

Research Article

An investigation of pharmacy students' perceptions of their oral health knowledge and education: A preliminary study

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Abstract

Purpose: To investigate the California pharmacy students' perception of their oral health education and knowledge.

Methods: In Spring 2015, we e-mailed experiential directors from all the eight accredited pharmacy schools in California requesting them to forward the survey cover letter, including a link to a 16-item online survey, to all their senior students. The e-mail also explained the purpose of the study. The survey measured students' opinions on oral health and its interface with general health and students' demographic characteristics.

Results: A total of 58 responses were received from students from five schools. Many ($n = 25$; 44%) students reported that oral health was not taught in any course of their pharmacy curriculum. Most ($n = 43$; 75.4%) students believed there was limited collaboration between primary care providers in managing patients' oral and overall health concerns. Most students ($n = 51$; 89.5%) indicated that "limited time is devoted to oral health topics in pharmacy education" and that they needed more education on oral health ($n = 41$, 73.2%).

Conclusions: Many students have limited knowledge and education on oral health and indicated that they needed more education on oral health topics. Further research using larger and more representative samples is needed.

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Keywords: Oral health; Oral-systemic link; Pharmacy education; Pharmacy students

Introduction

Oral health is integral to and inseparable from one's overall health. To maintain health, it is important for people to maintain oral health. Many conditions such as diabetes mellitus,^{1,2} cardiovascular disease,^{3,4} HIV/AIDS,⁵ cancer, osteoporosis,⁴ and Sjogren's syndrome, among others^{6,7} have been linked to chronic oral diseases. Many medications that are commonly used in treating systemic diseases and conditions can directly or indirectly affect patients' oral health.⁸

Pharmacists play an important role in ensuring appropriate use of medications many of which have oral side effects such as xerostomia, dysgeusia, and stomatitis. This is critically important, as many medical professionals do not recognize the link between oral health and overall health. Pharmacists can educate their patients about the potential oral side effects of their medications as well as work with dentists to improve oral health as part of whole-person care.

In order to be able to provide optimal whole-person care pharmacists should be ready to offer consultation for patients regarding oral health and medications that may impact oral health. Pharmacists can play an important role in enhancing oral health if they are appropriately educated or trained on oral health. However, the US Surgeon General report noted that "Too little time is devoted to oral health and disease topics in the education of non-dental health professionals."⁸ A previous preliminary study investigated the inclusion of

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oral-systemic health education in pre-doctoral/undergraduate curricula of pharmacy, nursing, and medical schools around the world (e.g., in Canada, the United States, Europe, Asia, Australia, and New Zealand) by surveying pharmacy school administrators responsible for curricula.⁹ Most of respondents mentioned that there was limited or no requirement to include oral health education within their training curricula. Most respondents considered that their current curricula inadequately covered oral-systemic health topics.⁹ However, little is known about how and the extent to which pharmacy schools in California and the rest of the United States prepare future pharmacists to prevent and address their patients' oral health concerns.

Study aims and objectives

The aim of the study is to investigate the California pharmacy students' perception of their oral health education and knowledge. The specific objectives of the study were to

- (1) determine pharmacy students' opinions of their oral health education in their Doctor of Pharmacy program,
- (2) determine pharmacy students' awareness and perception of the interface between oral and overall health,
- (3) determine pharmacy students' knowledge about dental diseases and the effects of medications on the oral cavity, and
- (4) determine pharmacy students' readiness and competence to offer consultation regarding oral health and medications that have oral health side effects.

Methods

The protocol for this cross-sectional study was approved by the Loma Linda University Health Research Ethics Board. The survey was developed by the authors based on current pharmacy, dental, and medical literature. The content and validity of the survey was assessed by pharmacists and pharmacy faculty at Loma Linda University School of Pharmacy. Before distribution, the survey was pre-tested with ten fourth-year pharmacy students from the Loma Linda University School of Pharmacy for completeness.

The survey was divided into three sections with a total of 16 items measuring students' opinions on oral health and its interface with general health as well as students' personal and demographic characteristics (e.g., age, gender, and current academic year). To measure their opinions, students were asked to indicate their agreement or disagreement with given statements using a scale ranging from one (strongly disagree) to five (strongly agree) and three being neither agree nor disagree.

The study was targeted at students in their final year of pharmacy school from all the eight pharmacy schools in the state of California that were accredited by the American Council on Pharmaceutical Education (ACPE). At seven schools, these were fourth-year students and from one school they were third-year students. In Spring 2015, we e-mailed experiential education department directors from all the eight accredited pharmacy schools in California requesting that they forward the survey cover letter, including a link to an online survey, to all their final year students. Names and e-mail addresses of the experiential directors were obtained from the relevant university websites. The survey was administered using Qualtrics[®] software.

The e-mail also explained the purpose of the study. Students were informed that completing the survey indicated their consent to participate in the study. It took students about ten minutes to complete the survey. Data collection lasted six weeks. A reminder email with the link to the questionnaire was sent out three weeks after the first e-mail.

Data analysis

Descriptive statistics were computed for all study variables. All the data were uploaded to Statistical Package for Social Sciences[®] (SPSS) software for analysis. A $p \leq 0.05$ was considered statistically significant.

Results

A total of 58 students from five pharmacy schools completed the survey. Most students were female ($n = 33$, 62.3%), Asian American/Pacific Islander ($n = 34$, 65.4%) and in their fourth year ($n = 43$, 74.1%). There were no respondents from the University of California at San Francisco, Touro University, or California Northstate University schools of pharmacy (Table 1).

Students' opinions on oral health issues

Totally, 90% of students agreed/strongly agreed that "Limited time is devoted to oral health topics in pharmacy education" ($n = 51$, 89.5%) and "The dental discipline remains relatively segregated from other health care disciplines" ($n = 47$, 82.5%) (Table 2). Furthermore, most students ($n = 41$, 73.2%) agreed/strongly agreed with the statement "I need more education and training on oral health (e.g., oral side effects of medications)" (Table 2). Only five (8.9%) students agreed/strongly agreed with the statement "I have adequate knowledge of periodontal diseases and their associations with systemic diseases. Overall, I have had good oral health education in my pharmacy curriculum." The five students who agreed with the later statement were from Loma Linda University ($n = 3$), Western University of Health Sciences ($n = 1$), and the University of Southern California ($n = 1$).

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