Objective. To identify and review strategies reported in the literature for strengthening instruction about both health disparities and cultural competency (HDCC) within various portions of the Doctor of Pharmacy curriculum and co-curriculum.

Findings. The classroom strategies reported in the literature for incorporating HDCC into the PharmD curriculum involved teaching a single course or series of courses in HDCC. Activities found to be effective in teaching HDCC were those that involved case-based and community engagement exercises. Recommendations for incorporating HDCC into the experiential education included preceptor development in areas of HDCC to assess student understanding of health disparities concepts, increasing student engagement with diverse patient populations, and implementation of cross-cultural communication models at clinical sites. Co-curricular and interprofessional (IPE) portions of pharmacy training were found to permit greater methodological flexibility for incorporating training in HDCC, as they often confronted fewer time or space constraints than classroom endeavors. Documented methods for teaching HDCC within co-curricular and IPE experiences included service learning, study abroad, symposia, and forums.

Summary. There is a paucity of literature describing processes for incorporation of health disparities and cultural competency education and training into the PharmD program. Findings suggest that conceptual frameworks for HDCC should be used throughout the pharmacy curriculum, with learning activities mapped to relevant pharmacy education standards to ensure coverage of important practice competencies. Best practices also involve the use of contemporary tools, strategies, and resources from a cross-section of disciplines that provide opportunities for learners to correct misconceptions and biases through active situational problem-solving.

Keywords: pharmacy education, cultural competency, health disparities, curriculum, co-curricular

INTRODUCTION

Improving cultural competency, which is defined as a process for integrating cultural awareness, knowledge, skills, encounters, and desire, has emerged as a key approach for health care professionals to use in overcoming health disparities. Cultural humility, another commonly used term to describe this approach takes into account the fluidity of culture and challenges both individuals and institutions to address inequalities. Health disparities acknowledge the impact of systematic discrimination and exclusion on patient health encounters and outcomes.
Cultural competency and health disparities are critical curricular components for shaping the professional identities of student pharmacists as persons accountable for incorporating culturally intelligent\textsuperscript{5} practices into their professional interactions. While teaching of and assessments for health disparities and cultural competency (HDCC) are mandated by educational standards (Table 1), concrete recommendations are lacking for incorporating HDCC training in a holistic, programmatic manner that fosters development of the knowledge and skills that pharmacy graduates are required to master. Also, while the Accreditation Council for Pharmacy Education (ACPE) Standards 2016 reference cultural awareness, methods for overcoming health care disparities are not presented.\textsuperscript{6} Because schools and colleges of pharmacy must document outcomes data based on their assessment of HDCC, additional guidance for programmatic incorporation is warranted.

Methods for integrating curricular standards into the teaching of HDCC within the Doctor of Pharmacy (PharmD) curriculum are not prescriptive. Faculty are therefore challenged to devise how HDCC curricula will be incorporated not only in the classroom, but also within co-curricular activities, interprofessional education (IPE), and experiential opportunities. This comprehensive review will describe overarching concepts related to HDCC training, provide published examples, and offer practical recommendations for its implementation.

**METHODS**

To identify detailed strategies for developing HDCC instruction, the authors conducted a literature review using PubMed/MEDLINE and Scopus. Key terms included pharmacy education, health science students, health disparities, cultural competency, and related terms (cultural sensitivity, cultural humility, cultural intelligence), curriculum, co-curricular/co-curriculum, service learning, and interprofessional education. Pharmacy and

