Pharmacy Education (2023) 23(1) 296 - 306
https://doi.org/10.46542/pe.2023.231.296306

RESEARCH ARTICLE

Pharmacy faculty perspectives on Cultural Competence education in pharmacy schools

Gladys Ekong[1*], Elizabeth Unni[2], Akesha Edwards[3], Margarita Echeverri[4]

[1] Department of Pharmaceutical & Administrative Sciences, College of Pharmacy and Health Sciences, Western New England University, Massachusetts, United States
[2] Social, Behavioral and Administrative Sciences, Touro College of Pharmacy, New York, United States
[3] Wegmans School of Pharmacy, St. Johns Fisher University, Rochester, New York, United States
[4] Centre of Minority Health and Health Disparities Research and Education, College of Pharmacy Xavier University of Louisiana, United States

Keywords
Assessment tool
Canada
Cultural competence
Faculty training
Teaching confidence
Teaching depth
United States

Correspondence
Gladys Ekong
Department of Pharmaceutical & Administrative Sciences
College of Pharmacy and Health Sciences
Western New England University
Massachusetts
United States
gladys.ekong@wne.edu

Abstract

Background: Faculties that teach cultural competence are in a great position to identify training gaps and improve the depth of teaching for pharmacy students. **Objective:** To assess the perspective of faculty on their perceived confidence and extent of teaching cultural competence (CC) content in the pharmacy curricula. **Methods:** A cross-sectional study using an adapted version of the Self-assessment of Perceived Level of Cultural Competence (SAPLCC) questionnaire. Data analysis included factor-level and item-level analysis using descriptive and inferential statistics. **Results:** Out of the 70 study participants, 77.1% were female and the average age was 47.97 (±10.52). Faculty with prior training reported a higher level of confidence to teach CC content in three areas, "*addressing population health needs*" (p = 0.007), "*recognising disparity-related discrimination*" (p = 0.017), and "*recognising social determinants of health*" (p = 0.03). The faculty's years of experience had a positive impact on both the extent of teaching CC and confidence. **Conclusion:** Study findings indicate a gap to address training needs for faculty development on CC to prepare students for an increasingly diverse patient population.

Introduction

Effective utilisation of clinical services by patients hinges on several factors, including adequate provider-patient communication to evaluate the patient's perspective and preferences based on their cultural background (Pharmacists' Patient Care Process, 2014; Stubbe, 2020). Unfortunately, various factors including cultural differences between healthcare team members with low levels of cultural competence may have a negative impact on the patient's willingness to adequately access and utilize healthcare services (Handtke, Schilgen, & Mösko, 2019; Lavingia, Jones, & Asghar-Ali, 2020). Patients with different cultural backgrounds and those who belong to minority groups may have different health-seeking and health behaviours when compared to the mainstream groups. Provider-patient communication gaps and mistrust of the healthcare system may contribute to healthcare disparities in culturally diverse patient groups, among other factors (Bazargan, Cobb, & Assari, 2021; Braveman *et al*., 2021). As the U.S. patient population is becoming increasingly diverse, educational institutions need to refocus training content to effectively prepare new-entry healthcare professionals, including pharmacists, to deliver culturally competent care. (Pharmacists' Patient Care Process, 2014)

Chen *et al* (2021) conducted a national assessment of pharmacy curricula and pharmacy assessments across U.S. and Canadian pharmacy programs (Chen *et al*., 2021). The researchers explored the offerings related to curricular content on health disparities, cultural competence, and health literacy. Two main findings were reported. First, there has been considerable

progress in the amount of content related to Health Disparities and Cultural Competence (HDCC) offered to pharmacy students compared to a similar assessment conducted by Onyoni and Ives in 2007 (Onyoni & Ives, 2007). A contributing factor to this progress may be the most recent revisions to the Accreditation Council for Pharmacy Education (ACPE) Standards (2016) which include an objective that acknowledges the link between health disparities and awareness of cultural differences (Standard 3.5) (*Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree, Standards 2016*, 2016). Secondly, Chen *et al* highlighted the fact that though curricular offerings were increased, the extent of content delivery varied. This variation may be due to barriers to the integration of cultural competence (CC) content into pharmacy curricula. This highlights a gap in pharmacy education across institutions. Faculties teaching CC content are in a great position to identify curricular gaps and address topics to bolster CC training content and depth to better prepare pharmacy students to offer care to an increasingly diverse patient population.

This study was conducted to contribute to bridging the gap in pharmacy education as it pertains to cultural competence training from the educator's point of view. It is not only timely but best to follow up on Chen *et al*'s assessment of CC in pharmacy curricula. Faculty members can reflect on their perspectives regarding their experiences and perceived levels of confidence to teach various CC topics before making curricular changes and assessing students' knowledge and skills in CC.

Thus, the primary objective of this study was to assess the perspectives of pharmacy faculty members on the extent of CC content taught and their perceived levels of confidence in teaching various aspects of CC topics. The authors hypothesised that one of the barriers to full integration of CC content into pharmacy curricula may be related to a lack of faculty training in teaching CC and implementation of structured assessment of training outcomes for students. Hence, a secondary objective was to evaluate changes in the depth of teaching CC content in the presence of an assessment tool for student training.

