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Aimee A. Woda

Marquette University, aimee.woda@marquette.edu

Theresa Gruenke Schnable

Marquette University, theresa.gruenke@marquette.edu

Penny Alt-Gehrman

Marquette University

Jamie Hansen

Marquette University

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Nursing Student Perceptions Regarding Simulation Experience Sequencing

Aimee A. Woda

College of Nursing, Marquette University, Milwaukee, WI

Theresa Gruenke

College of Nursing, Marquette University, Milwaukee, WI

Penny Alt-Gehrman

College of Nursing, Marquette University, Milwaukee, WI

Jamie Hansen

College of Nursing, Marquette University, Milwaukee, WI

Abstract

The use of simulated learning experiences (SLEs) have increased within nursing curricula with positive learning outcomes for nursing students. The purpose of this study is to explore nursing students' perceptions of their clinical decision making (CDM) related to the block sequencing of different patient care experiences, SLEs versus hospital-based learning experiences (HLEs).

A qualitative descriptive design used open-ended survey questions to generate information about the block sequencing of SLEs and its impact on nursing students' perceived CDM.

Three themes emerged from the data: Preexperience Anxiety, Real-Time Decision Making, and Increased Patient Care Experiences.

Nursing students identified that having SLEs prior to HLEs provided several benefits. Even when students preferred SLEs prior to HLEs, the sequence did not impact their CDM. This suggests that alternating block sequencing can be used without impacting the students' perceptions of their ability to make decisions. (J Nurs Educ . 2016;55(9):528-532.)

Dr. Woda is Assistant Professor, Ms. Gruenke is Simulation Coordinator and Clinical Instructor, and Ms. Alt-Gehrman and Ms. Hansen are graduate students, Marquette University College of Nursing, Milwaukee, Wisconsin.

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Clinical decision making (CDM) is a "complex process involving information processing, critical thinking, (and) evaluating evidence...to select the best course of action which optimizes patient health" (Standing, 2007 , p. 266). Simulation-enhanced education can lead to increased CDM skills of nurses (Meakim et al., 2013), improving patient outcomes and resulting in decreased patient complications, length of stay, and, ultimately, health care costs (Bakalis & Watson, 2005 ; Cook et al., 2011 ; White, 2003). Although it has been reported that nursing students perceive that simulated learning experiences (SLEs) enhance learning outcomes (Kirkman, 2013 ; McCaughey & Traynor, 2010 ; Ricketts, 2011), few studies have explored nursing students' perceptions about the sequencing of SLEs and traditional hospital-based learning experiences (HLEs) on CDM. Therefore, the purpose of this study is to describe nursing students' perceptions of two different sequences of blocks of SLEs and HLEs during students' first medical-surgical nursing practicum rotation and the perceived impact on their CDM.

Background

The use of simulation as a teaching strategy in nursing programs has grown during the past decade (Casida & Shpakoff, 2012 ; Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). Reasons for the increased use of simulation include technological advances, decreasing availability of appropriate clinical sites, and the need to expose students to acute, complex patients in a safe environment (Casida & Shpakoff, 2012 ; Fischer & King, 2013 ; Roh, Kim, & Kim, 2014 ; Wheeler & McNelis, 2014). Simulation incorporated into nursing curricula better prepares students for practice (Meyer, Connors, Hou, & Gajewski, 2011). Students perceive that participating in SLEs enhances safety (McCaughey & Traynor, 2010), improves self-confidence (Ricketts, 2011), improves clinical decision making (Kaddoura, 2010), and promotes the transfer of knowledge and skills to the clinical setting (Kirkman, 2013). The ability to manage patient care through assessment, interventions, skills, and evaluations are enhanced through SLEs (Fischer & King, 2013). In addition, students perceive that skills necessary for teamwork and communication, along with their knowledge, skills, and attitudes related to the care of an acute patient, were enhanced through SLEs (Casida & Shpakoff, 2012).

To counteract the negative outcomes of anxiety in the clinical setting, high-fidelity SLEs have begun to play a large role in the undergraduate nursing education curriculum. High-fidelity SLEs offer a safe environment for

nursing students to refine their CDM skills (Casida & Shpakoff, 2012 ; Leonard, Shuhaibar, & Chen, 2010) and alleviate their feelings of anxiety (Casida & Shpakoff, 2012). Garrett, Macphee, and Jackson (2010) reported that simulation provided an opportunity for nursing students to see the fluctuating health status of a patient, leading to increased confidence. Students also reported increased confidence in their ability to respond effectively, as well as manage acutely ill patients (Fischer & King, 2013 ; Leonard et al., 2010 ; Maas & Flood, 2011 ; Reese, Jeffries, & Engum, 2010 ; Wotton, Davis, Button, & Kelton, 2010). In a landmark National Simulation Study recently conducted by the NCSBN, it was reported that student outcomes were equivalent when up to 50% of HLEs were substituted with SLEs (Hayden et al., 2014). Schools of nursing continue to determine how to best sequence SLEs and HLEs within the curriculum. Currently, few studies have explored student perceptions when integrating different sequences of HLEs and SLEs (Curl, Smith, Chisholm, McGee, & Das, 2016 ; Schlairet & Fenster, 2012). The optimal sequence of SLEs, in coordination with HLEs, that results in optimum student outcomes has yet to be determined.