<table>
<thead>
<tr>
<th>Publication</th>
<th>Organization</th>
<th>Guidance Statement</th>
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<tr>
<td>Educational Outcomes 2013\textsuperscript{a}</td>
<td>Center for the Advancement of Pharmacy Education (CAPE)</td>
<td><strong>Domain 3.5:</strong> Cultural Sensitivity (include), calls for graduates to “recognize social determinants of health to diminish disparities and inequities in access to quality care.”</td>
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<tr>
<td>Standards 2016\textsuperscript{b}</td>
<td>American Council for Pharmacy Education (ACPE)</td>
<td><strong>Standard 13:</strong> Outlines educational outcomes for pharmacy programs related to culture and social determinants of health.</td>
</tr>
<tr>
<td>Pharmacists’ Patient Care Process\textsuperscript{c}</td>
<td>Joint Commission of Pharmacy Practitioners (JCPP)</td>
<td>Although HDCC is not explicitly referenced in this guidance on the pharmacy profession’s approach to patient-centered care, cultural factors and patient beliefs are incorporated into several steps of the process.</td>
</tr>
<tr>
<td>Core Entrustable Professional Activities\textsuperscript{d}</td>
<td>American Association of Colleges of Pharmacy (AACP)</td>
<td>The EPAs do not explicitly describe HDCC. However, the EPAs closely mirror the guidance documents described above, and several EPAs demonstrate opportunities to incorporate HDCC: Patient Care Provider (patient-centered goals), Population Health Promoter, and Information Master</td>
</tr>
<tr>
<td>Core Competencies for Interprofessional Collaborative Practice\textsuperscript{e}</td>
<td>Interprofessional Education Collaborative (IPEC)</td>
<td>Each of the four Core Competencies incorporate tenants of HDCC into their values/ethics sub-competencies.</td>
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professional education standards were accessed online and derived from reputable organizations known by the authors (Table 1). Full-text reports, reviews, commentaries, and research articles describing HDCC frameworks, activities, or recommendations for HDCC teaching in health science programs published within the past 20 years were included. Included articles provided key approaches, summaries of pre- and post-assessment of learning, and/or description of strategies with intended or actual outcomes among health science students. Articles were excluded if they did not provide the detail described above and/or did not involve student learners from health science disciplines. Bibliographies of all included articles were reviewed for additional references meeting criteria (Table 2). Information gathered was then organized into four major sections: didactic, experiential, co-curricular, or interprofessional education. Both United States and global exemplars were presented.

**FINDINGS**

**Content Regarding Health Disparities and Cultural Competency in the Didactic Curriculum**

Research suggests that learning should be active and engaging. This pedagogical format stresses critical thinking and problem-solving while fostering greater communication and accountability among learners. To accomplish active engagement, learners should feel safe to express themselves honestly through opportunities provided before and after they have “experienced” a particular concept or theme. Because HDCC stresses active engagement to enhance cross-cultural communication, interactive multimodal learning techniques can be used to illustrate core principles. Specifically, learners should be provided with three key principles early in the learning process: cultural competency is a continuous commitment, and not an endpoint; cultural humility rather than cultural competence should ultimately be the goal; and learning should aid the development of a transformative self-awareness, awareness of other perspectives, and continuous self-evaluation. Finally, learning outcomes should be mapped to identify where in the curriculum students are developing the knowledge and skills related to HDCC concepts. Institutions may consider looking to personnel tasked with curricular oversight and/or curricular assessment to provide the necessary mapping to intended learning outcomes.

An effective strategy for teaching HDCC topics is the three-phase activity, which involves presenting an introduction conducting an activity, and concluding with a debrief and/or reflection. For most activities, the introduction should relay the purpose of the topic and the aim of the activity to reduce shock and encourage engagement by the learner. The activity can vary in length and depth but should generally involve interaction among learners and facilitate passive awareness. Activities should be designed in a manner that uses the learner as their own tool for education. Cultural simulations and role-playing are important examples. During these exercises, students embody cultural behaviors and dilemmas, allowing them to reflect on personal experiences and observations. Finally, a debriefing discussion helps to contextualize learning by linking the activity to macro-social interactions at a societal or organizational level. This facilitates active awareness.

Results of a pre-post cultural self-assessment survey conducted by Sales and colleagues to evaluate the use of three different educational interventions to enhance cultural competency suggest that whether the teaching tool is active-learning, as is the case with simulation and case-based exercises, or lecture-based, each method has value and can enhance components of HDCC. An investigation by Prescott and Noble found that using multimodal approaches for active learning of cultural competency concepts in the classroom can assist students in reducing individual bias and gaining cultural knowledge. Activities ranged from reflections based on video vignettes to role-playing exercises, such as “Trading Spaces.”