Methods

Participants and data collection

Faculty members from accredited schools of pharmacy across the U.S. and Canada were invited to participate in this study. This was a cross-sectional study using *Qualtrics* as the platform to collect survey data. A recruitment email was sent to all Deans/Directors of Assessment. This list was populated from the AACP website containing all Deans and Directors of Assessment (N = 212). This email contained a response link to add the name(s) of the faculties that teach Cultural Competence in the respective program.

A list of faculty members who teach CC was generated from the responses of the Deans/Directors of Assessment. There was the possibility of having more than one faculty teaching CC from some schools. The *Qualtrics* link with the survey was sent to this faculty list and also to those Deans/Directors of Assessment who did not respond to the original recruitment email with a request to forward it to the appropriate faculty (N = 159). Participants signed a consent form on the first page of the survey before completing the survey questions. The survey was implemented based on the best survey practices by Dillman (Dillman, Smyth, & Christian, 2014). This study was approved by the host university's Institutional Review Board (IRB) (approval reference number: COP-IRB# 101).

Instrument

This study adopted the Self-Assessment of Perceived Levels of Cultural Competence (SAPLCC) questionnaire, a validated instrument to measure pharmacy students' perceptions of cultural competence (Echeverri *et al*., 2019). The SAPLCC includes 75 items that are organised into 14 factors grouped into six domains: Knowledge, Skills, Attitudes, Abilities, Awareness, and Encounters. Considering that the SAPLCC was developed for students to self-assess their cultural competence level, in this study the items were adapted to focus on teaching instead of learning. As a result, this tool may be used for faculty to self-assess their performance and confidence about their teaching regarding CC-related topics.

In this study, 13 factors were used on the SAPLCC which were relevant to teaching and suitable for faculty self-assessment (Table I). The factor "*Improving Interpersonal/Intercultural Interactions*" (F7) was not included because it assesses the individual's views on socio-cultural interactions with other members of the healthcare team.

All items in the adapted SAPLCC questionnaire were assessed using a 4-point scale ranging from "*not at all*" to "*to a great extent*" (for the Knowledge, Skills, Attitudes, and Encounters domains); "*poor*" to "*excellent*" (for the Abilities domain); and "*not at all comfortable"* to "*very comfortable*" (for the Awareness domain). For this study, depth of teaching and perceived levels of confidence were assessed only on factors related to knowledge and attitudes domains. Factors focused on direct patient care encounters (*Awareness*

and Abilities) were analysed as a subgroup, since some faculty members may not have a clinical setting for patient care services.

For the *Encounters* and *Abilities* domains, participants were asked if they have direct patient care responsibilities. If they answered "*Yes*", they were then asked about their comfort in dealing with each item. For the Awareness domain, the respondents were asked to indicate their comfort in discussing the items under this domain. Since these three domains are about actual clinical practice and/or patient encounters, the question that asked "*Do you teach this topic?*" was not relevant. Key adaptations implemented in the SAPLCC are summarized in Table I. Data on participants' characteristics including age, gender ("*male*", "*female*", "*other*", and "*prefer not to disclose*"), race/ethnicity, years of experience teaching CC, highest academic degree, and prior training in CC, as well as course demographics such as the professional pharmacy year in the program when CC topics are taught if CC content is taught as a standalone course and mode of delivery was also collected.

Table I: Self-assessment of perceived levels of Cultural Competence (SAPLCC) framework

Domains and factors	Questions about teaching	Questions about performance
Knowledge domain		
F1 Addressing population health needs F2 Understanding the context of care	Do you teach these topics?	How confident are you in teaching this topic?
Attitudes Ddomain		
F5 Recognising disparities-related discrimination F6 Recognising social determinants of health	Do you teach these topics?	How confident are you in teaching these topics?
Skills domain		
F3 Providing culturally competent services F4 Dealing with cross-cultural conflict	Do you teach these topics?	N/A
Encounters domain		
F8 Increasing comfort during cross-cultural encounters F9 Managing cross-cultural communication challenges	N/A	How comfortable are you in dealing with the following cross-cultural situations?
Abilities domain		
F10 Assessing population health needs F11 Applying multicultural knowledge	N/A	How do you self-assess your ability to deal with the following issues within a healthcare context?
Awareness domain		
F12 Engaging in Self-reflection F13 Understanding barriers to healthcare F14 Confronting racial dynamics	N/A	How comfortable are you in discussing these topics?

Statistical analysis

Descriptive statistics were used to summarise scores on all 13 factors within the six domains. In addition, item-level scores were computed for factors that assessed confidence and the extent of teaching CC content. These factors were "*addressing population health needs (F1)*", "*understanding the context of care (F2)*", "*recognising disparities related discrimination (F5*)" and "*recognising the social determinants of health (F6*)". Data were analysed using average scores for both items and factors (Echeverri *et al*., 2019). The cut-off average scores for factors were classified according to a previous study and categorised as "*low*" (<2), "*moderate*" (2-3), and "*high*" (>3) (Harpe, 2015). Higher average scores indicate a greater extent of teaching CC topics or confidence in teaching these topics. A one-way Analysis of Variance (ANOVA) and Tukey's post hoc were used to compare the means of the SAPLCC factors on teaching and confidence with faculty's characteristics; past training on CC and years of experience teaching CC content.

