

BRIEF**Assessment of Cultural Competence in Pharmacy Students Prior to Advanced Pharmacy Practice Experiences**

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Objective. To assess knowledge of cultural competence, skills in dealing with sociocultural issues, comfort in handling cross-cultural encounters, and attitudes towards health disparities in second-year pharmacy students, and to investigate the relationship between cultural competence and students' demographics, work experience, and prior education.

Methods. A 63-item survey comprising of four domains (knowledge, skills, encounters or situations, and attitudes towards cultural competency), modified from the Clinical Cultural Competency Questionnaire (CCCQ), was administered to second-year students at a pharmacy school in the Western United States with a 2-year didactic and 2-year experiential curriculum before Advanced Pharmacy Practice Experiences (APPEs). Additional questions regarding ability to identify and recognize elements of cultural competence were asked. The effects of demographics, work experience, and education on cultural competence were assessed.

Results. Data included 97 student responses (86.6% response). The majority of participants were Asian females in their late 20s. Most agreed or strongly agreed that they could identify and recognize elements of cultural competence. However, participants were only "a little" to "somewhat" comfortable when asked questions about knowledge, skills, and comfort, yet indicated "quite a bit" of competence regarding attitudes towards other cultures in the CCCQ-MP. Previous cultural diversity training in undergraduate studies and pharmacy school were associated with higher scores on the CCCQ-MP.

Conclusion. Students reported confidence in identifying and recognizing elements of cultural competence and their attitudes towards such situations. However, knowledge, skills, and comfort in this area were lacking. Previous training in cultural competence was associated with greater scores on the CCCQ-MP.

Keywords: cultural competence, pharmacy, pharmacy students

INTRODUCTION

The United States population, known as "a melting pot," is extremely diverse.¹ The population increases by one international migrant every 46 seconds.² This trend is expected to continue over time.³ The diversity of culture, race, and language creates new opportunities and challenges for healthcare providers in delivering equitable services.^{4,5} Differences in beliefs, cultures, and languages between patients and healthcare providers could lead to misunderstandings that may negatively impact patients, including limiting access to care, threatening safety, and causing dissatisfaction.^{6,7} To effectively care for the growing diverse patient population, healthcare providers must practice cultural competence, which is defined as "effective delivery of culturally and linguistically appropriate service in cross-cultural settings."^{7,8}

Cultural competence has been studied in healthcare professionals such as nurses and physicians.⁸⁻¹³ In these fields, the importance of integrating cultural competence into the educational curriculum is reflected in improved provider outcomes, healthcare access, utilization outcomes, and patient outcomes.^{7,9-13} In contrast, cultural competence was incorporated into pharmacy practice and education relatively recently as it was incorporated in the American Council on Pharmaceutical Education (ACPE) accreditation standards in 2006.¹⁴

Studies of the education and practice of cultural competence in pharmacy students and pharmacy healthcare providers suggest benefits. However, many questions remain regarding validation of improved outcomes and optimization of curricula and training elements. Among cultural competence assessment tools studied,¹⁵⁻¹⁹ the Clinical Cultural Competency Questionnaire (CCCQ), developed by the Center for Healthy Families and Cultural Diversity (CHFCD) in the Department of Family Medicine and Community Health at Rutgers Robert Wood Johnson Medical School, has been validated in several studies that assess cultural competence in pharmacy students.²⁰⁻²² Due to its relevance to pharmacy student education and validation in pharmacy students, the CCCQ was selected for this study. The CCCQ measures

different aspects of cultural competency, including knowledge of cultural competency, skills in dealing with sociocultural issues, comfort levels in handling cross-cultural encounters/situation, attitudes towards health disparities and sociocultural issues, self-awareness of one's own culture, and importance of cultural diversity training in health professionals. This study is different than prior studies and adds to the literatures as it assesses cultural competence knowledge and self-awareness of pharmacy students prior to Advanced Pharmacy Practice Experiences (APPEs).

The purpose of this study was to (1) assess knowledge of cultural competence, skills in dealing with sociocultural issues, comfort in handling cross-cultural encounters, and attitudes towards health disparities in second-year pharmacy students (P2s) at Touro University California College of Pharmacy (TUC-COP) prior to APPEs, and (2) investigate the relationship between cultural competence and students' demographics, work experiences, as well as education and prior training. The curriculum was a "2+2" program, meaning the students completed all didactic coursework during the first and second years of the curriculum, followed by two years of APPE rotations.

