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Review Article

Simultaneous Multiple Patient Simulation in Undergraduate Nursing Education: A Focused Literature Review

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KEYWORDS

simulation;
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Abstract: Newly graduated registered nurses are entering nursing practice with few, if any, undergraduate experiences caring for more than one patient at a time. Employers have identified this as a significant concern related to patient safety and staff morale. A potential solution to this dilemma is to assign multiple patient simulations during undergraduate preparation. However, little is known about the use of simultaneous multiple patient simulation (SMPS) in undergraduate nursing education. Furthermore, the planning and implementation of SMPSs can be resource intensive and cost prohibitive. The purpose of this article was to analyze the scientific quality of articles related to SMPS published between January 1, 2005, and October 31, 2015, and to provide recommendations for future research about the use of SMPS in undergraduate nursing education. Twelve publications were appraised using the Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal Tool. Although undergraduate nursing students tend to be satisfied with, and challenged by, this learning strategy, evidence about its effectiveness as a strategy to learn how to care for multiple patients simultaneously is lacking. Further research that utilizes longitudinal, rather than cross-sectional, study designs, psychometrically sound outcome measures, and participant randomization is necessary to provide evidence for the widespread use of SMPSs in undergraduate nursing education programs.

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The use of simulated clinical experiences has gained momentum as an exciting and effective learning modality in

undergraduate nursing programs. These experiences have been utilized to build confidence with therapeutic communication and clinical decision-making, promote intraprofessional and interprofessional collaboration, facilitate the development of empathy and other caring behaviors, and

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provide context-dependent integration of procedural knowledge (Eggenberger & Keller, 2008; Eggenberger, Keller, Chase, & Payne, 2012; Engum & Jeffries, 2012; Fisher & King, 2013; Jeffries, 2005).

Although the collective knowledge base regarding simulation has grown, many important gaps still exist that require more rigorous study designs (e.g., randomized controlled trials, crossover studies, multisite collaborative studies), qualitative or mixed-methods approaches, and a unifying theoretical framework. In particular, a discussion about the use of simultaneous multiple patient simulation (SMPS) has only recently emerged in the literature. Although these simulations are much more resource intensive than traditional single patient simulations, some studies provide preliminary evidence that SMPS may help prepare undergraduate students for complex patient care scenarios in ways that single patient simulations may not (Bensfield, Olech, & Horsley, 2012; Horsley, Bensfield, Sojka, & Schmitt, 2014). Furthermore, nursing administrators in the clinical setting have reported an overwhelming disconnect between what they expect of newly hired registered nurses and what these registered nurses are able to perform as new graduates (Letourneau & Fater, 2015). Among these deficiencies is the perceived lack of ability to manage the demands of multiple patients in the clinical setting. Newly graduated registered nurses also feel this “transition shock” as they enter the professional nursing workforce (Clipper & Cherry, 2015). Based on these factors, the National Council of State Boards of Nursing has charged nurse educators in academia with a responsibility to more adequately prepare graduates to achieve this crucial competency within the undergraduate curriculum (Spector et al., 2015).

A simulation laboratory with the resources to accommodate SMPS provides an optimal setting for students to achieve this goal. Because the literature about the use of SMPS in undergraduate nursing education is in its infancy and the climate for simulation use as a supplement or replacement for clinical time with actual patients is growing more favorable (Kardong-Edgren, Willhaus, Bennett, & Hayden, 2012), a literature review to organize the current knowledge of this learning strategy is timely. The purpose of this article was to analyze the scientific quality of articles included in the topic of SMPS in undergraduate nursing education and to provide recommendations for future research.

Key Points

- Nursing students tend to be satisfied with multiple patient simulation.
- Evidence about multiple patient simulation is sparse and based on single group pretest–posttest designs.
- Research that uses longitudinal designs, valid measures, and randomization is needed.

Background

Given the popularity, reported effectiveness, and potential for the use of simulation as a substitute for up to 50% of clinical hours at the undergraduate level (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014), the need for information about how to best utilize simulation in the undergraduate curriculum has increased substantially in recent years. The vast majority of these reports are focused on the use of single patient simulations, and very few have described the use of SMPS. Fewer still have reported conclusions about the effectiveness of SMPS based on empirical data.

The nature and content of simulation-related publications have evolved over time as well, shifting from case studies and expert opinion to pretest–posttest, quasiexperimental, and a few randomized controlled studies. As the scientific rigor of these studies has increased, nurses in academia have begun to develop guiding documents about how best to use simulation-related pedagogies. In 2013, the International Nursing Association for Clinical Simulation and Learning published the first set of practice standards for the use of simulation in nursing education. These standards are widely used in the development of simulation centers, preparation of faculty to teach using simulation, and the composition of simulation-based clinical scenarios. Rather than differentiate between traditional single patient simulation and SMPS, these standards focus on topics that are common to both types. The recently published Standard IX, “Simulation Design” (Loice et al., 2015), introduces several criteria for the design of SMPS that can assist faculty to develop rigorous simulation scenarios consistent with the needs of students and clinical stakeholders (e.g., future employers).

The simulation laboratory provides a unique venue for students to gain experience with managing the needs of more than one patient. First, faculty are limited only by their creativity and resources in designing simulation scenarios that allow students to practice caring for multiple patients simultaneously. Several previously used scenarios can be melded together into one simulation with many patients, or a new scenario can be developed for this purpose. The laboratory space can be structured as a small inpatient unit, an open ward, or in whatever manner best facilitates the scenario objectives. In other words, faculty are truly able to produce scenarios with limitless creativity and innovation to encourage learning through simulated clinical experiences. Second, the simulation laboratory provides an area in which students can safely practice without real-world clinical consequences. This allows them to re-evaluate a clinical decision that adversely impacted one or more of their simulated patients. Moreover, faculty are able to adapt the simulated consequences depending on the learning objectives for the specific simulation activity. Finally, students are provided a structured debriefing

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