

Title: A study into the perceptions of pre-registration nurses' use of mental simulation for learning cardiac arrest skills.

Background: Pre-registration nurses (students) must be prepared to be part of a cardiac arrest team at a moment's notice. Basic life-support (BLS) must be performed proficiently and accurately. Proficient performance relies on repetitive, but time without practice results in skill decay [1]. Mental simulation offers the opportunity for repetitive, solitary, deliberate practice. Mental simulation is a quasi-sensory or quasi-perceptual experience in the absence of stimuli and overt physical movement [2]. Mental simulation has been well researched within healthcare education with promising results.

Aims: 1) to understand how participants integrate mental simulation into their busy lives over several weeks; 2) to understand how the participants experience imagining a cardiac arrest and what this means to them; 3) and understanding the value that students place on experiencing cardiac arrest and life-support education through mental simulation.

Methods: *phase-1* was the design of a PETTLEP framework (physical, environment, task, timing, learning, emotion & perspective) mental simulation script. The broader protocol included basic and advanced audio scripts, a cardiac arrest point-of-view film, scenario overview and introduction, glossary, and resuscitation algorithms. The protocol was engineered to assist the student in creating functionally equivalent, high-fidelity images [3]. *Phase-2* was a qualitative interview study undertaken from a constructionist perspective. Eleven pre-registration nurses were asked to use the mental simulation protocol for 4-weeks. At the end of this period, semi-structured interviews and thematic analysis were employed to co-construct an understanding of student perceptions.

Findings: the participants had busy home lives but were motivated to undertake the mental simulations mainly due to feelings of low self-efficacy. These motivations created the volition required to problem-solve and make decisions that overcame environmental and time management challenges. The scripts assisted participants in coding images evoked from the language within the script narration. Unique to the participants, these images created individualised, emotionally laden, authentic scenarios high in psychological fidelity. This generated a realistic scenario akin to a real-world practice experience. The mental simulation acted as a reflective tool, and reflective practice allowed the participants to demystify the complexities of cardiac arrest life-support processes. This led to closing knowledge gaps, reduced anxiety at the prospect of being part of a cardiac arrest team, and increased self-efficacy.

Conclusion: Using mental simulation creates an authentic cardiac arrest learning experience. It creates self-efficacious, knowledgeable students who are ready for clinical practice. The author recommends mental simulation adjuncts physical mandatory BLS training within their organisation.

References:

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