the SBE activity; a mindfulness exercise before a task-based simulation and an introduction of a period of relaxation prior to debriefing. Faculty awareness of participant stress was measured objectively in only one study. SME design and equipment stressors were directly considered in two studies.
Implications for practice: There are limited dedicated studies addressing SBE-induced stress and how this can be modified; furthermore, a lack of research into faculty impact on stress hinders the opportunity to change. This was not a systematic literature review and so the findings are limited, but can help inform practitioners: (1) Repeated exposure and familiarity with SME reduce stress. (2) Designate roles that participants would be expected to undertake in real clinical scenarios. (3) Minimize distracting factors in the environment unless directly contributing to learning outcome. (4) Introducing a purposeful period of calm before debriefing may improve retention of learning outcomes.

182 SURGICAL SIMULATOR DESIGN, WHAT ARE EDUCATORS AND TRAINEES REQUIREMENTS?

Leonie Heskin[1], Ciaran Simms[2], Oscar Traynor[1], Rose Galvin[3]; *[1]RCSI, Dublin, Ireland[2]TCD, Dublin, Ireland[3]UL, Limerick, Ireland*

10.54531/QSDB8946

Background: Simulation is an important adjunct to aid in the acquisition of surgical skills of surgical trainees. The simulators used to enable trainees to learn technical skills, practice skills and to be assessed in competency exams, need to be of the highest standard and to be of consistent design. Input into the design and makeup of task trainers used to teach surgical skills come from a multitude of sources. Enquiry into the perspectives of simulation has been described in the past but there is little description, in the literature, of the expectations of the desired features of the simulator itself.
Aim: This study investigates the perceived requirements of simulation and simulators used to acquire skills in the surgical field, particularly in limb exploratory procedures in trauma.
Simulation activity outline: This study concentrated on the implementation and desired features of simulators for the acquisition of surgical technical skills.
Methods: Semi-structured interviews were conducted until data saturation was achieved. An international group of 11 surgical educators and 11 surgical trainees, who had experience with surgical simulation, were interviewed via one-to-one video calls. The interviews focussed on the perceptions of simulation, the integration of simulators within a curriculum and the features of a simulator itself. This study concentrated on synthetic and virtual reality simulators for open surgical skills, as these types of simulators are open to design and redesign or adaptation. Interviews were recorded, transcribed and underwent thematic analysis. Ethical approval was obtained for this study.
Results: Analysis of the perspectives of surgical educators and surgical trainees on simulated training in open surgery yielded three main themes: (1) attitudes to simulation, (2) implementing simulation, (3) features of an open skills simulator. The majority felt simulation was relevant, intuitive and a good way for procedure warmup and the supplementation of surgical logbooks. They felt that simulation could be improved with increased accessibility and a variety of simulator options tailored to the learner. Suggested simulator features included greater fidelity, haptic feedback and more complex inbuilt scenarios. On a practical level, there was a desire for cost-effectiveness, easy setup and storage. The responses of the educators and the trainees were similar and reflected similar concerns and suggestions for improvement.
Implications for practice: There is a clear positive appetite for the incorporation of simulation into general surgical and limb trauma training. The findings of this will inform the optimal requirements for high-quality implementation of simulation into a surgical trauma curriculum. The findings will inform the optimal features desired in a simulator or task trainer design. The aim is to inspire a more considered design approach to optimize surgical skills training and ultimately lead to increased patient safety.

144 SIMULATION WITHOUT THE BELLS AND WHISTLES OF TECHNOLOGY

Burcu Dogan[1], Natalie Pattison[1,2,3], Guillaume Alinier[1,4,5]; *[1]University Of Hertfordshire, Hatfield, UK[2]Herts NHS Trust, Stevenage, UK[3]Florence Nightingale Foundation, London, UK[4]Hamad Medical Corporation Ambulance Service, Doha, Qatar[5]Weill Cornell Medicine, Qatar*

10.54531/PGVT4167

Background: Full-scale simulation (FSS) is one of the most effective and commonly used simulation modalities in healthcare education. It enables the rehearsal of skills in a safe and controlled environment without the risk of harming patients, which provides a strong argument for it being a useful educational approach. With technological developments and the widescale use of simulation technologies in many institutions, simulation has become an essential part of healthcare professional training and curricula. However, setting up a simulation laboratory can be very costly for institutions, as can training facilitators and ensuring equipment maintenance. Simulated patients (actors) are also not universally embraced because of the costs. This makes running an FSS challenging. Furthermore, technology fear, shortage of trained staff, scarcity of space and equipment, workload and applicability to the existing curriculum can be acknowledged as further barriers to the adoption of FSS. We assert that Visually-Enhanced Mental Simulation (VEMS), which includes a patient poster instead of a patient simulator or simulated patient [1] and does not require a simulation laboratory, can be a potential alternative solution to FSS. This is particularly true for non-technical skills teaching.
Aim: This study aimed to explore nursing students' evaluation of the VEMS sessions.
Simulation activity outline: VEMS is a mental form of simulation which includes basic representations of a patient, equipment and interventions. A laminated patient poster is used to represent the patient and laminated equipment cards are used for equipment. A whiteboard or flipchart are used to write interventions and patient parameters in real-time. Also, the simulation session includes 'thinking aloud' (participants verbalize their thinking process and actions). Before the scenario, pre-briefing takes place, and a debriefing follows after the scenario, as in FSS.
Methods: As part of a wider project, we piloted the use of VEMS with 30 final-year adult nursing students who consented to participate in VEMS sessions. The main study relied on a quasi-experimental design to compare two simulation modalities,

FSS and VEMS. The study was approved by the University of Hertfordshire Ethics Committee (protocol number: aHSK/PGR/UH/03692(2)). Final-year adult nursing students studying at the university were targeted for this study. Control (FSS) and experimental (VEMS) groups were exposed to the same scenarios which included two deteriorating postoperative patients. Students were asked to evaluate the effectiveness of the simulation session with the Simulation Effectiveness Tool-Modified (SET-M) [2].