Theoretical Framework

The National League for Nursing Jeffries Simulation Framework (Jeffries, 2012) served as the theoretical framework for this study. Specific variables related to the conceptual components may impact learner outcomes. Within the National League for Nursing Jeffries Simulation Framework, the design is referred to as the study intervention (Jeffries, 2012), or, in the case of this study, the sequence of learning experiences. The conceptual component explored in this study was student perception.

Method and Design

This qualitative descriptive design used a paper-and-pencil survey (Table). This survey included five open-ended questions used to generate information about the block sequencing of SLEs and its impact on nursing students' perceived CDM at the conclusion of two different blocked sequences of SLEs. Junior-level, third-year nursing students completing their first practicum experience attending a metropolitan private university were asked to participate. This study was part of another study that used quantitative data examining CDM. Approval from the university institutional review board was received. Students were randomly assigned to one of two groups. The H-S group (HLE then SLE) participated in HLEs for the first 7 weeks, followed by SLEs for 7 weeks during one semester. The S-H group (SLE then HLE) reversed this order, starting the semester with 7 weeks of SLEs followed by 7 weeks of HLEs (Figure). The SLEs occurred during a 7-week block of time in which students completed three 4-hour high-fidelity SLEs and one mid-fidelity online simulation. Each nursing student had an active role in three simulations that lasted approximately 4 hours. Students entered the simulation in groups of two, one being the lead RN and the other as a helping RN. The instructor was located in the debriefing room with the remainder of the students viewing the simulation. Activities during each SLEs included orientation to the simulation room and manikin, prebriefing, a prequiz, the patient care scenario, and debriefing. During the HLEs, students were in a variety of medical-surgical hospital settings located in a large metropolitan city for two 8-hour days per week for 7 weeks. Patient care experiences and acuity of patients varied between hospital units.

Results

One hundred seventeen nursing students completing their first practicum experience participated in this study. Ninety-one percent of the participants were Caucasian and 111 were women, with a mean age of 22 years. Inclusion criteria consisted of students in the same junior level medical-surgical theory course and medical-surgical practicum.

Qualitative Data Analysis

Student responses were transcribed verbatim. Data analysis conducted by three investigators included data reduction, data display, and formulating conclusions (Miles & Huberman, 1994). Data reduction involved multiple readings of the transcripts with the intention of identifying students' perceptions about the block sequencing of SLEs. Passages of data were coded with topic codes written in the margins. Data were displayed in matrices to help with the organization and analysis of the transcribed data. Matrices included the topic codes and corresponding direct quotes. Although the original intent of the survey questions was to evaluate the students' perception of sequenced SLEs and its impact on CDM, three themes emerged from the data that focused on the overall practicum experience: Preexperience Anxiety, Real-Time Decision Making, and Increased Patient Care Experiences.

Various methods were used to ensure rigor (Maxwell, 2005). The purposeful sample facilitated a deep exploration of junior-level nursing students' perceptions about the block sequencing of SLEs versus HLEs. The same procedures were followed in each group for recruitment, data collection, and analysis. Explicit comparison between the S-H and the H-S group was completed. This demonstrates that the researchers systemically explored the topic and contributed to the dependability of the study.

Preexperience Anxiety

Students were asked to describe their thoughts and feelings when they found out which sequence they had been assigned-S-H or H-S. Initial comments suggest the students perceived that having SLEs prior to HLEs would decrease their anxiety and better prepare them for their hospital experience. Students who were assigned to SLEs first had positive comments, such as "I was relieved, I felt I would be more prepared for the hospital." Many stated that the SLEs would allow them extra time to practice their skills. Students assigned to HLEs first described feeling anxious, nervous, and overall terrified. One student wrote, "I am concerned about not knowing certain basic skills before performing them in front of real patients." They expressed concerns about not knowing the basic skills or being prepared. They were apprehensive about providing care to live patients.

After the students completed the 14-week semester, students who began their semester in an HLE expressed mixed feelings about how the sequencing impacted their confidence and anxiety. Most of the H-S students expressed that having an HLE first improved their confidence and increased their awareness of the potential for errors, and how important it is to safely administer medication. According to one student, "If I made a mistake in SLEs I was worried about my grade, whereas if I were to make a mistake in HLEs I was anxious about my patient." Still others expressed that having an SLE first would have helped decrease their anxiety as they prepared to care for live patients.

The majority of the S-H students continued to express gratitude for having the SLEs prior to HLEs. Comments did not explicitly express an increase in CDM, but focused more on comfort level in the hospital environment. Comments similar to "It was beneficial to be in simulation first and to review the skills, medications, and assessments" were common. A small group of students expressed that if they had more time in the hospital setting working with instructors, classmates, and nurses, they would have been better prepared to function alone during the SLEs.

