Competencies in Nursing Informatics among graduating Baccalaureate Nursing Students at San Francisco State University

Introduction/Statement of Purpose

Nursing Informatics is not a new specialty in nursing; however, many undergraduate schools have yet to incorporate this in their nursing curriculum. Graves and Corcoran (1989) define nursing informatics as “a combination of computer science, information science, and nursing science designed to assist in the management and processing of nursing data, information, and knowledge to support the practice of nursing and the delivery of nursing care.” With technology increasingly being an integral part of nursing, nurses, more than ever, are expected to provide safe, competent and quality care. Nurses are engaged with information systems and different digital tools used for their clinical practice as a foundation for evidence-based care, decision-support, and electronic health record. Unfortunately, not all graduating (and current practicing nurses) are fully prepared to use these digital tools to support their practice.

In 2009, the American Recovery and Reinvestment Act (Stimulus bill) was passed, of which the Healthcare Information Technology and Clinical Health Act (HITECH) provisions the development of an electronic health information technology by 2013 (U.S. Department of Health, 2009). The Stimulus bill included $19.2 billion to be used by hospitals and physician offices as an incentive payment to increase the use of electronic medical record (EMR). However, incentive payments are only in effect until 2015, after which penalties will be enforced if hospitals and physicians have not adopted an EMR system (U.S. Department of Health, 2009). This has accelerated the need to ensure that nurses obtain competencies needed to work with EMR, of which, the purpose of this study is to evaluate the informatics competencies of graduating nursing students.
The research findings will help us evaluate the current competency level of nursing students and help identify how to integrate informatics education into nurses competencies and give recommendations to nursing schools on how to prepare nurses to practice in a digital era.

The Technology Informatics Guiding Education Reform (TIGER) Competency was formed to develop informatics recommendations for all nurses (The TIGER Summit, 2009). Following an extensive review of the literature and survey of nursing informatics education, research, and practice groups, the TIGER Nursing Informatics Competencies model was developed consisting of three competencies, namely:

1. Basic Computer Competencies
2. Information Literacy
3. Information Management

The TIGER model will be the basis for evaluating the informatics competencies of the nursing students for this research.

Research/Evaluation Questions

1. What kind of informatics or information technology courses do nursing schools implement in their undergraduate nursing curriculum?
2. Does this group possess minimum informatics competencies?
3. Are they aware of the different information system tools to support their clinical practice?

Project Design

This research project will be conducted by interviewing the undergraduate dean and professors of San Francisco State University School of Nursing. This is to evaluate the
current efforts to meet the Informatics competencies as established by the TIGER summit. A questionnaire will also be emailed to all SFSU junior and senior undergraduate nursing students using Survey Monkey. Questionnaires will be anonymous. The questions will focus on obtaining data for informatics competency ranging from basic computer skills to information management.

Instrumentation

An existing instrument will be used for this study, the Information Technology Education in Nursing Curricula Survey (ITENCS). ITENCS was initially developed on paper and then reformatted the survey for online use. According to McNeil, Elfrink, Bickford, Pierce, Beyea, Averill & Klappenbach (2005), the online survey is meant to identify nursing informatics competencies and knowledge of undergraduate and/or graduate students in their nursing programs, determine faculty preparedness to teach NI and to use informatics tools, and provided perceptions of NI requirements of local practicing nurses. The survey is meant for deans and directors of baccalaureate and higher nursing programs in the U.S. The survey questions has a total of 37 questions and the questions correspond to 11 broad content categories namely:

1. Demographic data
2. Availability of informatics/information technology courses by region
3. Informatics/information technology skills and knowledge of nurses in the region
4. Informatics/information technology skills and knowledge required of undergraduate and graduate students at entrance/exit from these programs
5. Program’s current continuing education or staff development requirements for informatics/information technology
6. Informatics/information technology skills taught/should be taught by nurse faculty
7. Method of validating students’ informatics/information technology skills
8. Regional use of informatics/information technology tools by nurses
9. Perception of faculty’s informatics/information technology skills
10. Plans for future informatics/information technology training in the region
11. Perceived need for nurses trained in informatics/information technology

Reliability and Validity of the Instrument

The survey serves as a way to assess nursing students’ competence and attitudes related to informatics and information technology. McNeil et al. (2005) mentioned that the survey questions were developed from the nursing informatics literature and content validity was established by nursing informatics experts serving on the American Nurses Association’s (ANA) Committee on Nursing Practice Information Infrastructure and Data Set Evaluation Center (NID-SEC). Items were developed from a research-based, master list of informatics competencies for the beginning-level nurse, as defined in the work of Staggers, Gassert & Curran (2002). The reliability of the instrument was not mentioned in the article.

Personal Critique

I appreciate the fact that the instrument’s content validity is determined by expert judgment of practicing nursing informaticists. The ITENCS instrument is a good tool in assessing nursing student’s informatics skills as outlined by the Technology Informatics Guiding Education Reform Informatics Collaborative. The TIGER initiative identified a list of competencies for three broad categories namely, Basic Computer Competencies, Information Literacy and Information Management. When looking at the ITENC broad
content categories, questions 12-16, 18-19, 21-26 covers the three categories. Several questions in the instrument also answers one of my paper’s research question, that is, “What kind of informatics or information technology courses do nursing schools implement in their undergraduate nursing curriculum.” This question is addressed in the survey questions 5-11 (Availability of informatics/information technology courses by region) and 17-19 (Program’s current continuing education & Informatics technology skills taught/should be taught by nurse faculty). The instrument is also able to address the extent of faculty preparation for teaching informatics knowledge and skills, expectations for informatics skills for undergraduate and graduate nursing programs, and the future uses of informatics tools by practicing nurses. A key question is the reliability of results. I would expect to have independent, objective results and analysis that reflects the current situation of informatics competency of baccalaureate nursing students.

Procedure for Obtaining the Group to Study

Simple random sampling will be utilized to obtain the people that will be used for this study. An online survey will be given to all junior and senior nursing students at San Francisco State University. The list of enrolled students will be requested from San Francisco State University’s School of Nursing. A total of 160 questionnaire packages, including an introductory email and the link to the questionnaire will be sent to the nursing students. No identifiers will be on the questionnaires. Follow-up email remainders will be sent to non-responders after 3, 4, and 5 weeks.

Demographics Data

All junior and senior nursing students are eligible and invited to participate in the study, with the exception of registered nurses who are in the RN-Bridge Program.
Demographics data that will be asked will include the following:

1. Age
2. Gender
3. Highest degree or level of school completed
4. Employment Status and Employment Type
5. Race
References


