Innovations in Simulation

Using Simulation Design Characteristics in a Non-Manikin Learning Activity to Teach Prioritization Skills to Undergraduate Nursing Students

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Abstract: Teaching prioritization skills to nursing students is an important yet complex process. Nurse educators often expect these skills to be developed in the clinical setting; however, there are competing demands for the students' time. In simulation, there is an opportunity to assist students to develop prioritization skills. A limitation in using simulation is often the number of high-fidelity simulators available and the number of students who are assigned to the simulation-based experience. This article discusses the application of simulation design characteristics to a non–manikin-based simulation with a focus on developing prioritization skills.

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Nursing students and new nursing graduates find prioritization challenging. It is a skill that is often discussed in the nursing curriculum; however, it generally is not explicitly taught. Students are asked to prioritize patient care and provide rationale, which is often followed up with a discussion about why they made an appropriate or poor decision. Generally, there is not a structured process that students can follow, which novice students find helpful to guide their learning. To address this, the simulation educators at the University of Manitoba chose to create simulation scenarios that specifically addressed prioritization and to make the thinking behind the decision-making visible. Using the INACSL Standards of Best Practice: Simulation[SM],(2016) and applying the simulation design standard to a non–manikin-based simulation, the simulation team developed a series of prioritization simulation-based experiences (SBEs) in an undergraduate concept-based nursing curriculum. This paper discusses the process of this development and highlights the implementation of the simulation activities. Recommendations and future directions are also included.

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Literature Review

Prioritization is an important skill for nursing students to develop. With the increasing pressures of the hospital setting, nursing students and new graduates require effective prioritization skills to provide safe and competent care. Nursing students are frequently taught prioritization skills in a didactic classroom; however, this may not transfer to the clinical practice setting (Buykx et al., 2011; Tiwari, Lam, Yuen, Chan, Fung & Chan, 2005). Regardless, this remains the nursing students' main exposure to prioritization for clinical practice.

> **Key Points**
> - Prioritization is an important nursing skill, but the process is not routinely taught.
> - Simulation provides an opportunity to make the prioritization process visible, however not all nursing programs have multiple simulators to do this.
> - Applying simulation design characteristics to a non-mannequin based simulation can assist with the development of prioritization skills.

Simulation-based learning is a pedagogy that has demonstrated clear benefits that prepare nursing students for clinical practice (Bogossian et al., 2014; Everett-Thomas et al., 2015; Merriman, Stayt, & Ricketts, 2014). As educators have increased the use of simulation in nursing education programs, so has their ability to create effective simulation experiences for a variety of clinical problems. In addition to using simulation to teach psychomotor skills, educators are using simulation to teach concepts related to communication, clinical judgment, and prioritization. In doing so, they are able to provide students realistic opportunities to apply their prioritization skills without the fear of their decisions harming patients.

Human-patient simulators are the most common tool used in simulation-based education. These computerized, life-like manikins allow students to practice their clinical skills in a safe environment (Tanz, 2018). Typically, these experiences include two to five students in different roles caring for one simulator, which may not be the most effective method to allow students to demonstrate competency in prioritization (McGlynn, Scott, Thomson, Peacock, & Paton, 2012). Some programs may have multiple simulators; however, with the cost associated with these, it is unlikely that a nursing program would be able to support one or two students caring for four or five simulators. Given these constraints, a strong understanding of simulation design allows nurse educators to create non−manikin-based simulators that provide nursing students with the opportunity to apply prioritization skills.

In addition to understanding how to develop SBEs, the educator also needs to understand how to develop SBEs that are specifically linked to the development of prioritization. Too often, prioritization SBEs are developed with outcomes that the educator has predetermined based on their personal experiences or based on specific clinical pathways, such as cardiac arrest (Merriman et al., 2014). The process of how to develop prioritization skills is not explicit. Although there are tools such as the Lasater Clinical Judgment Rubric (Lasater, 2007) that includes a section on prioritization, the determination of what is the most important data is left to the educator.

