

# Integration of Latin American Complementary and Alternative Medicine Topics Into a Doctor of Pharmacy Curriculum and Survey of Student Attitudes and Behaviors

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**ABSTRACT:** One in 3 adults report using complementary and alternative medicine (CAM) and as many as 7 in 10 Hispanic patients report CAM use. Pharmacists often encounter patients who use CAM products and therefore college of pharmacy curricular standards require both CAM and cultural competence training; however, there is little guidance for colleges on how to best deliver this material. In Fall 2017, Larkin University College of Pharmacy implemented a curricular change wherein first professional (P1) year pharmacy students selected, researched, and presented on a CAM product from Latin America. Pre-post surveys were administered to the students to measure their attitudes and behaviors toward CAM before and after completing their project. Survey results showed that student attitudes and behaviors toward CAM were largely unchanged; however, post-survey results showed that students agreed that they knew where to search for Latin American CAM information ( $P < 0.05$ ). Integration of Latin American CAM topics was successfully implemented in the P1 year of a Doctor of Pharmacy degree curriculum to foster cultural competence.

**KEYWORDS:** pharmacy education, pharmacy student, Latin America, complementary therapies, cultural competency, curriculum

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## Background

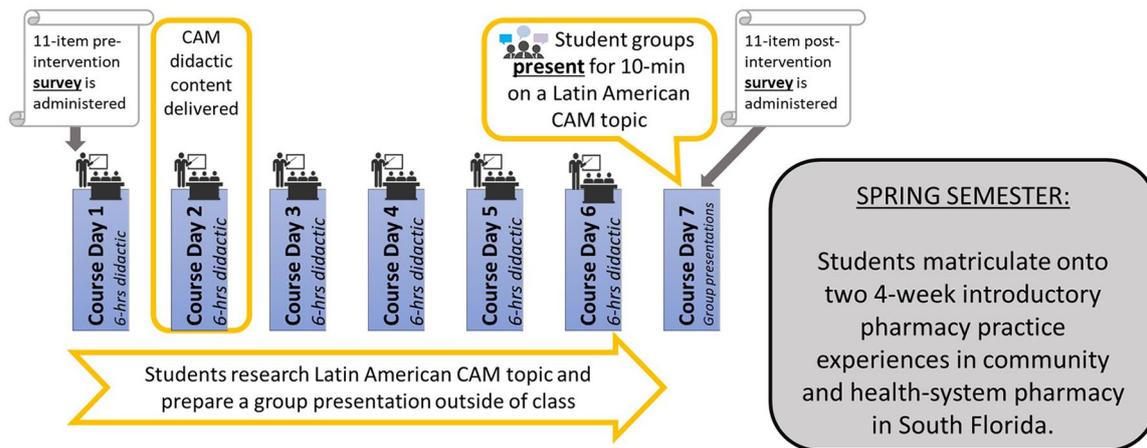
Complementary and alternative medicines (CAM) include unconventional medical practices, such as natural products or homeopathy, that are commonly used in tandem with conventional medical practices, such as medications or surgery.<sup>1</sup> More than 1 in 3 adult patients report using CAM.<sup>1</sup> The most common reasons that patients use CAM are to prevent illness, improve wellness, treat pain, or supplement conventional medicine.<sup>2</sup> Notably, CAM is well embedded into many Hispanic cultures compared with non-Hispanic white patients.<sup>3,4</sup> As many as 7 in 10 Hispanic patients report using natural products.<sup>4,5</sup> Differences in health care sources such as this are omnipresent in the United States and thus there is a necessity for health care professionals to embody behaviors, display attitudes, and develop practices that facilitate cultural competence. The National Prevention Information Network defines cultural competence as an integrative process which includes groups from diverse cultural settings who collectively develop standards, policies, practices, and attitudes with the aim of improving outcomes.<sup>6</sup> As a result, health professions education standards recommend cultural competence as components within their curricula.<sup>7–10</sup>

Pharmacists commonly encounter patients using CAM and the pharmacy profession is ideally placed to provide corresponding therapeutic interventions and education. Community

pharmacists are often charged with providing education or evaluating drug-herb interactions. Research in pharmacy education supports classroom-based innovations delivering CAM material.<sup>11–13</sup> However, there is a lack of published data that evaluate Doctor of Pharmacy students' training and competencies as they relate to regional and cultural CAM. Curricular standards and guidelines from the American Associations of Colleges of Pharmacy support cultural competency and CAM training for Doctor of Pharmacy students, but provide little structure or consistency in how content should be delivered to learners.<sup>9,10</sup> The topics taught, methods used, and assessments administered related to CAM remain a challenge for college of pharmacy faculty.<sup>14</sup>

