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Evaluating best educational practices, student satisfaction, and self-confidence in simulation: A descriptive study

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ABSTRACT

Background: The National League for Nursing (NLN) has endorsed simulation as a necessary teaching approach to prepare students for the demanding role of professional nursing. Questions arise about the suitability of simulation experiences to educate students. Empirical support for the effect of simulation on patient outcomes is sparse. Most studies on simulation report only anecdotal results rather than data obtained using evaluative tools.
Objectives: The aim of this study was to examine student perception of best educational practices in simulation and to evaluate their satisfaction and self-confidence in simulation.
Design: This study was a descriptive study designed to explore students' perceptions of the simulation experience over a two-year period. Using the Jeffries framework, a Simulation Day was designed consisting of serial patient simulations using high and medium fidelity simulators and live patient actors.
Setting: The setting for the study was a regional campus of a large Midwestern Research 2 university.
Participants: The convenience sample consisted of 199 participants and included sophomore, junior, and senior nursing students enrolled in the baccalaureate nursing program.
Methods: The Simulation Days consisted of serial patient simulations using high and medium fidelity simulators and live patient actors. Participants rotated through four scenarios that corresponded to their level in the nursing program. Data was collected in two consecutive years. Participants completed both the Educational Practices Questionnaire (Student Version) and the Student Satisfaction and Self-Confidence in Learning Scale.
Results: Results provide strong support for using serial simulation as a learning tool. Students were satisfied with the experience, felt confident in their performance, and felt the simulations were based on sound educational practices and were important for learning.
Conclusions: Serial simulations and having students experience simulations more than once in consecutive years is a valuable method of clinical instruction. When conducted well, simulations can lead to increased student satisfaction and self-confidence.

1. Introduction

The clinical education of nursing students has remained virtually unchanged for decades. Clinical experiences often focus on tasks or skill performance, such as medication administration, and do not always encourage the development of critical thinking or clinical decision making in students (Jeffries, 2015). Since students in clinical experiences care individually for only one or two clients, team-building aspects of care are not emphasized. Because care is becoming more complex and clinical placements are becoming hard to find, colleges of nursing are looking for innovative ways to provide the clinical education their students desperately need.

Simulation has been suggested as an alternative to face-to-face clinical experiences. Questions arise about the suitability of simulation experiences to educate students. The National Council of State Boards of Nursing (NCSBN) conducted the National Simulation Study to explore whether clinical time can effectively be replaced with simulation time. Results of the study showed that simulation can be an appropriate educational vehicle for the clinical education of nursing students (Hayden et al., 2014). This study examined student perception of best educational practices in simulation and evaluated student satisfaction and self-confidence in simulation.

2. Background

Simulation has been found to be a useful teaching strategy that contributes to learning, development of competencies, safety, and self-confidence (Norman, 2012). Simulation minimizes the variability of hospital or community based experiences, thereby providing a more consistent and predictable learning environment. The NLN has endorsed simulation as a necessary teaching approach to prepare students for the demanding role of professional nursing (NLN, Vision Statement, 2015). Nursing faculty use simulation as a way to provide valuable active learning experiences that can be substituted for real life clinical experiences.

A study conducted by the National Council of State Boards of Nursing (NCSBN) found that replacing clinical time with simulations does not adversely affect student education and is often beneficial for learning (Hayden et al., 2014). The NCSBN concluded that significant data support the idea that simulation can replace up to 50% of traditional clinical experiences (under specific conditions) and not affect NCLEX_RN pass rates (Hayden et al., 2014). Similar results have been found with the education of medical students. Simulation-based medical education with deliberate practice that incorporated thoughtful and complex educational interventions was found to be superior to traditional clinical medical education in achieving specific clinical skills (McGaghie et al., 2011).

3. Literature Review

Despite research recommendations for integration of simulation in nursing curricula, empirical support for the effect of simulation on student satisfaction and self-confidence is still rather sparse. In addition, most studies on the effectiveness of simulation report only anecdotal results rather than the data obtained using evaluative tools. Moreover, most studies do not describe the reliability and validity of quantitative tools (Kardong-Edgren et al., 2010). No studies were found that examined interdisciplinary simulation using students from all levels of a nursing program. In addition, no studies examined the effect of using serial simulations to build on student self-confidence as they progressed through the nursing school curriculum. This article will attempt to bridge that gap in the literature.

