RESEARCH

Clinical Cultural Competency and Knowledge of Health Disparities Among Pharmacy Students

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Objective. To evaluate the level of competency and knowledge about health disparities among third-year doctor of pharmacy (PharmD) students at 2 Florida public colleges of pharmacy and to explore the demographic correlates of these variables.

Methods. A cross-sectional survey study design was used to collect data from participants.

Results. The students had low health-disparities knowledge and moderate skills in dealing with socio-cultural issues and cross-cultural encounters. Speaking a language(s) other than English and having exposure to cultural-competency instruction were the demographic variables found to be most significantly associated with clinical cultural competency and/or knowledge of health disparities.

Conclusions. Clinical cultural competency and health-disparities instruction may not be adequately incorporated into the pharmacy school curricula in the institutions studied. Relevant education and training are necessary to enhance cultural competency among pharmacy students.

Keywords: cultural competence, health disparities, student pharmacist, curriculum

INTRODUCTION

The United States population is becoming increasingly ethnically diverse.1,2 According to projections by the US Census Bureau, by the year 2050, minority groups will constitute approximately half the US population,3 with the non-Hispanic white population estimated to represent less than 50% of the US population. Hispanics, the largest minority group, will constitute about 30% of the population; the black population will be 13%; the Asian population, 9%; and about 20% of Americans will be foreign-born.3 Because minority populations share a disproportionately greater burden of many disease conditions and generally tend to have poorer health outcomes, the need for healthcare providers, including pharmacists, to be well prepared to care for a diverse population is crucial and urgent.4,9 Culture and health communication are 2 key factors that have been linked to poorer health outcomes among minorities.10-12 Culture reflects a group’s values, beliefs, norms, practices, patterns of communication, familial roles, and other social regularities.11 Health communication refers to the transmission and reception of health-related information.10

To eliminate health disparities, healthcare providers must consider the influence of cultural norms and practices on patients’ attitudes, perceptions, and behaviors.12 As highly accessible healthcare providers, pharmacists are well positioned to help close the health gap between minority and majority populations.13 However, adequate response to this need requires that pharmacists be aware of these disparities in health care, recognize the diversity in culture as a key factor, and be able to navigate these differences in order to deliver culturally competent care to diverse patient populations.

Culture embodies “… the language, thoughts, communications, actions, customs, beliefs, values and institutions of racial, ethnic, religious or social groups.”14 Culture has an influence on how people seek and respond to healthcare information, their perception of the cause and nature of disease, what they regard as a health problem, and their attitude toward healthcare providers and treatment (Katz M. Personal communication, November 1998).15 Because health care is essentially a cultural construct, cultural issues are at the core of healthcare delivery. To effectively respond to the needs of the diverse populations they serve, pharmacists must be aware of their own health-related values and beliefs. They also need to understand and appreciate the cultural differences between different populations and integrate this knowledge into their delivery of patient care.14-17

In response to this need, the Accreditation Council for Pharmacy Education (ACPE) included in its accreditation
standards and guidelines in 2006 a cultural competency component for the PharmD curriculum.\textsuperscript{18} It is not clear how much pharmacy education reflects this need or how prepared students are to provide care across the US cultural spectrum.\textsuperscript{19-21} Some studies, however, have demonstrated an improvement in the level of cultural competency among pharmacy students following relevant educational training.\textsuperscript{22-27}

The long-term goal of the colleges of pharmacy at the University of Florida (UFL) and Florida A&M University (FAMU) is to foster a pharmacy curriculum that will prepare pharmacists who can effectively provide culturally competent care to all patients to ensure health equity. The first steps toward achieving this goal and the immediate objectives of this study were to: (1) evaluate the level of clinical cultural competency and health-disparities knowledge among third-year PharmD students; and (2) explore the demographic correlates (age, gender, race/ethnicity, institution, and country of birth) of cultural competency level and health-disparities knowledge.

