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Preparing Tomorrow's Nurses for Collaborative Quality Care Through Simulation

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ABSTRACT

Simulations were introduced into a 2nd semester associate degree nursing program as a teaching strategy designed to enhance learning, promote critical thinking, and bridge the gap between theory and practice. Minimizing error, promoting quality care, and establishing teamwork were among the main objectives. Decision making and completion of assignments and activities were shared. Simulation helps nursing students to build communication skills and collaborate characteristics essential to working within the interprofessional team in today's health care climate.

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Introduction

In order to meet the demands of caring for our current population, all health care professionals need to establish effectiveness in team participation. Student nurses must first learn to work as a team with their peers before they enter into practice as registered nurses and become part of an interprofessional team. Knowledge, skills, attitude, flexibility, and planning are important attributes for each interprofessional team member to possess, regardless of one's area of practice. Student nurses working together in simulation situations in a college skills laboratory or a simulation center can foster the learning process and promote communication and collaboration (Bahreman & Swoboda, 2016; Gore & Thomson, 2016; Brashes, Owen, & Haizlip, 2015). Ineffective communication and lack of collaboration can result in barriers and medical error (Browning, Torain, & Patterson, 2016; Hughes, 2008; Institute of Medicine (IOM), 2000, 2003). A culture of safety has been touted for the past two decades, yet morbidity and mortality rates as a result of medical error remain high, and such error has been identified as the third leading cause of death in the United States (Makary & Daniel, 2016). Review of deficiencies and adverse events have shown that continued lack of communication and deficiencies in teamwork can contribute to poor clinical outcomes (Nancarrow et al., 2013). Developing teaching strategies through simulation allows future nurses the opportunity to establish teamwork and develop the values and skills of their

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profession that are needed to bridge a gap in current health care practice (International Nursing Association for Clinical Simulation and Learning [INACSL] Standards Committee, 2016). This gap remains a lack of interprofessional communication and understanding among various allied health services that include, but are not limited to, nursing, medicine, social work, physical therapy, home care, and referred specialists (Baker, Day, & Salas, 2006; Nancarrow et al., 2013).

In addition, simulation allows students and health care providers an opportunity to improve their decision-making, problem-solving, communication, and collaboration skills in a safe, nonthreatening environment, while receiving constructive feedback on their performance (Anderson, Holmes, Le Flores, Nelson, & Jenkins, 2010; Goldsworthy, 2012).

Purpose

The purpose of this teaching strategy was to prepare tomorrow's nurses for collaborative, quality patient care through simulations. The trifold goal is to enhance learning, promote critical thinking, and bridge the gap between theory and practice when working as part of a team with the ultimate goal being to prepare student nurses to be able to function as part of a team when they enter into practice as a registered nurse.

Background and Theoretical Framework

The literature has shown that, in order to facilitate safe and effective quality health care, interprofessional team work is essential (IOM, 2000, 2001, 2003). Various reports and commissions have, for

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the past two decades, espoused the need for collaboration because "how care is delivered" is just as important as to "what care is delivered" (IOM, 2001, p.19) The foundation for this teamwork needs to begin in schools of higher education with all members of allied health fields, nursing being one of them. Before team participation with allied health fields occurs, nursing students need to hone their skills while working together as part of the nursing team, thus preparing them for real-world situations where nurses are part of both nursing and interdisciplinary teams (O'Daniel & Rosenstein, 2008). Simulation during the last decade has increasingly become a method utilized not only in nursing programs but also in the health care industry in order to advance the learning of registered nurses in complex situations (Aebersold, 2016; Aebersold & Tschannen, 2013; Baker et al., 2006).

Simulations may be referred to as low, mid, or high fidelity, depending on the objectives of learning and realism portrayed. To illustrate and measure the competency of various skills, low-fidelity simulation, such as listening to heart and/or lung sounds on a mannequin, may be employed. A high-fidelity simulation may include either a virtual or a standardized patient in an enfolding case study, wherein students respond to a specific scenario, requiring assessment, planning, intervention, and evaluation of intervention. The simulations developed were based on the systematic guidelines for simulation design (Jeffries, 2005). Further development of this theoretical framework is now known as the NLN/Jeffries Simulation Framework. This framework demonstrates the connectivity between the design characteristics of a simulation; between the facilitator, participant, and educational practices in a simulation; and between the various aforementioned simulation components and possible outcomes. Simulation provides varied interactive learning, engaging all learning styles in a safe, nonthreatening atmosphere (Jeffries, 2009; Kameg, Szpak, Cline, & McDermott, 2014). Using simulation technology as a strategy to promote teamwork is one way that nursing faculty can increase and engender communication and team collaboration skills among nursing students, which are vital attributes of all health care professionals who are delivering quality, efficient, and safe care (IOM, 2000, 2003; Nancarrow et al., 2013).

