RESEARCH

A Comparison of Educational Interventions to Enhance Cultural Competency in Pharmacy Students

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Submitted September 29, 2012; accepted December 3, 2012; published May 13, 2013.

Objective. To determine the degree to which 3 different educational interventions enhance cultural competency in pharmacy students.

Methods. Students were equally divided among a simulated-patient activity group, a written case-scenarios group, and a formal lecture group. Mean scores for pre- and post-intervention cultural self-assessment surveys were compared.

Results. In the simulation group, there were significant positive changes in the cultural skills and cultural desire components; in the case-scenario group, there was a significant positive change in the cultural awareness component; and in the lecture group, there were significant positive changes in the cultural skills and cultural empathy components. With respect to the cultural skills component, there was greater post-intervention improvement in the simulation and lecture groups than in the case-scenario group.

Conclusions. There were significant positive changes within each group, indicating that ideologies and behaviors may be altered based on the educational intervention received. However, a 1-hour practicum may not be sufficient to enhance cultural competency.

Keywords: cultural competency, simulated patients, written case scenarios, pharmacy students

INTRODUCTION

Although Americans of European descent currently make up the majority of the US population, there may not be a single majority group by 2050.[1] For healthcare professionals, this change will be reflected in an increasingly diverse patient population. In 2002, the Institute of Medicine (IOM) reported that, compared with white Americans, racial and ethnic minorities in the United States receive a lower quality of health care.[2] These disparities have been further highlighted in specific healthcare services, including screening for breast and cervical cancer and management of diabetes and anticoagulation control.[3-5] Additionally, there are disparities in the rates of diagnosis, morbidity, and mortality in minority populations compared with the same among non-Hispanic whites in cancer, diabetes, heart disease, HIV/AIDS, immunizations, infant mortality, and stroke.[6] Although the reasons for these disparities are not fully understood, the IOM has acknowledged several possible factors that may affect the ways in which healthcare providers deliver care to different populations, including language and cultural differences; distrust of the medical system among minority patients; a lack of minority physicians in clinical practice who may be more culturally sensitized to the needs of minority patients; time limitations imposed by the pressures of clinical practice; and conscious or unconscious biases, prejudices, or negative racial and ethnic stereotypes.[2]

These disparities are particularly important for individuals in the profession of pharmacy, considering that those of Caucasian descent represent 90%, 75%, and 89% of pharmacists, pharmacy faculty members, and pharmacy students in this country, respectively.[7,8] Therefore, given the underrepresentation of minorities among pharmacy professionals and trainees, education and training are imperative to the effective provision of care for patients of nonmajority cultures. The American Pharmacists Association, the American Society of Health-System Pharmacists, and the American Association of Colleges of Pharmacy have all published policies and statements

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highlighting the importance of increasing knowledge and awareness of cultural differences.[9-11] Similarly, the Accreditation Council for Pharmacy Education[12] requires the inclusion of education in cultural competence in the doctor of pharmacy (PharmD) degree program.

The goal of education and training is to produce a healthcare provider with the knowledge, attitudes, and skills to provide culturally competent care. Cultural competence has been described as a process, not an endpoint, in which the practitioner continuously strives to achieve the ability to effectively work within the cultural context of an individual, family, or community from a diverse cultural background.[13] Cultural competence can be classified into 6 components: cultural awareness, cultural knowledge, cultural skills, cultural encounters, cultural desire, and cultural empathy.[14,15]

Methods of instruction to improve cultural competence vary, and many have been published in the pharmacy literature. There are multiple descriptions of cultural competency education and awareness in individual courses, throughout several courses, and in introductory and advanced pharmacy practice experiences (IPPEs/APPEs).[16-24] Some colleges and schools of pharmacy have elected to integrate cultural competency content throughout the entire PharmD curriculum.[25-27] Activities have included assigned readings, classroom lectures, documentaries, case discussions, and portfolio reflections.

Schools of medicine, nursing, dentistry, and pharmacy have used simulated patients as a unique method of instruction to enhance student learning and to gain practical experience in a nonthreatening teaching environment.[28-34] Simulated patients have been used to teach and evaluate students' and residents' cultural competence.[35-37] The advantages of this method of learning include direct interaction with "patients," the opportunity to experiment with and perfect new skills, the option for the trainee to receive feedback directly from the patient, and the opportunity to deal with difficult issues.[38] This technique has been associated with improvements in successful communication.[28,29]

The current literature has not provided guidance as to the superiority of any particular technique over other strategies.[39,40] However, knowledge of the differential effects of specific interventions would be useful to institutions seeking to provide education on diversity and cultural variances with limited resources. The purpose of this study was to compare 3 different teaching strategies (ie, a cultural competence lecture, 2 written case scenarios, and a simulated patient exercise) to determine the extent to which each intervention enhanced the cultural competency of student pharmacists.