The use of simulators, when compared to live patient-actors, yielded equivalent results in improvement of patient assessments and treatment selection. Simulation closely represented real-life scenarios and disease states (Gillet et al., 2008). An improvement in nursing knowledge and critical thinking resulted after simulation of a rapid deterioration of the patient's clinical condition (Schubert, 2012).

McNellis et al. (2014) studied the traditional model of clinical nursing education and found four themes common to different programs and geographic areas. These themes were: educators assessed the success of a clinical day by the completion of tasks; only one type of pedagogy was used; students missed many learning opportunities during the clinical day; and since each student individually cared for only one client, teamwork was not taught or stressed. This study found that traditional methods of teaching failed to optimize student clinical opportunities.

4. Method

This study was a descriptive study designed to explore students' perceptions of the simulation experience over a two-year period. The purpose of the study was to examine student perception of best educational practices in simulation and to evaluate their satisfaction and self-confidence in simulation.

Permission to conduct the study was obtained from the University Institutional Review Board. For two consecutive years, students in all levels of our nursing program (sophomore, junior, and senior) participated in a Simulation Day. These Simulation Days were designed and conducted using the Jeffries framework for designing, implementing, and evaluating simulations (Jeffries, 2005). The setting for the Simulation Day was the Health Science Wing of the campus; classrooms and the nursing lab were utilized for the various simulations.

The Simulation Days consisted of serial patient simulations using high and medium fidelity simulators and live patient actors. Students, patient actors, and faculty received a copy of the simulation schedule and learning objectives one week prior to simulation. Students were divided into groups based on their current courses and level in the nursing program. Students rotated through four one-hour scenarios that corresponded to their level. Scenarios were designed to meet specific course objectives. For example, senior students participated in mental health, critical care, leadership, and community scenarios. Junior students participated in pediatric, obstetrics, medical/surgical, and geriatric scenarios. Sophomores were patient actors for 2 h and then participated in basic nursing scenarios for the other 2 h.

On the morning of the Simulation Day, all students and faculty met to review the schedule, group selection, and objectives for the simulation day. At the conclusion of the simulation experience, a debriefing session was held.

4.1. Hypotheses

Jeffries (2005) describes student factors that affect learning through simulation; these factors include program level and age. We used these factors to develop three hypotheses to examine the effect of serial simulations on students in our nursing program. First, we hypothesized that there would be an improvement in student satisfaction, self-confidence, and learning between Year 1 and Year 2. Second, we hypothesized that younger students would respond better to the simulation compared to older students in the nursing program. Third, we expected that class standing would have a significant influence on student response; specifically, that juniors and seniors would have higher perception of the educational practices of serial simulations than sophomores. In addition to hypothesis testing, we provide extensive descriptive data of student responses to the serial simulations in terms of student satisfaction, self-confidence, and learning.

4.2. Sample

The convenience sample consisted of sophomore, junior, and senior nursing students enrolled in the baccalaureate nursing program at a regional campus of a large, Midwestern Level 2 Research University. In year 1, 97 students participated and 102 students participated in year 2, for a total of 199 students. The sample was predominantly female (86%). The majority of students were between 19 and 25 years old (75%), followed by 26–35 years old (16.5%), 36–45 years old (5.5%), and 46–55 years old (3%). Students were further identified as being sophomores (36.5%), juniors (35.5%), or seniors (28%). The specific description of the sample is contained in Table 1. It is interesting to note that year 1 sophomores became juniors in year 2, and year 1 juniors

Table 1
Characteristics of participants presented by school year.

		2014–2015		2015–2016	
		n	%	n	%
Gender	Male	14	14.4	13	12.7
	Female	83	85.6	89	87.3
Age	19–25	73	74.5	77	75.5
	26–35	16	16.3	17	16.7
	36–45	6	6.1	5	4.9
	46–55	3	3.1	3	2.9
Level	Sophomore	39	39.8	34	33.3
	Junior	34	34.7	37	36.3
	Senior	25	25.5	31	30.4