Nurse Education Today 54 (2017) 83–88

Contents lists available at ScienceDirect

Nurse Education Today

journal homepage: www.elsevier.com/locate/nedt

The need for academic electronic health record systems in nurse education

Joohyun Chung[a,*], Insook Cho[b]

[a] College of Nursing, University of Massachusetts Dartmouth, Dartmouth, MA, USA
[b] Dept of Nursing, Inha University, Incheon, South Korea

ARTICLE INFO

Keywords:
EHRs
Nurse education
Nursing documentation

ABSTRACT

The nursing profession has been slow to incorporate information technology into formal nurse education and practice. The aim of this study was to identify the use of academic electronic health record systems in nurse education and to determine student and faculty perceptions of academic electronic health record systems in nurse education. A quantitative research design with supportive qualitative research was used to gather information on nursing students' perceptions and nursing faculty's perceptions of academic electronic health record systems in nurse education. Eighty-three participants (21 nursing faculty and 62 students), from 5 nursing schools, participated in the study. A purposive sample of 9 nursing faculty was recruited from one university in the Midwestern United States to provide qualitative data for the study. The researcher-designed surveys (completed by faculty and students) were used for quantitative data collection. Qualitative data was taken from interviews, which were transcribed verbatim for analysis. Students and faculty agreed that academic electronic health record systems could be useful for teaching students to think critically about nursing documentation. Quantitative and qualitative findings revealed that academic electronic health record systems regarding nursing documentation could help prepare students for the future of health information technology. Meaningful adoption of academic electronic health record systems will help in building the undergraduate nursing students' competence in nursing documentation with electronic health record systems.

1. Introduction

Hospitals with health information technology (HIT) may be able to improve on their quality of care and cost by improving communication, making knowledge more readily accessible, performing checks in real time, and providing decision supports (Bates and Gawande, 2003). Particularly, electronic health record (EHR) systems provide great functionality as a form of HIT (Fareed et al., 2015). Recently, the Office of the National Coordinator for Health Information Technology (ONC) reported that three out of four hospitals (76%) have a basic EHR systems and nearly all reported hospitals (97%) possess a certified EHR technology in 2014 (ONC, 2015). The wide adoption of EHR systems has led the Institute of Medicine (IOM) to emphasize the use of informatics as a core competency required of all health care professions. The 2009 Health Information Technology for Economic and Clinical Health Act (HITECH) directs all health providers to use EHRs. The National League for Nursing (NLN) recommends that nursing faculty should incorporate informatics into all levels of the curriculum (Skiba and Rizzolo, 2009). However, the nursing profession has been slow to incorporate information technology into formal nurse education and practice (Meyer et al., 2011; Pobocik, 2014; The TIGER Initiative, 2017).

According to Meyer et al. (2011), most nursing schools continue to educate students in traditional ways. For instance, when nursing faculty teach nursing documentation to undergraduate nursing students in clinical settings regardless of paper-based or electronic documentation, the first major teaching strategies for documentation include the use of paper (Nickitas et al., 2010). Nurses have used paper-based forms for nursing documentation, including narrative notes and flow sheets, to exchange pertinent patient information (Bjorvell et al., 2003a, 2003b; Tapp, 1990). Similar to paper-based documentation, EHRs contain flow sheets. However, EHR documentation also incorporates new features (Ammenwerth et al., 2001). EHRs help nurses practice better nursing care. Some of their functions include supporting standard nursing terminology, incorporating clinical documentation from various sources, supporting standard care plans, guidelines, and protocols, supporting drug interaction checking, presenting alerts for preventive services and wellness, and linking clinical tasks. These features may alter how nurses document, make decisions, and communicate with other healthcare providers (Ammenwerth et al., 2001; Choi et al., 2009; Cho et al., 2010). Because different documentation methods may be used with EHRs than are used with paper-based records, paper-based

* Corresponding author.
E-mail address: jchung@umassd.edu (J. Chung).

http://dx.doi.org/10.1016/j.nedt.2017.04.018
Received 19 May 2016; Received in revised form 26 February 2017; Accepted 21 April 2017

instruction may not be sufficient for teaching electronic nursing documentation.

In some nursing programs, students are not exposed to electronic documentation until they participate in clinical rotations in local hospitals (Meyer et al., 2011). Unfortunately, during clinical rotations, it is not easy for students to learn about best practices in electronic documentation (Billie, Chadwick, Mann, & Brooke-Read, 2013). However, students can learn to navigate EHRs in simulation labs (Gardner & Jones, 2012). Lucas (2010) has reported partnering with a medical center to provide students access to training with EHRs before the first clinical rotation. These students felt more confident with their documentation.

