



Featured Article

Using High-fidelity Simulation to Prepare Advanced Practice Nursing Students

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KEYWORDS

high fidelity;
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advanced practice
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graduate student
confidence;
primary adult nurse
practitioner student

Abstract

Background: Limited evidence is available explaining the use of human-patient simulators (HPS) in primary adult advanced practice nursing (APN) programs to enhance clinical performance. The paucity of literature related to using HPS in primary adult APN programs is what led the authors to develop simulations using HPS for such students.

Methods: Simulations were used to increase student confidence and knowledge before their Objective Structured Clinical Examination to optimize this costly and important experience. The purpose of this paper was to describe the development of a simulation using a HPS and student perception of using this learning strategy.

Results: Students reported decreased anxiety after the simulation experience and a better understanding of what to expect during the OSCE experience.

Conclusion: Using a HPS in an interactive simulation is a valuable tool that assesses student knowledge, skills, and allows for student reflection. The authors will continue to use this pedagogy, and encourage others to develop such activities in order to prepare future competent APNs.

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The objective structured clinical examination (OSCE) is an instructional strategy that uses standardized patients to assess the student's knowledge and skills typically resulting in a grade based on the student's abilities (Jeffries and Rogers, 2007). The OSCE is a widely used approach for

validation of clinical skills in many medical (Gerstang, Altschuler, Jain, and Delisa, 2012; Kurz, Mahoney, Martin-Plank, & Lidicker, 2009), nursing, and allied health programs (Bartfay, Rombough, Howse, & LeBlanc, 2004; Wessel, Williams, Finch, & Gemus, 2003). Some advanced practice nursing (APN) education programs integrate the OSCE in curricular delivery (Khattab and Rawlings, 2001; Kurz et al., 2009), which many researchers deem as the gold standard for assessment of clinical competency (Bartfay et al., 2004). Benefits seen in using the OSCE include direct observation

by faculty of the student's clinical skills, immediate feedback for students, and a safe practice environment for both the student and patient. Although there are many proven benefits of the OSCE, the structured examination may also increase student's stress (Bartfay et al., 2004) and impede the APN student's successful demonstration of clinical competency.

During the APN program, students receive substantial theory and supervised practical application; however, they are often anxious about the direct observation of their clinical skills by the faculty or standardized patient. Anxiety can make the student slow to apply knowledge gained from the classroom and clinical setting during their OSCE experience. Research has shown that active involvement in the learning process increases learning and confidence with skills and decision making (Tiffen, Corbridge, Shen, and Robinson, 2011). Coupling the use of simulation technology with the standardized patient is an effective instructional strategy to simulate the real-world clinical setting (Byrd, Pampaloni, & Wilson, 2012). Therefore, we might conclude that having the student participate in a nongraded, simulated activity using a human-patient simulator (HPS) before their OSCE may increase student learning and confidence and decrease anxiety to enable the student to successfully complete the graded OSCE experience.

High-fidelity simulation is an assessment technique that has been tested and used to substitute for direct observation

in the clinical setting (Weller, Bloch, Young, Maze, Oyesola, Wyner, ... Newble, 2003). High-fidelity simulation provides active involvement in the learning process, and a realistic hands-on experience in a safe environment (Hovancsek, 2007). This paper describes the development of a simulation activity using a HPS and the student perceptions of using this learning strategy with primary adult nurse practitioner students.

Using Simulation in Nurse Practitioner Education

Simulation has been shown to be a valuable tool that supports development of clinical reasoning and decision making (Seropian, Brown, Gavilanes, and Driggers, 2004). There are many advantages to using high-fidelity simulations, such as being able to control the clinical condition of the 'patient,' easy scheduling, and faculty do not need to interrupt the student-patient interaction for safety concerns during critical events (Weller et al., 2003). Another benefit is that patient disease states can simply be replicated, thus standardizing the learning experience (Branch, 2013). The HPS is widely used in health professional educational programs such as nursing, physical therapy, pharmacy, health care management, and anesthesia (Branch, 2013; Cooper, Singer, Hayes, Sales, Vogt, Raemer, & Meyer, 2011; Shoemaker, Riemersma, & Perkins, 2009; Weller et al., 2003). Although the literature describes the use of high-fidelity simulation in APN programs with psychiatric mental health, acute adult, and women's health, there is limited evidence about the use of this method in adult primary care APN programs (Pittman, 2012).

Experiential learning through simulation allows adult learners to use independent critical thinking skills, and they can reflect on their experience, thus providing opportunities for them to evaluate their frame of reference and determine gaps in their learning (Clapper, 2010). Often times when a situation occurs in the primary care setting during the student's practicum, the preceptor may take the lead leaving the student to take on the role of observer (Pittman, 2012). Using an HPS in simulations that are developed specifically for the primary adult nurse practitioner student is a feasible strategy that could be of benefit to APN courses and programs.

Simulated Examination Room

There were two rooms used for the simulated experiences that were arranged to resemble an examination room in a primary care clinic. A high-fidelity patient simulator (HPS) was placed in a chair beside a table to represent the adult patient. High-fidelity patient simulators are computer-operated mannequins with programmable physiologic responses based on the student actions (Nehring and Lashley, 2007).

Key Points

- There is limited information on using human patient simulators in a primary adult advanced practice nursing programs.
- Using a human patient simulator in an interactive simulation is a valuable tool that assess student knowledge, skills, and allows for self reflection.
- Human patient simulators can effectively be used in simulated activities with advanced practice nursing students.

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