Letter to the Editor in Response to: Early Skill Decay After Paracentesis Training

TO THE EDITOR:
We read the article "See one, do one, forget one: early skill decay after paracentesis training"[1] by Sall et al. with interest and commend the authors for addressing the important issue of invasive procedure skill acquisition and retention. Based on more than a decade of education and research, we raise two important points.

The first and most important point is that skills must be acquired to a high standard before they are retained, a learning outcome Sall and colleagues likely did not achieve for at least four reasons. First, the [first training session] final performance score also serves as the study baseline score. Thus, the two scores are confounded because no independent baseline metric was obtained and there is no index of learning improvement to gauge the simulation-based intervention. Second, the authors use two relatively low achievement standards. The minimum passing standard (MPS) for the checklist was only 73% and the unsupervised practice standard was 88%.[1] Both are below minimum competence expectations used in earlier studies of paracentesis clinical performance.[2] Third, 18 volunteer faculty raters received only 1 h of calibration training without reported results of its effectiveness. Fourth, information about interrater reliability is presented with insufficient detail given the large number of raters and frequent follow-up testing occasions. Absent a clear estimate of data quality, one cannot make valid decisions about resident skill acquisition or retention over time.[3]

A second point concerns skill measurement and what is clinically meaningful. Sall and colleagues report significant score decay at follow-up. However, we assert this finding is not meaningful clinically because the magnitude of decay is small: 16%, 15%, and 13% for the checklist, global scale, and entrustment scales, respectively. Research shows that clinical skills must reach a nearly flawless standard in the simulation setting to be robust to decay, display clinical transfer, and achieve downstream patient care improvements. Use of the mastery learning model, featuring a high MPS, improves clinical outcomes such as paracentesis procedure quality and cost,[2] reduced central line associated bloodstream infections,[4] and reduced maternal trauma after forceps-assisted vaginal delivery.[5]

Despite these reservations about the study's conclusions, we applaud Sall and colleagues for demanding procedural education accountability during internal medicine residency training. The medical community has a long agenda to ensure that education best practices including deliberate practice and mastery learning are used to ensure competence of all trainees before invasive procedures are attempted on patients.

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