The Impact of Rater Training on Pediatric Simulation Assessment of Medical Students

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INTRODUCTION

The role of simulation in high-stakes assessment in clinical education continues to grow with increased focus on assessing behavioral outcomes and adoption of competency-based assessment.[1] However, without rigorous processes for rater training, high-stakes assessment of learner performance in simulation may be subject to bias, inconsistency, and lack of fairness.[2] In 2017, we developed a 3rd year pediatric clerkship simulation with the goal of assessing medical student entrustability of the AAMC's Entrustable Professional Activity (EPA) #10: "*Recognize a patient needing urgent or emergent care and initiate evaluation and management*". Incorporation of rater training is essential to ensure accuracy and reliability of student assessment if our simulation is eventually utilized as a high-stakes evaluation by the medical school.

OBJECTIVES

Our primary objective was to develop a rater training session and determine if this training changed how our simulation facilitators completed an observational checklist used to evaluate medical student performance during the simulation. We also determined whether the rater training helped facilitators complete the simulation checklists correctly. Our secondary outcome was to evaluate participants' attitudes towards the rater training and how helpful it was.

METHODS

Our rater training incorporated rater error identification, performance dimension training, frame-of-reference training, and behavioral observation training.[1] The sessions were mainly conducted virtually. Sessions were scheduled at least 1 week before the facilitator's assigned simulation session. During the simulation session, observational checklists were completed by the facilitators for each student. These checklists are used to identify whether a student successfully completed set objectives during the simulation. The frequency of "Yes", "No", and "With Prompt" responses were recorded for each checklist item. We compared the checklist results from this academic year to last year to assess how our rater training impacted facilitator responses using a repeated measures mixed model analysis. Correct checklist completion was also evaluated. Additionally, a post-survey was completed by each facilitator to determine how helpful they found the rater training.

RESULTS

	Pre-Training (n=72)	Post-Training (n=28)	p-value
% Yes Response	79.3	78.1	0.69
% No Response	7.2	15.3	0.082
% With Prompt Response	6.1	4.8	0.073
% No + With Prompt Response	13.2	19.6	0.051
% Correct Completion	58.3	75.0	0.020

Table 1. Frequency of mean checklist response rates by facilitators before and after our rater training. Also included are the correct checklist completion percentages.

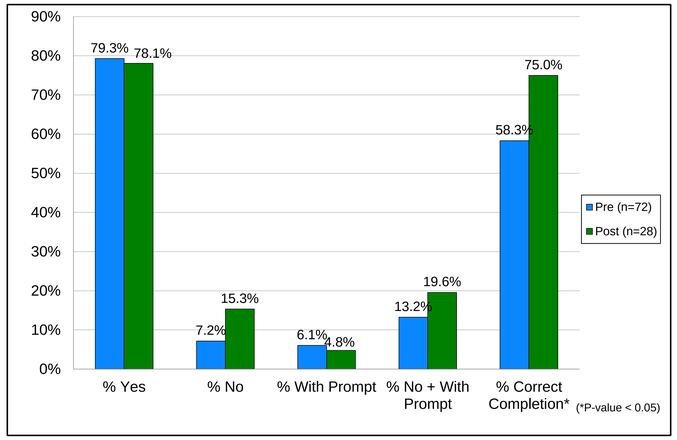


Figure 1. Graphical comparison of data shown in Table 1. The increase in correct checklist completion by facilitators after the rater-training was statistically significant (p=0.020).

Post Rater-Training Survey Questions
Question 1: Before completing the simulation rater-training session, how confident were you in your ability to evaluate students using the simulation case checklists?
Question 2: After completing the simulation rater-training session, how confident are you now in your ability to evaluate students using the simulation case checklists?
Question 3: Please rate your agreement with the following statement: The simulation rater-training session helped me achieve better accuracy when evaluating students using the case checklists during their simulation session.
Question 4: Please rate your agreement with the following statement: The simulation rater-training session will help me evaluate students or residents in other learning environments outside of the simulation lab.

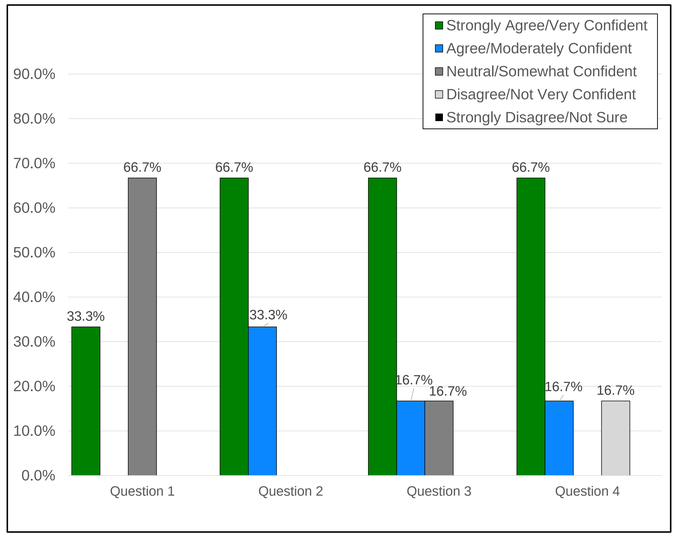
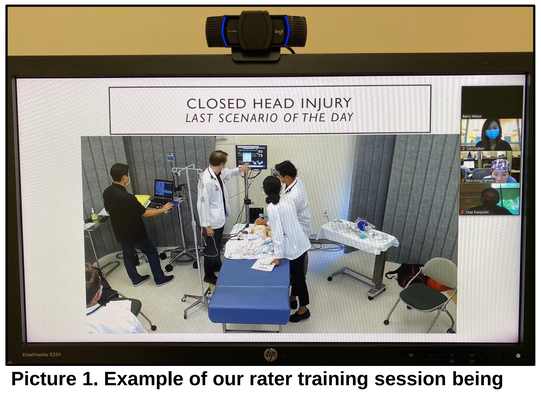


Figure 2. Survey data after facilitators completed our rater-training showing (1) an increase in confidence using the checklists and (2) most facilitators finding the rater-training useful. (n=6)



Picture 1. Example of our rater training session being conducted virtually.

Please use this QR Code to see copies of our simulation checklists and a PDF copy of this poster.

DISCUSSION

- Incorporation of rater training significantly improved the correct completion of case scenario checklists by facilitators.
- Though no significant difference was seen in the frequency of response type for each checklist that was completed, there was a trend for more "No" + "With Prompt" responses to be utilized by facilitators after the rater training. This may imply that the rater training helped facilitators become more discerning, and less lenient, when deciding if a student truly fulfilled a simulation objective. With more data, the higher frequency of "No" + "With Prompt" responses may become significant.
- Our rater training was overall well received by participating facilitators. Survey results demonstrated increased facilitator confidence using the simulation checklists, facilitators feeling more accurate when completing the checklists, and facilitators believing that this training will help them evaluate learners in other settings.
- Our rater training may be the first reported training of its kind to be conducted virtually making it more convenient to schedule and ideal for use during the ongoing COVID-19 pandemic.
- One limitation is the smaller number of checklist data available after completion of our rater training in comparison to the pre-training data. This study is ongoing and we plan to collect more post-training data till the end of this academic year.

REFERENCES

1. Feldman M et al. Rater Training to Support High-Stakes Simulation-Based Assessments. Journal of Continuing Education in the Health Professions. 2012; 32(4): 279-286.
2. Holland AE et al. The Effect of Evaluator Training on Inter- and Intrarater Reliability in High Stakes Assessment in Simulation. Nursing Education Perspectives. 2020; 41(4): 222-228.

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