METHODS

A cross-sectional study design was used to assess the cultural competence of the P2s (Class of 2020) at TUC-COP from March 2018 to May 2018 via an online survey using Qualtrics. Inclusion criteria were any P2 at TUC-COP willing to participate in the survey. Exclusion criteria were (1) unwilling to participate, or (2) refusing to consent. The original CCCQ is a 63-item survey developed to assess physician's knowledge, skills and attitudes related to cultural competency and health disparities.²³ The CCCQ was adapted with permission from the authors and modified to be more relevant for pharmacy students. The version modified for pharmacy students will be referred to as CCCQ-MP.

The CCCQ-MP had four areas of focus or domains. The first domain assessed knowledge of cultural competency, including health disparities experienced by diverse groups, sociocultural issues, different healing traditions, as well as the Office of Minority Health's National Standards for Culturally and Linguistically Appropriate Services (CLAS) in Health Care. The second domain regarding skills in dealing with sociocultural issues focused on culturally-sensitive patient care, patient education, counseling, and dealing with cross-cultural conflicts relating to treatment and adherence. The third domain relating to comfort in handling cross-cultural encounters/situations, queried comfort level in dealing with cross-cultural situations that may be faced as a pharmacist working with different ethnic groups. Examples included caring for patients with limited English proficiency and those from culturally diverse backgrounds. Lastly, the fourth domain assessed attitudes towards health disparities including contributing factors, interactions with patients, and self-awareness of cultural differences in patient care. Cultural competency scores for each participant were calculated by assigning points 0-5, respectively, to the answer choices which consisted of "do not know," "not at all," "a little," "somewhat," "quite a bit," and "very." Mean scores for each domain were calculated by adding the responses to the items and dividing the sum by the number of items in each component, as done in prior studies using CCCQ.^{21,24} The total mean score was calculated by adding the scores of the responses to all items and dividing the sum by 63, the total number of all items in the survey.

Additionally, the participants were asked two questions from the American Association of Colleges of Pharmacy (AACP) Graduating Student Survey. These questions asked about "the degree to which you agree or disagree with whether your Pharm.D. curriculum prepared you to (1) identify cultural disparities in healthcare, and (2) Recognize and address cultural disparities in access to and delivery of healthcare." The participants could select "unable to comment," "strongly disagree," "disagree," "agree," and "strongly agree." These items were not assigned a score and not counted as part of CCCQ-MP.

All statistical analyses were conducted using STATA IC version 14.2 (College Station, TX). Continuous data are reported as mean and standard deviation (SD) and categorical data are reported as numbers and percentages of respondents. A multivariate linear regression was conducted to study the effects of variables on the cultural competence score.

RESULTS

Of the 97 P2s, 84 completed the survey (86.6% response rate). The participants had a mean age of 27 years (SD 3.6) and were mostly female (64.2%). Table 1 summarizes the participant demographics. The majority of the students were Asian (71.4%), followed by Latinx/Hispanic (10.7%), Caucasian (6%), and African American (2.4%). Half of the students indicated they had received "a little" (29.8%) cultural competence training or "none" (20.2%) during undergraduate education.

Table 2 summarizes the participants' scores from the CCCQ-MP. The overall mean scores of cultural competence was 3.2 (SD 0.3), indicating a familiarity between "somewhat" to "quite a bit." The knowledge of cultural competence, skills in dealing with sociocultural issues, and comfort in handling cross-cultural encounters yielded mean scores of 2.9, 2.6, and 2.7, respectively, indicating "a little" to "somewhat" competence. The attitudes towards health disparities domain, which included self-awareness, had the highest overall mean of all domains with a mean score of 4.1, indicating

“quite a bit” of competence. The overall average cultural competence score, taking into consideration all domains of the CCCQ-MP, was 3.15, indicating “somewhat” competence.

The participants expressed confidence when answering the two questions from the AACP Graduating Student Survey. Two-thirds (66.7%) of the students selected they “agreed” or “strongly agreed” that they were able to identify cultural disparities in healthcare. Additionally, 65.5% also “agreed” or “strongly agreed” that they would be able to recognize and address cultural disparities in access to and delivery of healthcare.