For the secondary research objective, a student t-test was applied to compare average scores on the SAPLCC factors with the presence of an assessment tool ("*Yes*" or "*No*") to evaluate the impact of assessing training outcomes on CC domains. All data analyses were performed on SPSS, version 28, and a statistical significance of $p \leq 0.05$ was applied.

Results

Participants and delivery modes for Cultural Competence training

A total of 159 survey invitations with the Qualtrics link were sent to faculty members and Deans of Assessment at schools and colleges of pharmacy. Seventy completed responses were received and analysed (response rate = 44%). Since the survey was anonymous and more than one faculty from one school could be teaching CC and could have answered the survey, it is not possible to calculate how many schools responded to the survey.

Participant characteristics and training modalities for CC are summarised in Table II. Most participants self-identified as female (n=54, 77.1%) and as White or Caucasian (n=47, 67.1%). The average age was 47.97 years old (SD=10.52) and the average years of experience with teaching CC content was 5.23 years (SD=1.36). Although 40% of the respondents reported that they offered CC content in the first academic year, CC training was mostly embedded into different courses by a vast majority of the schools (95.5%) and not as a standalone course (n=3, 4.5%). The CC content was often integrated into Interprofessional Education courses (n=23, 16.1%) or longitudinally across the PharmD curriculum (n=23, 16.1%). A little more than a fourth of the respondents (26.9%) reported teaching CC as lectures or seminars. The next reported mode of teaching was by using case studies or journal clubs (12.6%); team-based learning or experiential small group (12.6%); and community immersion (10.6%). A little over a third of participants utilized assessment tools to evaluate CC training outcomes (n=23, 34.9%). A wide range of tools were reported, and these include validated surveys, quizzes, exams, and Objective Structured Clinical Examinations (OSCE).

Table II: Faculty characteristics and training modalities for Cultural Competence (N= 70)*

Participant characteristics	N= 70 (%)
Race	
White or Caucasian	47 (67.1)
Black or African American	12 (17.1)
Asian	6 (8.6)
Native Hawaiian or another Pacific Islander	1 (1.4)
Other	2 (2.9)
Prefer not to disclose	2 (2.9)
Gender	
Male	14 (20.0)
Female	54 (77.1)
Prefer not to disclose	2 (2.9)
Years of experience in teaching cultural competence	
<1 year to < 2 years	8 (11.5)
2 to <5 years	12 (17.1)
5 to 10 years	17 (24.3)
More than 10 years	19 (27.1)
Does not teach CC content#	14 (20.0)
Highest academic degree	
PhD	33 (47.8)
MS/MBA	2 (2.9)
PharmD	34 (49.3)
Cultural competency training as a standalone course	
Yes	3 (4.5)
No	64 (95.5)
Presence of an assessment tool for student training	
Yes	23 (34.8)
No	43 (65.2)
Received training in cultural competence	
Never	7 (11.9)
In the past year	25 (42.4)
At least once in the past 3 years	13 (22.0)
At least once while in academia	14 (23.7)
Has direct patient responsibilities	
Yes	22(37.3)
No	37 (62.7)

* Missing responses were observed in some variables

The percentage of participants who do not teach CC content but are involved in experiential learning

Summary scores on SAPLCC factors

Out of the 13 factors (Table III), four had mean scores in the "*high*" score range (>3), and nine factors were in the "*moderate*" score range (range 2 to 3). Factors with high average scores were on topics related to "*Engaging in self-reflection (F12)*" (Mean=3.4, SD=0.57) and "*Increasing comfort during cross-cultural encounters (F8*)" (Mean=3.21, SD=0.75), while moderate average scores were reported for topics on "*Addressing population health needs (F1)*" (Mean=2.12, SD=0.81) and "*Recognising disparities related to discrimination (F5)*" (Mean=2.28, SD=1.92).

Table III: Mean factor scores on the Self-Assessment of Perceived Levels of Cultural Competence (SAPLCC)

Domain	Factors on the SAPLCC related to teaching	Items	n	Mean score (SD)	
				Extent of teaching	Confidence teaching
Knowledge	F1 Addressing population health needs	7	61	2.12 (0.81)	2.31 (0.81)
	F2 Understanding the context of care	8	61	2.39 (0.73	2.56 (0.81)
Skills	F3 Providing culturally competent services	3	60	2.69 (0.91)	NA
	F4 Dealing with cross-cultural conflict	4	60	2.31 (0.91)	NA
Attitudes	F5 Recognising disparities-related discrimination	6	59	2.28 (1.92)	2.93(0.71)
	F6 Recognising social determinants of health	5	59	2.68 (0.86)	3.09 (0.72)
					Comfortability dealing with
Encounters	F8 Increasing comfort during cross-cultural encounters	3	21	N/A	3.21 (0.75)
	F9 Managing cross-cultural communication challenges	8	21	N/A	2.67 (0.77)
					Ability
Abilities	F10 Assessing population health needs	8	20	N/A	2.64 (0.70)
	F11 Applying multicultural knowledge	5	20	N/A	3.15 (0.49)
					Comfortability discussing
Awareness	F12 Engaging in Self-reflection	3	58	N/A	3.41 (0.57)
	F13 Understanding barriers to healthcare	4	57	N/A	3.14 (0.77)
	F14 Confronting racial dynamics	2	56	N/A	2.80 (0.93)

(*) range 1 to 4

Notes:

- F7 "*Improving Interpersonal/Intercultural Interactions*" was not included in this study because it was not related to teaching.
- Factors in the Encounters and Abilities Domains were collected from faculty who have direct patient care responsibilities

Factor-level comparison with faculty characteristics

The factor-level average scores on the extent of teaching and confidence were compared with two faculty characteristics "*received CC training*", and "*years of experience teaching CC*" using ANOVA (Table IV).

