ROLE OF PRACTICAL TRAINING IN MODERN PHARMACEUTICAL EDUCATION: LIRETATURE REVIEW

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Abstract

Experiential training of pharmacists is a critical component of pharmacy education, which role in university curriculum is constantly growing. This study is a literature review of international experience of organization of experiential training in pharmacy education.
Rolul instruirii practice în învățământul farmaceutic contemporan: reviul literaturii

Rezumat

Instruirea practică a farmaciștilor este o componentă critică a învățământului farmaceutic, ponderea căreia în curicula universitară este în continuă creștere. Studiu dat reprezintă un reviu al experienței internaționale privind organizarea stagiilor practice în învățământul farmaceutic.
Goal of this study is literature review regarding role of practical training in pharmacy education at the international level.

Data sources

Bibliographical data search was made within PubMed and PubMed Central. As a search criteria the following have been used: publications between 2008-2013, key words: *experiential pharmacy education, introductory pharmacy practice, advanced pharmacy practice*

Inclusion criteria

Papers published in English were retrieved and reviewed regarding the management of experiential pharmacy education. 47 studies published full-text have been included in the review.

Synthesis of data

Experiential training is a critical component of pharmacy education. At the turn of the 20th century there was no required educational degree or experiential training for pharmacists prior to licensure, although many pharmacists chose to complete apprenticeships. Beginning with New York in 1910, the states slowly began requiring pharmacy degrees that ranged from 2 to 6 years.1 In 2000, all first professional pharmacy degrees became the 6-year doctor of pharmacy (PharmD) degree. The experiential component of education has also undergone changes. It did not become an academic requirement until the Accreditation Council for Pharmacy Education (ACPE) standards of 1974. [2] Before then, few schools had implemented pharmacy practice experiences as a part of their curriculums; instead, students had to obtain a certain number of internship hours prior to licensure. The quality of these experiences was not primarily regulated by colleges or schools of pharmacy; instead they were under the jurisdiction of organizations (eg, American Society of Health-System Pharmacists) and/or state boards of pharmacy. With the 1974 standards, these experiences became a greater part of pharmacy academic programs. The 2000 ACPE Standards stated that advanced pharmacy practice experiences (APPEs) "should ordinarily be equivalent to one academic year" and that introductory pharmacy practice experiences (IPPEs) "should be offered during early sequencing of the curriculum." In 2007, the Standards specified that the "IPPEs must make up not less than 5% of curricular length (300 hours) and APPEs not less than 25% of the curricular length (1440 hours)." [3]

Since the 1970s, ACPE has continued to place more responsibility on institutions to develop and monitor experiential education. Internships and externships still contribute to the educational growth of students, but have become increasingly less important as a requirement for board licensure. With more responsibility on academic programs to regulate both quantity and quality of these experiences, experiential programs offices have become more important. Significant time and resources are needed to successfully deliver these programs which now constitute greater than one-third of most curriculums. Although basic requirements are the same, each institution has implemented its own strategies to meet ACPE standards. Unfortunately, sharing of these strategies has been somewhat limited.

Pharmacy preceptors are teachers who facilitate practice-based learning for student pharmacists. With preceptors delivering an estimated 30% of the doctor of pharmacy (PharmD) curriculum, their training and development is an essential component of a successful experiential education program. The Accreditation Council for Pharmacy Education (ACPE) requires orientation, ongoing training, and development of preceptors.

Preceptors are "adult learners" and have many different preferred learning styles. Though different theories and models of learning styles have evolved over the years, the fundamental tenet of most is the idea that individuals differ in their approach to learning tasks and their responses to those tasks. Therefore, successful preceptor development and training must include a constellation of educational activities and include resources to meet the diverse needs

of all preceptors as part of their continuing professional development. For example, one preceptor may prefer an online program to view at his or her convenience, while another preceptor may prefer a live program that provides opportunities for interaction with the speaker and other preceptors. Preceptors practice in many different types of pharmacy settings and therefore may have different learning needs. For example, a preceptor in a community setting may need to learn how to integrate students into medication therapy management practices while another preceptor at an institutional practice site may need to learn how to start a journal club. A preceptor needs a unique set of skills and individualized education in different areas within this skill set. For example, one preceptor may need to learn about cultural competence, while another preceptor may need to learn about giving appropriate feedback or integrating students into clinical activities.

Preceptor development is cited in the literature as being an important component of pharmacy students' clinical learning. In 2002, even before required by ACPE, 90% of colleges and schools of pharmacy offered programs for preceptor development. Assemi and colleagues reported that preceptors who had received training were more confident than preceptors who had not received training in clarifying expectations, evaluating a student's knowledge, and fostering critical thinking skills. However, there are no data to support whether this training and development would actually improve performance as measured by students' rating on preceptor evaluations.