There are several papers that have reported interventions aimed at the development of prioritization skills (Behrens, Dolmans, Leppink, Gormley, & Driessen, 2018; McGlynn, et al., 2012; Nelson et al., 2006; Poorman & Mastorovich, 2016); however, the papers generally describe activities that promote prioritization skills or the perceived level of preparedness to prioritize without actually describing how they worked through the prioritization process. Some papers provided rationale linked to the prioritization (Donovan, Argenbright, Mullen, & Humbert, 2018; Nelson et al., 2006); however, this process tended to be specific to a particular simulation and is not easily applied to new simulation-based experiences. One key study that included 30 registered nurses (RNs) investigated how RNs prioritize their activities (Patterson, Ebright, & Saleem, 2011) and coded over 422 prioritization decisions. According to their findings, RNs prioritized according the following levels: (1) imminent clinical concerns, (2) high uncertainty activities, (3) core clinical caregiving, (4) managing pain, (5) relationship management, (6) documenting, (7) helping others, (8) patient support, (9) system improvement, (10) cleaning/preparing supplies, and (11) personal breaks and social interactions (Patterson, et al., 2011). Another paper from Alspach (2000) included what they called the five F's of prioritization: fatal (could cause death or injury), fundamental (essential to nurse), frequent (must be conducted many times), fixed (must be done within certain times), facility (standard by the organization). These two papers were complementary in their description of prioritization and were used to guide the development of our simulation-based experience.

Simulation Development

At the University of Manitoba, the simulation faculty were provided the opportunity of developing new SBEs for the revised concept-based curriculum. To accommodate the number of students (n = 120) and to cycle them all through the SBEs, a mix of manikin- and non−manikin-based simulation experiences were developed. All experienced simulationists who developed the SBEs followed the INACSL Standards of Best Practice: Simulation[SM]. Simulation activities are included over six terms (3 years), and

each term included an SBE specifically aimed at developing prioritization skills. These SBEs used the normative hierarchy of nursing tasks (Patterson, et al., 2011) as a framework to guide the decision-making points and rationale for the decisions. In using a structured framework, the intent was to assist beginning nursing students in being able to understand how to make decisions around prioritization of nursing care.

For each SBE, the scenario included five patients with varying needs that the students had to prioritize the care. Patient conditions and backgrounds were consistent with what was being taught and seen in the theoretical and clinical courses. Morning report was simulated by using patient charts and verbal report. This was the context of the simulation, and students' prioritization skill development began with identifying which patient they would see first and why. To maintain consistency of the discussion of the prioritization, rationale that was supported by the hierarchy framework was provided. The prioritization and supporting rationale for the five simulated patients was also reviewed by five experienced practicing nurses in the content areas to provide validation for the prioritization decisions. This information was included in our simulation template for the facilitator who would be working with the students in that simulation.

Simulation Implementation

The prelearning preparation included providing the students with the 11 levels of prioritization from Patterson et al. (2011), and during the prebriefing, the students were instructed to prioritize and provide rationale based on these levels.

Working in pairs, the students were provided the charts for five different patients. This was to simulate the arrival of a nurse to the unit before shift. Students were then given a verbal report on their patients. Working with their partner, students were asked to indicate whom they would see first, and why. The pair was asked to obtain consensus regarding their decisions. This took approximately 15 minutes. Once this was complete, the students assembled as a larger group (n = 10) and discussed their decision with their simulation facilitator, and how this linked to the decisions of the experienced nurses and the hierarchy framework. Each pair presented the rationale for their decisions and discussed prioritization as a group, which took another 20 minutes. A 15-minute structured debriefing followed this discussion.

For each term of this 1 + 3 year baccalaureate nursing program, the simulation activity was leveled according to the level of the students. For example, in year 2, part of the simulation was filling in a worksheet with relatively stable patients and the discussion during the debrief focused more on prioritization, clumping care for the patients to increase time management, and the concept of delegation to unlicensed practitioners, whereas in year 3, the focus of the debrief was related to the complexity of patients. The debrief sessions were more focused on the actual prioritization of patients, critical thinking, problem solving, time management, and organization than the previous year.

In the final year, the focus was on organizing workloads and distributing patients as well as delegation and finally community home care prioritization, with a focus on how to plan the nurses day when a community health nurse has to travel and care for patients in a community setting.

Recommendations and Future Development

Recommendations for further research would include evaluating the effectiveness of prioritization simulations on students' critical thinking, problem solving, and prioritization in a clinical setting. Although our current simulations are primarily chart based with verbal report, we are looking at creating video-based simulations that will include prioritization activities like the ones we have created.

Conclusion

Through the application of the Standards of Best Practices: Simulation[SM], and using evidence-informed practices for prioritization, nursing students' prioritization skills can be developed through the participation of non—manikin-based simulation experiences. Additional research should be conducted to further determine the transferability of the learned prioritization skills in simulation to clinical practice.

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