

# The Impact of Simulated Learning Experience Sequencing on Clinical Decision Making

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## Abstract

**Purpose/Aim** The purpose of this study was to explore whether there is a difference in learning outcomes based on the order in which nursing students receive patient care learning experiences. Specifically, this study examined whether there were differences in students' perception of clinical decision making (CDM) and CDM-related self-confidence and anxiety based on the sequence (order) in which they participated in a block of high fidelity simulated learning experiences (SLE) versus hospital-based learning experiences (HLE).

**Background/Significance** An emerging nursing education trend is to supplement HLE with SLE as a means to optimize student clinical competency and decision-making skills. However, there is insufficient research to guide faculty in determining the ideal sequence in which to offer SLE in relationship to HLE in order to achieve the most favorable student learning outcomes. A better understanding of evidence-based practices to integrate SLE into nursing curricula may lead to better use of resources.

**Research Design** The NLN Jeffries Simulation Theory provided the theoretical framework for this study. A quasi-experimental crossover design was used to determine if the sequence of SLE and HLE affected students' confidence, anxiety, and ability to make clinical decisions. Students in a junior-level medical-surgical practicum were assigned to one of two group sequences with each sequence lasting 7 weeks; Group S-H (simulation learning followed by hospital experience) or Group H-S (Hospital experience followed by simulation). Outcomes were measured with two self-report surveys 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. Baseline data were collected at week 1 (T1) and week 14 (T2) at the completion of the two sequences of learning experiences. A repeated measures ANOVA was used to determine within and between group differences in the outcome variables.

**Results** Between and within group differences were found relative to the NASC-CDM specifically in regards to self-confidence with the decision-making process. When comparing groups, at baseline (T1) the S-H group had significantly higher self-confidence scores compared to the H-S group; however, at 14-weeks (T2) both groups were not significantly different. Between group differences in NASC-CDM mean scores related to anxiety with making clinical decisions were not significantly different at T1 or T2. Significant within group differences were found in the S-H group only demonstrating a significant decrease in clinical decision-making anxiety across the 14 week semester. No significant differences in NASC-CDM scores between T1 and T2 were found within the H-S group. Finally, there were no significant difference in scores on the CDMNS within or between the two study groups at the two measurement points.

**Conclusion** The sequencing of learning experiences does not appear to impact students' perceptions of their CDM ability, confidence, nor anxiety at the conclusion of both sequences. However, students having SLE first did demonstrate decreased anxiety and increased self-confidence which may enable them to learn better and ultimately improve their clinical performance.

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**Application/Recommendation for Nursing Education** Preliminary findings suggest that SLE and HLE can be offered with alternating sequences without impacting the process, anxiety or confidence in CDM. This study provides beginning evidence to guide schools of nursing in curriculum development and allow flexibility in providing high-fidelity simulated learning in relationship to hospital-based clinical practicums based on student needs and available resources. Further studies are needed comparing the sequencing of SLE versus HLE that include an objective measurement of additional outcomes such as student performance and clinical competency.

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