**METHODS**

**The Survey Instrument**

To accomplish the study objectives, a cross-sectional survey study design was used. (A copy of the survey instrument is available upon request from the corresponding author). Participants were surveyed using a modified pretraining version of the Clinical Cultural Competency Questionnaire\textsuperscript{28} (CCCQ), a self-administered assessment instrument that measures different aspects of cultural competency, including knowledge of health disparities, skills in dealing with sociocultural issues, comfort in dealing with cross-cultural situations, attitude toward factors contributing to health disparities, self-awareness of racial/ethnic/cultural identity, self-awareness of racial/ethnic/cultural stereotypes, self-awareness of biases and prejudices, and importance of training in cultural competency. The CCCQ is a 63-item instrument originally developed to assess the impact of training on the level of cultural competency and health-disparities knowledge of practicing physicians by administering it pre- and post-training. The instrument has been translated into other languages and used internationally as an assessment tool for cultural-competency training interventions targeting healthcare workers.\textsuperscript{29} Results of factor analysis on the CCCQ have also been published.\textsuperscript{30}

With permission from the author, the questionnaire was modified to better suit the target population – pharmacy students. Items were deleted from the instrument if they were not applicable to pharmacy students or relevant to pharmacy practice, as determined by the expert opinion of faculty members with extensive training in cultural competency and health disparities. An item about Healthy People 2010 was added to section A of the CCCQ to reflect the current dialogue on health disparities. The questions preceding items in sections B and C of the questionnaire were reworded to reflect assessment based on respondents’ self-perception of their competencies in these areas (ie, not based on actual practice experience). A sixth option of “don’t know” was added to the scale for items in subsection DI to enable respondents to answer accurately if they could not assess the importance of a factor because they did not know to what it referred. In contrast to the sequence in the original instrument, demographic information was requested at the end of the questionnaire instead of in the first section.

The questionnaire had 6 subscales (Table 1). Subscale A (knowledge of health disparities) was a list of 8 subject areas about health disparities in the United States. For example, participants were asked about their knowledge of health risks experienced by diverse racial and ethnic groups and also about the Office of Minority Health’s National Standards for Culturally and Linguistically Appropriate Services in Health Care. In subscale B,
(skills in dealing with sociocultural issues) respondents were required to assess their skills in dealing with different sociocultural issues that pharmacists were likely to encounter in patient care. Such issues included providing culturally sensitive patient education and counseling and dealing with cross-cultural adherence/compliance problems.

Subscale C (comfort in dealing with cross-cultural situations) dealt with how comfortable the respondent would feel in dealing with cross-cultural encounters or situations in which they may find themselves as pharmacists. Examples of such encounters included caring for a patient who insists on using or seeking folk healers or alternative therapies, breaking “bad news” to a patient’s family first rather than to the patient if this is more culturally appropriate, and treating a patient who makes derogatory comments about the healthcare provider’s racial or ethnic background.

Subscale D (attitude and self-awareness relative to identity, stereotypes, biases, and prejudices) had 3 subsections. Subsection I assessed attitudes toward various factors that contribute to health disparities, such as genetics, poverty, literacy, sexism, classism, and homophobia. Participants were asked to indicate how important each of these factors was in contributing to health disparities. In subsection II, participants were asked how aware they were of their own racial, ethnic, or cultural identity; racial, ethnic, or cultural stereotypes; and biases and prejudices. Subsection III consisted of 2 questions asking participants to rate the importance of training health professionals in cultural diversity and multicultural health care.

Subscale E and Section F addressed the importance of training in cultural competency and demographics. In subscale E, participants were asked about their previous training in cultural diversity. Section F was used to collect relevant demographic information, such as age, gender, race/ethnicity, country of birth, language(s) spoken other than English, and exposure to cultural-competency instruction in the school curriculum, and any formal training on cultural competency outside the curriculum.

Survey Administration

Survey respondents were third-year students in the doctor of pharmacy degree programs at UFL and FAMU. These schools were chosen for comparison because of the divergent racial/ethnic distribution of their student populations (Table 5). Third-year students were surveyed for this study because by the third year of study, students are expected to have received considerable training and instruction. Much of the fourth year of study is dedicated to clinical practice experiences in different practice sites where they are expected to apply the skill sets they have learned. Institutional Review Board approvals were obtained from both institutions. With the consent and collaboration of faculty members, participants were recruited and the survey instrument was self-administered by students in the fall 2010 semester at both colleges during a regular class session of the Law and Ethics course. The course is a core requirement for the third year of study and does not include any specific instruction on cultural competency or health disparities. The questionnaire took approximately 10 to 15 minutes to complete.

Data Analyses

Items in each survey section were assessed using a 5-point Likert scale on which 1 = not at all, 2 = a little, 3 = somewhat, 4 = quite a bit, and 5 = very. A sixth response of “don’t know” was added to subscale DI. The total score for each subscale was obtained by summing the scores for each item in that subscale. For subscale DI, the option “don’t know” was assigned a value of zero (0). Each item was weighted equally and the total score for each subscale was obtained for each respondent.