Depth of teaching CC or confidence by "received CC training"

In comparing the depth of teaching CC by the presence of prior CC training (using the variable, "*received CC training*"), there was a statistically significant difference in two factors on "*addressing population health needs (F1)*" (p = 0.015) and "*understanding the context of care (F2)*" (p = 0.049). Post hoc analysis using the Tukey test showed that the average scores on depth of CC taught were significantly higher in the group who "*received training at least once in the past three years*" compared to the other three groups, "*Never*", "*in the past year*", and "*at least once while in academia*".

A statistically significant difference was observed in three factors when comparing perceived confidence by "*received training to teach CC".* These factors focused on topics related to "*addressing population health needs (F1)*" (p = 0.007), "*recognising disparity-related discrimination (F5)*" (p = 0.017), and "*recognising social determinants of health (F6)"* (p = 0.03). Post hoc analysis of the three factors indicated that the perceived level of confidence to teach CC topics was significantly high for faculty who received training "*in the past year*" or "*at least once in the past three years*", compared to the other two groups (Table IV).

Depth of teaching CC or confidence by "years of experience teaching CC"

A statistically significant difference was observed in all four factors when comparing depth of teaching CC by "years of experience teaching CC" - "*addressing population health needs (F1)"* (*p*= 0.001), "*understanding the context of care (F2)*" (*p* < 0.001), "recognising disparity-related discrimination (F5)" (*p* = 0.002), and "*recognising social determinants of health (F6)"* (*p* = 0.003).

Table IV: Factor-level comparison with faculty characteristics on extent of Cultural Competence topics taught and perceived levels of confidence

		Received CC training (n=59)					Years of experience teaching CC (n= 56)			
Factors on the SAPLCC	*p*	Never (7)	In the past year (25)	At least once in the past 3 years (13)	At least once while in academia (14)	*p*	< 2 years (8)	2 to <5 years (12)	5 to 10 years (17)	More than 10 years (19)
Addressing population health needs	0.210	1.7	2.2	2.3	1.8	0.001	1.39	1.81	2.33	2.54
• Depth of teaching	0.007	1.9	2.8	2.8	2.2	<0.001	1.70	2.40	2.70	3.30
• Confidence teaching										
Understanding the context of care	0.049	1.8	2.4	2.7	2.2	<0.001	1.73	2.15	2.55	2.94
• Depth of teaching	0.205	1.9	2.4	2.5	2.0	<0.001	1.47	1.78	2.57	2.87
• Confidence teaching										
Recognising disparities-related discrimination	0.015	1.9	2.2	2.9	1.9	0.002	1.48	2.15	2.38	2.86
• Depth of teaching	0.017	1.3	2.0	2.3	1.8	<0.001	1.10	1.80	1.90	2.50
• Confidence teaching										
Recognising social determinants of health	0.058	2.4	2.7	3.2	2.4	0.003	2.03	2.84	2.72	3.27
• Depth of teaching	0.030	1.6	2.1	2.5	1.8	0.003	1.60	1.80	2.00	2.60
• Confidence teaching										

Statistical significance of $p \leq 0.05$; CC = Cultural competence; SAPLCC = Self-assessment of Perceived Levels of Cultural Competence;

Similarly, when comparing perceived confidence by "*years of experience teaching CC*", all four factors on teaching CC were statistically significant. These factors covered topics on "*addressing population health needs (F1)*" (p < 0.001), "*understanding the context of care (F2)*" (*p* < 0.001), "recognising disparity-related discrimination (F5)" (*p* < 0.001), and "*recognising social determinants of health (F6)"* (*p* = 0.003).

Post hoc analysis showed that average scores on both depths of teaching CC topics and perceived confidence were statistically significantly high for faculty who had "*five to ten years*" or "*more than ten years*" of experience teaching CC content compared to other groups (Table IV).

Factor-level comparison of depth of teaching by the presence of an assessment tool for CC training outcomes

Furthermore, the depth of teaching CC content was compared by the presence of an assessment tool ("*Yes*" or "*No*") to evaluate students' CC knowledge/skills. Although a low percentage of faculty members (34.8%) applied an assessment tool for CC training among students, findings on the t-test showed a statistically significant difference in all four factors which assessed the depth of teaching CC topics on "*addressing population health needs (F1)"* (*p* = 0.03)*,* "*understanding the context of care (F2)"* (*p* < 0.001), "*recognising disparity-related discrimination (F5*)" (*p* = 0.021), and "*recognising social determinants of health (F6)"* (*p* = 0.027).