Table 3 shows the results of the multivariate linear regression analysis. The effects of age, gender, race, whether they had lived in a foreign country, total years of work experience prior to pharmacy school, total years of work experience in healthcare prior to pharmacy school, and cultural diversity education in undergraduate studies, pharmacy school, and other graduate studies on cultural competence were investigated. Only cultural diversity training in undergraduate education (95% CI [0.022–0.184]; $p=.013$) and in pharmacy school (95% CI [0.126–0.347]; $p<.001$). were associated with higher CCCQ-MP scores.

DISCUSSION

In this study, the cultural competence of P2s, prior to APPEs, was assessed using the CCCQ-MP. Additionally, correlations of demographics with cultural competence were investigated. The majority of the participants were in their late 20s, which is older in comparison to other studies.^{22,24} Older students may be more comfortable when dealing with cross-cultural situations/issues, perhaps due to increased maturity. The majority of participants identified as Asian American. This difference in demographics, compared to previous studies which consisted mostly of Caucasians or African Americans, may have some impact on cultural competency.²⁰⁻²²

Participants’ answers to the two AACP Graduating Student Survey questions differed from the answers provided on the more comprehensive and detailed CCCQ-MP. Approximately two-thirds of the participants believed they could identify cultural disparities in healthcare, as well as recognize and address cultural disparities in access to and delivery of healthcare. However, the CCCQ-MP scores averaged across all four domains indicated “somewhat” cultural competence among the participants. None of the respondents scored the maximum points in the four domains, suggesting an opportunity for improvement in cultural competence training. The need for formal education regarding this topic cannot be overlooked, even in students who are culturally diverse.

The CCCQ-MP allowed for assessing students’ competence in individual domains. The scores of the three domains of knowledge, skills, and encounters fell between “a little” and “somewhat” culturally competent, suggesting that the majority of participants need more training in these domains. A low score in these domains prior to APPE rotations is expected since the students have not yet had extensive exposure to clinical practice. The attitudes toward the health disparities domain had the highest assessment scores among the four domains. The majority of respondents ranked themselves as between “quite a bit” and “very” culturally competent toward health disparities. The higher ratings in the attitudes towards disparities domain may be attributed to the questions in this section consisting partly of those related to self-awareness and identifying contributing factors to disparities.

The results of the multivariate regression analysis highlighted the importance of cultural competence training in achieving a higher score on the CCCQ-MP. Greater undergraduate training and pharmacy school training in cultural diversity were associated with higher cultural competence assessment scores. Interestingly, the other parameters studied did not have a significant impact on cultural competence scores per CCCQ-MP. Perhaps because of vast cultural differences, no one demographic variable can predict competence, other than past formal training. At the time of this study, cultural competence was not extensively covered as a topic in the TUC-COP didactic curriculum. Instead, elements of cultural competence were incorporated throughout the didactic curriculum in various courses. Since then, a more formal hour-long lecture session and approximately three hours of reading assignments have been incorporated into the TUC-COP curriculum during the first year for an earlier, formal introduction to the topic. The findings thus stress the importance of structured education in cultural competence, even in environments where there is extensive interactions with diverse populations.

The results of this study are consistent with prior studies that there is a need to integrate cultural competence in the pharmacy curriculum.²⁵⁻²⁷ Prior studies have shown that adding curriculum content on cultural competence leads to greater cultural competency.²⁸ Significant strides have been made in the over 10 years since the survey, with a number of studies aiming to assess cultural competence in the pharmacy profession.²⁸⁻³¹ However, work is still needed to define and assess effective curricular approaches, which should incorporate both didactic and experiential components, along with self-assessments.

The current study is not without limitation. The study participants consisted of mostly Asian female students completing the second year of pharmacy school prior to embarking on APPEs. As such, the findings may not be generalizable to all pharmacy students across the United States. Perhaps surveying other regions of the United States will provide further insights into training needs. Additionally, the second AACP Graduating Student Survey question

attempted to assess four different areas in the same question, posing limitations in interpreting responses to this question. This question can be separated into four distinct sections for future assessments to more accurately capture student answers.

