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(SBE) provides an efficient educational framework for learners to proceed through the entirety of Kolb's Learning Cycle

While in-person, high-fidelity simulations have been the mainstay of SBE and its application to Kolb's Learning Cycle,⁴ technologies such as virtual reality (VR) present an opportunity for increased uptake of experiential learning. VR-based simulation creates an immersive audiovisual experience where learners asynchronously interact with a virtual environment. Although perceived complexity, technical requirements and cost are often cited as barriers, VR-based simulation has been successfully applied in surgical skill training,⁵ clinical emergency management⁶ and empathy-building patient experiences.⁷ The ability for learners to virtually participate whenever and wherever is most convenient allows for more streamlined and accessible approaches to experiential learning.⁸

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Using Kolb's Learning Cycle as a framework, we aimed to develop, implement and evaluate a 1-week virtual simulation-based clinical emergency management course to expand opportunities for concrete clinical learning experiences. Through review of student simulation performance, course evaluations and learner reflections, we assessed the curriculum's feasibility, acceptability and effectiveness as a novel approach to virtual experiential learning for clerkship students.

2 | APPROACH

2.1 | Curriculum design

We developed a 5-day virtual 'Emergency Care' course focused on clinical emergency management for Pedsian School of Medicine

(see Table 1). Asynchronous mini-lectures (5 h) provided content for motion, interactive problem-based learning (1 h), facilitated active experimentation, and virtual simulations (3 h) and VR clinical cases (3 h) allowed for concrete experience. Embedded debriefing and reflections allowed students to perform reflective observations.

Content was hosted on the Canvas Learning Management Platform.⁹ Simulations and case discussions were conducted via the BlueJeans¹⁰ video-conferencing platform. The course utilized a free trial of the Oxford Medical Simulation (OMS) VR software,¹¹ which was accessed via students' personal computers (no VR headsets required). Students formulated a diagnosis, initiated treatment and interacted with interdisciplinary team members during three different VR simulations (perforated viscus, non-ST elevation myocardial infarction and sepsis).

In addition to the OMS cases, students completed three locally developed virtual simulations comprised of videos of standardized patients, multidisciplinary team encounters, simulated cardiopulmonary resuscitation and visual adjuncts (e.g. vital signs display and clinical data). Students were assigned team roles and collaborated remotely to manage patients with facilitator assistance. Facilitator guides included learning prompts, suggested responses and a scene navigation map to enable facilitators to advance videos based on student management decision. For example, if a student chose to intubate the patient, the facilitator could advance the video to the intubation scene.

2.2 | Intervention

Six cohorts of clerkship medical students completed the required 1-week Emergency Care course, which was embedded in a larger 6-week virtual clerkship clinical skills curriculum. Other topics included advanced communication, clinical reasoning, health care systems, information technology and diagnostic tests.

2.3 | Reflective practice

Students completed individual reflections following each OMS VR case, commenting on what they did well, what they could improve and key takeaways. Students also participated in a group debriefing session to review critical actions and discuss their overall performance.

2.4 | Course evaluation

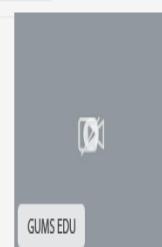
Students completed de-identified pre- and post-course assessments of comfort with EPA 10 (Table 1), as well as course evaluations assessing educational value and overall course quality. OMS software gen-

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VIDEO - 1

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ATTENDEES - 21

▼ MOSTS (2)

GUMS EDU (2)

سیده باریمی شریعتی You

▶ Presenters (0)

▼ Participants (19)

Dr Azar Darvishpour Guest

Dr fereshteh besharati Guest

Dr Iman Alizadeh Guest

CHAT

Everyone +

mishebaray shoma ham hamintore?

Dr Shiva alizadeh: Salam vaght bekhir

Mitra Rezapour: bale

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Sharing



Discussion



Collaboration