Educating students in a transitional electronic environment is no longer optional for nursing faculty. It is necessary for accurate documentation, transmission, and management of data for improving patient care (Aktan et al., 2011). According to the NLN survey (2008), 80% of faculty reported that they are self-taught on use of EHRs. Faculty are learners themselves in this transition from paper to electronic media for teaching nursing documentation. Considering that the national average age of nursing faculty is about 53.5 years (AACN, 2013), most nursing faculty have long practiced paper-based documentation. It follows that they will likely feel more comfortable in a paper-based teaching environment (Nickitas et al., 2010). Also, nursing faculty now experience a new challenge in teaching the use of different EHRs in various clinical settings when they teach nursing documentation. The fact that EHR systems are designed to force the user to follow correct procedures for the default safety protocols sometimes presents faculty with obstacles to providing adequate education about electronic nursing documentation (Mahon et al., 2010).

Several studies show that nursing students are not comfortable using healthcare technology, and nurses in practice are not comfortable using EHRs (Fetter, 2009; Kelley et al., 2011). Several studies demonstrate that nurses report that EHRs are extensive and time consuming (Saarinen and Aho, 2005; Scott et al., 2005). About three quarters of nurses reported spending at least 50% of their time using the EHRs, which means less time for patient care (Johnson et al., 2008). Another recent study reported that bedside nurses spend 4 h per day documenting using EHRs (Penoyer et al., 2014). The high number of hours spent using EHRs may be associated with non-user-friendly systems or nurses' lack of competence with the electronic systems. Some nurses have reported that their critical thinking is reduced by using the EHRs, although most nurses believed that EHRs are beneficial (Fraenkel et al., 2003; Meyer et al., 2011; Moody et al., 2004). It is imperative that the nursing students are able to use EHRs in their education so that they will be more prepared to enter the profession with strong technology skills for nursing documentation (Meyer et al., 2011).

The intention of this study was to identify the use of academic EHRs in nurse education and to determine student and faculty perceptions of academic EHRs in nurse education.

2. Methods

A quantitative research design with supportive qualitative research was used to gather information on nursing students' and nursing faculty's perceptions of academic EHRs in nurse education. For quantitative data, a cross-sectional descriptive design was developed, in which a questionnaire-based survey was used to examine nursing students' and faculty's perceptions of academic EHRs. For qualitative data, the semi-structured interview guideline was created after discussions with researchers.

3. Samples and Setting

3.1. Quantitative Data

Participants in this study were nursing undergraduate programs accredited by the Commission on Collegiate Nurse education (CCNE) and the Accreditation Commission for Education in Nursing (ACEN) in the United States. A cluster convenience sampling was used for the data collection. In the United States, 100 undergraduate nursing programs were randomly selected, regardless of Associate Degree in Nursing (ADN) or Bachelor of Science in Nursing (BSN) programs, from the list of programs accredited by CCNE and ACEN. The selected schools were invited to participate in this study. Only five schools agreed to participate. Among the five schools, two schools had graduate programs (Master of Science (MS)), Doctor of Nursing Practice (DNP) or Doctor of Philosophy (PhD). All undergraduate students and faculty in each school received the information via email. There were 83 respondents to the survey; 21 were faculty and 62 were students (ADN: 21 students, BSN: 23 students, and RN to BSN: 18 students).

3.2. Qualitative Data

A purposive sample of nine nursing faculty (seven women and two men) was recruited from one university in the Midwestern United States.

3.3. Instruments

To address aims, faculty and students' perceived knowledge of academic EHRs was measured with the researcher-designed instruments. The instruments were designed to measure both nursing faculty and nursing students' perceptions of the need for academic EHRs. The survey included three sections: 1) demographics, 2) perceived knowledge, and 3) attitude toward electronic nursing documentation and academic EHRs. The survey consisted of 15 items excluding demographical questions. This survey assessed knowledge of and attitude toward electronic nursing documentation. It used a 5-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5) or from “lacking understanding” (1) to “solid understanding” (5).

3.4. Data Collection Procedure

Approval from the Institutional Review Board at a university in the Midwestern United States was obtained prior to data collection, which was conducted in mid-March 2015. For the quantitative data, the selected schools were invited to participate in the study. A survey link and a brochure were sent to the nursing departments/colleges. Deans/chairs were responsible for disseminating the survey link to nursing students and faculty.

For the qualitative data, an in-depth, exploratory approach to data collection from nursing faculty was taken, employing five semi-structured interview questions (Appendix I). The interviews were conducted in faculty members' own offices. The recorded interviews lasted 5 to 25 min (average 16 min). Additionally, demographic information was collected including gender, age, and years of teaching experience.

3.5. Data Analysis

Related to the quantitative data, statistical analysis was performed using SAS version 9.4 (SAS Institute Inc., NC). Descriptive statistics were used to describe frequency and percentage. Chi-Square statistics were used to determine the variances between programs (ADN, BSN, and RN-BSN) and pre licensure students (ADN and BSN students)/post licensure students (RN-BSN students).

Related to the qualitative data, all interviews were transcribed verbatim for analysis. The two researchers were independently coded. The transcribed text was carefully read and thematic segments were identified. Data segments were grouped based on commonalities within the descriptions of nursing students' perceptions of academic EHRs. For credibility and trustworthiness, data were collected by the 1st author