In the future, re-assessing the same pharmacy students after the completion of APPE rotations may be worthwhile as the “2+2” curriculum allows for more hands on experience during the experiential years and may contribute to greater cultural competence scores. Moreover, variables that did not predict cultural competence scores in the CCCQ-MP prior to APPEs may be more predictive following rigorous rotation experiences in which 100% of the students encounter cultural competence events. Future studies should also include direct measures of students’ cultural competence in addition to perceptions.

CONCLUSION

Though the majority of pre-APPE students expressed confidence in identifying and recognizing elements of cultural competence, most were overall only “somewhat” comfortable when assessed with the multi-item CCCQ-MP questionnaire. Undergraduate and pharmacy school training in cultural competence was associated with greater scores on the CCCQ-MP, and emphasize the importance of graduate level training in the didactic and experiential portion of the pharmacy school curriculum to increase proficiency with regards to knowledge, skills, comfort, and attitudes towards other cultures, even in diverse student populations.

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Table 1. Demographics of Survey Participants

Participants (N=84)	M (SD)	Frequency (%)
Response rate		84 (86.6)
Age	27 (3.6)	
Gender		
Female		54 (64.2)
Male		30 (35.8)
Ethnicity		
Asian American		60 (71.4)
Latinx/Hispanic		9 (10.7)
Caucasian		5 (6.0)
African American/Black		2 (2.4)
Native Hawaiian/Other Pacific Islander		1 (1.2)
Two or more ethnicities		6 (7.1)
Other		1 (1.2)
Visited or lived in foreign country(s)		
Yes		60 (71.0)
No		24 (29.0)
Total cultural competence training in undergraduate		
None	0.6 (1.2)	17 (20.2)
A Little	0.9 (1.4)	25 (29.8)
Some	0.8 (1.4)	21 (25.0)
Quite A Bit	0.6 (1.3)	14 (16.7)
A Lot	0.3 (1.0)	7 (8.3)
Total years of work experience prior to pharmacy		
0 Years	0.4 (1.0)	11 (13.1)
1-5 Years	1.7 (1.6)	46 (54.8)
6-10 Years	0.8 (1.4)	21 (25)
11-15 Years	0.1 (0.7)	3 (3.6)
>15 Years	0.1 (0.5)	3 (3.6)
Years of healthcare work experience prior to pharmacy		
0 Years	1.0 (1.4)	27 (32.1)
1-5 Years	2.1 (1.6)	54 (64.3)
6-10 Years	0.1 (0.4)	2 (2.4)
11-15 Years	0.0 (0.0)	0 (0.0)
>15 Years	0.0 (0.3)	1 (1.2)

Table 2. Assessment Scores of Overall Cultural Competence and of Knowledge, Skills, Encounters, and Attitudes Domains from CCCQ-MP

Areas of Cultural Competence ⁺	M (SD)
Overall	3.2 (0.3)
Knowledge of cultural competence	2.9 (0.3)
Skills in dealing with sociocultural issues	2.6 (0.5)
Comfort in handling cross-cultural encounters	2.7 (0.4)
Attitudes towards health disparities	4.1 (0.2)

⁺Assessment Score:

0="Do Not Know", 1="Not At All", 2="A Little", 3="Somewhat", 4="Quite A Bit", 5="Very"

Table 3. Multivariate linear regression assessing effect of demographics on cultural competence

Areas of Cultural Competence	Coefficient	95% Confidence		p value
		Interval		
Age	-0.007	[-0.037 – 0.022]		0.623
Gender	0.068	[-0.118 – 0.254]		0.467
Race	0.013	[-0.066 – 0.092]		0.748
Lived in a foreign country	0.077	[-0.120 – 0.274]		0.440
Undergraduate education training on cultural competence	0.103	[0.022 – 0.184]		0.013*
Pharmacy school training on cultural competence	0.237	[0.126 – 0.347]		<.001*
Graduate education on cultural competence	0.074	[-0.008 – 0.157]		0.078
Total work experience	0.023	[-0.006 – 0.052]		0.125
Work experience in a health care field	-0.008	[-0.054 – 0.039]		0.738

*p value is defined as <.05, between the undergraduate training and the cultural competence assessment scores in each domain