Real-Time Decision Making

The theme of Real-Time Decision Making emerged from the data that captured the participants' view of engaging in SLEs. The sequencing of the SLEs related to the HLEs did not appear to be a contributing factor. Both the S-H and H-S groups of students reported that engaging in SLEs increased their confidence with CDM. Students commented that during SLEs they had "more pressure to make decisions" and "being the RN in a

simulation is a higher pressure role to make decisions. This was not necessarily something we got in the hospital." Students noted that in the SLEs, they were encouraged to make decisions independently before being able to consult another RN or instructor. One student expressed that "being faced with these worst-case scenarios prepares me for real life." Another student expressed that SLEs "taught me that in a high intensity situation, I can make valid decisions."

Several comments about having SLEs prior to HLEs suggested that actively participating in SLEs during a 7-week block allowed the students to familiarize themselves with the health care environment. Real-time feedback to discuss the students' decision-making process was noted as helpful prior to caring for live patients. This was supported by comments such as "We were able to make mistakes and learn from them," and others stated that they began to trust their own judgment.

Increased Patient Care Experiences

Regardless of the sequencing of SLEs, students craved more patient care experiences. At the completion of the semester, the students expressed that the opportunities they had to engage with patients, whether they were simulated or live, positively impacted their ability to engage in CDM. Additional patient care experiences helped the students to feel more comfortable with completing physical assessments, administering medications, and prioritizing patient care needs. Having the additional experiences, or time in a clinical setting, increased their overall confidence and decreased their anxiety with CDM.

Discussion

Incorporating SLEs into nursing curricula is helpful in the development of CDM. The incorporation of SLEs can decrease anxiety associated with caring for patients in the hospital setting. Because of the known benefits of SLEs, many schools of nursing have begun to substitute HLEs with SLEs or are intermittently adding SLEs throughout the students' semester. Findings suggest that no major perceived difference exists in CDM, regardless of the sequence of SLEs versus HLEs in which a student participates. It does appear that students who have SLEs prior to HLEs have the opportunity to gain more practical experience with skills, medication administration, and physical assessments.

Implications, Recommendations, and Limitations

Findings from this study suggest that those planning SLEs can do so with more flexibility than previously noted. The use of block sequencing of SLEs and HLEs may optimize the use of limited clinical sites and address the current faculty shortage. Incorporating SLEs into the semester will help improve confidence and decrease anxiety among nursing students. For example, if students are given the opportunity to participate in an SLEs focused on physical assessment and medication administration, they may be more prepared to do so in the hospital setting. Additional studies are needed to compare outcomes with block sequencing, supplementation versus substitution of HLEs and SLEs, and episodic SLEs throughout a semester.

Several study limitations were noted. There was a small, homogenous sample size. Data were collected in one educational setting using participants from one nursing course. In addition, students were surveyed only at the end of the semester and were expected to remember how they perceived the SLEs versus the HLEs placement at the beginning of the semester. Student responses did not explicitly discuss how the sequencing influenced their CDM, and this may be due to the style of questioning or a lack of understanding of their own CDM after a one-semester practicum. Finally, the instructors' perception was not evaluated in this study, which may have been a useful comparison.

Conclusion

Although the majority of the students stated they initially preferred to have an SLEs prior to an HLE, these findings suggest that SLEs and HLEs can be offered with alternating sequences without impacting the CDM process. The emerging themes provide the researchers with beginning evidence to guide schools of nursing in curriculum development. Initial findings allow flexibility in providing high-fidelity SLEs in relationship to HLEs based on student needs and available resources.

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Please answer the following questions if you had a simulated learning experience prior to a hospital-based learning experience:

1. Please describe your initial thoughts and feelings when you found out you had simulated clinical experience first before going to the hospital?
2. Do you feel that the simulated clinical experience improved your clinical decision-making skills?
3. After having completed the hospital portion, do you feel that the simulated clinical experience increased your confidence to make clinical decisions? Please explain.
4. After having completed the hospital portion, do you feel that the simulated clinical experience helped you feel less anxious about making clinical decisions? Please explain.
5. Did your initial feelings about having the simulated clinical experience prior to your hospital clinical experience change after you completed the 16-week semester? Please explain.

Please answer the following questions if you had a hospital-based learning experience prior to a simulated learning experience:

1. Please describe your initial thoughts and feelings when you found out you had a hospital clinical experience first before going to the simulated clinical experience?

2. Do you feel that the simulated clinical experience improved your clinical experience decision-making skills?
3. Do you feel that having the simulated clinical experience after being in the hospital setting increased your confidence to make clinical decisions? Please explain.
4. Do you feel that having the simulated clinical experience after being in the hospital setting helped you feel less anxious about making clinical decisions? Please explain.
5. Did your initial feelings about having the hospital clinical experience prior to your simulated clinical experience change after you completed the 16-week semester? Please explain.