



Impact of peer assessment on student pharmacists' behaviors and self-confidence

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Abstract

Objective: To assess the impact that peer assessment has on student pharmacists' behaviors and self-confidence.

Methods: A 19-item, electronic survey instrument was sent to 161 third-professional-year student pharmacists enrolled in a one-credit, required integrated laboratory course. The survey instrument aimed to assess how experiences with peer assessment throughout the Doctor of Pharmacy curriculum had affected students' behaviors and self-confidence as well as identify factors that may influence the reception of peer feedback.

Results: One hundred forty-one (88%) responses were received. The majority (78%) of students agreed that they remembered the content of assessments provided by peers and that the assessments provided by peers were accurate. However, most students reported that receipt of feedback from an instructor is more meaningful than from a peer. Students were divided over the meaningfulness of anonymous peer review compared to an identified peer-reviewer. While 65% of students agreed that peer assessments have enhanced their learning, only 40% indicated that they reflected on previous assessments. The majority of students (85%) agreed that a positive peer assessment gave them more confidence in their abilities. Finally, most students agreed that peer assessments have helped them to identify personal strengths and future opportunities for growth.

Conclusions: Peer assessment is perceived by students to positively impact self-confidence, enhance learning behaviors, and aid in the identification of personal strengths and limitations. Most students agreed that receipt of feedback from an instructor is more meaningful than from a peer, but students were divided regarding the impact of anonymity and friendship.

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Introduction

Peer assessment, commonly used in continuing education and professional development, is generally defined as the application of standards to evaluate and provide feedback on the work of peers or colleagues.¹ Objective peer assessment is an important skill for student pharmacists to learn during their formal education. In didactic settings,

the peer-assessment process can be used for student evaluations, as well as faculty evaluations, as endorsed by the Accreditation Council for Pharmacy Education.² Beyond the didactic setting, pharmacists may also encounter peer assessment during post-graduate training, employment, and the manuscript peer-review process. Improvements in critical-thinking skills and self-assessment have been associated with the practice of peer assessment as well.³

Use of peer assessment during the training of health professional students has been studied in both didactic and experiential training venues.^{4–11} Two studies have examined the attitudes, perceptions, and the impact of peer assessment on medical students.^{4,5} While these studies only

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provide qualitative data, the results suggest that students may need more practice to become familiar with peer assessment. Additionally, results suggest that the practice of peer assessment improves confidence and enhances learning.⁴ Nofziger et al.⁵ investigated what types of peer feedback medical students remember and what reactions or transformations students experience as a result of peer assessment. Students recalled content about both positive and negative qualities expressed during peer assessments. Important transformations in awareness, attitude, or behaviors due to peer assessment were reported in 65% of students. The authors also reported that when specific areas for improvement were given, change was more likely to occur. Wagner et al.⁶ investigated the reliability and value of peer- and self-reported evaluations in the grading of pharmacy students and found that students graded their peers higher when compared to grades given by faculty members. The authors also surveyed alumni and found that of those who completed peer evaluations in school, 76% thought it was helpful.

Wu et al.⁹ studied student pharmacists' perceptions of and attitudes towards the use of peer assessment within a drug-literature evaluation course and found that students were more comfortable receiving than providing peer feedback (95.7% and 80%, respectively). However, the impact of the content from peer-assessment activities on student pharmacists has not been well studied. As such, the purpose of this study was to assess the impact that peer assessment has on student pharmacists' behaviors and self-confidence.

Methods

A convenience sample was identified of 161 third-professional-year student pharmacists who were enrolled in a one-credit, required integrated laboratory course. A 19-item questionnaire was constructed by investigators to assess how peer assessment throughout the curriculum has affected students' behaviors and self-confidence and to identify factors that may influence the reception of peer feedback. Responses to each item were recorded using a 5-point Likert scale (strongly agree, agree, undecided, disagree, and strongly disagree). An electronic invitation containing a hyperlink to the questionnaire was sent to all students enrolled in the integrated laboratory course. To encourage an adequate response rate, one reminder email was sent two weeks later, and students were compensated with five bonus points for participation to be applied to their final course grade. Qualtrics Survey SoftwareTM (Qualtrics Labs, Provo, UT) was used to design and distribute the survey electronically as well as maintain confidentiality of all responses. The project was approved by the University's Investigational Review Board with exempt status from regulations for the protection of human research subjects.

Several courses throughout the curriculum at our College of Pharmacy incorporate peer assessment. For example, an integrated laboratory course is required as part of the

core curriculum in all six didactic semesters, with students randomly assigned to five different sections of approximately 30 students. In these courses, students are required to give a variety of presentations on volunteer experiences, over-the-counter medications, prescription medications, disease states, and patient cases. The presentations are evaluated by college faculty and other students in the section. These peer assessments do not determine the student's grade, but rather provide feedback on presentation style and content. Several other courses throughout the curriculum also require peer assessment. Since multiple opportunities exist for peer assessment, the investigators were interested in the impact of these evaluations on subsequent student behaviors.

Results

A total of 141 complete responses were received, yielding a response rate of 88% (141/161). Results showed that 78% (110/141) of students agreed that they remember the content of assessments provided by peers, and 78% (110/141) agreed that the assessments provided by peers were accurate. Students' agreement ratings regarding factors that may influence the reception of peer feedback are presented in Table 1. Students appeared to be divided over the meaningfulness of anonymous peer review. Approximately 37% (52/141) of students agreed that an assessment provided by an identified peer-reviewer is more meaningful than an assessment provided by an anonymous peer-reviewer, whereas 40% (57/141) of students agreed that an assessment provided by an anonymous peer-reviewer is more meaningful than an assessment provided by an identified peer-reviewer. Approximately half of the students agreed that an assessment provided by someone with whom they do not have a personal relationship with was more meaningful than one provided by a friend, and the majority of students agreed that an assessment provided by an instructor is more meaningful than an assessment provided by a peer [82% (116/141)]. On the contrary, only 13% agreed that an assessment provided by a peer is more meaningful than an assessment provided by an instructor.

Students' agreement ratings regarding impact of peer assessment on behaviors are presented in Table 2. A high percentage of students [92% (130/141)] agreed that a positive assessment provided by a peer reinforced the behavior that was viewed positively; but only 36% (51/141) of students agreed that positive assessments provided by peers positively impact personal relationships with that peer. Most students also agreed that negative assessments provided by peers prompt change in the behavior that was viewed negatively [85% (120/141)], with only 13% (19/141) agreeing that negative assessments provided by peers negatively impact personal relationships with those peers. While 65% (91/141) of students agree that receiving peer assessments has

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