METHODS

Second-year pharmacy students at the University of Pittsburgh School of Pharmacy enrolled in the Profession of Pharmacy 4 (POP4) course were invited to participate in the study. Profession of Pharmacy is a 6-semester course series that provides pharmacy students exposure to various aspects of healthcare and pharmacy practice, including human dimensions, critical inquiry, clinical skills, managing as a professional pharmacist, literature evaluation, healthcare systems, and public health. A segment of the POP4 course focuses on issues and challenges affecting the public's health, including the relationship of factors such as race, gender, socioeconomic status, sexuality, religion, and culture to health disparities and access to care.

For this study, the class of 108 students was equally divided into thirds. Each third of the class (36 students) participated in 1 of 3 hour-long educational interventions. The first group received a 50-minute lecture on cultural competence in which the instructor verbally described 2 patient cases. The case-scenario group received a brief (10-minute) lecture providing some background on cultural competence and then was split into preassigned groups of 6 to complete 1 written case each. The simulation group received a brief (10-minute) lecture providing some background on cultural competence and then was split into preassigned groups of 6 for 2 simulated patient encounters in which 1 of the students volunteered to interview a patient of non-Caucasian background, played by pharmaceutical sciences graduate students. The learning objectives for all 3 interventions were identical: identify the characteristics of the culturally competent healthcare practitioner and the common characteristics that may be encountered when interacting with patients with unique cultures; and explain the role of cultural competence in achieving an effective pharmacist-patient relationship and the cultural issues that should be considered when designing a monitoring plan for patients.

The cultural assessment survey instrument was an evaluation tool comprised of questions previously validated in the literature by Sealey[14] and original questions developed by the investigators based on themes from previously published questions in the literature.[15] These questions were modified by the investigators and then validated by pharmacy and nonpharmacy faculty members with expertise and/or experience in the area of cultural competence. The survey instrument consisted of 15 questions, including 3 demographic questions and 12 questions assessing students on the 6 components of cultural competency (ie, cultural awareness, cultural knowledge, cultural skills, cultural encounters, cultural

desire, and cultural empathy). Responses to the cultural competency questions were presented on a 5-point Likert scale, ranging from strongly agree=1 to strongly disagree=5).

During a class prior to the interventions, all students were invited to take the cultural assessment survey. At the end of the intervention, students were asked to take the same survey again. In order to match pre- and post-intervention survey instruments together, students were provided with a random 3-digit number, to use as their identification number on the survey. These identification numbers were kept separate from the survey responses (stored in a secure, locked cabinet by a support staff person who was not part of the investigation team) and were available at the follow-up survey for students who had forgotten their numbers. This protocol was approved as an exempt study by the University of Pittsburgh Institutional Review Board.

The demographic data were analyzed using a chi-square test. The mean change in scores for each question was compared within each group using paired *t* tests and among all 3 groups using an ANOVA test. All data analyses were completed using SPSS 18.0 software (SPSS, Inc., Chicago, IL).

RESULTS

One hundred eight second-year pharmacy students were invited to participate in the study. Ninety-eight students (91%) completed the pre-intervention survey instrument, and 98 students (91%) completed the post-intervention survey instrument. Eighty-four pre-and post-intervention survey instruments were successfully matched and used in the data analysis. The remaining 14 pre- and post-intervention surveys could not be accurately matched and thus were not included in the analysis. There were 26 respondents in the lecture group, 30 in the case-scenario group, and 28 in the simulation group.

Of the 84 student respondents, the majority were white (81%), male (57%), and between the ages of 20 and 25 (93%). There were no differences in age, sex, or ethnicity among groups. A combination of the mean value for the cultural competence pre- and post-intervention survey scores for all of the students and a comparison of the mean values among the 3 intervention groups are shown in Table 1. Students were more likely to agree or strongly agree with the cultural skills statement regarding modifying one's communication style, demeanor, and interviewing questions during cultural encounters ($p<0.01$) and the cultural empathy statement, "patients prefer healthcare providers who are genuinely concerned with their (ie, the patients') cultural preferences" ($p=0.011$). Students in the simulation ($p=0.008$) and lecture ($p=0.037$) groups showed greater improvement than those in the case-scenario group in the cultural skills statement regarding modifying one's communication style, demeanor, and interviewing questions during cultural encounters.