Standard descriptive statistics were used to summarize participants’ score for each subscale (A-E). Scores were also summed for each institution. Tests were used to compare mean scores of each subscale between UFL and FAMU pharmacy students on their level of cultural competency and health-disparities knowledge. A multiple regression analysis was performed for each of the subscales (A-E) with each of the respective scores as the dependent variable. The predictor variables used were age, sex, race, country of birth, language(s) spoken other than English, exposure to cultural-competency instruction in the school curriculum, and formal training on cultural competence outside the curriculum and the school (FAMU or UFL). Each covariate was treated as a dichotomous variable.

For each subscale, the mean score was obtained by averaging scores for the respondents. The median score for each subscale was calculated by determining the point below which half of the respondents’ scores fell. The midpoint of each subscale represented the score that would be obtained if a respondent were “somewhat” knowledgeable or “somewhat” skilled (ie, chose option 3 consistently). This served as the reference to which scores for individual respondents and/or mean scores for the 2 institutions were compared.

RESULTS

Three hundred four students participated in the study, with 184 from UFL and 120 from FAMU (response
rates of 62.2% and 90.9%, respectively), for an overall response rate of 70.2%. The majority of the students in both schools were female, most respondents were between 20 and 24 years of age, and 84.2% from each college were born in the United States (Table 2). More students had lived in or visited another country outside the United States than had not. At FAMU, the respondents were predominantly African-American/black (60.8%), approximately a third (29.2%) spoke a language in addition to English. About 86% of the FAMU respondents reported having been previously exposed to cultural-competency instruction in their school’s curriculum. In contrast, respondents at UFL were mostly Caucasian (69.4%) and more UFL students (38%), spoke a language(s) in addition to English, compared with students from FAMU. Only about 27% of respondents at UFL reported having had some previous exposure to cultural-competency instruction in the school curriculum, and 13% reported having had some previous exposure outside the school curriculum.

The health-disparities knowledge subscale assessed participants’ knowledge of health disparities by subject area, including programs, policies, and sources of information. With a potential maximum score of 40 and mid-score of 24 (score if a respondent indicated the option “somewhat” about knowledge on all 8 areas listed), the overall mean score was 22.4 (median score, 22) (Table 3).

The sociocultural-skills subscale had a list of common sociocultural issues that a pharmacist as a healthcare provider would likely encounter in patient care. With a potential maximum score of 60 and a mid-score of 36 (score if a respondent indicated the option “somewhat” for all the 12 sociocultural issues listed), the overall mean score was 37.5 (median score, 38).

Table 2. Demographic Characteristics of Pharmacy Students Participating in a Survey About Clinical Cultural Competency and Knowledge About Health Disparities

<table>
<thead>
<tr>
<th>Item</th>
<th>FAMU, No. (%) n = 139</th>
<th>UFL, No. (%) n = 294</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response rate</td>
<td>120 (90.9)</td>
<td>184 (62.6)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>42 (35)</td>
<td>55 (29.9)</td>
</tr>
<tr>
<td>Female</td>
<td>78 (65)</td>
<td>129 (70.1)</td>
</tr>
<tr>
<td>Age distribution, years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;20</td>
<td>1 (0.8)</td>
<td>0</td>
</tr>
<tr>
<td>20-24</td>
<td>78 (65)</td>
<td>108 (58.7)</td>
</tr>
<tr>
<td>25-29</td>
<td>29 (24.2)</td>
<td>59 (32.1)</td>
</tr>
<tr>
<td>30-34</td>
<td>10 (8.3)</td>
<td>8 (4.3)</td>
</tr>
<tr>
<td>35-39</td>
<td>2 (1.7)</td>
<td>6 (3.3)</td>
</tr>
<tr>
<td>≥40</td>
<td>0</td>
<td>3 (1.6)</td>
</tr>
<tr>
<td>Race/ethnicity&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American/black</td>
<td>73 (60.8)</td>
<td>8 (4.3)</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Asian-American</td>
<td>8 (6.7)</td>
<td>29 (15.8)</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>5 (4.2)</td>
<td>15 (8.2)</td>
</tr>
<tr>
<td>Native Hawaiian/other Pacific Islander</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Caucasian</td>
<td>21 (17.5)</td>
<td>124 (69.4)</td>
</tr>
<tr>
<td>Other</td>
<td>13 (10.8)</td>
<td>8 (4.3)</td>
</tr>
<tr>
<td>Country of birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>101 (84.2)</td>
<td>155 (84.2)</td>
</tr>
<tr>
<td>Non-US</td>
<td>19 (15.8)</td>
<td>29 (15.8)</td>
</tr>
<tr>
<td>Visited/lived in other country outside US</td>
<td>61 (50.8)</td>
<td>121 (65.8)</td>
</tr>
<tr>
<td>Speaks language(s) other than English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>35 (29.2)</td>
<td>70 (38)</td>
</tr>
<tr>
<td>No</td>
<td>85 (70.8)</td>
<td>114 (62)</td>
</tr>
<tr>
<td>Exposure to cultural competence instruction in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School’s curriculum*</td>
<td>103 (85.8)</td>
<td>49 (26.6)</td>
</tr>
<tr>
<td>Outside school curriculum</td>
<td>24 (20.0)</td>
<td>24 (13.0)</td>
</tr>
</tbody>
</table>