Devraj and colleagues discussed a series of activities used in a three-credit required course to assist third-year student pharmacists with developing skills for working with patients with low health literacy, a social determinant that increases the risk for HD. Embedded in each of six sessions were activities, such as “Informal Signs of Health Literacy,” where students were divided into teams to discuss observed signs of poor health literacy based on a written case, and patient education materials, where students were required to use skills learned during the course to develop educational materials for patients with low health literacy. The first three out of six class sessions involved introducing the topic of health literacy,

<table>
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<tr>
<th>Domains</th>
<th>Articles Meeting Initial Criteria, No.</th>
<th>Articles Included in Review, No.</th>
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<tr>
<td>Curriculum</td>
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<td>Experiential</td>
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<td>Interprofessional Education</td>
<td>30</td>
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Table 2. Summary of Findings From a Review of Articles on Health Disparities and Cultural Competency in the Doctor of Pharmacy Curriculum and Co-curriculum
including common measurement tools. The course concluded with a summary of takeaway points to synthesize all themes reviewed during the course. Post-course evaluations revealed that the average student reported a 4.8 on a scale of 1 to 6 (1=strongly disagree, 6=strongly agree) for feeling that “[he or she] had an improved knowledge of health literacy issues.”

Trujillo and Hardy described a course-based seminar series that sought to increase cultural awareness and sensitivity, as well as economic competence related to obstacles experienced by overweight, obese, and diabetic patients. First-year pharmacy students attended a nutrition and weight management lecture, maintained an online nutrition and exercise journal, and simulated grocery shopping based on an assigned patient scenario incorporating issues of race, ethnicity, and socioeconomic status. The two-credit elective course concluded with a facilitator-driven, small group debrief where students discussed their reflections about the nutritional exercises. Student and facilitator learning outcomes (such as increased empathy and awareness) were measured using pre- and post-activity surveys. All facilitator respondents agreed or strongly agreed that the exercise improved their awareness of the impact of such factors as culture and financial and social challenges on nutritional and lifestyle choices.

Matthews and colleagues devised a multipronged role-reversal exercise to enhance pharmacy students’ sensitivity to and reduce communication barriers experienced by deaf and hearing-impaired patients. The program was adapted from a National Center for Deaf Health Research program and was included in a required first year Introduction to Diversity pharmacy course in collaboration with a dental school. Facilitators collaborated with interpreters and other volunteers from the deaf community to create a one-day, large-scale role-play activity. Before the exercise, students were introduced to fingerspelling, basics of American Sign Language (ASL), and deafness as a culture. The activity culminated with small group debriefs followed by a panel discussion led by community members who were deaf or hearing impaired. A 13-item survey assessing student learning outcomes found that 97% of respondents either agreed or strongly agreed that the activity would positively impact future interactions with patients with disabilities.

Based on findings from the literature regarding incorporation of HDCC in the PharmD curriculum, active-learning exercises that are multimodal are ideal for didactic teaching. Further, combining didactic exercises with a community engagement component can ensure opportunities for students to practice important skills associated with HDCC.

Health Disparities and Cultural Competency Content in the Experiential Education Curriculum

Experiential education, as defined by Kolb, is a process in which knowledge is created through transformation, reflection, practice, and experimentation. Experiential activities, which include both introductory pharmacy practice experiences (IPPE) and advanced pharmacy practice experiences (APPE), account for over 30% of the PharmD program. This portion of the curriculum creates a prime opportunity to fulfill ACPE standards that emphasize serving diverse populations through shared decision-making that optimizes care.

Enhanced emphasis on HDCC in experiential education is a positive development in pharmacy education that has the potential to strengthen the practice skills of future pharmacists. Therefore, it is critical that preceptors expand opportunities to engage with and learn about various cultures, as well as barriers to high-quality care that overburden historically underserved groups. Similarly, institutions must regularly assess rotation criteria and site-based activities to ensure that student encounters with patients and other health care professionals represent the diversity in society. From this process, institutions may find it necessary to partner with other schools and colleges and/or reach outside of their surrounding areas to expand opportunities for students to engage with diverse communities. Preceptor awareness and implementation of culturally sensitive practices must also be assessed to ensure that they can model behaviors and devise the student activities necessary to achieve HDCC-related competencies.

