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Clerkship Student Perceived Educational Effectiveness of Virtual Simulation

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Clerkship Student Perceived Educational Effectiveness of Virtual Simulation

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Background

High fidelity simulation (HFS) has been described as an effective tool in medical training. COVID 19 has led to educational gathering restrictions for both medical students (MS) and Physician Assistant students (PAS). In response, we offered MS and PAS education through a virtual HFS (VS) experience.

Objective

To determine the perceived educational efficacy of VS.

Methods

This IRB reviewed study was conducted by a PGY 1-4 EM residency. Given COVID restrictions, virtual clerkship educational experiences, including VS were created. VS was conducted via WebEXTM. Previous in person HFS cases were streamed by on site personnel, including faculty and chief residents Student leaders were assisted by teammates via chat in teams of 3. Students had a minimum of 3 VS. After rotation completion, either full virtual (FV) or patient care with virtual education (PC), MS and PAS were asked to provide anonymous feedback. The electronic survey consisted of the host network's standard Continuing Medical Education (CME) questions (Table 1). The Likert questions were analyzed descriptively with a value of 1 for Strongly Disagree (SD), 2 Disagree (D), 3 Undecided (U), 4 Agree (A), and 5 Strongly Agree (SA). Open ended questions were qualitatively analyzed.

Results

From 8/3/20-10/23/20, 79 students (58 FV, 19 PC) rotated. Due to scheduling conflicts, 14 were unable to participate leaving 65 VS participants (44 FV, 21 PC). A total of 46 replied (70.8% response rate). Table 1 demonstrates that VS was received overwhelmingly positively. Only 1 respondent replied that they would not recommend this activity to others. Positives include perceived realism, experience and teamwork. Ability to view the monitor was a theme for improvement.

Conclusions

This single site cohort indicates that VS is an effective, well received education tool for students unable to access a sim center. Further research is needed to compare VS to an in-person simulation experience.

Table 1: CME Questions and Analyzed Responses

Question	Analyzed Response
The objective(s) of this activity were met	4.71 (0 SD, 0 D, 0 N, 13 A, 33 SA)
The pacing of the activity was appropriate	4.59 (0 SD, 0 D, 1 N, 17 A, 28 SA)
The activity kept me engaged	4.76 (0 SD, 0 D, 0 N, 11 A, 35 SA)
I learned new knowledge from this activity	4.85 (0 SD, 0 D, 0 N, 7 A, 39 SA)
I will be able to apply what I have learned to my job	4.85 (0 SD, 0 D, 0 N, 11 A, 35 SA)
I would recommend this activity to others	4.82 (0 SD, 1 D, 0 N, 5 A, 40 SA)
This activity will improve my job performance and productivity	4.59 (0 SD, 1 D, 1 N, 14 A, 30 SA)
What about this activity was most useful to you?	Several students commented on the usefulness of acting as a leader and playing the role of a physician, as well as the feedback and review provided at conclusion of the cases. They also appreciated the realistic environment and scenarios that were created. In addition, students enjoyed being put in stressful situations and working as a team to put their knowledge into practice. Others commented on the extra experience and practice that is provided.
What about this activity was least useful to you?	Common responses included N/A, difficulties seeing the patient monitor and inherent difficulties with the virtual process (lack of actual patient touch/ inability to perform a physical exam, lagging of computer quality, etc.) and the procedure demonstrations.
How can we improve this activity to make it more relevant?	Many responses included N/A, having physician leads perform an example case, improve clarity of monitor/EKGs/ imaging presented over the web cam. One student mentioned adding metrics for team members in addition to the team leader, more structured debriefing.
Please provide any additional comments you may have. (e.g., speakers, content, facilities, cases, etc.)	Common responses included thanking the team for putting together the activity, suggesting making the monitor more clearly visible.
What are you going to change in your practice as a result of this educational activity?	Major themes included students having a more 'structured' approach, including utilization of a safety net (IV,02, Monitor, POCT glucose, urine HCG) and assessment of ABCs. Second, students expressed they would be more careful to maintain a broad differential rather than 'anchoring' on a single diagnosis. Additionally, students reported they would strive to share their thoughts with the rest of the team throughout a patient's course of treatment and they would remember to utilize family and EMS for history that may be useful to the patient's diagnosis and treatment.
State any barriers to implementing this change.	Most responses were N/A, but also limitations placed by computer/ virtual aspects and inability to see live patients in their current level of training.

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