Results: The students found VEMS to be effective for their learning and confidence as they marked it 43.70 (SD: 9.11) out of 57. The pre-briefing part scored 2.41 (SD: 0.61), the learning scored 2.19 (SD: 0.50), the confidence subscale scored 2.25 (SD: 0.57), and the debriefing part scored 2.51 (SD: 0.53), all out of three points.

Implication for practice: This may suggest that students found the VEMS session a useful learning activity which also contributed to developing their confidence. Based on the pilot study questionnaire data, it could be argued that VEMS can be a valuable simulation approach in nursing education as it does not rely on technology and is easy to facilitate anywhere.

REFERENCES

1. Alinier G, Meyer J, Naidoo V, Campbell C. Simplifying simulated practice for healthcare professionals and educators. J Emerg Med Trauma Acute Care. 2016;2016(2):79. Available from: http://www.qscience.com/doi/10.5339/jemtac.2016.icepq.79.
2. Leighton K, Ravert P, Mudra V, Macintosh C. Updating the simulation effectiveness tool: item modifications and reevaluation of psychometric properties. Nurs Educ Perspect. 2015;36(5):317–23. Available from: http://nlnjournals.org/doi/10.5480/15-1671.

154 AN OBSERVATIONAL STUDY: AN EXAMINATION OF EYE MOVEMENTS WHEN ASSESSING A DETERIORATING HIGH-FIDELITY PATIENT SIMULATOR

Kirsty Harris[1], Isobel Ryder[1], Matt Dicks[2]; [1]*School of Healthcare Professionals, University of Portsmouth, Portsmouth, UK*[2]*School of Sport, Health and Exercise Science, University of Portsmouth, Portsmouth, UK*

10.54531/ERVK9255

Background: Simulation has been identified as one of the principles to improve patient safety [1]. To increase and advance the research with eye-tracking and simulation, the researcher piloted a longitudinal, exploratory study of eye movement. Eye tracking is considered a novel method in assessing gaze behaviour in simulation has the potential to teach novices expert eye gaze [2,3].

Aim: The aim of this study was to explore the gaze patterns of healthcare students when assessing an HPS.

Simulation activity outline: A longitudinal study was conducted between 2014 and 2015 at three different time points (3, 6 and 12 months) with a final transfer study (with or without a patient monitor).

Method: The study was conducted in a simulated environment with student paramedics and operating department practitioners (N = 6). Participant eye movements were measured whilst participants assessed a simulated patient with and without a monitor.

Results: The images represent the gaze behaviour of 1 participant at testing phase 1 (Figure 1) and phase 3 (Figure 2). The gaze pattern changes and the participant demonstrates a more holistic approach when assessing a patient in phase 3 without monitor 3.

Figure 1: Phase 1.

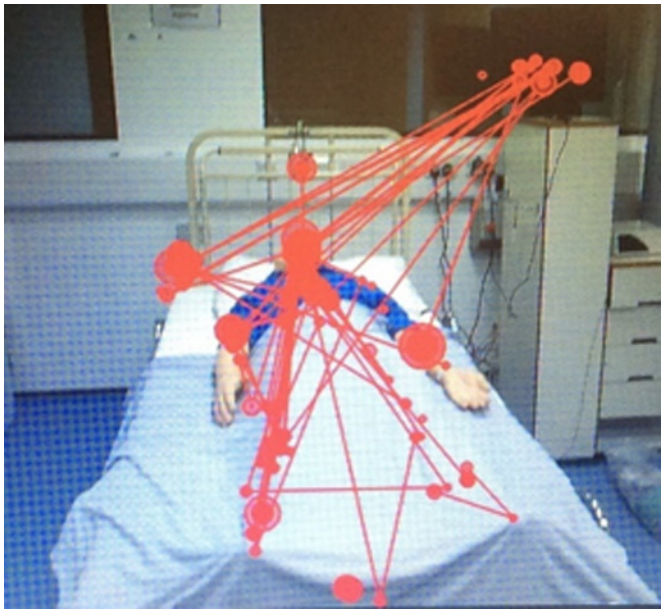

Figure 2: Phase 3.

Implications for practice: Encourage the use of an algorithm from the end of the bed to recognize a deteriorating patient and teach simulation with the HPS monitor switched into the off mode. Training through the observation of gaze patterns may help develop the design of simulation alongside augmented or mixed reality technology for the future.

REFERENCES

1. Health Education England. Enhancing education, clinical practice and staff well-being. A national strategic vision for simulation and immersive technologies in health and care. TEL. 2020: 1–39. Available from: https://www.hee.nhs.uk/sites/default/files/documents/National%20Strategic%20Vision%20of%20Sim%20in%20Health%20and%20Care.pdf
2. Capogna E, Salvi F, Delvino L, Di Giacinto A, Velardo M. Novice and expert anesthesiologists' eye-tracking metrics during simulated epidural block: a preliminary, brief observational report. 2020;13:105–109. Available from: http://www.dovepress.com/by158.174.187.204
3. Harris K. Does gaze behaviour change when assessing a high-fidelity patient simulator? An in-depth exploratory study of healthcare students using eye-tracking technology. [Professional doctorate thesis]. Portsmouth: University of Portsmouth; 2021.