CAM is well integrated into Caribbean, Central, and South American cultures; this region is collectively deemed as Latin America. There is a large contingency of Latin American populations in South Florida, especially Miami. Approximately 63% of the student body at Larkin University College of Pharmacy (LUCOP) identifies as either Hispanic or black. A consistent vision for LUCOP is to adequately prepare graduates for pharmacy practice in the greater South Florida community. It is essential for the students in the program to take active roles in understanding, assessing, and recommending CAM to patients throughout this community. Hence, there is a need for student pharmacists at LUCOP to both learn about





**Figure 1.** Timeline of the project and subsequent experiential education. CAM indicates complementary and alternative medicine.

and self-assess their attitudes and behaviors toward Latin American cultural competency.

The primary goal of this study is to determine whether there is a change in cultural competency elements of first-year pharmacy student attitudes and behaviors, measured via survey, before and after they complete research and a presentation on a selected natural product that is used in Latin American culture.

## Description of Activity

### Survey selection

There are several validated surveys that aim to determine students' attitudes toward and knowledge of CAM.<sup>12,13,15-22</sup> The study team reviewed the various surveys and selected the tool published by Saha and colleagues.<sup>15</sup> This survey was selected because it was concise and more suitable for pharmacy students in the first professional (P1) year of a Doctor of Pharmacy degree curriculum. The tool used questions with dichotomous responses, such as yes/no or agree/disagree, on various domains including CAM knowledge, self-practice, information retrieval, barriers, and awareness and perceptions.<sup>15</sup>

### Activity description

Students enrolled in a P1 year nonprescription medication course at LUCOP during the Fall 2017 semester were required to identify a CAM natural product from Latin America, prepare a 10-minute presentation, and present it to faculty and students. The Doctor of Pharmacy curriculum at LUCOP is predominantly delivered in a block system. Herein, almost each course is administered over a 2-week period including seven 6-hour course days that blends didactic lectures and team-based learning activities. The final grade in the course is based on students' performance on a summative assessment (eg, a 50-item multiple choice examination) at the conclusion of the 2-week block. Formative assessments, such as the Latin American CAM presentations, are used throughout the block but are not counted toward the final course grade. The purpose of formative assessments is to provide learners with timely

feedback prior to high-stakes exams.<sup>23</sup> The timeline in which the CAM didactic lectures and student presentations were administered is depicted in Figure 1.

Prior to the course, students were placed into a learning group which would serve as their unit for team-based learning throughout the didactic curriculum. Each learning group selected a CAM natural product and submitted it to the course director for approval. The herbal products, Latin American regions, and common uses are listed in the Appendix in Supplemental Table 1. Students used databases, such as LexiComp Natural Products, Natural Medicines, and the National Center for Complementary and Integrative Health, to research their herbal product.

## Outcome of Activity

### Methods

The survey was administered online using the anonymous survey function within Canvas Learning Management System (Instructure Inc., Salt Lake City, UT). Following administration of the pre-post survey, the data were transcribed to Microsoft Excel (Microsoft Corporation, Redmond, WA) and subsequently analyzed in Minitab (Minitab LLC., State College, PA). The Wilcoxon signed-rank nonparametric test was used to analyze the categorical scaled survey responses. This article was prepared in accordance with the Standards for Reporting of Qualitative Research.<sup>24</sup> This research was institutional review board approved.

### Results

Pre-post survey results are presented in Table 1. Eighty students were enrolled in the course and eligible to complete the pre-post survey. Fifty-four students completed the pre-survey and 47 students completed the post-survey which yielded 67.5% and 58.8% response rates, respectively. Student attitudes and behaviors toward CAM remained relatively unchanged before and after preparing and presenting their Latin American CAM presentations; however, post-survey results demonstrated that

