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Title: *Effect of live versus video grading on student objective structured clinical examination (OSCE) assessment scores*

Abstract

Simulation-based assessments are an essential tool included in many pharmacy school curriculums. The use of these assessments allows students to develop clinical skills necessary to excel in the profession of pharmacy in a realistic and constructive setting. Implementation of technology in academics is becoming more prominent and has obvious benefits. However, the use of video recording during OSCE assessments and the impact it has on student grades has not been established. This study was designed to investigate if there is a significant difference in student grades when the OSCE public health assessment was graded live versus graded from a video.

Pharmacy practice faculty members volunteered to re-grade the 2018 public health assessment portion of the OSCE from videos originally recorded using SimulationIQ. During the public health activity, students are prompted with questions from a healthcare provider about a relevant public health topic. Students are given 45 minutes to conduct research before meeting with the healthcare provider. During the encounter, students have 10 minutes to provide a response to the healthcare provider's questions, as well as answer any additional questions that arise. Historically, the assessment is graded "live", or in-person, as each student is preforming the assessment. Faculty volunteers were asked to re-grade the videos using the same rubric and checklist from which the students were initially graded. Students were assessed on global communication skills and ability to answer all parts of the proposed questions. The maximum score was 17 points on the skills checklist and 15 points on the global communication rubric. The total number of points on each rubric were calculated and validated to determine a final weighted score. Students were then assigned a final grade of pass, 1 standard deviation of no pass, or no pass. Original and regrade scores were compared, and a two-tailed student t-test was performed for total skill checklist score, total global communication rubric, and total weighted score. IRB approval was granted prior to the start of this study.

Six faculty members volunteered to regrade seventy-two student public health assessment videos. The mean total skills checklist score was 14.375 points for live grading and 14.236 points for video grading ($p= 0.6674$). The mean score varied when original grades were compared to video re-grading on the global communication rubric (11.208 vs. 10.348 points, $p = 0.0019$). Similarly, there was a slight difference between means of original and video re-grading for the total weighted score (25.583 vs. 24.583 points, $p = 0.0621$). Thirty-nine students had a lower total score after re-grading while fifteen students were given a higher total score. Eighteen students had no change in final score when live score was compared to video re-graded score. Also, fifteen students did have a change in score categorization (pass, 1 standard deviation of no pass, or no pass) after video re-grading. The mean total score was lower in the re-grade data compared to the live data (24.58 points vs. 25.58 points, $p= 0.0492$). Overall, live versus video grading did results in similar weighted scores, 79.64% and 76.82%, both passing scores.

Video grading rather than live grading only made a significant difference in score for global communication. The use of technology and video grading has potential benefits, but studies with a larger sample size are necessary to determine if there is any negative impact on student grades.