Summary scores on SAPLCC items (depth of content and perceived levels of confidence)

Item level analysis on perceived levels of confidence to teach CC topics and depth of teaching were assessed for each of the four factors in the Knowledge and Attitudes domains (Table V). In general, faculty members reported a moderate depth of content on most topics. However, low mean scores (<2.0) in depth of teaching were observed on knowledge regarding reproductive health/pregnancy (Mean=1.72, SD = 0.91), child health (Mean=1.78, SD= 0.84), and adolescent health (Mean=1.75, SD= 0.89), and knowledge of the Title VI regulations prohibiting discrimination (Mean=1.88, SD=1.04) and the national standards for providing

culturally and linguistically appropriated services (CLAS Standards) (Mean=1.98, SD= 1.08).

In looking at perceived levels of confidence to teach CC topics, a high average score was reported for the topic on "*health disparities experienced by diverse racial and ethnic groups*" (Mean=3.08, SD=0.89). However, low average scores were reported on perceived confidence to teach topics related to "*Recognising disparities-related discrimination,*" specifically, when teaching about homophobia (Mean=1.91, SD= 0.76), ageism (Mean=1.94, SD= 0.77), sexism (Mean=1.91, SD= 0.76), ableism (Mean=1.85, SD= 0.79), and classism (Mean=1.94, SD= 0.75).

Table V: Item-level comparison for the extent of cultural competence content taught and perceived confidence

SAPLCC factors	SAPLCC items	Extent taught		Confidence	
		M	SD	M	SD
Addressing population health needs	Health promotion/Disease prevention	2.72	0.94	2.86	0.93
	Reproductive health/Pregnancy	1.72	0.91	1.98	0.98
	Child health	1.78	0.84	2.02	0.92
	Adolescent health	1.75	0.89	2.02	0.94
	Adult health	2.42	1.03	2.53	0.97
	Geriatrics	2.28	1.01	2.40	0.91
	Women's health	2.10	0.99	2.32	0.95
Understanding the context of care	Demographics of diverse racial, and ethnic groups	2.51	0.92	2.85	0.87
	Socio-cultural characteristics of diverse racial and ethnic groups	2.56	0.87	2.80	0.90
	Health risks experienced by diverse racial and ethnic groups	2.77	0.86	3.00	0.83
	Health disparities experienced by diverse racial and ethnic groups	2.92	0.92	3.08	0.89
	Different healing traditions (e.g. Ayurvedic medicine, Traditional Chinese Medicine)	2.00	0.91	2.07	0.99
	Historical and contemporary impact of discrimination (i.e. racism, bias, prejudice) in health care experienced by various population groups	2.44	1.04	2.62	1.03
	Office for Civil Rights August 30, 2000, Policy guidance on the title VI prohibition against national origin discrimination as it affects persons with limited english proficiency	1.88	1.04	2.00	1.06
	Office of Minority Health's national standards for Culturally and Linguistically Appropriate Services (CLAS) in health care	1.98	1.08	2.09	1.11
Recognising social determinants of health	Lifestyle	2.66	0.93	2.06	0.76
	Environment	2.58	1.03	2.04	0.76
	Poverty	2.73	0.99	2.09	0.75
	Educational status	2.67	0.97	2.11	0.78
	Illiteracy	2.75	1.01	2.15	0.75
Recognising disparities-related discrimination	Ageism (prejudice based on age)	2.12	1.02	1.94	0.77
	Sexism (prejudice based on sex)	2.17	0.95	1.91	0.77
	Racism (prejudice based on race)	2.53	1.06	2.02	0.77
	Classism (privilege based on economic status)	2.41	1.04	1.94	0.75
	Ableism (prejudice against disabled people)	2.20	1.05	1.85	0.79
	Homophobia (prejudice against homosexuals)	2.24	1.06	1.91	0.76

SAPLCC = Self-assessment of Perceived Levels of Cultural Competence

Discussion

This study focused on assessing the perspective of faculty members on their perceived confidence and depth of content on CC topics. It also investigated the extent of CC content taught in the pharmacy curricula. The majority of participants were females and white. There was a fair distribution of faculty holding PhD and PharmD degrees. In general, our sample matched the national trend of racial distribution of pharmacy faculty in the U.S., but it was not consistent with the gender and academic degree distribution (*Pharmacy Faculty Demographics and Salaries*, 2022). According to the American Association of Colleges of Pharmacy (AACP), the 2021-2022 gender distribution of full-time pharmacy faculty was more balanced (52% women vs 48% men) than in our sample while the distribution by academic degrees was less balanced (52% PharmDs vs 42% PhDs), however, the racial distribution was similar (63% Whites) (*Pharmacy Faculty Demographics and Salaries*,2022).