Preceptor development is critical to all institutions around the country. Vos and colleagues outline a comprehensive development program that could be used to provide initial and ongoing training to preceptors. Their program includes a combination of live sessions, online presentations, newsletters, and onsite (face-to-face) visits. Although online programming was favored, the authors propose developing a diversity of programs to meet preceptor learning needs.

Related to preceptor training, Burgett and colleagues investigated the perception of onsite visits as a component of their quality assurance program. They surveyed 235 volunteer preceptors, the majority of whom responded favorably to site visits and recommended they be performed monthly rather than every other month or once a year. Considering colleges and schools face challenges in finding time and/or staff members to do these visits, performing them once a month may seem daunting. The manuscript will help stimulate further discussion on the benefits and frequency by which onsite visits should occur.

Scheduling of IPPEs and APPEs is a major responsibility of experiential administrators. Schedules distributed to students and preceptors at the start of a year inevitably undergo multiple changes. Modifications can be initiated by preceptor, student, site, and/or school. Duke and colleagues performed a study to determine the annual number of APPE changes that were made to student schedules at 5 institutions over a single academic year. The number of changes ranged from 14%-53% and most were initiated by site and/or preceptor (57%). Institutions estimated between 50 to 370 hours were spent dealing with schedule modifications throughout the year. Developing policies and procedures to limit the number of changes could prove beneficial to experiential offices.

Accrediting agencies at the national, regional, and professional levels have stressed the assessment of educational outcomes for more than a decade to improve the evaluation of student learning.[4] This shift from traditional process-oriented to outcomes-oriented accreditation implies that colleges and schools must now provide evidence that learning outcomes are achieved, rather than simply have an assessment process. Even with this shift, the nature of accreditation may still result in assessment of student learning becoming another set of activities to accomplish rather than an actual demonstration of learning outcomes. A variety of approaches and tools for evaluating student learning have emerged with the advent of accreditation based outcomes assessment. Student portfolios are one such approach, as implied by the Accreditation Council for Pharmacy Education (ACPE) Standards and Guidelines 2007: "*In general, the college or school's evaluation of student learning should . . . demonstrate and document in student portfolios that graduates have attained the desired competencies, when measured in a variety of health care settings.*" [5]

A difficulty in requiring student portfolios for assessment is the lack of consistency within the existing literature and research of approaches to summative assessment of competency, and the definition, role, and components of portfolio assessment. Also, legal and psychometric issues remain to be resolved in using student portfolios in summative assessment. Thus, issues and concerns about portfolio use remain under investigation. Traditionally, portfolios have been used in higher education and defined as: "... a purposeful collection of student work that exhibits the student's efforts, progress, and achievement in one or more areas. The collection must include student participation in selecting contents, the criteria for selection, the criteria for judging merit and evidence of self-reflection."[10]. While relatively new to pharmacy education, the emerging application of portfolios for assessment purposes appears to focus on the more constructivist paradigm emphasizing self-reflection, which is prevalent in the nursing literature [11]: "*Reflective portfolios are a collection of evidence that through critical reflection on its contents demonstrate achievement as well as personal and professional development through a critical analysis and reflection of its contents.*" [12]

Both definitions highlight the paradigmatic conflict between constructivist and positivist portfolios that was identified over a decade ago.[13] Whereas a positivist portfolio assesses learning outcomes defined externally (eg, accreditation standards, institutional mission/goals)

that are constant across users, contexts, and purposes, the constructivist portfolio is more a learning tool in which the student constructs meaning, and that will vary by individuals, time, and purpose. Thus, the difficulty is in differentiating and choosing between the constructivist student-composed and owned portfolio approach, which is supported by McMullan and colleagues [11] and Plaza and colleagues, [12] and a positivist portfolio approach used by faculty members as an assessment management system and receptacle for student work to document evidence of students' progress toward meeting externally developed competency standards. The choice will result in the development of entirely different portfolio activities: the positivist approach places a premium on the selection of items that reflect external standards and interests, whereas the constructivist approach emphasizes the selection of items that the student believes reflect learning. [13] Further confusing the issue is the current trend toward online assessment management systems (a positivist approach) that are being called "electronic portfolios."

New systems are continually developed and marketed to educational programs and frequently offer numerical scoring of artifacts against a rubric with statistical analyses for aggregating collected data. Consequently, such electronic assessment management systems may be changing the more traditional (albeit ambiguous at best) definition of student portfolios.

Conclusions

Experiential training is a major component of university curriculum. This domain is in the focus of pharmaceutical education accreditation. Pharmacy schools have to develop and implement different introductory and advanced rotations, emphasizing the quality of students' experience. To fulfill these goal educators should focus on new collaboration opportunities and ideas sharing among schools.

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