Kripalani and colleagues recommend that three frameworks, the LEARN (Listen, Explain, Acknowledge, Recommend, Negotiate) model, the RISK (Resources, Identity, Skills, and Knowledge) framework, and the Kleinman-Eisenberg-Good’s questionnaire be used by pharmacy preceptors to reinforce and assist learners with application of HDCC skills during patient encounters on IPPEs and APPEs. Preceptors should be trained in how to map learning outcomes to Campinha-Bacote’s five domains (cultural awareness, cultural knowledge, cultural skills, cultural desire, and cultural encounter) when devising activities to develop cultural competency, specifically.

In an elective course for junior and senior nursing students, flipped classrooms were used to instill cultural humility in students through self-paced experiential learning lasting two to four hours weekly. Small groups of students were matched with preceptors, who mentored them in developing confidence in culturally inclusive clinical skills. Students collaborated with community schools, shelters, transitional housing centers, recreation centers, libraries, and parks to develop a health promotion project...
that would meet a community-defined need while enriching student learning.\textsuperscript{23} While this course primarily addressed social determinants of health, the community-based strategies also fostered cultural humility.

Vyas and Caliguiri implemented a six-week series for application of cultural competency theories in a clinical context for IPPE students entitled Becoming a Culturally Competent Provider.\textsuperscript{24} Each week, the series incorporated two-hour interactive sessions discussing key topics related to culture competency, followed by reflection and application at the IPPE site. The first session introduced topics such as population demographics, language barriers, and a discussion about personal biases; the next session focused on cross-cultural communication models using patient case scenarios; the third session focused on religion and health beliefs; the fourth session covered socioeconomic status; and the remaining sessions covered health disparities. Assessment consisted of reflective writing, feedback on role-play scenarios, formal evaluation of HD presentations, and course evaluation. Pre- and post-surveys revealed positive changes in the attitude of student participants.\textsuperscript{24}

Investigators in the above studies emphasized use of interactive classroom learning followed by praxis during experiential and community-based activities as a means of fortifying HDCC concepts for pharmacy and other health science students. Other key strategies included preceptor training on HDCC concepts and methods for incorporation into site experiences, as well as collaboration between institutions to provide additional support and student learning opportunities.

**Health Disparities and Cultural Competency in the Co-curriculum**

Though intended to complement the existing didactic and experiential curriculum, ACPE Standards 2016 emphasize that co-curricular experiences are as important as other components to the professional development of pharmacy students.\textsuperscript{6} Service-learning, student organizational involvement, advocacy, and leadership are widely accepted examples of co-curricular activities.\textsuperscript{25} Current standards for the co-curriculum are broadly defined, making the co-curriculum prime for innovative HDCC-related learning activities. Students, for example, may conduct service learning within a marginalized or underserved population, or may participate in an organizational initiative that addresses high disease risk in a specific community.\textsuperscript{25}

Schools and colleges of pharmacy should consider expanding upon existing co-curricular endeavors to tie in HDCC content. Requiring regular documentation of co-curricular activities related to HDCC can identify longitudinal exposure to HDCC concepts. Electronic portfolios, experiential management systems, or learning management systems may be used to record, track, and assess student progression through learning outcomes.\textsuperscript{25} Documentation can include self-reflection, logged time for HDCC activities, and/or surveys.\textsuperscript{25}

Garavalia and colleagues describe the implementation of a peer-taught, faculty-supported medical Spanish co-curricular training program for student pharmacists.\textsuperscript{26} Participants attended eight one-hour sessions that included a brief didactic component followed by small-group interactive sessions involving role-playing with facilitators. Beginner, intermediate, and advanced tracks were available. Spanish-speaking pharmacy students identified by faculty or peers served as facilitators. Responses on pre- and post-training knowledge tests demonstrated student improvement across all three tracks as follows: 98% found it was useful to be able to speak basic medical Spanish in California; 99% believed they would frequently encounter patients whose primary language was not English; 72% were sensitive to cultural differences related to healthcare within the Latinx population.\textsuperscript{26}

