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Featured Article

Controlled Postpartum—Newborn Simulation With Objective Evaluation Exchanged for Clinical Learning

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KEYWORDS
simulation replacing clinical;
clinical versus simulation;
grading in simulations;
maternal-newborn;
undergraduate nursing students

Abstract

Background: Simulation offers educators a way to replicate traditional clinical experiences in a controlled, safe environment. Simulated training bolsters nursing students' confidence, and nurse educators find simulation delivers measurable performance improvements.

Method: Undergraduate nursing students' performance and learning in a simulated setting was compared with a traditional clinical setting.

Results: Findings revealed no significant differences in ability to demonstrate competent assessment skills, determine appropriate interventions, and think critically between students in a traditional pediatric clinical experience with postpartum—newborn simulations, compared with students in a traditional maternal—newborn clinical plus the same simulations. Differences between high- and low-performing student's performance in skills were evaluated beyond simple observation based on a standardized simulation evaluation tool.

Conclusions: These results support replacing traditional clinical experiences with simulation and provide support for objective evaluation benchmarking clinical reasoning capabilities beyond the "pass/fail" evaluation of student competency.

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Given the unpredictable nature of undergraduate nursing students' learning in clinical settings and the limited availability of clinical sites, simulation offers educators a

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viable way to replicate traditional clinical experiences in a controlled, safe environment. Although much has been observed and written about how simulation improves nursing students' confidence in their performance, nurse educators generally find the traditional ''pass/fail'' grading to be insufficient in benchmarking competencies acquired through clinical practice or simulation (Heaslip & Scammell, 2012).

Key Points

- Well-designed simulation can be exchanged for learning that occurs in traditional clinical setting.
- Simulation design grounded in learning theory allows educators to make informed decisions about student's knowledge and thinking.
- Uses of evaluation rubrics grounded in NLLT to score simulation performance allows objective evaluation and ability to determine level of competence.

When a curriculum change at a major university in the Pacific Northwest replaced two, separate clinical rotations, with students choosing either one with postpartum mothers and newborns or with pediatric patients, nurse educators examined the effectiveness of simulation in replacing a clinical experience. The consolidated curriculum provided an opportunity to replace the subjective pass/fail measure of success with an objective evaluation.

As a result of these dual opportunities, a study was launched to:

1. Discover what differences, if any, exist between undergraduate nursing students' learning gleaned from a traditional pediatric clinical rotation and their participation in postpartum and newborn simulations as compared with undergraduate students' learning gained from a traditional maternal—newborn clinical experience with these same postpartum and newborn simulations.
2. Identify what differences, if any, exist between high- and low-performing students' learning in terms of their simulation-acquired performance to pinpoint opportunities for remedial training.
3. Evaluate the students' simulation performance and clinical reasoning skills at the completion of the course of study.

Key Definitions

To help ensure clarity, key research terms were defined as:

- High-performing student—students who achieved a score that was one standard deviation above the mean or higher.
- Low-performing student—students who achieved a score that was one standard deviation below the mean or lower.
- Clinical reasoning—reflective, creative, and critical systems' thinking processes nurses use to frame the meaning and facts associated with a patient story to make judgments about outcome achievements derived from reflection and self-regulation of thinking (Kautz, Kuiper, Pesut, Knight-Brown, & Daneker, 2005; Pesut & Herman, 1999).

Background

A trend exists in nursing education toward use of simulation to replace a portion of traditional clinical experiences (Hayden, 2010; Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). Therefore, the need exists to determine if learning, clinical reasoning, interventions, and outcomes relative to patient care in both of these settings are equal. Faculty must be able to identify students' simulation performance or thinking that falls below passing and objectively evaluate and score these same behaviors. In addition, nurse educators view simulation as a teaching strategy that emphasizes skills acquisition and student self-efficacy, not a way to develop and evaluate students' higher order thinking or problem-solving skills (Kaakinen & Arwood, 2009). The literature lacks research delineating how to evaluate, from a position of objectivity, learning accomplished via simulation (Gantt, 2010; Hayden et al., 2014).

Research Objectives

This study investigated whether undergraduate nursing students' performance and learning in a simulated setting can be exchanged for experiencing a traditional clinical setting. Specifically, the study focused on differences in performance across the student population, including both high- and low-performing individuals. Finally, the research set out to create a way to replace traditional ''pass/fail'' evaluation of student competency with an objective evaluation that benchmarked clinical reasoning capabilities.

Research questions were (a) is there a difference between students who received a traditional pediatric clinical experience and the maternal—newborn simulations and students who received a traditional maternal—newborn clinical experience plus these same simulations in terms of psychomotor skills, ability to determine appropriate intervention, and application of clinical reasoning in the maternal—newborn setting? (b) is there a difference between high- and low-performing students psychomotor skills, ability to determine appropriate intervention, and application of clinical reasoning in the maternal—newborn setting? and (c) can simulation effectively evaluate the quality of students' simulation performance and clinical reasoning in the maternal—newborn setting?