HETS Online Journal
Volume 10, Issue 1: November 2019

Utilizing Simulation to Foster Nursing Skills in a Cohort of Community College Students

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Abstract

The nursing profession is currently focusing on improvements in patient-provider relationships and is utilizing simulation as an approach to increase competency and empathy of healthcare providers as they develop preemptive skills. In nursing, simulation training utilizes technology that mimics human body parts or model body systems to provide nursing students a simulated real world setting in a safe practicing environment. At Hostos Community College, a faculty member in the licensed practical nursing program (LPN) integrated constructs of critical pedagogy theory with simulation training for LPN students. This article discusses the results of preliminary data from a survey assessing the LPN students' level of confidence in learning the three domains of nursing skills (cognitive, affective and psychomotor) and highlights the importance of future research to analyze the impact of simulation training specific to nursing practice and care. The article also underscores the utility of critical pedagogy in simulation training for nursing students as an effective tool to educate health care providers about the social and structural barriers impacting patient health outcomes.

Background:

Eugenio Maria de Hostos Community College was founded in 1968 to provide post-secondary education to South Bronx residents who were historically marginalized from higher education. Hostos is part of the City University of New York (CUNY), one of the largest public and urban university systems in the country. Despite Hostos being situated in one of the poorest urban congressional districts in the country, it continues to carry out its mission of providing a high quality college education to the South Bronx, as well as other underserved communities in New York City. Hostos offers over 29 academic degree options and certificate programs, such as licensed practical nurse (LPN). As a community pillar, Hostos offers numerous community events that celebrate the rich culture and history of the communities it serves. Hostos utilizes education as a platform for social justice and social mobility. Through the utilization of various teaching modalities, including online and hybrid, Hostos makes education accessible to its diverse student population. The college places emphasis on the integration of education technology in its courses to address the pervasive digital gap that exists in underserved communities. Hostos has been acknowledged nationwide as an innovator in the use of education technology to facilitate student learning. The Center for Digital Education (CDE) has ranked Hostos in the top ten as a digital community college eight consecutive times (Center for Digital Education, 2018).

The Licensed Practical Nursing Program at Hostos:

The mission of the Nursing Unit aligns with the mission of Hostos Community College to provide educational opportunities for a diverse student population and promote

socioeconomic mobility through academic success. The licensed practical nursing program (LPN) was established with a primary focus of serving the population of the South Bronx, as well as other underserved New York City communities. Students who complete the LPN program and enter the nursing field become community assets who deliver high quality and compassionate care and value the importance of health promotion and wellness as a way to prevent disease.

The New York State Department of Education is the accrediting body for the licensed practical nurse certificate program. The LPN license provides students with marketable skills. The LPN practice is a subset of the Registered Nurse profession. Under the direct instruction of a Registered Nurse, the LPN collaborates as a member of the health care team to provide medical care to a diverse patient population. The framework for the LPN certificate program demonstrates essential components of meeting patients' basic needs, selected constructs of the nursing process, and skills that are essential to practice proficiently as a member of the health care team. Under the direct guidance and supervision of a qualified professional nurse instructor, LPN students are trained in an assortment of settings to deliver health care to a diverse patient population.

The Increased Demand for Licensed Practical Nurses in the Workforce

According to the United States Department of Health and Human Services (2019), over 107 million Americans (1 in every 2 adults) over the age of 18 were reported to have at least one chronic illness ranging from cardiovascular disease to cancer. Also, measures to educate consumers and institute methods to prevent or reduce the incidence of chronic illnesses cost the United States a reported 3.3 trillion dollars annually (CDC, 2018). LPNs

commonly providing care for patients in long-term care settings account for close to 40% of nursing professionals working as members of the residential healthcare team (Nurse Journal, 2018). With increasing demands for LPNs in the workforce, the United States can anticipate a 15% growth in LPNs entering the profession by the year 2026 to address the aging population and the increasing prevalence of chronic illnesses (Nurse Journal, 2018). It is noted that the need for empathy training is an essential nursing skill, and competency educators can support student acquisition through instruction and practice (Bas-Sarmiento et al., 2017; Williams, Boyle, & Howard, 2016). The nursing profession is currently focusing on improvements in patient-provider relationships and is utilizing simulation as an approach to increase competency and empathy of healthcare providers as they develop preemptive skills. Furthermore, the simulation experience provides LPN students with a better understanding of the patient's experience.

