

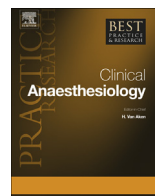


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Institutional needs and faculty development for simulation



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This review focuses on simulation in anaesthesiology as an educational intervention from a learning perspective. Simulation-based education in anaesthesiology has implications for both faculty development and institutional needs. However, in order to find evidence for the implications of these areas, it is necessary to turn to the literature on anaesthesiology simulations, health-care simulations and also the medical education and pedagogical literature. The most important factor for successful simulation-based education on an institutional level is curriculum integration of simulation, closely connected with defined learning outcomes. The corresponding factor concerning faculty development in simulation-based education is feedback. These three factors are closely interrelated, and to understand them and how to design high-quality simulation interventions from a learning perspective, it is important to look not only to the simulation literature but also to the pedagogical literature.

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Practice points

- Faculty development for faculty engaged in simulation interventions should integrate learning theories

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- Be aware of the fact that faculty may initially be threatened by a simulation intervention situation as there is a risk of a competency drop from (content) expert to simulation novice if the simulation context is a new experience
- Curriculum integration, learning outcomes and feedback are factors closely linked together and all very important for a successful outcome for simulations from a learning perspective
- A technical device (simulator) as such does not drive learning. Technology, faculty, learners and clinical context are all in interplay in order to foster high-quality learning; it is of significant importance to guarantee a high return of investment of time and money. Understanding this interplay and being able to master strategies to optimize learning are therefore essential.

Research agenda

- There is a great need for including the integration of educational theoretical frameworks in future research on simulation in health care
- There is a need for simulation in anaesthesiology to rely on evidence from not only the health-care simulation literature but also other parts of the medical education literature

Introduction

Defining simulation in health care and anaesthesiology

Simulation in health care, although originating from different specialties, is said to have its roots in the area of anaesthesiology [1]. However, simulation in health care has many faces and definitions; Aggarwal et al. [2] defines it as a technique, a technology or a process. Another way to describe simulation as a three-component phenomenon would be as follows: (a) a device for simulating a patient or a part of a patient, (b) used for technical and/or non-technical skills training or validation of equipment or technique and (c) interacts appropriately with actions taken by the clinician [3]. Yet a third way to make distinctions between different types of health-care simulations is between high-fidelity and low-fidelity simulations, depending on the degree to which the simulations is able to replicate reality. Within the field of fidelity, psychological fidelity is also discussed. Here, stressors are added into the simulation, trying to make the situation as 'realistic as possible' [4,5]. A third degree of fidelity is sociological fidelity, not very frequently addressed in the literature. Proponents of sociological fidelity claim that the traditional simulation literature overlooks hierarchies in a care team, power relations and issues on professional identity [4]. Further, simulation can also be an instrument for both formative and summative assessments. A review of simulation-based assessment in anaesthesiology [6] shows that it is used within the specialty, but that it needs to be developed further especially concerning scoring. In this review, simulation is viewed from a learning perspective.

Simulation and learning – review rationale

Looking at simulation from a learning perspective, it is evident that it requires and stimulates active learning, as shown by Murray [7] through his review on current trends in simulation training in anaesthesia. Hence, the process of learning through simulation is quite different from many traditional methodologies; in simulation, the learner learns through observation, participation and debriefing [8]. A review of simulation studies in anaesthesia journals from 2001 to 2010 also points toward the fact that the key to effective simulation training is often not the actual simulation scenario, but instead the debriefing phase [3], which has also been confirmed by Dieckmann et al. [5] and LeBlanc [9]. Le Blanc [9] further shows through her review that although simulation is an established tool for training and assessment in anaesthesiology it has become even more important to focus on issues of learning; how are simulations being implemented and used to their full potential? Walton et al. [10] describes a lacking perspective of pedagogy when thinking about how learning occurs in connection to health

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