The pre- and post-intervention scores were further analyzed within each intervention group (Table 2). When comparing the pre- and post-intervention responses within the simulation group, respondents were more likely to agree or strongly agree with the cultural desires question on the post-intervention survey instrument, indicating that they would like to learn about the health beliefs and practices of different cultures and ethnic groups ($p=0.037$). Within the case-scenario group, there was a significant change in the cultural awareness component regarding mastery of cultural competency ($p=0.041$). There were significant changes in the lecture group in the cultural skills question regarding modifying one's communication style, demeanor, and interviewing questions during cultural encounters ($p=0.001$) and in the cultural empathy question stressing the importance of pharmacists addressing medication issues from the patients' personal and cultural perspective when providing care ($p=0.032$).

DISCUSSION

Three educational interventions were compared to determine to what degree each would enhance the cultural competency of pharmacy students. The expectation was that the simulation activity would enhance student cultural competency to the greatest extent, given that it involved more active participation than did the lecture and case-scenario groups. However, none of the activities raised survey scores for all domains.

Different domains improved after each of the 3 educational interventions, suggesting that it may take a combination of the 3 to increase cultural competency. For example, the only significant change for students who were in the case-scenario group was in the cultural awareness component, whereas in the simulation and lecture groups, significant changes occurred in the cultural desire, empathy, and skills components. With respect to the length of the intervention, previously assessed interventions that show significant improvements in cultural competency are often intense and of a longer duration;[26-28] however, the time length of these interventions make them less accessible for colleges and schools of pharmacy. Whereas ideologies and behaviors that have been held and practiced for years require time to change; short experiences, when built over time, could effectively change these beliefs. Our study showed an improvement in certain cultural domains over a single hour-long intervention.

Table 1. Comparison of Mean Pre- and Post-Intervention Survey Scores Among All Participants and All Groups[a]

	Survey Scores for All Participants (n=84)			Comparison of All Groups, Mean							
				Simulation Group (n=28)		Case-Study Group (n=30)		Lecture Group (n=26)		*P*	*P*
	Mean, Pre	Mean, Post	*P*	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Cultural encounters											
I am in close contact with individuals who provide health services to culturally diverse groups	2.8	2.7	0.59	2.5	2.7	3.2	3.0	2.5	2.4	0.007	0.09
Spent extended time with diverse populations	2.9	3.0	0.52	2.8	3.0	2.8	3.1	3.0	2.7	0.86	0.46
Cultural awareness											
Mastery of cultural competency can be achieved	2.2	2.3	0.28	2.2	2.0	2.0	2.5	2.4	2.4	0.21	0.09
Cultural knowledge											
Knowledge about at least two diverse groups besides my own	2.8	2.9	0.28	2.6	2.8	2.9	3.1	2.7	2.7	0.51	0.33
Cultural kills											
Modify one's interview when encountering diverse populations	2.7	2.2	< 0.01	2.6	1.9	2.8	2.7	2.7	2.0	0.78	0.008
Others may be offended if asked about cultural preferences	3.2	3.0	0.11	3.3	2.7	3.3	3.1	3.1	3.2	0.82	0.14
Rumors, opinions, or comments about others should not influence cultural encounters	1.6	1.7	0.66	1.7	1.7	1.6	1.8	1.7	1.6	0.85	0.79
Cultural desire											
Caring for diverse cultures is a challenge that I welcome	2.2	2.2	0.68	2.3	2.2	2.2	2.3	2.1	2.1	0.85	0.68
I would like to learn about other cultures through training and direct contact with others	2.5	2.4	0.29	2.6	2.2	2.4	2.6	2.4	2.3	0.65	0.24
Cultural empathy											
Patients prefer healthcare providers who are genuinely concerned with their cultural preferences	2.0	1.7	0.011	2.0	1.8	2.0	1.8	2.0	1.7	0.94	0.83
One should be aware of nonverbal cues of patients from diverse cultures	1.9	1.8	1.00	1.9	1.8	1.8	2.0	1.9	1.8	0.68	0.45
It is important to view the encounter from the patient's perspective	1.8	1.7	0.54	1.6	1.7	1.8	1.8	1.9	1.6	0.36	0.43