Abbreviations: FAMU = Florida A&M University; UFL = University of Florida.
<sup>a</sup> Significantly different between the 2 schools (p < 0.001).
The cross-cultural subscale was comprised of a list of 12 common cross-cultural encounters or situations in which pharmacists might find themselves while providing patient care. Self-assessment of how comfortable the respondents thought they might feel in these situations yielded an overall mean score of 36.6 (median score, 36). The potential maximum score was 60, indicating a consistent score of 5 ("very comfortable") for each item.

The attitude subscale had a list of 12 factors known to contribute to health disparities, such as genetics, the environment, lifestyle, racism, ableism, and ageism. Respondents were asked to rate the importance of each factor. A sixth option of “don’t know” was included on the scale and assigned a value of zero (0) to allow participants to provide an appropriate response to factors about which they had no knowledge. The potential maximum score, therefore, was 60; with a midscore of 36. The mean score for all participants was 45.7 (median score, 46).

Each item on the self-awareness subscale was assessed independently. There were 3 items addressing self-awareness of racial, ethnic, or cultural identity; self-awareness of racial, ethnic, or cultural stereotypes; and self-awareness of biases and prejudices. Each item had
a potential maximum score of 5. Overall mean scores were generally high for these items (mostly ≥ 4.0 on a scale of 5). The importance of training in cultural competence for health professionals was generally rated highly; with an overall mean score of 8.2 (median score of 8) out of a potential maximum of 10.

Regression analyses were performed to determine the variables that were significantly associated with cultural competency and knowledge of health-disparities constructs (Table 4). After controlling for relevant covariates, students who had formal training on cultural competence outside the school curriculum and those attending FAMU had significantly more knowledge of relevant subject areas related to health disparities. Respondents who were not born in the US, those who spoke a language other than English, and those exposed to formal training reported better skills in dealing with sociocultural issues (p < 0.05). Respondents older than 24 years, male students, and those who spoke a language other than English reported feeling more comfortable with cross-cultural encounters. Speaking a language other than English was associated with more favorable attitudes toward factors contributing to health disparities and higher self-awareness of racial, ethnic, or cultural identity, and biases and prejudices (p < 0.05). Students from minority groups and females tended to place more value on training in cultural competence for health professionals (p < 0.05). Generally, students at FAMU had more favorable attitudes toward factors contributing to health disparities and higher self-awareness of biases and prejudices (p < 0.05).

**DISCUSSION**

The demographic variables that were significantly different between the 2 schools were race (p < 0.001) and exposure to cultural-competency instruction within the school curriculum (p < 0.001). For all the other demographic characteristics, there was no significant difference (Table 2).

Approximately two-thirds of the respondents were between the ages of 20 and 24 years. Older students reported feeling more comfortable with cross-cultural encounters, which may be attributable to increased maturity and more experience dealing with people in general. With regard to race and ethnicity, the 2 schools had different distributions. While the majority of respondents in FAMU were from minority groups (the highest proportion being African-American/black), most of those who responded in UFL were from the majority population (Caucasian). Being exposed to cultural competence
instruction was more significantly associated with higher levels of cultural competence than was race/ethnicity. Controlling for other covariates in a regression model, being from a minority group was only significantly associated with 1 subscale. The respondents from minority groups tended to place more emphasis on the importance of training in cultural competence for health professionals, which may in part be attributable to personal experiences as patients themselves. This result suggests that while being from a minority group may sensitize a person to the need for cultural competency, it does not necessarily confer on that person the requisite cross-cultural skills or knowledge about health disparities. Therefore, regardless of racial/ethnic background, all pharmacy students need to receive cultural competency instruction.

