

High Fidelity Patient Simulation to Evaluate Student Nurse Patient Safety Competency

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Introduction

In 1999 *To Err is Human: Building a Safer Health System* was published claiming that as many as 98,000 Americans were dying each year from medical error (Institute of Medicine [IOM], 1999). This landmark report provided the impetus for the current patient safety movement. The Robert Wood Johnson Foundation in partnership with the IOM later identified nurses as being uniquely positioned to impact safe patient care. To prepare future nurses for this task, schools of nursing have been charged by the IOM to improve patient safety content in all curricula (IOM, 2010). To assist faculty with this effort, The Quality and Safety Education for Nurses Project (QSEN) translated the IOM patient safety recommendations into competencies which allow for student nurses to develop the knowledge, skills and attitudes (KSAs) which will be necessary to provide safe patient care (Cronenwatt, et. al., 2007). Ensuring that patient safety content is integrated into curricula to enhance student nurse safe patient care knowledge is the initial task of nursing faculty. Evaluation of learning is the next step to ensure competency in these safe patient care tenants throughout the curriculum. Evaluation data can help faculty assess whether the student nurse has developed a basic foundation of patient safety knowledge and skill to allow him/her to enter the profession ready to practice safely (Barnsteiner, et. al., 2013).

Significance to Nursing

Employers assume nursing faculty have prepared the new graduate nurse for this the professional role and have carefully evaluated the student's competency to provide patient care while adhering to established safe patient care tenants (Hall, 2013). Nursing faculty need to ensure competency in these safe patient care tenants prior to sending students into the clinical area for the initial experience and throughout their pre-licensure educational process. It is important that faculty embed the concepts of safe patient care and the nurse's professional role regarding attitudes toward error into the curriculum outside of clinical practice experiences. Nursing faculty must also identify evaluation methods which identify what student nurses are learning and that learning continues throughout the curriculum. Using this evaluation data, faculty can be confident that the student nurse has developed a strong foundation of patient safety knowledge which will allow him/her to enter the profession ready to practice patient care safety in its entirety (Barnsteiner, et. al., 2013).

Sample

All sophomore level students (N=52) in the Baccalaureate Nursing program at Old Dominion University who successfully completed the fundamental level nursing courses were required to participate in the HFPS as part of an ungraded class activity. Only evaluation data from those students who provided informed consent was used for this study. All of the eligible students consented to the use of their data.

Measures

The High Fidelity Patient Simulation (HFPS) was created with patient safety errors in the hospital room in the simulation laboratory in the School of Nursing. Patient safety errors were the nurse call bell lying on the floor, the patient's water pitcher and eyeglasses on the bedside table far from the bed, and the patient armband with an incorrect birth date. The students were also expected to introduce themselves to the patient, perform hand hygiene before providing the meal tray and, provide an SBAR handoff to a transport technician. After creating the HFPS, the scenario was videotaped using one senior-level student nurse volunteer. The video demonstrated the senior-level nursing student providing safe patient care, identifying the safety errors and making corrections.

Watching the HFPS video, participating in the HFPS and participating in the post simulation debrief were required but were not graded course activities.

The purpose and the procedure were briefly reviewed with a copy of the informed consent document given to the students. The students were then shown the video of the senior level student performing in the HFPS as a review of the patient safety content of the course. The students briefly discussed the videotape with fundamental level faculty. The faculty did not point out competencies that were corrected but allowed the students to do so. In this pre-brief all of the corrected competencies were identified by the students.

One week after viewing the video of the HFPS, all of the students were then required to individually provide simulated patient care and were informed that their HFPS would be evaluated by an observer behind a one-way glass. To begin the HFPS, each student was given a videotaped nurse-to-nurse handoff to provide consistency. The handoff guided the student to introduce them self to the patient, correctly identify the patient, complete a room safety survey, and assist the patient with a meal tray. Each student was evaluated in the HFPS as correctly or incorrectly performing each safe patient care competency.

Evaluation of the student's competency was completed by a faculty member who had no didactic or clinical authority for the students in this study. Prior to the simulation, the evaluator reviewed the evaluation tool and the videotaped patient care scenario with the project director to allow for clarification of student expectations. The students were evaluated as conducting the patient safety competency or not conducting patient safety competency. Immediately after the simulation, the students individually viewed their evaluation tool and a videotape of their performance during the HFPS. The evaluator guided group reflective post-simulation debriefing sessions within two hours of the HFPS. There were four debriefing groups with each group having no more than 20 students.

Results

The Mann Whitney U was used to analyze the data. There was no statistically significant difference ($p < 0.05$) between previous healthcare experience, student age or gender and HFPS performance with the competencies of introduction, hand hygiene, patient identification, call bell and personal items within reach or handoff using SBAR.

Demographic data and descriptive results are presented in tables. Of note only ten students (19%) were able to identify all six of the patient safety competencies.

Table 1. Demographic Data of Sample

Variable	N=
Gender	
Male	4
Female	48
Age	
18-21	27
22-26	8
27-55	17
Previous Healthcare Experience	
yes	23
no	29

Table 2. Descriptive Results

Patient Safety Competency	N= % Correct
Introduction to Patient	N=49; 94.2%
Patient Identification	N=24; 46.2%
Patient Call Bell Far From Patient	N=46; 88.5%
Patient Personal Items Far From Patient	N=51; 98.1%
Hand Hygiene Before Meal Tray	N=31; 59.6%
SBAR Handoff	N=51; 98.1 %

Discussion

The poor compliance with hand hygiene and correct patient identification could be due to the timing of the HFPS. This simulation took place in the days following the students final requirements of performing a graded head to toe physical assessment and graded skills practicum. Many of the students were visibly exhausted from intense preparation for these final graded experiences. Further, the HFPS was clearly identified to students as not being part of the graded practicum or having any bearing on their success with the semester. Students may have performed better if they were not so exhausted and if they felt the HFPS would impact their grade for the semester.

Another factor that may have impacted their performance is the lack of previous orientation to the simulation laboratory. Due to staffing issues and time constraints of the student group, there was no orientation to the simulation laboratory prior to the HFPS. It was also surprising that previous health care experience of the students did not significantly impact the safe patient care competencies during the HFPS. It was assumed that students with previous health care experience of any type would have basic competency in safe patient care. Since previous health care experience was determined by School of Nursing admissions committee data which was as limited as hospital volunteer experience, the actual previous health care experience was not known. In the future, the type and extent of the previous health care experience should be clarified to provide useful data. No post simulation survey data was collected from this student group. Anecdotal student comments included discomfort with the high fidelity simulator, and with some of the patient care tools in the room such as the patient armband, and the hand sanitizer bottle representing hand hygiene. These comments could explain the poor performance with hand hygiene and patient identification.

The information from this simulation provides faculty with knowledge about student competency after the fundamental level didactic course. Faculty who began the initial clinical practice experiences with these students were reminded to provide continued emphasis of the importance of all basic patient safety competencies. The results of the HFPS identified that additional emphasis on hand hygiene and the importance of patient identification using two identifiers, will need to occur during each and every clinical day, not only in the initial clinical rotation but throughout the curriculum. This information can also be used to inform clinical practice sites and future employers of patient safety competency.

HFPS is an effective method to evaluate student patient safety competency. The use of HFPS was successful and has potential for providing evaluation data regarding student safe patient care learning throughout the curriculum. Orientation to the simulation laboratory may facilitate the simulation experiences. Future refinement of the observation tool for use in every clinical course will allow faculty to evaluate continued student patient safety competency. Competency evaluation data will allow faculty to inform future employers that student nurses were able to demonstrate safe patient care when entering the workforce.