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Featured Article

Enhancing Prelicensure Nursing Students' Use of an Electronic Health Record

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EHR;
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Abstract
Background: Nursing students must develop competency in the use of electronic health records (EHRs). This pilot investigates the impact of using a simulated EHR during high-fidelity human simulation.
Method: Prelicensure students were evaluated pre- and postsimulation on accuracy and time to complete an EHR-based scavenger hunt. Focus groups evaluated student perception of the experience.
Results: Navigation time improved significantly ($p < .0001$) without decline in accuracy ($p = .141$). Student focus group comments support movement in level of proficiency from novice to competent.
Conclusion: Integration of a simulated EHR into high-fidelity simulation improves student speed while maintaining accuracy in the utilization of health care technologies.

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As legislation pushes health care into the digital age through incentive programs, it becomes imperative that nursing students have access to tools that allow them to become competent in the use of electronic health records (EHRs; Blumenthal, 2011). Students will inevitably encounter EHRs in the clinical learning environment and in their professional practice. The American Association of Colleges of Nursing (AACN), American Nurses Association, and the National League for Nursing (NLN) began the call for informatics competency for nurses in 2008 and have continued to expand on their positions regarding health care technology and nursing education with emphasis on the role of faculty in bridging the gap between education and clinical practice (AACN, 2008; ANA, 2008, 2014; Mulready-Shick, Kafel, Banister, & Mylott, 2009; NLN, 2008, 2015).

Concepts central to the utilization of clinical information systems and EHRs are introduced early in our curriculum through theory-based education with hands-on experiences occurring later. Variations in the clinical environment present challenges to consistent and quality experiences. A multitude of factors, the type of clinical site (acute vs.

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community), characteristics of the site (level of technology, access, training), security issues (access, liability, confidentiality), and patient safety (medication, documentation errors), may limit the experience. Finally, some clinical experiences are observational in nature, where student access to an EHR may not occur at all (Miller et al., 2014; Young-Mahon, Nickitas, & Nokes, 2010).

Key Point

- The integration of a simulated electronic health record into high-fidelity simulation improves student utilization of health care technologies.

Specific Aims

The specific aims of this mixed-methods pilot study were to:

1. Evaluate student competency and efficiency using a simulated, Web-based, academic EHR with high-fidelity human simulation.
2. Examine student perceptions of their experience utilizing an EHR during high-fidelity simulation.

Background

In 2009, the Carnegie Foundation for Advancement of Teaching in collaboration with the NLN, American Association of Colleges of Nursing, and the National Student Nurses' Association completed *The National Nursing Education Study*, which resulted in the need for a transformation of nursing education to close the practice—education gap (Benner, Sutphen, Leonard-Kahn, & Day, 2010). With rapid changes in health care and the increasing complexity of patient care, students are being inadequately prepared to manage the technologic and scientific requirements of nursing practice; and programs need to enhance their teaching of the sciences, humanities, and technology (Benner et al., 2010; Fulton, 2010). The NLN has been promoting simulation in nursing education for many years, and in 2014, the National Council of State Boards of Nursing released findings that support the substitution of up to 50% of traditional clinical experiences with quality high-fidelity simulation. The study demonstrated that student learning with simulation is equal to that in traditional clinical settings (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014).

Despite the recurrent call for informatics competency, there remains scant literature surrounding the use of a simulated EHR in health care education. The assumption is that students learn to utilize the clinical information system during their clinical experiences. Clinical sites and the EHR utilized by each site often vary. There are discrepancies in how students and faculty are trained to use the EHR. Some clinical facilities provide structured expert-led classes in a training environment; however, offering this type of training can be cost and time ineffective for organizations (Roney, 2012). Other facilities provide structured training to the clinical faculty who are then expected to teach the students to use the system while on the clinical unit. This can be difficult for students and faculty who are simultaneously attempting to assimilate to the unit and focus on providing direct patient care. Still other facilities provide no structured training process, and many faculty and students report being self-taught (Young-Mahon et al., 2010). In addition, students receive training and information related to Health Insurance Portability and Accountability Act violations, documentation errors, and the potential fines and punishments that may occur for inappropriately using the EHR. Although valuable, this knowledge may lead to a less than detailed examination of the patient's EHR. It can be challenging for students to effectively utilize the EHR to accurately and comprehensively understand their patient's condition, treatment, ongoing documentation of responses, and evaluation of change in patient status.

Although EHRs vary in appearance and brand, all consist of a basic skeleton of functionality. This premise supports the use of a simulated academic EHR that contains the various components as a way to instruct and support informatics competency in the nursing student. According to a report from the National Institutes of Health, National Center for Research Resources (2006), Electronic Health Records Overview:

> The Electronic Health Record (EHR) is a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting. Included in this information are patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data, and radiology reports. The EHR automates and streamlines the clinician's workflow. The EHR has the ability to generate a complete record of a clinical patient encounter, as well as, supporting other care-related activities directly or indirectly via interface—including evidence-based decision support, quality management, and outcomes reporting.

A simulated academic EHR encourages experiential learning through reflection and narrative understanding of transitions in the patient's condition and care over time where the instructor becomes part of the learning process through questioning and reflection during debriefing (Benner et al., 2010). Simulated learning in nursing education moves students from passive to active learners and also has the ability to move learners through Benner's continuum of clinical expertise—novice to expert (Galloway, 2009). Data support the use of simulation in health care education to improve patient outcomes (Flo, Flaathen, & Fagerstrom, 2013; Franklin & Lee, 2014; Luctkar-Flude et al., 2014; Nehring & Lashley, 2009; Shearer, 2013).