

Research

Student performance on and attitudes toward peer assessments on Advanced Pharmacy Practice Experience assignments

Rochelle F. Rubin, PharmD, BCPS*, Traci Turner, PharmD Candidate

Midwestern University, Downers Grove, IL & Dreyer Medical Clinic, Aurora, IL

Abstract

Purpose: To compare student (peer) assessment and preceptor evaluation of required rotation assignments and assess students' attitudes toward this process.

Methods: Fourth-year students completing their Ambulatory Care rotation at Dreyer Medical Clinic from March 2009 to February 2010 were required to complete peer assessments on the rough drafts of three required assignments. Students were trained on proper use of peer assessment forms plus formative feedback questions. After receiving feedback, students had the opportunity to revise final submissions. Preceptors evaluated final versions using the same grading criteria. At the end of the rotation, students provided feedback on the process. A historical control was later created consisting of preceptors' evaluations of students completing their Ambulatory Care rotation at the same clinic the previous year who were not required to complete peer assessments.

Results: Twenty-two students completed the peer assessments. Mean total scores for peer assessments were similar to preceptor evaluations for case presentation (13.2 vs 12.6, $P = .209$), journal club (12.6 vs 13.1, $P = .457$), and drug information paper (12.7 vs 12.6, $P = .882$). Final feedback indicated that students liked receiving their peers' feedback and felt that assessing peers' assignments helped them improve their own assignments. Mean total scores for preceptor evaluations were similar to the historical control for case presentation (12.6 vs 12.8, $P = .529$), journal club (13.1 vs 13.3, $P = .605$), and drug information paper (12.6 vs 13.5, $P = .121$).

Conclusion: Although the opportunity for peer evaluation did not translate into a difference in final grades, it is still recommended based on student feedback and reduced faculty workload.

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Keywords: Peer assessment; Rough draft; Students attitudes

Background

Peer assessments are a part of lifelong learning and professional evaluations in the workforce. In preparation for a pharmacy career, pharmacy students should be exposed to the use of a peer assessment process in the academic setting to gain confidence in peer assessment and the provision of constructive, formative feedback.^{1,2} Important conditions to support successful implementation of a peer assessment include adequate preparation on the use of peer assessment,

incorporation of peer assessment into the global objectives for the rotation, availability for mentorship throughout the process, and constructive discussions after peer assessment.³ Previous research has shown that students' peer assessments tend to assign slightly higher grades^{1,4} or similar grades^{5,6} to instructors' evaluations, thus these assessments can be used as a source of formative feedback during the rotation. The student assessor also improves his/her skills by grading peers' assignment against specified grading criteria,⁷ thereby fostering professionalism in student behavior. Current evidence describes the use of peer assessments in health care higher education in group work settings, such as problem-based learning curricula⁷ and laboratory courses^{8,9} to assess students' performance and professionalism. In addition, peer assessments are also im-

* Corresponding author: Rochelle F. Rubin, PharmD, BCPS, Assistant Professor, Midwestern University and Dreyer Medical Clinic, 555 31st St., Downers Grove, IL 60515.

E-mail address: rrubin@midwestern.edu.

plemented in postgraduate residency training¹⁰ and in practicing medical clinicians' evaluations¹¹ as a more accurate assessment tool than self-assessments.

One of the last academic requirements a pharmacy student completes before graduation and the start of a professional career is a year of advanced pharmacy practice experiences (APPEs). These APPEs occur in a variety of settings, from traditional community practice or staff hospital practice to advanced clinical management of patients in acute or chronic settings. Each student is required to complete a variety of assignments while on these APPEs. At Midwestern University Chicago College of Pharmacy, the required assignments include a journal club, a case presentation, and a drug information/monograph paper, plus three additional graded projects selected by the preceptor. The grading criteria for all assignments are available for students and preceptors to review online. Students have been exposed to these assignments in earlier courses, thus the repetition on rotations is meant to solidify skills that will prepare them for their pharmacy careers.

To help students receive as much formative feedback as possible, improve their grades, and ultimately improve their critical thinking skills, some preceptors suggest that students turn in a rough draft of each of these required assignments a few days before the final assignment is due. This is thought to help their performance on the final assignment, but it places extra workload on preceptors who may be precepting multiple students at a time. As a method to encourage students to become acquainted with and use the grading criteria, and reduce work on the preceptor, this study asked APPE students to trade papers with each other as a rough draft assignment and peer-assess each others' assignments based on the standard grading criteria used for each assignment.

Rationale and objectives

This study aimed to compare student peer assessment of the rough draft of required APPE assignments to preceptor evaluations of the final copy of the same assignments, and assess students' attitudes toward this process. In addition, it aimed to compare preceptor evaluation of student APPE assignments to the preceptor evaluations of the same type of assignments from the previous year (when students were not required to complete a rough draft and use peer assessments) to assess the impact of peer assessments on final scores for each project.

Materials and methods

This was a prospective investigation of students' performance and attitudes toward peer assessment while on their ambulatory/chronic care rotation at a chosen clinical site. Thirty-two students were eligible to participate during the 2009–2010 rotation year. Data collection included student

peer assessment scores using the college-approved grading criteria plus additional open-ended formative feedback questions, preceptor evaluation scores using the college-approved grading criteria, and student evaluations of the process through surveys completed at the end of each six-week rotation. Students received credit for one additional preceptor-selected, graded rotation project for completing the peer assessments.

A letter that described the project and the students' participation was provided to each student on their first day of rotation. A signed and returned letter constituted students' informed consent. Students that refused to provide informed consent were still required to complete the assessments of peers' assignments for educational benefit, but their data were not included in the study.

All students were trained by the principal investigator on proper use of peer assessments on week one of their APPE at the clinic. Training included review of sample assessment forms and discussion on grading criteria, grading scale, and appropriate constructive feedback.

Each student completed one peer assessment on a rough draft of each required assignment one to two days before the final assignment due date. Students then provided feedback to their peer student author and reviewed the comments with the author, if appropriate. After receiving feedback, student authors had the opportunity to revise their assignments before turning in the final draft to their preceptor.

The case presentation (Fig. 1) had three assessment components: patient presentation, knowledge, and handout and/or presentation quality. Students were expected to present a full chronologic course of the patient and include all information necessary to make an informed assessment. This case presentation format included a brief overview of pathophysiology and review of current literature to support the students' plan for this patient. The project was presented to faculty and students in a formal style, and required the use of PowerPoint slides. Peers only evaluated the rough draft of the handout, whereas preceptors evaluated both the handout and the formal presentation.

The journal club (Fig. 2) had three assessment areas, including presentation of study design, methodology, and results; presentation of critique and clinical relevance; and handout and/or presentation quality. Students were expected to analyze the study objective, design, methodology, and results and comment on whether bias was present, what methods were used to reduce error, and whether appropriate analysis was conducted. Differentiation between statistical and clinical significance, discussion of limitations of the study, presentation of a conclusion independent of the author's, and a statement as to what the relevance is in practice were considered integral to a thorough analysis. Students were also assessed on their ability to present the components of the article in a logical, organized sequence, and appropriately using medical terminology and citations in the handout. Once again, peers evaluated the rough draft of the handout and

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