[a] Rating scale: 1=strongly agree, 2=agree , 3=neutral, 4=disagree, 5=strongly disagree

Table 2. Changes in Pre- and Post-Intervention Survey Scores Within Each Group

Survey Item	Simulation Group		Case-Study Group (n=30)	Lecture Group (n=26)
	All Students (n=28)	Interviewers (n=9)[a]		
Cultural encounters				
I am in close contact with individuals who provide health services to culturally diverse groups	0.36	1.00	0.17	0.68
Spent extended time with diverse populations	0.33	0.045	0.24	0.24
Cultural awareness				
Mastery of cultural competency can be achieved	0.16	0.68	0.041	0.71
Cultural knowledge				
Knowledge about at least 2 diverse groups besides my own	0.28	1.00	0.43	1.00
Cultural skills				
Modify one's interview when encountering diverse populations	0.001	0.003	0.52	0.001
Others may be offended if asked about cultural preferences	0.033	0.023	0.46	0.54
Rumors, opinions, or comments about others should not influence cultural encounters	1.00	1.00	0.23	0.76
Cultural desire				
Caring for diverse cultures is a challenge that I welcome	0.83	1.00	0.40	1.00
I would like to learn about other cultures through training and direct contact with others	0.037	0.08	0.28	0.63
Cultural empathy				
Patients prefer healthcare providers who are genuinely concerned with their cultural preferences	0.13	0.28	0.26	0.08
One should be aware of nonverbal cues of patients from diverse cultures	0.38	0.34	0.14	0.19
It is important to view the encounter from the patient's perspective	0.63	0.68	0.80	0.032

[a] 12 students participated as interviewers; however, only 9 surveys were identified.

However, the follow-up time may not have been sufficient to determine the long-term impact of this short intervention once students begin to care for real patients through experiential learning.

With the anticipated changes in the demographic composition of the United States, colleges and schools of pharmacy must allocate time and resources to effectively increase student cultural competence, with the ultimate goal of reducing health disparities. Based on the results of this study, it may be necessary for colleges and schools with limited resources to integrate learning opportunities throughout the degree program by focusing on specific activities that may enhance targeted components of cultural competency. For example, a simulated patient activity should be used to enhance cultural skills or cultural desire. Some institutions have described and evaluated culturally relevant activities, such as lectures, case-based assessments, simulated and/or standardized patient activities; guest lecturers from various cultural, racial, ethnic, socioeconomic, and spiritual backgrounds; and other active-learning techniques.[16-27] Activities such as these could be threaded throughout the degree program.[25-27] Additionally, the option of a required IPPE/APPE may provide further opportunities to enhance cultural competency.[22-27]

Students' mean scores at baseline were close to the ideal responses (ie, strongly agree=1) for the cultural empathy statements and 1 of the cultural skills statements about avoiding rumors, opinions, comments, or any other factors that may negatively impact the cultural encounter. There are several possible reasons for these findings. First, the responses may reflect students' past experiences, such as a culturally diverse upbringing or previous exposure to cultural and diversity issues. Additionally, students could have responded according to what they perceived as a "correct" answer to these questions. This study did not

Table 3. Summary of Patient Case Scenarios

Case #1: AD is a 72-year-old Indian man who has just been discharged from the hospital after a second DVT. He is in the outpatient pharmacy at the hospital to pick up Coumadin before going home. The physician also prescribed a statin and beta blocker for a prior myocardial infarction that the patient is refusing to pick up. In addition, he has mentioned that he does not plan to follow-up in the Cardiology clinic next week. He is asking about nattokinase.[a]
Case #2: SS is devout Muslim. He/she meets with the physician, Dr. Naasir, who is of the same gender and was referred to the refill clinic to meet with the pharmacist to have his/her lisinopril refilled. He/she thought that Dr. Naasir would be at the clinic today just in case there were any cultural issues that may arise, but this refill clinic is in the morning and only the pharmacy staff and support staff are available. You were not informed of this until you were seated in the examination room. According to the practices of his/her religion, he/she avoids seclusion, touching (ie, hand shaking, physical examinations, etc.), and maintaining direct eye contact with members of the opposite sex. He/she is especially anxious and provides limited information to healthcare providers that are of the opposite gender.

