Using High-fidelity Simulation as a Teaching Tool to Enhance Undergraduate Nursing Students Understanding, Recognition, and Communication in Critical Patient Situations

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Decreasing medication errors is important to all healthcare workers, the general public, and educators. Medical errors, specifically medication errors often result from poor communication. Simulated clinical experiences can be used as a tool to create a safe learning environment and can be utilized to enforce that communication in the healthcare setting is critical to reduce errors. The study was completed with group of undergraduate nursing students to explore the effects of a high-fidelity nursing simulation experience on undergraduate nursing students' perceptions of their own ability to recognize the need to clarify medication orders. The findings showed that the students found the simulation experience beneficial and increased their comfort level with medication orders and when to seek clarification from the healthcare provider.

The purpose of this study is to explore the effects of high-fidelity nursing simulation experiences on undergraduate nursing students' perceptions of their own ability to recognize the need to clarify physician orders. Simulated clinical experiences can provide an undergraduate nursing student the opportunity to practice the clinical skills they have learned in the classroom and laboratory environment. In a simulated experience a manikin is utilized as a patient for the student nurse to provide care. Studies have been completed to assess the effectiveness of simulation to teach nursing students clinical practice skills and communication techniques. Bucknall, et al. explains that simulation not only helps with clinical skills but can also "facilitate the development of knowledge, technical and non-

technical skills including communication, decision making, teamwork and leadership" (p. 2484).

Using high fidelity simulation scenarios to enhance undergraduate nursing students learning is a beneficial teaching method. Simulation scenarios create a unique experience for students to participate in direct patient care in a safe and non-judgmental learning environment. This type of safe learning environment fosters the learning process and allows nursing students to gain critical knowledge needed for clinical nursing practice. When simulation techniques are implemented correctly, and a standardized debriefing process post-simulation occurs, the students are prepared with critical thinking skills needed for the increasing acuity of patients being treated in acute care settings. Self-reflection is a component of the debriefing process. Pai, Ko, Eng, Yen (2017), found that the effectiveness of simulation and the process or self-reflection strengthen students' defense and decrease anxiety in the clinical setting and increase nursing competence. When anxiety is decreased, increased concentration on patient treatments, including medication orders could potentially lower errors.

Literature Review

Simulation should not be used as a single strategy in nursing education but blended with didactic and clinical components. Zakari, Hamadi, Audi, and Hamadi (2017), found that when didactic and clinical nursing education is supported by simulation it will increase students' confidence and success in the clinical setting. A study completed by Schubert (2012), found that nurses can be better prepared to care for high-

risk patients through simulation experiences. Hospitalized patients often have acute events that make managing care challenging for a new graduate nurse. With the integration of simulation experiences over the course of their curriculum can enhance and lead to the ability to perform quality patient care.

Self-confidence can be increased with the use of simulation experiences. A study completed by Samawi, Miller, Haras (2014), found an increase in self-confidence reported by nursing students who participated in simulation experiences. A nurse who lacks self-confidence could potentially cause an increased number of errors while providing patient care. Critical situations are stressful, and a timid nurse may not intervene quickly enough to fully benefit the patient's health. By the use of simulation experiences in nursing school, self-confidence could be increased.

Methods

Research Participants

Data was collected from a regional public university. Internal review board approval was obtained. An email was sent to students enrolled in the final year of a baccalaureate nursing program that detailed the research study. A total convenience sample of 32 undergraduate students with ages ranging from 21 to 30 years old enrolled in the same nursing course participated in this study. There were 29 females and 3 males that completed the pre-simulation survey. Nineteen of the 32 currently work in a healthcare related job, 5 of the 32 had transcribed a physician order, and 2 of the 32 students agreed to being comfortable with transcribing hand-written physician orders.

Procedures

The simulation experience was a required course component, but participation in the research study was optional. An electronic consent form was presented at the start of the pre-and post-simulation surveys. One-week prior to the simulation experience a pre-simulation survey was sent to the class of 38 students. The post-simulation survey was sent one hour after the activity and 29 students completed the survey.

The simulated clinical experience presented a case study relating to a middle-aged man presenting to an emergency department setting with an allergic reaction. The participants were then told that the electronic heath record was not functioning and that traditional paper documentation and physician orders were being used. The simulation experience presented the students with illegible handwritten physician orders.

Findings

Pre-simulation survey results are represented as (A). Post-simulation survey results are represented as (B).

Survey Results

Question	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I will be [I was] proficient during the downtime event simulation.	A=0 B=0	A=6 B=7	A=17 B=3	A=7 B=17	A=2 B=2
The simulation prepared me for a downtime event in the clinical setting.	B=1	B=2	B=0	B=20	B=5

I am comfortable transcribing handwritten orders.	A=2 B=1	A=16 B=6	A=11 B=1	A=2 B=18	A=1 B=3
I know when to seek clarification of handwritten orders to prevent medication errors.	A=0 B=1	A=0 B=0	A=1 B=1	A=14 B=15	A=17 B=12
KEY: A. Pre-simulation Survey, B. Post-simulation Survey Number (N): A. 32, B. 29					

Student comments that were submitted during the completion of the post-simulation survey:

"It was great experience and helped me a lot!"

"Great simulation. I would like to do more of them."

"Helpful to feel like we are in a real-life situation."

Limitations

The main limitation of the research study is the small number of participants. A convenience sample from one nursing program was used for data collection. Future research studies could be expanded by utilizing various levels of nursing students across various college campuses.

Conclusions

Many students provided positive feedback regarding the realistic situations that were presented during the simulation experience. The data from this small study showed that the simulation experience increased the students comfort level with transcribing a hand-written physician order and to seek clarification when an illegible order is encountered. Overall, the

simulation experience provided a unique learning environment that a nursing student may not experience until working as a licensed nurse in the acute care setting.

References

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