The Quality and Safety Education for Nurses (QSEN, 2013) project (2007) redefined a nurse's role in practice. The development of these competencies for nursing practice added to the response of health care professionals in the prevention of medical errors in the health care industry and in achieving the best outcomes for patients. In addition, these simulation experiences will allow nursing students to collaborate as members of a team, with clearly delineated roles and responsibilities.

During the first semester, in the fundamentals course, nursing students are introduced to a simulation scenario toward the end of their first semester. A brief lesson on simulation, reading assignments that coincide with their theory class, and the electronic health record for the simulation are given to students prior to the simulation in which they will participate at the end of the semester as part of their college laboratory class. Clinical adjuncts are oriented to the simulation by full-time faculty. Before entering the second semester, students have some familiarity with simulation; however, team work is not introduced, and postsimulation assignments are not given. Each clinical group consists of 10 students, and the class size ranges from 40 to 60 students based on attrition. Keeping in mind that the availability of the high-fidelity laboratory and technician are not always available, if the simulation does not take place in the Simulation laboratory, it takes place in the skills laboratory, which does not have video capability.

Teaching Strategy Using Simulation to Promote Team Collaboration

Today's health institutions do utilize simulation to establish safe, quality care. Developing abilities to perform as a member of a team

is vital to the success of future nurses who are employed in health care facilities. Health care institutions, particularly hospitals, are using simulation as training for registered nurses, physicians, physician's assistants, anesthesia fellows, physical therapists, social work, and other allied health professions. Such professional development through simulation is important but so too is utilizing simulation as a foundational tool and strategy in nursing education before nurses become part of nursing interprofessional health care teams (Brandt, 2015).

Four afternoon on-campus simulations were introduced into a second semester medical-surgical course in the associate degree nursing program as a teaching strategy, with a trifold goal to enhance learning, promote critical thinking, and bridge the gap between theory and practice while establishing team collaboration. Students attended clinical in the hospital setting in the morning and returned to campus for the afternoon participation in simulations. Each of these simulations had specific objectives and outcomes based on QSEN competencies. The simulations were based on the concepts of tissue perfusion, oxygenation, elimination, nutrition, and metabolic demands. The first simulation topic was a perioperative patient experience that related specifically to advanced directives and informed consent. The goals included insuring patient safety with correct surgery being performed and conducting preoperative teaching for prevention of postoperative complications, such as pneumonia, atelectasis, and deep vein thrombosis. The second simulation topic was a patient readmitted for heart failure and decreased tissue perfusion resulting from vascular insufficiency and decreased cardiac output. The goals focused on patient education regarding lifestyle changes, diet modifications, and medication actions and adverse effects. The third simulation topic was a diabetic patient mismanaging medication administration resulting in inadequate metabolic processes related to glycemic control and nutrition. The goals focused on patient education regarding lifestyle changes, proper administration and actions of medications, and signs and prevention of both hyperglycemic and hypoglycemic symptoms. The last simulation was on nutritional deficiencies related to inadequate absorption of nutrients and compromised absorption, such as the one that occurs in inflammatory bowel disease. The goals were to insure basic care and comfort, to conduct patient education related to dietary intake, and to review medications and adverse effects of the same. The QSEN competencies of these simulations related to patient-centered care, safety, quality improvement, teamwork and collaboration, evidencedbased practice, and informatics (Hughes, 2008; John, 2013). The goals of theses simulations included the ability of nursing students to provide individualized nursing care, using the nursing process to perform a focused assessment, to prioritize their nursing interventions, and to develop critical thinking skills, all the while using a team approach. These simulations were created specifically not only to enhance individualized learning but also to promote teamwork among the nursing students (Nancarrow et al., 2013).

One week prior to each simulation, students were given an electronic health record for the forthcoming simulation, which contained the patient background, reason for admission, doctors' orders, medications, treatments, and diagnostics tests. Readings on the topic covered and related focused questions were assigned, and students were instructed to complete and bring these materials to the simulation. During the prebrief, an audio PowerPoint presented patient background and the current situation with actual patient comments. At the prebrief, the topics and concepts were reviewed, and possible interventions for the patient were discussed.

The situation, background, assessment, and recommendations (SBAR) were provided immediately before the first team was to begin. Each of the three teams was assigned specific objectives, and all teams huddled before beginning their section in the unfolding simulation. Each team had 15 min to complete their objectives;

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