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Research

Specialty education for student pharmacists and PharmD graduates in U.S. colleges and schools of pharmacy

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Abstract

Objective: To discuss the current status of dual degree and graduate certification programs offered by U.S. colleges and schools of pharmacy.

Methods: The websites of individual pharmacy colleges and schools were accessed, pertinent sections on dual degree and graduate certificate programs were identified, retrieved, and analyzed.

Results: A total of 63 colleges or schools of pharmacy are offering 125 dual degree programs for 2014–2015 academic year. Master of Business Administration (MBA) constitutes 37% of the total dual degrees followed by Doctor of Philosophy (PhD) (23%), Master of Public Health (MPH) (18%), Master of Science (MS) degrees in different areas of specialization (18%), and others (4.0%). A total of 30 graduate certificate programs which include regulatory affairs, clinical research design, patient safety, global health, etc. are offered by 12 colleges and schools. Admission requirements and curricular framework of these specialty programs vary by program types and institutions.

Conclusion: Dual degrees and graduate certification programs with a wide array of specialties are emerging, which allow PharmD students/graduates to acquire new competencies and expertise along with PharmD degree. While there are positive outcomes documented for some of the programs, further study is required to evaluate the impact of these programs on students' academic and career advancements.

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Introduction

The competency framework of U.S. entry-level Doctor of Pharmacy (PharmD) education integrates knowledge, skills, and values required to achieve expected educational outcomes in four major domains: (1) patient-centered care,

(2) health system management, (3) health and wellness, and (4) promotion of population-based care.¹ In this context, the accreditation standards of Accreditation Council for Pharmacy Education (ACPE),¹ the educational outcomes of the American Association of Colleges of Pharmacy (AACP) Center for the Advancement of Pharmacy Education (CAPE),² and North American Pharmacist Licensure Examination (NAPLEX) blueprint for PharmD education³ align well with each other to address contemporary practice of pharmacy. With the evolving nature of

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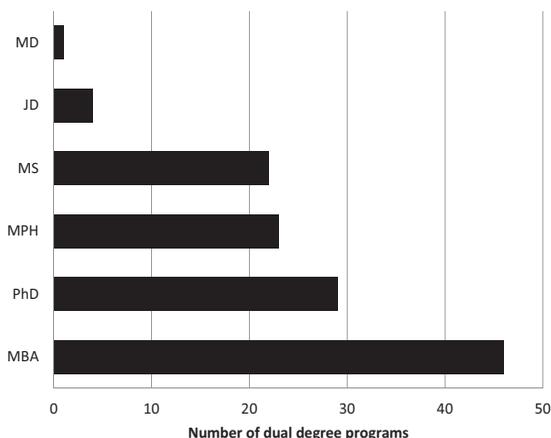


Fig. Dual degree programs in U.S. pharmacy schools/colleges. (MBA, Master of Business Administration; PhD, Doctor of Philosophy; MPH, Master of Public Health; MS, Master of Science; JD, Juris Doctor; and MD, Doctor of Medicine).

the pharmacy profession, the roles of pharmacists are expanding toward achieving a model of care determined by the broad spectrum of patient care and societal needs.^{4,5}

In recent years, proliferation of new pharmacy programs has caused a surplus of pharmacists in certain regions of the country.⁶ Knapp and Cultice⁷ estimated that by 2020, there will be a 29% increase in the pharmacy workforce from 2007. With the current workforce environment, attaining full-time employment will continue to be more competitive for PharmD graduates. U.S. colleges and schools of pharmacy are offering alternative educational pathways including dual degrees and graduate certification programs to expand career options for students in a rapidly changing health care field. In 2009, AACP Research and Graduate Affairs Committee looked into the structures and roles of dual degree programs offered by U.S. colleges and schools of pharmacy.⁸ Colleges and schools of pharmacy have introduced dual or joint degrees such as PharmD/MBA, PharmD/MPH, and PharmD/PhD, PharmD/MS in geriatrics, PharmD/MS in health informatics, etc. with the goal of enhancing career opportunities as well as allowing specialization in an area of interest. The number of colleges and schools offering PharmD/MBA programs increased to 36 in 2009–2010 from 18 in 2001–2002.⁸ The offerings of PharmD/PhD dual degree followed same trend over the last decade.⁸ The prevalence and characteristics of PharmD/MPH and PharmD/PhD programs have been reported.^{9,10} Previously, the PharmD/MBA, PharmD/MPA, and PharmD/MS programs offered by a school/college of pharmacy have been described.¹¹

The aim of this study is to describe the current status of dual degree and graduate certificates programs offered by U.S. colleges and schools of pharmacy and their impact on students' career pathways.

Methods

A thorough search of websites of 132 U.S. pharmacy colleges and schools as described by other researchers^{12,13} was conducted to identify information regarding dual degrees and graduate certificate programs available for PharmD students and graduates. The search was conducted in November 2013 through June 2014 by the principal investigator. Two approaches were used for searching the websites of individual colleges or schools of pharmacy. The first approach was to search pages within the website related to PharmD curriculum, current students, and prospective students. Then, in some cases, intranet search of the websites was required to obtain information pertaining to dual degrees or graduate certificate programs. Key terms used in the search process included “dual degrees,” “joint degrees,” “combined degrees,” and “graduate certificates.” The AACP Pharmacy School Admission Requirements (PSAR2013-2014)¹⁴ were also accessed and reviewed. In addition, searches of PubMed (<http://www.pubmed.gov>), Google search engine (<http://www.google.com/>), Google Scholar (<http://scholar.google.com/>), and the websites of the *American Journal of Pharmaceutical Education* were conducted to identify any relevant published studies. Document analysis and data extraction from electronic documents were performed utilizing a systematic approach.¹⁵ All data were recorded in Microsoft Excel[®] worksheets. This research was granted exempt status by the Institutional Review Board of West Coast University.

Results

Dual degrees

A total of 63 out of 132 U.S. pharmacy colleges and schools are offering 125 dual degree programs (Fig.). The predominant dual degree is PharmD/MBA ($n = 46$; 37%) followed by PharmD/PhD ($n = 29$; 23%), PharmD/MPH ($n = 23$; 18%), and PharmD/MS ($n = 22$; 18%). Table 1 lists the diverse specific areas of PharmD/MS programs offered by 11 colleges and schools. There are four colleges and schools offering PharmD/JD and one program offering PharmD/MD. There are seven accelerated PharmD programs (block or quarter system) offering dual degrees. Each dual degree program is focused with achieving competencies as required by the respective accreditation standards for each degree component.

Admission to the non-pharmacy component of dual degree programs occur after a student has been admitted into the PharmD program and has satisfactorily completed 2–3 semesters of the PharmD program. In most instances, the requirement of baccalaureate degree appears to be waived for dual degree programs as completing the first or second year of PharmD credits can be considered equivalent to a baccalaureate degree. However, there are a few exceptions. Admission into the PharmD/MBA dual degree programs at the University of Southern

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