Simulation in Nursing Education

Simulation is recognized as an instructional approach instituted for the purpose of creating learning opportunities. Educators institute simulation learning experiences to replicate, or mimic, realistic events, skills or procedures (Jerry & Catherine (2017); Jill (2017). The origins of simulation in nursing dated back to the early 1900s, where it was utilized within nursing programs to train student nurses. The increasing popularity and the use of simulation laboratories in the mid-1930s can be traced to Indiana University, which is recorded to have the first nursing program to establish a skills simulation laboratory. The research literature attributes the benefits of simulation to skill learning and development while addressing patient safety goals. The positive effects on student learning outcomes have

prompted full adoption of simulation into nursing programs across the United States. In nursing programs across the country, opportunities have increased for students in nursing programs to experience simulation experiences. Within the past decade, the widespread use of simulation in nursing programs has demonstrated an educational paradigm shift (Jill, 2017).

The National League of Nursing (2019), supporting the standards and excellence in nursing education, considers simulation as invaluable, offering a realistic and safe approach to enriching the learner's knowledge and experience. Students are immersed in the learning environment while engaged in skill development through the utilization of mannequins with technology such as the replication of heart and respiration rates, and other vital signs (Jill, 2017). Such technology is designed to mimic human body parts or model body systems, which provides nursing students a simulated real world setting in a safe practicing environment. Clinical aptitude and competency levels can be effectively evaluated using simulated scenarios. Simulators respond to student interventions through artificial variations in the simulator's response. These changes prompt students to critically analyze the situation and react to the situation to problem solve while gaining immediate feedback (Jill, 2017; Jerry & Catherine, 2017; Kapucu, 2017). Simulation in nursing education provides educators with opportunities to construct educational experiences, measure competencies, and meet established learning outcomes, but also provide students with a safe practice environment (Kapucu, 2017). Therefore, the gap between clinical practice and theory can be addressed through simulation (Sevgisun, 2017). Nursing education today has acknowledged the value that simulation offers in educating and training future nurses, including the improvement of acceptance into a prelicensure educational program (Jill, 2017). Moreover, increasing the use

of simulation in nursing programs enables students to be exposed to different clinical scenarios through the use technology.

Educators addressing the diverse educational needs of the student population recognize that knowledge acquisition occurs through a tailored approach. Simulation addresses the cognitive, affective, and psychomotor learning domains of learning while providing an individualized approach to each student (Jill, 2017). According to Shin, 2015 and Berman, et al, 2014, the competency level of new graduates entering the nursing practice shows significant deficiencies in their nursing competency levels, specifically in the area of necessary foundational psychomotor skills. Lucas (2014) suggests simulation-based learning offers an opportunity for nurses to practice and expand their psychomotor skills, such as a patient physical assessment, with no risk to patient safety. The psychomotor domain of learning occurs through observation, imitation, practice, and adoption of new knowledge (Timby, 2017). Ramalingam, Kasilingam, and Chinnavan (2014) note that the cognitive domain of learning represents the mental skill, a core region of learning and a requisite for affective and psychomotor domains of learning. Advancing through complexities of skills, the cognitive domain progresses with increasing inquiry of the learner. Conversely, the affective domain represents the learner's feelings, attitudes and motivation. The learner internalizing the response and value assigned to the experience represents the affective domain of learning (Welty, 2010; Ramalingam, Kasilingam & Chinnavan (2014).

Replicated scenarios of simulation allow for learning to occur through both auditory and visual means, with the opportunity to acknowledge feelings or beliefs. Recent research literature in nursing education urges faculty to apply new and innovative methods of

instruction to meet the rigors of nursing standards and address competency deficits specific to the area of basic foundational psychomotor skills. Currently, nursing education places a high emphasis on theory and allots limited time to practice. Compounding this issue is the limited availability of clinical practice sites (Dapremont & Lee,2013). These factors pose a challenge for nursing students in developing psychomotor skills. Psychomotor skills require practice, precision, and mastery of techniques performed through guidelines to ensure accuracy of basic or complex skills (Ramalingam, Kasilingam, & Chinnavan (2014). There is concern related to unsafe, unreliable practice levels in the nursing care of new graduates.

In contrast, students learning through simulation are provided a safe environment to develop clinical skills and achieve learning outcomes in nursing care (Lucas, 2014). Educators have infinite opportunities to introduce skills or concepts while supporting the diverse learning needs of the student population, promoting student engagement, and ensuring skills are practiced in a safe learning environment. Simulation in nursing education has shown promise in addressing specific challenges, such as improvement in patient safety, addressing limited clinical sites, meeting learning outcomes, and conducting research. The assorted use of simulation in meeting and exceeding the needs of academic institutions has prompted changes to future perspectives of nursing schools. Further research is warranted to investigate the impact of simulation training specific to nursing practice and care (Jill, 2017).