In our study, no significant differences in teaching and comfort of teaching were found by race or gender of the faculty completing the surveys. These results are similar to the findings reported in a study conducted among 36 pharmacy faculty members of the AACP's "*Health Disparities and Cultural Competency*" Special Interest Group, which found that the majority of survey respondents identified as White/Caucasian (n=25, 69.4%) and were female (n=29, 80.1%) but neither gender nor race/ethnicity predicted higher scores on the Multicultural Teaching Competency Scale (Winston, 2020). In the U.S. the 2019 trends in having a majority representation of White (78.2%) and female (65.1%) licensed pharmacists, also mirror the trends in other health-related professions (Witry *et al*., 2021). In a comparison between pharmacy, dentistry and medical schools, it was found that faculty in these three professions had consistently a majority representation of Whites and a low representation of underrepresented minorities, compared to the general distribution of the population in the U.S (Campbell, Hagan, & Gaither, 2021). Similar trends by gender are applicable in Canada, however, authors could not find data about the racial distribution of pharmacists in Canada (Canadian Institute for Health Information, 2020).

In general, faculty participating in the study reported a moderate level (scores ranging between two to three) in the extent of teaching for topics included in the Knowledge, Skills and Attitude domains, but the average scores in their confidence when teaching topics in these domains were higher. A key finding in this study is the relation between the low mean scores on depth of teaching concepts related to "*addressing population health needs*" (M=2.12), recognising disparities-related discrimination (M=2.28), and recognising social determinants of health (Mean=2.68) versus higher mean scores in confidence when teaching these concepts (Mean=2.31, M=2.93, and Mean=3.09, respectively). There is no doubt that topics in these three domains are highly related; to be able to address population needs, it is necessary, first, to recognise the impact of discrimination and social determinants of health in the target population. For example, when looking at the incidence and mortality of COVID-19 among racial and ethnic minorities (Van Dyke *et al*., 2021), including disparities in the outpatient treatment of COVID-19 (Boehmer *et al*., 2022) and the impact of mistrust in the healthcare system, low health literacy, and limited transportation services may have impacted timely access to screening, medications, hospital services, and vaccinations (Joynt Maddox *et al*., 2022; Maness *et al*., 2021), pharmacists will be able to develop programs and initiatives to address the needs of specific populations during and after the pandemic (Ahmed *et al*., 2022). Considering that faculty in this study, reported high mean scores (>3.0) in their levels of comfort and abilities to conduct cross-cultural encounters, apply multicultural knowledge, engage in self-reflection, and understand barriers to healthcare, these results may be an indication that they are ready to provide direct care to multicultural and minority populations. However, considering that the majority of participants (63%) do not work directly with patients, and CC content is included in approximately one-third of experiential learning evaluations, (Chen *et al*., 2021) it would be interesting to discuss and modify the role of teaching faculty who do not have a clinical practice and the strategies to assess the effectiveness of teaching CC on student performance at experiential sites.

Factor mean scores were directly related to receiving training in cultural competence, and years of experience teaching CC. As seen in Table IV, factor means scores on the extent of teaching and confidence were higher for those faculty reporting that they had received CC training in the past year or at least once in the past three years, as well as for those faculty with more years of experience teaching CC content. It is interesting to note that higher years of experience were significantly related to higher scores in the extent of teaching and confidence for all four factors focused on teaching. On the other hand, having received training in CC was also significantly related to higher mean scores in the extent and confidence in teaching for most of the factors, except in the extent of teaching content regarding addressing population needs and recognising social determinants of health, and confidence in teaching content regarding understanding the context of care. As discussed earlier, faculties teaching content regarding these factors need to be updated considering the social, economic, and

political events that affect the dynamics of the healthcare system and society as a whole.

Confidence is defined in the Cambridge Dictionary as "*the quality of being certain of your abilities*"; it is associated with an individual's perceived knowledge of their capability to perform specific tasks. When faculty have already completed a task, they feel more confident repeating it. Therefore, it may be inferred that perceived confidence to teach increases with years of experience in the field. Our results show that those faculty members who have not received training in CC have lower scores in their confidence when teaching CC content. Confidence is used also as a synonym for self-efficacy, defined in the Merriam-Webster Dictionary as "*confidence in oneself and in one's powers and abilities*". In Bandura's self-efficacy theory, self-efficacy is defined as the "*Beliefs about whether one can produce certain actions*", and perceived self-efficacy as the "*judgment of one's ability to organise and execute given types of performances*" (Bandura, 1997). In general, there is a consensus that teachers' self-efficacy increases as they progress across their teaching careers; (George, Richardson, & Watt, 2018) teachers with more experience report higher self-efficacy scores; (Wolters & Daugherty, 2007) and experience level (beginning, novice, and career) is significantly related to overall self-efficacy, with beginning teachers reporting lower scores (Gale *et al*., 2021). Although no studies were found about the self-efficacy of pharmacy faculty when teaching CC, a study among 211 faculty and 213 students in pharmacy, found that being knowledgeable about a subject matter, enthusiastic about teaching the topic, and confidence were among the ten most effective teaching qualities and behaviours essential to teaching in a school of pharmacy (Ford, 2016).

Finally, the majority of participants (65%) reported that they do not use any tools to assess CC learning outcomes. Our analysis comparing the usefulness of assessing CC outcomes during/after training vs depth of teaching found significant differences in depth of teaching when the training outcomes were assessed with a tool. A wide range of tools reported included validated surveys related to CC, quizzes, exams, and Objective Structured Clinical Examination (OSCE). Findings suggest the usefulness of integrating an assessment tool/method for CC training.

