural groups than across cultural groups.*

A summated score ranging from 20 to 80 can be obtained when using the instrument and the extent to which a healthcare professional is culturally competent is indicated by four categories Culturally Proficient, Culturally Competent, Culturally Aware, and Culturally Incompetent. See Table 1 for the scoring of each category.

Table 1. IAPCC Category Ranges

Category	Score Range
Culturally Proficient (CP)	75-80
Culturally Competent (CC)	60-74
Culturally Aware (CA)	40-59
Culturally Incompetent (CI)	20-39

METHODOLOGY

The IAPCC instrument was administered to 28 faculty participants prior to a cultural competence workshop aimed at providing skills for faculty to better integrate cultural competency within the curriculum and when interacting with students. The instrument was administered again after the workshop on the same day and at three, six and 12 months.

Findings

The mean score of the faculty on the IAPCC instrument pre-test was 52.17 and post-test was 55.35 which indicated that the faculty, as a group, were Culturally Aware. There was one participant who was Culturally Incompetent on the pretest and others who were Culturally Competent. No participants scored in the Culturally Incompetent range on the post, three, six, or 12 month IAPCC administrations.

Table 2 shows the competency levels of the participants on the pre, post, three, six, and 12 month IAPCC administrations. While one participant's pre-test score was in the Culturally Incompetent range (between 20-

39), no one scored in that range again. No participants scored in the Culturally Proficient range (between 75-80). One interesting finding is that even with the change in the sample sizes, the number of participants scoring in the Culturally Competent range (60-74) increased over time.

Table 2. Participants' Competency Levels at Pre, Post, 3, 6, and 12 months

Time	N	CP	CC	CA	CI
Pre	28	0	4 (14%)	23 (82%)	1 (3.6%)
Post	28	0	7 (25%)	21 (75%)	0
3 mo	16	0	7 (44%)	9 (56%)	0
6 mo	19	0	9 (47%)	10 (53%)	0
12 mo	21	0	10 (48%)	11 (52%)	0

CP=Culturally Proficient

CC=Culturally Competent

CA=Culturally Aware

CI = Culturally Incompetent

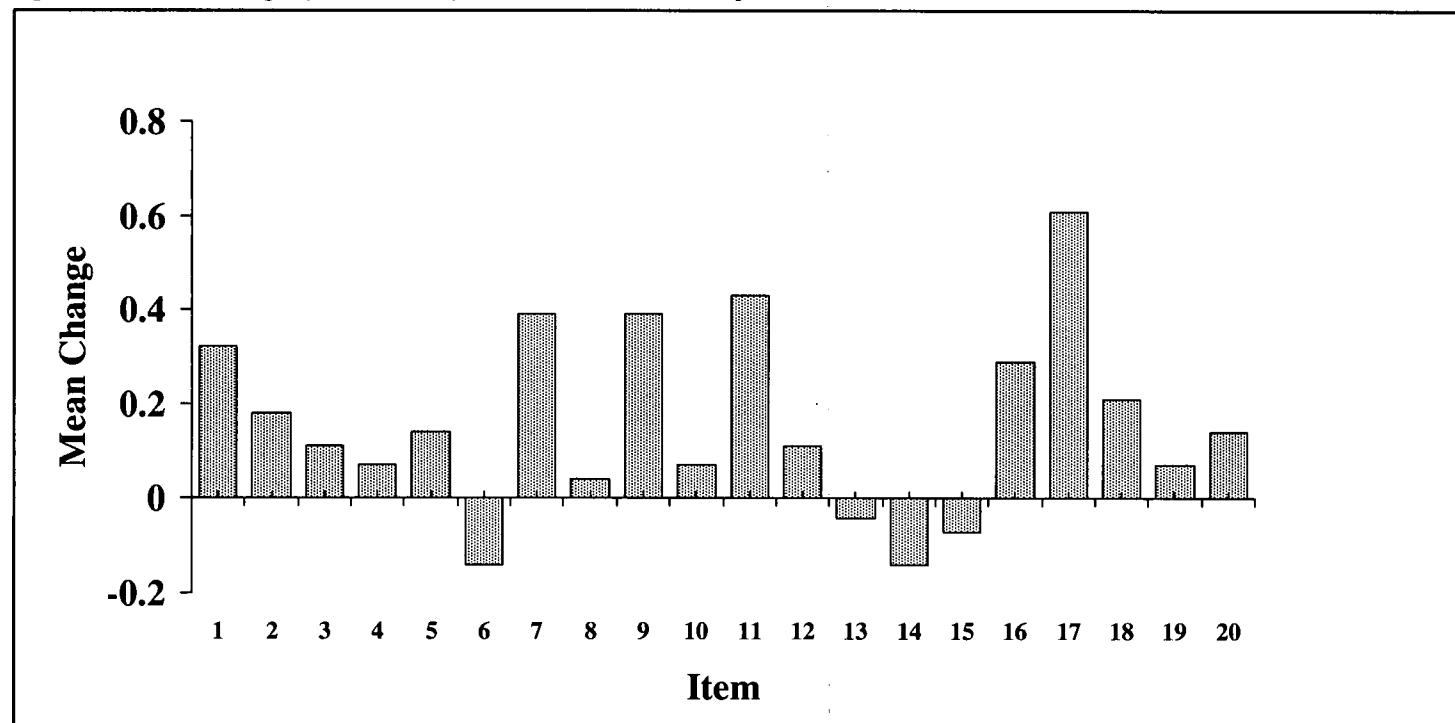
There was a statistical significance ($p = .006$) in the group mean summated score of the pre and post administration of the IAPCC instrument with the post test scores being higher. However, the groups mean summated score at the three month administration was higher than the post test score but not statistically significant. In contrast, there was a statistical significance in the post test group mean at six ($p = .03$), and 12 ($p = .03$) month group means. Table 3 shows the group means and levels of significance at three, six, and 12 months compared to the post test.