**Table 1.** Latin American complementary and alternative medicine attitudes and behaviors pre-post survey results.

	PRE-SURVEY (N=54)	POST-SURVEY (N=47)	P VALUE
There are diseases that I would recommend herbal or homeopathic medicines to my patients.	3.0	3.0	NSS
There are diseases that I would recommend herbal or homeopathic medicines to my family.	3.0	3.0	NSS
I know where to look to gather information regarding herbal or homeopathic medicines.	2.5	3.0	<0.05
Herbal or homeopathic medicines are components of a patient's medical management.	3.0	3.0	NSS
Herbal or homeopathic medicines with an insubstantial amount of medical evidence may be valuable to pharmacists.	2.5	2.5	NSS
The combination of conventional medicine and herbal or homeopathic medicines is more effective than either component alone.	3.0	2.5	NSS
Herbal or homeopathic medicines contain beliefs and practices that add value to conventional medicine.	3.0	3.0	NSS
Pharmacists should refer patients to herbal or homeopathic medicine providers (homeopaths or naturopaths) if a disease is inadequately managed by conventional medicine.	3.0	3.0	NSS

Abbreviation: NSS, not statistically significant.

Responses were collected using a categorical scale where 4=strongly agree, 3=agree, 2=disagree, and 1=strongly disagree. Data are reported as medians.

students agreed that they knew where to search for more information on Latin American CAM.

## Discussion

Cultural competency and CAM knowledge are essential components of health care students' education.<sup>7-10</sup> Pharmacists are accessible and trusted health care professionals who must not only display cultural competence but also possess a strong understanding of CAM practices. There are more than 130 Doctor of Pharmacy degree programs throughout the United States and therefore students must be prepared to practice regionally inclusive cultural competence and provide accurate information on local CAM natural products.

Our survey findings indicate that changes in attitudes and behaviors surrounding CAM use or recommendations were not changed by the course or student presentations. Although 9 of 42 lecture hours were dedicated to CAM material, most course content focused on conventional medications to treat self-limiting diseases (ie, acetaminophen for fever, antihistamines for allergies, corticosteroids for dermatitis, etc). It is plausible that the students dedicated a majority of their time and efforts toward learning those conventional topics as they occupied a majority of the course content and examination questions. Future research would help identify if additional didactic and experiential exposure throughout the curriculum, in addition to this activity, would have a stronger influence on cultural competency, attitudes, and behaviors.

Previous literature describing the relationship between CAM use and cultural competency has largely been conducted in the Southwest United States and focused on Mexican and Native American CAM use.<sup>3-5,25,26</sup> In contrast, our report

incorporates the collective Latin American region to include practices and beliefs that may be used not only in Central American culture but also in South American and Caribbean cultures. Our report also surveyed students, more than 60% of whom identify as Hispanic or black, to assess their attitudes and beliefs toward CAM, whereas previous research has described the types of CAM practices used by patients.<sup>5,25,26</sup>

Our results show that student attitudes and behaviors were relatively unchanged; however, it is important to note that students agreed that their knowledge of resources for Latin American CAM increased after delivering their presentations. In the semester following this course, the students matriculate onto 8 weeks of introductory experiential training. Herein, students observe pharmacists and interact with patients in community and health-system settings throughout South Florida. Students' self-reported increased confidence in searching for CAM information could influence student confidence in either communicating with Latin American patients who use CAM or learning from preceptors who ask students to answer CAM-related questions.

This research is not without limitations. Although the study investigators felt that the tool published by Saha and colleagues was appropriate for P1 students, more comprehensive surveys may ascertain additional information about students' attitudes and behaviors toward CAM.<sup>18,22</sup> Results from this project may be limited to the narrow scope and short duration of this 2-week block course which focused primarily on nonprescription medications. Cultural competency concepts were concurrently covered in a longitudinal course in the same semester of the P1 year. It is unclear whether the Latin American CAM project predominantly influenced student attitudes and

behaviors toward cultural competence in other courses and vice versa. A total of 50% to 60% of eligible students completed the survey, whereas response rates greater than 80% may more accurately assess attitudes and behaviors.<sup>27</sup>

### Summary

Integration of Latin American CAM topics was successfully implemented in the P1 year of a Doctor of Pharmacy degree curriculum to foster cultural competence.

### Authors' Note

Preliminary results from this project were presented as a 10-minute microsession at the American Association of Colleges of Pharmacy 2019 Interim Meeting in Tampa, FL.

### Author Contributions

PB led the study team from inception, contributing to each phase of the project. AM, JP, and NKC participated on the study team from inception, contributing to each phase of the project. At the time of activity inception and delivery, NKC was an Assistant Professor at Larkin University College of Pharmacy.

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### Supplemental Material

Supplemental material for this article is available online.

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