Lee and colleagues reported on a student-led health education initiative that involved working with an underserved Chinese community. The Asian Community Health Education Initiative (ACHEI) was a collaboration between an interdisciplinary student organization of health professions students and a community-based nonprofit organization with no health care workers on staff.\textsuperscript{27} The ACHEI hosted monthly events for the local Chinatown community involving blood pressure and cholesterol screenings, short educational presentations on health topics, nutritional counseling, and immunization services. Promotion to senior volunteer was awarded to acknowledge outstanding student volunteers with a strong commitment to the ACHEI. The program impacted over 1600 residents and provided student volunteers the opportunity to develop leadership, practice, and HDCC skills.\textsuperscript{27}

Fritsch and colleagues describe their experiences with AdvoCaring, a longitudinal service-learning program that incorporates direct patient care.\textsuperscript{28} Groups of 10 to 12 students and a faculty advisor were paired with a community agency that assisted an underserved population. Every two years, an incoming student cohort was assigned to the same partnering institution. This allowed a layered-learning approach in which third- and fourth-year pharmacy students trained first- and second-year students, which increased the sustainability of the program. In addition to service-learning, student teams also participated in advocacy and agency legislative days, and periodically conducted needs analyses on behalf of partnering
organizations; they used level-appropriate skills to meet the needs of agency clients. Fourth-year students completed a capstone project which included hosting a day-long event at their agency to meet identified agency needs. Student feedback was collected annually. Students reported devoting an average of 10-17 hours annually to the AdvoCaring program during the first through third years, and six hours during the fourth year. Most students agreed that they learned important lessons and saw value in the program, and that AdvoCaring had positively impacted or would positively impact how they cared for patients.28 Faculty reported that AdvoCaring engaged students in the health care needs of underserved populations.28

**Health Disparities and Cultural Competency in Interprofessional Education**

Interprofessional education is a required pharmacy education element according to ACPE.6 It can be incorporated into either the curricular or co-curricular pharmacy program, with the intent of preparing students to practice collaborating across professions. The four competencies outlined by the Interprofessional Education Collaborative (IPEC) form an important framework for addressing population-based health needs and developing cultural competency.29,30 Emphasis on principles of IPE by accrediting bodies of many health disciplines is likely driven by growing evidence that refinement of this area can improve quality, safety, and efficiency in health care delivery to a rapidly diversifying patient population (Table 1). Therefore, IPE principles are valuable components of HDCC curricula.

Delivery of HDCC training using open forums or symposia represents a convenient format for bringing together learners from multiple disciplines who often have disparate academic schedules. Literature suggests that forums are a compelling format that can easily be embedded in delivery models for IPE.30,31 They can help to support teachings in didactic or experiential coursework by introducing and/or reinforcing topics through guided group discussion.30,31 Interprofessional symposia permit pedagogical creativity through thematic approaches that address specific population-based health issues.

Another common approach to teaching HDCC in an interprofessional context is the integration of service-learning or immersion opportunities abroad. These experiences are usually optional and sometimes entail a screening process. Global service-learning experiences can therefore also be embedded in elective courses which prepare interdisciplinary student groups for immersion and facilitate reflection. Fell and colleagues describe an international IPE experience for nursing, medical, physician assistant, physical therapy, audiology, and occupational therapy students who participated in a one-week clinic service experience in Trinidad.32 Students set up three clinics and led stations focused on intake and triage, medical screening, pharmacy management, rehabilitation services, and hearing screenings. Pre and post-surveys, journal entries, and focus groups were used to evaluate the experience using IPEC competencies and the Transcultural Self-Efficacy Tool-Multidisciplinary Healthcare Provider (TSET-MHP).32 Students reported improvements in self-perceived cultural competency; improvements in all three cultural competency domains assessed by the TSET-MHP (p<.001) supported this finding, even though cultural competency skill development was not the primary focus of the study.32

