Title:
Evaluating the Impact of Supplemented Simulation and Traditional Learning Experiences on Student Decision Making and Competence

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Simulation Education Strategies
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9:00 AM

Keywords:
Clinical Competency, Clinical Decision Making and Simulation-Based Learning

References:
Hansen, J. & Bratt, M. (in press). Effect of sequence of simulated and clinical practicum learning experiences on clinical competency of nursing students. Nurse Educator.

Hayden, J.K., Smiley, R.A., Alexander, M., Kardong-Edgren, S. & Jeffries, P.R. (2014). The NCSBN national simulation study: A longitudinal, randomized, controlled study replacing clinical hours with simulation in prelicensure nursing education. *Journal of Nursing Regulation, 5*(2), C1-S64.

Meyer, M., Connors, H., Hou, Q., & Byron, G. (2011). The effects of simulation on clinical performance: A junior nursing student clinical comparison study. Society for Simulation in Health care, 6(5), 269-277.

Schlairet, M., & Fenster, M. (2012). Dose and sequence of simulation and direct care experiences among beginning nursing students: A pilot study. Journal of Nursing Education, 51(12), 668-675.

Woda, A., Gruenke, T., Alt-Gehrman, P., & Hansen, J. (2016). Nursing Student Perceptions Regarding Simulation Experience Sequencing. Journal of Nursing Education, 55 (9), 528-532. DOI 10.3928/01484834-201608 16-07

Abstract Summary:
Supplementation of simulation-based learning experiences vs. substituting hospital-based learning with simulation may impact clinical competency. Current findings suggest that supplementation of simulation based learning experiences resulted in graduating nursing students that performed better patient assessments, had increased clinical judgment, and provided safer care in the simulated environment.
Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
1. Describe several ways to supplement simulation based learning experiences and traditional hospital clinical learning experiences for best student outcomes.	• Overview study design related to simulation and traditional clinical learning experiences. • Provide an example of how to supplement simulation learning experiences within a semester clinical course.

2. Identify at least two instruments used to assess nursing students' perception of clinical decision making, self-confidence, and anxiety.	• Present information on pertinent instruments including psychometric data.
3. Articulate three ways to improve student's clinical decision making and competence.	• Discuss study findings including the impact on student's clinical decision-making, self-confidence, anxiety, and competence. • Participant discussion and questions.

Abstract Text:

Simulation-based learning is an educational strategy being developed and implemented across the United States as well as internationally. An emerging nursing education trend is to substitute a portion of hospital-based learning experiences (HLEs) with simulation-based learning experiences (SLEs) as a means to optimize student clinical competency and decision-making skills. Nursing programs encounter constant demands to provide quality education in an increasingly complex healthcare system. Driven by these complexities including cost, limited training facilities, and limited nursing faculty, one College of Nursing implemented a revised nursing clinical curriculum to better prepare nursing students for the current and future nursing profession.

The best method of incorporating SLEs into nursing curricula has yet to be determined. Previous studies found no difference in student performance (Meyer, Connors, Hou, & Byron, 2011; Schlairet & Fenster, 2012, Hansen & Bratt, in press), clinical judgment (Meyer et al., 2011), critical thinking (Schlairet & Fenster, 2012) or perception of clinical decision making (Woda, Gruenke, Alt-Gehrman, & Hansen, 2016) based on the sequence or timing of SLEs and HLEs at the end of one semester. Results from the National Council of State Boards of Nursing (NCSBN) National Simulation Study supports that high quality simulation experiences can be used to substitute up to 50% of traditional clinical hours or hospital-based learning experiences (HLE) (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014) but gives no guidance on the impact of supplementation.

Substituting HLEs with SLEs means that students leave their hospital based environment to engage in SLEs in a simulated health care environment. This can include low, mid, or high fidelity simulations. In contrast to substituted SLEs, supplementation of SLEs provides additional time in the simulated environment with no change to time in the HLE. In a supplemented model students do not leave the HLEs to attend simulation. HLEs are not decreased but instead, additional learning opportunities are provided using SLEs. Currently little is known if supplementing HLEs with SLEs versus substituting one for the other has an impact on learner outcomes, and ultimately patient care.

The purpose of this study was to determine whether supplementation of SLEs influenced the development of nursing students. Specifically, this study explored the differences in clinical decision making (CDM), CDM-related self-confidence and anxiety, and clinical competence between two groups of baccalaureate nursing students in their final semester of a traditional pre-licensure program. A quasi-experimental design was used to comparing students who had either no SLEs or SLEs substituted with their medical-surgical HLEs (Group 1) were compared to a group of students who had robust supplementation of SLEs in addition to HLEs (Group 2).

Outcomes were measured with two self-report surveys and one objective measure, all with established reliability and validity. The *Clinical Decision Making in Nursing Scale* (CDMNS) measured students' perceptions of CDM and *Nurse Anxiety and Self-Confidence with Clinical Decision Making* (NASC-CDM) measured students' perceptions of their level of CDM-related self-confidence and anxiety. Clinical competency was measured with a version of the *Creighton Competency Evaluation Instrument* (CCEI) which rates students on four areas of competency: assessment, communication, clinical judgment, and

patient safety (Hayden et al., 2014). Students in both groups engaged in a novel evaluative SLE on their own time at the completion of their program.

The sample included 71 seniors in a traditional baccalaureate nursing program; 35 in Group 1 and 36 in Group 2. Demographic characteristics between the two groups were non-significant except for employment in healthcare. Group 2 had statistically significantly more participants who were employed as a certified nursing assistant or nurse intern/extern ($p < .01$). When comparing perceived CDM, self-confidence and anxiety, there were not statistically significant differences between groups. With regard to clinical competency, when controlling for work experience, it was not a predictor of clinical competence. Group 2 had significantly higher CCEI total scale scores when compared to Group 1 ($p < .01$). Further analysis of the subscale scores of the CCEI revealed that only the assessment subscale was significantly higher among Group 2 participants ($p < .01$). Although not significant, Group 2 had higher scores than Group 1 on the clinical judgment and patient safety subscales of the CCEI.

Students in Group 2 did not perceive increased CDM, self-confidence or decreased anxiety compared to those with substituted SLEs. Supplementation vs. substitution may have impacted clinical competency. These findings suggest that offering increased exposure to simulation based learning experiences resulted in graduating nursing students that performed better patient assessments, had increased clinical judgment, and provided safer care in the simulated environment.