Not surprisingly, speaking a language other than English was associated with higher levels of cultural competence, as reflected by responses regarding skills in dealing with sociocultural issues and feeling comfortable with cross-cultural encounters. Findings from the literature demonstrate that language discordance can be a barrier to patient-provider communication and may lead to health disparities and poor patient outcomes.\(^31\)\(^-\)\(^33\) In 1 study, physician self-rated language ability was associated with enhanced interpersonal process of patient-centered care among Spanish-speaking patients.\(^31\) Most of the respondents however, did not speak any language other than English, further emphasizing the need for cultural-competency instruction to be adequately incorporated in the pharmacy curriculum to enhance the pharmacists’ quality of healthcare delivery.

Few respondents in either school had been exposed to cultural-competency instruction outside the school curriculum (Table 2). However, the few students who had been exposed to cultural-competency instruction reported higher levels of cultural competency and more knowledge of health disparities. There may not be adequate opportunities outside the formal school curriculum for pharmacy students to acquire the relevant skills that would enable them to interact effectively with patients of diverse cultures in order to optimize patient care. The school curriculum, therefore, may be the only opportunity pharmacy students have to acquire these competencies. The 2 schools compared had different racial/ethnic demographics (Table 5). Even though most students at FAMU were from minority populations (82.0%), race/ethnicity did not appear to have any significant association with knowledge of health disparities specifically or with level of cultural competence generally. Compared with respondents in UFL, more students at FAMU reported having had exposure to cultural competence instruction in their school curriculum. However, compared with UFL students, fewer FAMU respondents spoke a language other than English. The higher level of cultural competence was likely as a result of training. There are studies that have documented an increase in levels of cultural competence following relevant training.\(^14\)\(^-\)\(^17\)

Mean scores for knowledge of relevant subject areas pertaining to health disparities (subscale A) in both schools were low. Each fell below the midpoint (24 points) on the subscale, the score at which a respondent would be considered “somewhat” knowledgeable. Scores for most of the other subscales were approximately or slightly higher than the midscores, represented values expected if the students responded “somewhat” to most items. Student pharmacists are not expected to be experts in health-disparities knowledge or to possess excellent skills in cross-cultural encounters. However, as future healthcare professionals who will interact with a diverse population of patients, they should be knowledgeable about health disparities and have considerably higher levels of competence than would be expected of individuals for whom being “somewhat” culturally competent might be sufficient.

A primary limitation of this study is that participants were not recruited randomly, thereby limiting the representation of participants to students who volunteered to participate in the study. Given the lower response rate at UFL (62.2% vs 90.9% at FAMU), the respondents at UFL may not be as representative of the study population as the respondents at FAMU. We cannot rule out the possibility that UFL students who were unavailable at the time of administration may have characteristics different from those who were available. However, comparing the students who did respond to the general student population (Table 5), the sample is fairly representative in terms of demographics. The response rate is also considered acceptable for a survey.\(^34\) The race/ethnicity categories were those used by the US Census Bureau, which may not capture all groups with whom people self-identify. Respondents were given an option of “other,” but only a few respondents (6.9%) fell into this category. Finally, a self-administered survey tool was used for data collection. Reporting bias is a potential issue because participants’ responses are based on self-assessment. Despite these limitations, this study significantly contributes to the literature on clinical cultural competency and health-disparities knowledge among pharmacy students.

**CONCLUSIONS**

Our findings suggest that clinical cultural competency and health-disparity instruction may not be adequately incorporated into the pharmacy-school curricula in these 2 Florida public institutions. However, the results
also demonstrate that relevant education and training can potentially improve cultural competency and knowledge of health disparities. This was mostly among respondents who received instruction outside the school curriculum, but most pharmacy students may not have the opportunity to acquire this skill set outside the formal school curriculum. We recommend that clinical cultural competency and health-disparity instruction be incorporated into pharmacy colleges’ and schools’ curricula to ensure that pharmacists are adequately equipped to deliver competent care to the diverse patient populations that they will serve.

REFERENCES