Limitations and potential directions for future research

As in every study, some limitations need to be considered when interpreting these results. First, an important limitation is that we do not know how many faculty members teach cultural competency in the pharmacy curriculum. Although many efforts were made to get access to a high number of participants, we may have missed faculty who may play an important role in teaching CC and who were not invited to participate.

Second, a potential source of bias may be related to the variability in participants' responses since not all participants were taught CC topics. A total of 20 participants reported not teaching CC topics but are involved in clinical experiential training for students. Since they engaged in experiential training but did not offer didactic CC content, their responses were included. However, this could have added bias to the study.

Third, perceived confidence was self-reported by faculty participating in this study. Studies focused on the measurement of confidence in teaching should consider using a multi-dimensional approach to assess self-efficacy, including the influence of cognitive, motivational, and affective domains in teaching such as the Teachers' Sense of Efficacy Scale (TSES) to measure self-efficacy beliefs.

Finally, the tool used in this study is an adaptation of the SAPLCC, which has been previously validated with pharmacy students. As this is the first time the SAPLCC is used to assess the perception of faculty on teaching CC and confidence when teaching CC-related topics, the adapted tool has not been validated yet. Considering the significant results of this study, we are recommending conducting a validation process of the adapted tool and, perhaps, creating a new tool that would focus on the perspectives of faculty members.

Regardless of the limitations, the results from the descriptive analysis may be considered adequate, because the number of participants who responded is similar to the ones reported by Chen *et al*. (2021). Though Chen *et al* used institutional-level data by surveying the institutions compared to this study which used faculty-level data, this study may have fewer schools as more than one faculty from a specific school would have responded to the survey. Since the data collected was anonymous, identifying the actual number of schools can be challenging, which is a limitation.

Conclusion

This study assessed the perspectives of faculty members who teach CC content in the PharmD curriculum. Based on the study findings, perceived confidence and depth of teaching CC content were associated with the faculty's years of experience, prior training on CC, and the application of an assessment tool to evaluate CC knowledge and skills among students. It is recommended that these relationships be further studied and faculty development and training on CC be

supported to prepare student pharmacists for an increasingly diverse patient population.

Conflict of interest

The authors declare no conflict of interest

Funding

This research work was supported by the Dean's Starter grant at the College of Pharmacy and Health Sciences, Western New England University, Springfield, Massachusetts to Gladys Ekong. Margarita Echeverri's contributions were supported in part by funds from the Health Resources and Services Administration of the US Department of Health and Human Services under grant number (No.) D34HP00006; the Research Centers in Minority Institutions Program of the National Institute on Minority Health and Health Disparities (NIMHD) grant No. 2U54MD007595; the Xavier's NIMHD funded Center for Minority Health and Health Disparities Research and Education grant No. 5S21MD0000100, and the National Institute of General Medical Sciences funded Louisiana Clinical and Translational Science Center grant No. U54GM104940. The contents and views in this manuscript are those of the authors and should not be construed to represent the views of the National Institutes of Health and other funders.

References

Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree, Standards 2016. (2016) https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf

Ahmed, A., Tanveer, M., Shrestha, S., Khatiwada, A.P., Khanal, S., Dujaili, J.A. & Paudyal, V. (2022). Interventions and Impact of Pharmacist-Delivered Services for People Infected with COVID-19: A Systematic Review. *Healthcare (Basel),* **10**(9) https://doi.10.3390/healthcare10091630

Bandura, A. (1997) Self-Efficacy: The Exercise of Control. W.H. Freeman and Company, New York

Bazargan, M., Cobb, S. & Assari, S. (2021). Discrimination and medical mistrust in a racially and ethnically diverse sample of California adults. *The Annals of Family Medicine,* **19**(1):4-15

Boehmer T.K, Koumans E.H, Skillen E.L, Kappelman M.D, Carton T.W, Patel A., August E.M., Bernstein R., Denson J.L., Draper C., Gundlapalli A.V., Paranjape A., Puro J., Rao P., Siegel D.A., Trick W.E., Walker C.L. & Block J.P. (2022). Racial and Ethnic Disparities in Outpatient Treatment of COVID-19 - United States, January-July 2022. *MMWR Morbidity and Mortality Weekly Report,* **71**(43):1359-1365 https://doi.10.15585/mmwr.mm7143a2

Braveman, P.A., Cubbin, C., Egerter, S., Williams, D.R. & Pamuk, E. (2010). Socioeconomic disparities in health in the United States: what the patterns tell us. *American Journal of Public Health,* **100**(1):S186-196 https://doi.10.2105/ajph.2009.166082

Campbell, H.E., Hagan, A.M. & Gaither, C.A. (2021). Addressing the need for ethnic and racial diversity in the pipeline for pharmacy faculty. *American Journal of pharmaceutical education,* **85**(9)

Canadian Institute for Health Information. *Canada's Health Care Providers*, *2015 to 2019* - Data Tables. (2020). Retrieved from https://www.cihi.ca/sites/default/files/document/canada-health-care-providers-2015-2019-data-tables-en.xlsx