Table 3. Comparison of Group Means and Levels of Significance

Time	N	Mean	P value compared w/post
Pre	28	52.17	
Post	28	55.35	.006
3 mo	16	55.90	.08
6 mo	19	59.89	.03
12 mo	21	59.71	.03

There was a difference in the group means for each item on the IAPCC between the pre and post administrations with most of the scores increasing while four items decreased. Figure 1 shows the difference in the individual items on the IAPCC from the pre to post administration. The largest increase was item 17 (It is more important to conduct a cultural assessment on ethnically diverse clients than with other clients), followed by item 11 (I seek out education, consultation, and/or

Figure 1. Mean Change (post minus pre) in IACCP Scores by Item



training experiences to enhance my understanding and effectiveness with culturally and ethnically diverse clients), item 9 (Anatomical and physiological variations do not exist in different ethnic groups) and item 7 (I am aware of the cultural limitations of existing assessment tools that are used with ethnic groups).

There were 4 items that were scored lower on the post test than the pretest and they were item 14 (When my values and beliefs "clash" with my client's values and beliefs I become frustrated), item 6 (I am knowledgeable about the worldviews, beliefs, practices and/or life ways of at least two cultural groups), item 15 (I am aware of some of the stereotyping attitudes, preconceived notions and feelings that I have toward members of other ethnic/cultural groups, and item 13 (I recognize the limits of my competence when interacting with culturally/ethnically diverse clients).

Internal Consistency Reliability

Knowing whether or not an instrument has internal consistency reliability is vital to determine the value of the findings. Therefore, a Chronbach's alpha was used to determine internal consistency reliability of the IAPCC. The internal consistency reliability of the IAPCC in this sample of health science faculty was high (alpha = .86 on pre-test and .81 on post-test)

CONCLUSIONS

Overall, the faculty increased their cultural competence mean scores between the pre and post IAPCC administrations. This was evident in the scores of 16 items on the IAPCC increasing. Faculty scores indicated

that they had improved in cultural awareness, culture knowledge, cultural skill, and cultural encounters. The scores demonstrated the importance of conducting cultural assessments on all clients, seeking out education and training to enhance personal understanding and effectiveness with diverse clients, understanding the anatomical and physiological variations in different ethnic groups, and being aware of cultural limitations of existing cultural assessment tools used with ethnic groups.

There was a decrease in the mean score of four items indicating that some faculty were still uneasy about personal cultural competence concepts such as still having frustration when their values and beliefs clash with others, their knowledge about worldviews, personal stereotyping, and the inability to recognize personal limitations when working with persons of other cultures. These behaviors are consistent with the notion put forth by Campinha-Bacote (1994) that cultural competence is an ongoing process.

The IAPCC instrument is a reliable tool to measure cultural competence among health science faculty especially nursing faculty. Faculty members in this study became more aware of cultural awareness, knowledge, skill, and encounters as a result of the cultural competence workshops. The results of the last administration of the IAPCC one year after the intervention indicated that no faculty scored in the Culturally Incompetent range.

The results of the current study demonstrate that developing cultural competence is a continual growth

process that individuals experience over time and individuals may move between the stages of cultural competence. Noteworthy was the ease in which faculty were able to openly discuss diversity issues among themselves. There was a new interest in incorporating the concepts of the Campinha-Bacote model into the curriculum and in daily interactions in the classroom with diverse students.

IMPLICATIONS

Workshops can enhance faculty members' cultural competency skills that, in turn, can lead to better understanding and interaction among diverse students. There is the possibility of increasing the diversity of the nursing workforce by retaining and graduating diverse students taught by culturally competent faculty. Cultural competence must also be a priority for nursing program administrators. Nurses will interact with clients from global perspectives and are ethically obligated to provide care that is consistent with their clients' customs, beliefs and values (Brathwaite, 2005). Nursing program directors, deans and administrators are well positioned to support and encourage inclusion of cultural competence courses as well as requiring the review of the curriculum for inclusion of cultural beliefs, values, and differences. By doing so, all students are exposed to theories and behaviors that encourage cultural knowledge, cultural awareness and cultural sensitivity. In addition, academic institutions and program administrators must actively recruit diverse faculty, ensure cultural competence among their current faculty, and be committed to recruiting, retaining, and graduating nurses from diverse backgrounds. These behaviors will provide foundations to increase the diversity and sensitivity of faculty and students which in turn may contribute to decreasing health disparities. Future research includes replication of this longitudinal study with a larger sample size and faculty from diverse institutions.

LIMITATIONS OF THE STUDY

A major limitation of the study was the sample size and sample selection limiting the generalizability of the findings. Also group means were compared rather than individual means at each administration. Knowing individual means would have strengthened the study. The decision to use group means rather than individual means was to assure anonymity of the faculty participating.

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