Mu and colleagues established an interprofessional collaboration between colleges of pharmacy, nursing, and health professions in the United States and a medical university and hospital in China to boost cultural competency and leadership skills.33 The experience was delivered as an elective honors course, which incorporated seminars on Chinese culture and health care, collaborative case studies, and a 10-day immersion trip. Both US and Chinese students participated in professional consultations, in-service trainings, provided direct patient care, and participated in cross-cultural experiences. A mixed-methods approach was used to assess the experience of US students over five years. The experience resulted in improved scores on the Values and Belief Systems subscale of the Cultural Competence Health Practitioner Assessment.33 Qualitative analysis of written reflections and focus group discussion revealed several major themes which authors coded as: accepting different ways of attending to daily life; increased cultural competence; enhanced professional and interprofessional development; a unique experience; and a multifaceted opportunity. The students from China were not evaluated.33

McElfish and colleagues describe a unique interdisciplinary program that addressed health disparities. It involved a formidable experiential component (student-led clinic experience) that involved cultural immersion in a Marshallese Pacific Islander community.34 Students from medicine, nursing, and pharmacy were divided into interprofessional teams to work with members of the community on chronic and infectious disease detection and mitigation. Students attended two 60-minute educational seminars that provided them with important historical context and background on health beliefs and health disparities present within the Marshallese community.34 During these seminars, “experts” on the culture and health issues within the population engaged learners in open discussion, and debunked misconceptions through question and answer.34
The Office of Diversity and Inclusion at one university held a Culturally Effective Care Symposium in Spring 2016 that brought together dental, medical, audiology, nursing, pharmacy, public health, and social work students with the intent of equipping them to deliver optimal patient care. The students rotated through breakout sessions focused on LGBT health equity and refugee health. The sessions used cases and facilitators for pre-clinical simulation.

The Asia Pacific Alliance of Health Leaders (APAHL) designed a symposium with a very different purpose: to promote academic exchange and global health care leadership through cultural understanding and exchange. The four-day annual event brought together health science students from 22 disciplines who attended universities in Thailand, Korea, China, Japan, and Australia. The agenda included presentations as well as panel and group discussions on various health care topics. Topics were related to cultural and political issues affecting health, as well as strategies and initiatives to improve health care delivery and outcomes.

Overcoming Barriers to Teaching Health Disparities and Cultural Competency

Considerable time, expertise, and resources may be required for instructors to engage learners with HDCC concepts. This can be daunting for educators because of the skills-based factors, such as balancing different learner needs and managing ambiguity in discussion. Capacity barriers can include faculty time restraints, space, and cost limitations. Potential solutions may entail cross-training and co-piloting activities. Complex activities may require planning multiple days for execution.

Priming learners by having them complete pre-readings or use media tools (such as watching YouTube videos) prior to the introductory session may be of particular benefit to learners who have little or no prior exposure to a topic area. Using post-activity “decompression” can mitigate negative feelings, anxiety, and confusion that may result from more intensive topics or exercises which are most likely to cause ambiguity. Decompression may involve engaging in a light-hearted guided discussion, a mini-exercise that allows free conversation with peers about experiences, or physical movement combined with mindfulness exercises. To reduce costs and circumvent space restrictions, free online exercises may be used. If no space is available for activities that require face-to-face interaction, web-based video systems (eg, Zoom) or outdoor space may be an option (weather permitting). Finally, consistency is key; therefore, it would be ideal to integrate these topics across all four years of the PharmD curriculum.

SUMMARY

The examples provided in this review suggest that methods and strategies for teaching HDCC often incorporate active, complex situational problem-solving that allows learners to confront potentially biased personal perceptions that can compromise optimal delivery of patient care. Practice-based activities can be culturally enriching when opportunities are offered either locally or internationally and/or within the curriculum or contiguous to it. Conscious awareness of principles of culture and health should be emphasized and mapped to learning outcomes. Reinforcement of concepts through post-activity debrief and written reflection may increase the impact of HDCC teachings. To the extent possible, pharmacy programs should devise a format wherein HDCC concepts are scaffolded throughout all years of the curriculum and co-curriculum.

When considering the development of HDCC learning activities, resource capacity should be carefully evaluated and the program scaled accordingly to ensure quality execution. For this reason, institutions should select where HDCC training is best-suited, bearing in mind that the curricular (including the didactic and experiential portions) and the co-curricular portions are equally important to students’ development. No matter which format is selected, certain key principles should be emphasized, including an awareness that erudition of HDCC is a lifelong process.

ACKNOWLEDGMENTS

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