Chen, A.M.H., Armbruster, A.L., Buckley, B., Campbell, J.A., Dang, D.K., Dev Chen AMH, Armbruster AL, Buckley B, Campbell JA, Dang DK, Devraj R, Drame I, Edwards A, Haack SL, Ma Q, Petry N, Planas LG, Sadowski CA, Santee J, Wade L, Borja-Hart N (2021). Inclusion of Health Disparities, Cultural Competence, and Health Literacy Content in US and Canadian Pharmacy Curriculums. *American Journal of Pharmaceutical Education,* **85**(1):8200 https://doi.10.5688/ajpe8200

Dillman, D.A., Smyth, J.D. & Christian, L.M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method*: John Wiley & Sons

Echeverri, M., Unni, E., Harpe, S.E., Kavookjian, J., Alkhateeb, F., Ekong, G. & Law, A. (2019). A Multi-School Validation of a Revised Scale for Assessing Cultural Competence in Pharmacy Students. *American Journal of Pharmaceutical Education,* **83**(3):6602 https://doi.10.5688/ajpe6602

Ford, C. (2016). Identifying effective teaching behaviors of pharmacy faculty master teachers

Gale J., Alemdar, M., Cappelli, C. and Morris D. (2021) A Mixed Methods Study of Self-Efficacy, the Sources of Self-Efficacy, and Teaching Experience. *Frontiers in Education*. **6**:750599 https://doi.10.3389/feduc.2021.750599

George, S.V., Richardson, P.W. & Watt, H.M.G. (2018). Early career teachers' self-efficacy: A longitudinal study from Australia. *Australian Journal of Education,* **62**(2):217-233 https://doi.10.1177/0004944118779601

Handtke, O., Schilgen, B. & Mösko, M. (2019). Culturally competent healthcare–A scoping review of strategies implemented in healthcare organisations and a model of culturally competent healthcare provision. *PLoS One,* **14**(7):e0219971

Harpe, S.E. (2015). How to analyse Likert and other rating scale data. *Currents in Pharmacy Teaching and Learning,* **7**(6):836-850

Joint Commission of Pharmacy Practitioners. Pharmacists' Patient Care Process. (2014). Retrieved from https://jcpp.net/wp-content/uploads/2016/03/PatientCareProcess-with-supporting-organisations.pdf

Joynt Maddox, K. E., Reidhead, M., Grotzinger, J., McBride, T., Mody, A., Nagasako, E., Ross, W., Steensma J.T. & Barker, A.R. (2022). Understanding contributors to racial and ethnic inequities in COVID-19 incidence and mortality rates. *PLoS One,* **17**(1):e0260262 https://doi.10.1371/journal.pone.0260262

Lavingia, R., Jones, K. & Asghar-Ali, A.A. (2020). A systematic review of barriers faced by older adults in seeking and accessing mental health care. *Journal of Psychiatric Practice,* **26**(5):367-382 https://doi.10.1097/PRA.0000000000000491

Maness, S.B., Merrell, L., Thompson, E.L., Griner, S.B., Kline, N. & Wheldon, C. (2021). Social Determinants of Health and Health Disparities: COVID-19 Exposures and Mortality Among African American People in the United States. *Public Health Rep,* **136**(1):18-22 https://doi.10.1177/0033354920969169

Onyoni, E.M. & Ives, T.J. (2007). Assessing implementation of cultural competency content in the curricula of colleges of pharmacy in the United States and Canada. *American Journal of Pharmaceutical Education,* **71**(2):24 https://doi.10.5688/aj710224

Pharmacy Faculty Demographics and Salaries. (2022). Retrieved from https://www.aacp.org/research/pharmacy-faculty-demographics-and-salaries

Stubbe, D.E. (2020). Practising cultural competence and cultural humility in the care of diverse patients. *Focus,* **18**(1):49-51

Van Dyke, M.E., Mendoza, M.C.B., Li, W., Parker, E.M., Belay, B., Davis, E.M., Quint, J.J., Penman-Aguilar, Ana., . Clarke, K.E.N. (2021). Racial and Ethnic Disparities in COVID-19 Incidence by Age, Sex, and Period Among Persons Aged <25 Years - 16 U.S. Jurisdictions, January 1-December 31, 2020. *MMWR Morbidity and Mortality Weekly Report,* **70**(11):382-388 https//doi.10.15585/mmwr.mm7011e1

Wang, E., Glazer, K.B., Sofaer, S., Balbierz, A. & Howell, E.A. (2021). Racial and ethnic disparities in severe maternal morbidity: a qualitative study of women's experiences of peripartum care. *Women's Health Issues,* **31**(1):75-81.

Winston, N.R. (2020). Faculty Perceptions and Teaching Practices for Transformative Change: Culturally Responsive Teaching in Pharmacy Education. Theses, Dissertations and Capstones. 1296 https://mds.marshall.edu/etd/1296

Witry M.J., Arya V., Bakken B.K., Gaither C.A., Kreling D.H., Mott D.A., Schommer J.C. & Doucette W.R. (2021). National Pharmacist Workforce Study (NPWS): Description of 2019 Survey Methods and Assessment of Nonresponse Bias. Pharmacy (Basel), **9**(1):20 https://doi.10.3390/pharmacy9010020

Wolters, C.A. & Daugherty, S.G. (2007). Goal structures and teachers' sense of efficacy: Their relation and association to teaching experience and academic level. *Journal of Educational Psychology,* **99**:181-193 https://doi.10.1037/0022-0663.99.1.181