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Featured Article

## Low-Fidelity Simulation to Enforce Patient Safety

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### KEYWORDS

patient safety;  
low-fidelity;  
simulation;  
static manikins;  
debriefing

### Abstract

**Background:** Literature is limited regarding low-fidelity simulation related to patient safety. A low-fidelity simulation was implemented to assess prelicensure students' ability to detect patient safety issues and their perceptions of the simulation.

**Method:** A descriptive design was used with a convenience sample of students enrolled in associate, bachelor, or accelerated bachelor degree programs.

**Results:** Participants were not successful in identifying all the patient safety issues. However, they perceived themselves as being successful. Participants valued the learning experience and felt it increased their confidence in identifying patient safety issues.

**Conclusions:** Nurse educators need to examine their nursing curriculum related to how patient safety concepts are taught and reinforced throughout the curriculum.

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Following the Institute of Medicine's (IOM) report *To Err is Human: Building a Safer Health System* (Kohn, Corrigan, & Donaldson, 2000), quality and safety in the health care environment have emerged as top priorities. The IOM later released a report that challenged educators to prepare health professionals, including nurses, not only to care for patients but also to improve the quality, safety, and reliability of the health care system in which they worked (IOM, Greiner, & Knebel, 2003). As members of the health care team, nurses play a pivotal role in ensuring

patients receive quality care in a safe manner. In a response to this challenge, the Robert Wood Johnson Foundation began an initiative to address quality and safety in nursing education, titled Quality and Safety Education for Nurses (QSEN) (Cronewett et al., 2007).

QSEN adapted the IOM's core competencies (IOM et al., 2003) to develop the nursing competencies of patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics (Cronewett et al., 2007). To master these competencies, various teaching strategies must be utilized in the classroom, clinical, and laboratory settings throughout the prelicensure

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curriculum. According to DeBourgh and Prion (2011), “Opportunities to develop cognitive knowledge and clinical practice skills that promote patient safety are limited by the ‘student’ designation and restricted scope of practice” (p. e48). Simulation has been identified as an effective strategy

to teach the QSEN competencies (Cronenwett, Sherwood, & Gelmon, 2009; DeBourgh & Prion, 2011; Durham & Sherwood, 2008; Ironside, Jeffries, & Martin, 2009).

In a systematic review of 12 articles related to medium- and high-fidelity simulation, Cant and Cooper (2010) found simulation to be a better strategy for knowledge acquisition compared with lecture. Another systematic review of eight articles related to only high-fidelity simulation

also reported improved learning outcomes in knowledge acquisition (Lapkin, Levett-Jones, Bellchambers, & Fernandez, 2010). In addition, the review reported improved outcomes in clinical reasoning, critical thinking, and clinical skills with the use of simulation.

Utilization of simulation to specifically improve patient safety is also addressed in the literature. Simulation has been confirmed to be an effective strategy to improve patient safety competencies (Berndt, 2014; DeBourgh & Prion, 2011; Debourgh & Prion, 2012; Gantt & Webb-Corbett, 2010; Ironside et al., 2009). DeBourgh and Prion (2011) stated simulation focused on how patient safety builds knowledge, skills, confidence, and ability to reduce the potential for risk and harm.

Resources for medium- to high-fidelity simulation may be a barrier for some prelicensure nursing programs. No literature was found that addressed the utilization of low-fidelity simulation, especially the use of static manikins, to teach patient safety competencies. This article discusses a low-fidelity simulation strategy implemented to assess prelicensure students’ ability to detect patient safety issues and teach students the importance of assessing their patient’s environment for safety hazards.

## Purpose of the Study

The purpose of this study was to identify students’ patient safety knowledge and explore learners’ perceptions of a safety simulation strategy, specifically focusing on students’ (a) ability to identify patient safety issues, (b) perception on their ability to identify patient safety issues, and (c) evaluation of a low-fidelity safety simulation strategy.

## Method

A descriptive design was utilized with a convenience sample (N = 244) of students enrolled in associate, bachelor, or accelerated bachelor degree nursing programs on a regional university campus. This study was approved at the expedited level by the university institutional review board. During campus laboratory for the foundation and medical surgical courses, students were asked to participate in the study. Three surveys were completed by students: (a) simulation strategy survey, (b) postsimulation strategy survey, and (c) postdebriefing survey. All three surveys collected the same demographic information from the student including type of nursing program, current course, gender, age range, current health care employment, and role in the health care setting. The first survey completed was the simulation strategy survey. This survey was completed during the safety strategy and asked students to identify the safety issues at each station. The next survey completed was the postsimulation strategy survey. This survey was completed immediately after the safety strategy, and students were asked to rate how successful they felt that they were in identifying the patient safety issues, value of the learning strategy, how well their nursing courses prepared them to identify the patient safety issues, if a sufficient amount of time was provided for the activity and if the patient safety simulation increased their confidence level in identifying safety issues. There were three-essay format questions that asked about the positive and negative aspects of the safety simulation and areas for improvement. The final survey completed was the postdebriefing survey which was identical to the postsimulation strategy survey. The surveys were identical to evaluate if students’ perspectives on the strategy changed after debriefing.

To ensure anonymity for the students, no personal identification data were collected to link students to their survey responses. As part of each survey, students were provided an informed consent with the option to participate or not to participate in each of the individual surveys. Therefore, the number of participants varied from survey to survey (Table 1).

## Safety Simulation

Three stations were set up in the nursing laboratory utilizing static manikins to mimic a patient’s bedside. Each station had a bed, manikin, bedside stand, and overbed table. Various patient safety issues were simulated

### Key Points

- Patient safety issues need to be addressed and reinforced throughout nursing curricula.
- Students struggled to identify simulated patient safety issues.
- Low fidelity safety simulation with static manikins can be an effective teaching strategy.

**Table 1** Participants by Survey

Participants	N
Simulation strategy survey	235
Postsimulation strategy survey	240
Postdebriefing survey	207

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