Simulation and Empathy

The literature defines empathy as the quality or ability of an individual to demonstrate, recognize and resound the experience or experiences of another person (Rasasingam, Kerry, Gokani, Zargaran, Ash, & Mittal (2017). Through empathy, providers

gain the patient's trust and engage the patient in care, resulting in improved patient health outcomes, thereby positively impacting the patient-provider relationship (Hardy, 2017). The literature recognizes the use of simulation as influential in supporting, creating and increasing empathy amongst healthcare providers and enabling the translation of patient experiences into the clinical practice environment (Lauenroth, Schulze, Ioannidis, Simm & Schwesig, (2017); Jerry & Catherine, 2017). Dal Santo, Pohl, Saiani, and Battistelli (2014) suggested that opportunities to promote empathy training in nursing education, informed by research, are necessary to promote positive clinical outcomes for patients. Through research studies that suggest the importance of empathy training in the field, educators have been motivated to create scenarios that promote empathy in nurses. Cannon and Boswell (2016), considered simulation as an evidence-based approach to student instruction that addresses the complexities of today's patient population. Simulation provides students the opportunity to practice life-threatening scenarios in a simulated environment which emulates the real world before entering into the clinical setting. This approach to replicating life-threating scenarios within a structured learning environment is intended to support student-centered learning and is an essential component of promoting optimal patient-provider communication and improving patient outcomes. The current patient population of increasingly acute and chronically ill patients requires intensive nursing care. Increasing demands on healthcare providers to assume primary roles for patients diagnosed with chronic or terminal illnesses demands a higher level of nursing skill. Through simulations, nursing students can develop these higher-level skills.

Critical Pedagogy and Simulation at the Hostos Community College Nursing Program

Although faculty perceive simulation as an additional burden to course work, it facilitates the introduction of abstract concepts such as empathy. At Hostos Community College, the students in the licensed practical nursing program bring prior work experience, which enables them to contribute to the planning of scenarios in the classroom. In the Hostos Community College LPN program, a faculty member adopted constructs of critical pedagogy by Paulo Freire (2018) to introduce simulation in nursing education to a cohort of 14 LPN students. Critical pedagogy enlists the participation of students in shaping the teaching and learning process. In this milieu, students unveil dominant myths in society and are prompted to counteract oppression by reflecting on their own circumstances and the social contexts in which their circumstances are rooted. As students reflect on their experiences, a higher level of consciousness is raised, enabling them to identify with shared experiences of patients, resulting in empathy. Upon completion of the LPN program, the 14 students were administered a survey to assess their level of confidence in learning the three domains of nursing skills (cognitive, affective and psychomotor). The cohort was composed of adult learners, of which 40% were Hispanic, 10% African American, 30% of African descent, 10% Asian, and 10% unknown. The majority of the cohort was female (80%), and a much smaller percentage was male (20%). Participation in the survey was voluntary and no incentives were offered. It was noted that 50% of the LPN student population volunteered to take the survey, and the average student completed the survey in 35 minutes. The survey was anonymous and the City University of New York Institutional Review Board granted permission for this study (IRB#20171078). Preliminary data from the survey shows promising results, as the majority (99%) of the students reported a high level of confidence in having learned the three

domains of nursing skills (cognitive, affective and psychomotor). Only 1 student reported feeling unsure of having learned all three domains. These preliminary results indicate the need for the field of nursing to further investigate the impact of simulation training specific to nursing practice and care. Moreover, the introduction of critical pedagogy in simulation training to nursing students may be an effective tool to educate health care providers about the social and structural barriers impacting patient health outcomes. As health care providers become more conscious of the social and structural barriers that patients confront, their interaction with patients will be more empathetic and engaging. This strategy may facilitate improvements in the patient-provider relationship, yielding an increase in engagement in care and treatment adherence. Such a strategy will prove useful as the U.S demographic and patient population continues to increase in diversity.

Conclusion

The benefits of simulation are many, as it provides students with the ability to prepare for a crisis before it occurs in a clinical setting. At Hostos Community College, the utilization of constructs from critical pedagogy theory enabled a cohort of 14 students to contribute, evaluate and reflect on the simulated activities in a non-threating environment. In addition, simulation training provided these students with the opportunity to prepare for a multitude of clinical scenarios while addressing the challenge of limited clinical sites for practice and overcrowding. It is noteworthy to mention that many state boards of nursing are currently beginning to realize the numerous benefits that simulation training provides, as they are now permitting the utilization of simulation for clinical time.

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