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Research

# Student insight on the value of performing medication histories independently in a live outpatient setting

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## Abstract

**Objective:** The purpose of the study was to gather insight on how P4 students perceive the benefits of a medication history-taking activity.

**Design:** Students were required to complete chart reviews, reconcile medications, and identify drug-related problems prior to performing live medication histories with patients. Following completion of this assignment, students were asked to write a reflection about the overall process, what they learned, and what surprises they experienced. Reflections were analyzed using a basic qualitative approach.

**Assessment:** A total of 24 reflection essays were analyzed. Five themes emerged. The activity increased student confidence, taught the meaning of interprofessional work, raised awareness of pharmacist impact, improved understanding of individualized care, and helped recognize that foundational knowledge is necessary to function in practice.

**Conclusions:** Performing live medication histories helped students refine skills necessary to function as a pharmacist and fostered the evolution of their views and attitudes of the pharmacy profession.

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**Keywords:** Medication history taking; Active learning; Interprofessional; Qualitative; Student pharmacist

## Introduction

Pharmacy is a health field continuously focused on safe and effective medication use. In order for pharmacists to determine whether medications are safe and effective, they must be able to communicate with patients and gather the appropriate information. One particular skill of major importance for a pharmacist is medication history taking. In addition, pharmacists must be able to identify and resolve drug-related problems (DRPs) after obtaining a medication history or when

reviewing patient charts to optimize medication outcomes. In order for pharmacists to be proficient with this skill, they must have appropriate training in multidisciplinary, interprofessional health care settings as students, and medication history-taking skills must be developed while still in training.

The Accreditation Council for Pharmacy Education (ACPE) standards and guidelines for the professional degree program in pharmacy define goals of the pharmacy curriculum for all colleges of pharmacy. The ACPE states that a college or school's evaluation of student learning should use a variety of assessments and should follow a plan that documents how the learning experiences are appropriate for the development of competencies such as medication history taking.<sup>1</sup> In terms of curriculum design, tailoring an advanced pharmacy practice experience (APPE) is one

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method of focusing on skill development. In order to maximize active learning in the experiential setting, students must actively engage in processing these experiences in order for them to evolve into new knowledge, skills, attitudes, and behaviors.<sup>2</sup>

Several studies have described various settings in which medication history-taking skills are being developed,<sup>3–5</sup> and several others described quantitative evidence to support effectiveness of pharmacy students performing medication histories in simulation and live environments.<sup>6–13</sup> These quantitative studies reveal the perception of the preceptors and faculty, and acknowledge that the described activity was effective for the patient, clinic, or medication outcomes. Unfortunately, these studies give little insight to whether the activity was effective for the student. Although the activity may have been valuable for the patient, the question of whether the activity was valuable for the student still remains unanswered.

One qualitative method used to determine whether students believe the purpose or outcome of medication history-taking activities is being achieved is through reflective essays. Reflection has been defined as a form of mental processing that is used to fulfill a purpose or to achieve some anticipated outcome.<sup>14</sup> Several medical programs have assessed the objectives of their experiential activities using reflections and qualitative analysis.<sup>15–18</sup> One study by Morello et al.<sup>19</sup> discovered that when pharmacy students attended a free student-run clinic for early experiential hours, they had a positive experience and were able to form a broader vision of how pharmacists can impact the community at lesser-known levels. The impact of this experience may not have been realized if a qualitative assessment was not conducted. To date, there is a small body of qualitative analyses that assess the student perspective in pharmacy education to evaluate specific activities.<sup>20–25</sup> Given that medication history taking and identifying and resolving drug-related problems is central to what pharmacists must be able to do, it is important to know whether APPE activities created to provide these learning opportunities are in fact meeting the intended goals through the perspective of the student. Therefore, the primary objective of the study was to gather insight on how fourth-year pharmacy students perceive the benefits of a medication history-taking activity. The secondary objective was to describe the development and implementation of a new live medication history-taking activity in a single clinical-based ambulatory care site.

## Design

### *The ambulatory care APPE*

The site is a disease state management clinic housed within the University of Oklahoma Family Medicine Center (FMC), an academic-based patient-centered medical home. This pharmacist-run clinic, Pharmacotherapy

Services, primarily provides patient care for patients on warfarin therapy or with diabetes. In 2012, the average number of patient visits per week was 110 for anticoagulation therapy and 50 for diabetes management. The clinic provides an Advanced Pharmacy Practice Experience (APPE) to fourth-year pharmacy students year round to help support this patient load while providing a valuable learning experience. Seven rotating pharmacy preceptors help run this clinic and provide teaching opportunities. Four to five fourth-year pharmacy students within the PharmD program were randomly selected and assigned to the site for an APPE lasting eight consecutive weeks. This resulted in 28 students assigned to the clinic during the 2012–2013 academic year. As of June 2011, in addition to their disease state management experience at the Pharmacotherapy Service, students also began to work directly with primary care physicians at other physician-run clinics within the same facility to perform medication histories integrated within usual care.

### *Site innovation*

During the first three to four weeks of the rotation, the students worked only in the Pharmacotherapy Service clinic to become better oriented to the system and flow of this clinic itself before expansion into the physician clinics for the new activity. During the remaining four to five weeks of the rotation, each pharmacy student was assigned to two to four half-day clinic sessions (four hours each) with one of five participating faculty physicians or one chief resident. The physicians' administrative assistants were contacted a few weeks prior to the start of the rotation to identify available clinic days for each physician to avoid conflicts with other medical, physician assistant, or nurse practitioner students who also rotate through the FMC. This allowed the physician to have only one learner per clinic session. Each student's sessions were no closer than one week apart.

Coordination of schedules with physician availability was performed by one preceptor. The time needed to schedule the medication history activity was approximately one to two hours every other month. Since the Pharmacotherapy Service is supported by seven faculty members, the review of the students preparatory work was divided among faculty as well as two post-graduate year-2 ambulatory care residents. Usually one preceptor was assigned to one student for the entire rotation for consistency purposes and so that progress of the student could be tracked. On average, the preceptors spent one hour reviewing the student's preparatory work for all patients prior to the first session. Subsequent reviews of student's preparatory work were less than one hour.

The students were oriented to this medication history process about two weeks into the rotation by one of the faculty pharmacists or pharmacy residents during a 30–60 minute session. The students were provided with chart

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