[a] Adapted from *Am J Pharm Educ*. 2010;74(7):129.

evaluate whether students could demonstrate cultural competence but rather, only that they could verbalize understanding of the concept (ie, awareness).

Students also may need improvement in cultural knowledge and cultural encounters. Cultural knowledge is enhanced through research, reading, and consulting with individuals from different cultures, which may be achieved by assigned readings or research.[18] Cultural encounters are enriched by direct contact with people from other cultures. Thus, inviting members of different cultures to speak individually or to participate in a panel discussion[23] may assist in enhancing this component. Assemi and colleagues also found that when evaluating an 8-hour cultural competency course, the only item on the survey instrument for which responses did not demonstrate post-intervention improvement was the students' ability to "feel comfortable interacting with people of diverse backgrounds."[18] This finding emphasizes the need to incorporate into the curriculum more standardized/simulated patient activities and real-life patient encounters with diverse populations either through specific course content or IPPEs/APPEs to enhance students' comfort, awareness, and skills when working with these populations. These activities are effective in increasing cultural competency in the medical[28,29] and nursing[30] literature.

This study has limitations. Education and training in the area of cultural competency is threaded throughout the curriculum at the University of Pittsburgh School of Pharmacy.[27] In the first year, students spend 40 hours each semester at a service-learning site, where their goals are to improve communication skills and to begin understanding the needs of the community. In classroom debriefings, students receive a lecture on aspects of cultural competence and then spend a 2-hour practicum engaging in an "acknowledging your cultural heritage" exercise, which includes a personal cultural assessment. Students then participate in a large-group interactive session to share and reflect on cross-cultural experiences at their experiential learning sites. In the Profession of Pharmacy 2 course, first-year students are exposed to culturally relevant issues using the "Worlds Apart" curriculum tool, which includes a series of 4 short video vignettes and large-group discussion on issues relating to cultural competence. In the second year, all students are required to attend at least 1 session at a free clinic, again learning about the needs of the community and gaining exposure to the intersections among culture, race, socioeconomic status, and health. The Profession of Pharmacy 3 course, also in the second year, was redesigned this year with increased focus on the interrelationships among culture, diversity, and health**.** In the Profession of Pharmacy 4 course, which addressed this intervention, students had already been exposed to concepts of disparities, the impact of class on health, and a specific focus on the needs of the community; however, none of this content was specifically focused on cultural competence. By the time the students participated in this intervention, they had been exposed to cultural diversity issues through activities and lectures in all prior semesters. Therefore, the lack of significant change in mean scores for many of the domains could reflect their familiarity with cultural differences and diversity. This study supports the continued threading of activities related to cultural competence throughout the curriculum. However, neither previous exposure to cultural competency topics nor exposure to the study interventions significantly impacted all the cultural domains.

Another limitation was the sample size. The study was designed to determine if students who were able to directly interview the "patient" in the simulation activity experienced any different effect as a result of the intervention. However, only 12 out of 36 students were able perform the patient interview because of the nature of the activity structure, and only 9 of 12 interviewer survey results were identified. More significant changes in the overall mean scores for the simulation group might have

been detected if all of the students had been given the opportunity to be the interviewer.

The potential for response bias is also a limitation. Generally, students who are more culturally competent are more likely to volunteer to complete a survey instrument; however, this tendency may not apply to the current study because such a large percentage of students completed the survey instrument. Some students may have provided inaccurate survey responses if they were sitting in close proximity to their peers and feared chastisement if their answers were not considered politically or socially correct. Additionally, the lack of incentive to complete the survey instrument or provide the expected answers could have skewed student responses. The incomplete survey instruments could be a result of confusion about or inattention to the coding system or concerns regarding the anonymity of the codes.

Finally, students had the option of providing a neutral response on the survey instruments rather than only a positive or negative response. A modified survey instrument on which the students were required to either affirm or negate their agreement with a statement may have provided a clearer indication as to the true impact of each intervention on the students' cultural competence. Future studies may be strengthened by incorporating this strategy when evaluating student perceptions.

CONCLUSION

Cultural competency overall was not significantly enhanced by any of the 3 interventions in this study; however, each showed improvement in at least 1 of the cultural competency domains, suggesting that a combination of approaches is needed to increase cultural competency. Decision-makers at colleges and schools of pharmacy should determine which cultural components they seek to enhance and establish the cultural learning activities based upon these selected competencies.

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