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Implementation of a skills practical to first-year pharmacy students

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ABSTRACT

Background and purpose: Objective structured clinical examinations (OSCEs) are being implemented in pharmacy schools across the country. As part of a new curriculum, a practical with an OSCE component was implemented for the first time at the West Virginia University School of Pharmacy.

Educational activity and setting: A practical with an OSCE component was developed for first-year professional pharmacy students in a foundational pharmacy skills course. The OSCE component assessed insulin and inhaler counseling and blood pressure skills. A written exam covered material from throughout the semester.

Findings: A total of 76 students completed the practical. The average grade was a 27.8 out of 30 points. A total of 62 faculty hours were needed for the implementation of this OSCE.

Discussion and summary: An OSCE that assessed a variety of foundational pharmacy skills was designed and implemented to first year pharmacy students using limited faculty time and resources.

Background and purpose

The West Virginia University (WVU) School of Pharmacy implemented a new curriculum starting in the fall semester of 2015. As part of the new curriculum, a course entitled “Foundational Pharmacy Skills” was developed to introduce basic pharmacy skills that first-year pharmacy students could build upon in the future years of the curriculum. Within the new course, a practical was developed to assess student learning at the end of the semester. A hands-on portion with similar structure to an objective structured clinical examination (OSCE) assessed blood pressure and counseling skills, while a separate written portion tested student knowledge on concepts learned throughout the semester. Such a practical format had never been conducted by the school to that point.

Pharmacy students are expected to exhibit good communication skills to provide effective patient care and to be able to implement patient care plans that involve advanced clinical skills. Standards 2016 from the Accreditation Council for Pharmacy Education (ACPE)[1] encourage the use of active learning activities that involve the application of knowledge and skills to help students advance in areas such as critical thinking and problem solving. The ACPE accreditation standards also emphasize the reinforcement and advancement of these essential skills throughout the curriculum. Therefore, it is imperative to determine whether students are competent at foundational communication and patient care skills early so that those skills can be further developed and advanced throughout the curriculum. Assessing these skills is somewhat difficult using traditional written examination methods commonly utilized to measure content knowledge in most doctor of pharmacy programs.[2] Many schools of pharmacy are now using various methods to assess these core abilities, including simulations and OSCEs.[2–7]

The OSCE was originally developed in the 1970s and was used to assess the practical skills of medicine and nursing students.[5] It is now considered a reliable and valid method of measuring clinical skills in multiple disciplines.[5] For these reasons, schools of

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pharmacy have been utilizing OSCEs in their curriculums for years in various capacities to assess students' communication skills and their ability to apply knowledge to practical situations. Written examinations can also be added to OSCE stations in order to provide a more comprehensive assessment of student knowledge and skills.[3,4] OSCEs can be developed in a variety of formats, including high stakes or low stakes, and may or may not include providing feedback to the students.[5–7] OSCEs can also be conducted at various points throughout the curriculum, and occur as a standalone activity that students are required to pass (high-stakes) or be embedded into a course to contribute to a certain percentage of a student's course grade.[7] The number of stations that are included in an OSCE also varies. While the inclusion of an appropriate number of stations is important to consider to reduce sampling error, and 12–16 stations are often utilized in the US and Canada for medical and pharmacy licensing purposes, little information is available regarding the minimum number of stations required for a low-stakes OSCE.[5,7]

Another advantage of utilizing OSCEs is that they provide an ideal opportunity to give students feedback on their performance of clinical skills. Feedback is an integral part of education, and is necessary for students to improve as clinicians and learners.[8] In order to be effective, feedback should be targeted, specific and timely.[9] There are several ways to provide feedback to a student about his/her performance in an OSCE. OSCE stations can be developed so that the facilitator can provide immediate feedback to the student after they perform the intended skill, but before the student progresses to the next station. Students can also be provided with feedback at the beginning of the following station. Though both of these feedback techniques would be beneficial, as they would be targeted, specific and timely, time restraints and testing policies often do not allow for this type of feedback during an OSCE.[8] Another potential limitation of providing feedback during an OSCE is that students may find it difficult to absorb all of the information provided.[10] Feedback can also be provided in a group setting after all students have completed the OSCE, or may be provided by distributing the completed checklists to students so they can determine their areas of deficiency.[10]

Literature supports the use of OSCEs to assess critical thinking, problem-solving and communication skills, and to evaluate clinical knowledge.[2–8] Many schools of pharmacy are interested in using OSCEs to measure clinical competence and skills, but there are many barriers that may limit their use, including financial and time constraints.[5] Planning OSCEs can be time-consuming and requires careful organization and scheduling to ensure that the session is successful.[11]

Our goals in developing the foundational skills practical with OSCE component at our institution were to: (1) design an evaluation method that assessed foundational patient care and communication skills and (2) develop an effective OSCE-like assessment with limited time, faculty, and resources available. This article describes the process of planning and implementing such a practical for our Foundational Pharmacy Skills course with limited funding and faculty time.

Educational activity and setting

The course had 76 total students enrolled, and the class was divided into three different two hour sections with 24 or 26 students per section. Students were divided into groups of 12 (or 14 in two cases to accommodate the larger sections) and assigned in one-hour increments to report to class on the day of the practical exam. The breakdown of the students for the entire session is depicted in Fig. 1. This study received exemption status from the WVU Institutional Review Board. Data were analyzed using Microsoft Excel® 2010.

Each student rotated through three OSCE stations and a written component. Station one consisted of a student performing a blood pressure assessment on a faculty member using a teaching stethoscope. Stations two and three assessed student's patient counseling skills and required them to educate a faculty facilitator on a randomly selected inhaler (Advair Diskus®, Proair HFA®, Spiriva Handihaler®, or Symbicort MDI Inhaler®) and either an insulin pen or insulin vial. A separate individualized assessment checklist was designed for each of the medications/dosage forms.

Students spent approximately seven minutes at each of the stations. Time was not strictly enforced; however, it was estimated that each station would take approximately that amount of time and facilitators were instructed to use their judgment to move the student through the station if they were starting to reach the seven-minute point. There were two different rooms where students could perform each of these activities, making two circuits of stations so that six (or seven when necessary) students could progress through the hands-on portion of the practical at a time. Students were randomly assigned a starting station, from which they moved in chronological order to complete the three hands-on stations of his/her circuit. Most students did not use the full seven minutes per station, and the students were not required to move through the stations in the same order. In the instances where a seventh student needed added to the group, the extra student went to a station that had an opening while still conducting one inhaler education, one insulin education, and the blood pressure assessment. This flexibility in station order was necessary to ensure that time would stay on track. Assignments for the types of inhalers or insulins were random and selected by the faculty member at the station to eliminate the possibility of a student receiving information from peers who had already completed the stations. Students were made aware of the potential medications they would need to counsel on prior to the practical.

The written portion of the skills practical tested student knowledge on pharmaceutical calculations, components of a written prescription, prescription abbreviations, Drug Enforcement Administration (DEA) number verification, and normal vital signs. Students were given 30 min to complete the written portion of the skills practical. Two different written assessments were developed that assessed the same objectives so that students were given a different exam for each day of the practical. Students in the first two sections received the same written assessment, as their practical was on the same day. Students in the third section completed a different version of the written assessment since their practical was on a different day to decrease sharing of concepts on the assessment among students. A schematic of student rotation through the practical activities is outlined in Fig. 1.

Students were assessed on each of the skills based on checklists designed by the lab coordinators for each of the medication counseling sessions and the blood pressure assessment. Each facilitator was instructed on how to complete the checklist to ensure