

Nursing Education Research Conference 2018 (NERC18)

Opportunities and Barriers to Building EBP Skills in the Clinical Setting via Mobile Technology

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Introduction

Evidence-based practice (EBP) is a professional expectation for health care providers today. Nursing faculty create curriculum for the didactic and clinical environments that facilitate student learning in the EBP process. Mobile technology, a more recent variable in the educational environment, is one tool in the educator's toolkit for achieving this educational goal. This project looks at how two processes, curriculum mapping and research on BSN student usage of iPads in clinical education, helped with evaluating EBP curriculum in a BSN program and informing strategies for course revisions.

Literature Review

The AACN's BSN Essentials (2008) defines Scholarship for EBP as a key component of undergraduate curriculum. However, in their investigation about the state of nursing education, Benner, Sutphen, Leonard, & Day's (2010) found that "graduates continue to leave their educational experience with negative attitudes toward research along with perceptions that EBP takes too much time and cannot be realistically implemented in real-world clinical practice settings" (Melnik et al., 2012, p. 415). Review and evaluation of the BSN curriculum is critical in preparing graduate nurses prepared for practice in an ever-changing healthcare system (Oermann, 2017).

The curriculum encompasses much more than a structure of courses, and is a dynamic interaction between students, faculty, experiences, content, and program outcomes (Oermann, 2017). Curriculum evaluation also reaches beyond traditional measurements of pass rates or course evaluations, and should critically assess whether the program prepares graduates that can practice in a contemporary healthcare system that is ever-changing and saturated with technology.

Mobile technology has held the interest of nurses for a long time as a possible solution to bridge EBP into real-world practice. In practice, mobile devices improve clinical workflows for documenting patient care electronically, and increasing access to clinical resources (Weston & Roberts, 2013). In education research, these devices have been beneficial since they "[provide students] with easily accessible, current evidence-based facts" (Raman, 2015, p.664).

Despite this history, there are some persistent barriers that continue to hinder the integration of mobile technologies into clinical education stemming from both the faculty and the students themselves. Studies find that faculty are often not role-modeling the use of devices in clinical education. Sometimes this is associated with a lack of faculty development and training on the devices prior to implementation; some faculty also just have negative attitudes towards mobile technology in clinical care (Raman, 2015; Lamarche, Park, Fraser, Rich, & MacKenzie, 2016; O'Connor & Andrews, 2015; Rubenstein & Schubert, 2017). The policies about mobile technology usage at health care facilities also interferes with use in the clinical setting (Lamarche, Park, Fraser, Rich, & MacKenzie, 2016).

The faculty-related challenges with implementation of mobile technologies in clinical education matches many of the same barriers found with establishing EBP in clinical settings. Kajermo et al. (2010) systematically reviewed over 63 studies using the BARRIERS scale and aggregated information to identify persistent barriers. Fifty-three studies ranked the issues based on response frequency. From

those rankings, the Setting Barriers and Limitations category is the biggest barrier to EBP followed by Presentation and Accessibility of the Research.

Methods

This research was conducted within a traditional BSN program that is part of a School of Nursing offering BSN, MSN, and DNP programs. The BSN program is an upper-division admission program, admitting cohorts of 90 students twice a year, and is offered over four semesters of study. The SON master plan of evaluation outlines the frequency of curricular review and evaluation which is completed every two years.

The curricular framework is founded on Bronfenbrenner's ecological systems theory, and the Environments of Care model (Ervin, Bickes, & Schim, 2006). There are seven student learning outcomes (SLO) that all graduates must be able to demonstrate upon completion of the program. Of significance to this study is the scholarship SLO. The scholarship SLO describes that students will contribute to excellence in nursing practice by identifying and critiquing research evidence and integrating it with clinical practice, client preference, cost-benefit, and existing resources.

Throughout the curriculum review and evaluation process the Undergraduate Curriculum Committee (UGCC) maps the AACN BSN Essentials and the Program SLOs to the course objectives. The map also includes detailed descriptions of the course content, student learning activities and strategies, and the teaching learning environment. The BSN program uses a variety of quantitative formative and summative evaluation tools. The UGCC consists of BSN program faculty who review course maps and relevant outcomes for each course and provide a peer critique of each course. The course faculty meet with the UGCC to discuss course strengths, weaknesses, challenges, and go over key findings. Feedback and recommendations for improvement or change are documented and provided to faculty for integration into courses.

In order to explore the student perspective, the Health Sciences and Nursing Librarian designed and conducted a sequential, mixed methods study. The research was approved by the organization's Institutional Review Board #16-0106. Participants were recruited from the second semester course roster (n=90); two cohorts were involved to control for cohort differences. The first phase of research was a survey that gathered basic demographic information, years of experience with using mobile technologies, clinical course placement, and list of resources used. The survey also adapted Pryse, McDaniel, & Schafer's (2014) EBP Work Environment Scale in order to gauge student perceptions about how clinicians at their placements valued EBP, demonstrated EBP behavior, and provided access to research evidence. Interviewees were recruited from survey responses for the second phase of the project, student interviews. The qualitative methodology allowed for follow up discussion related to specific survey responses. Faculty participated in piloting the survey and in-depth interview guide.

Findings

One-hundred eighteen students participated in the survey and 12 students in the follow up interviews. Students had varying patterns of use for their iPad across the three different clinical courses. Overall, a majority of students (54%) did not use their iPad in clinical coursework. Students were least likely to use the iPad in Women's Health course (9%) and most likely to use it in their Clinical Applications II (Medical Surgical) course (34%). Follow up interviews found that the presence and availability of computers in facilities, limitations of the academic EHR for documentation, perceptions of distraction, and concerns of theft were the major reasons preventing iPad adoption.

Consistent across cohorts and clinical courses, students mostly agreed that they had access to relevant research (86%) and that the organizations valued EBP (87%). However, several students disagreed (12%) or were neutral (26%) about whether they had access to databases. Instead, the most frequently used resource was Google. Many also disagreed (15%) or were neutral (22%) about whether nurses discussed research at their clinical locations. In the follow-up interviews with the students, the researcher

found that students were aware of the term EBP due to mentions of the phrase but the reality was fuzzy. Students often conflated EBP with research:

“normally it is something that I or a nurse... see as a problem or something that they think might correlate and so they run an experiment”

“I would say...that its got to be like any scientific study, so its got to be something that can be repeated”

Students also indicated that they lacked understanding of how they would do it outside of the educational environment.

“I never thought about it as creating EBP as a nurse. I didn’t know if like just nurse researchers did that or if like any nurse can like contribute to forming or creating literature and that sort of thing”

Concurrently, the UGCC found that although scholarship is a SLO that is linked to each course through a focused objective, comprehensive content mapping did not identify clear course activities, readings, lectures, or assessments in first and second semester courses. In addition, there was a not clear link between course content and the new mobile technology integrated into the program. The UGCC made recommendations for individual course revision to better demonstrate student competency with the scholarship SLO.

Integrating Evidence into Educational Practice

In response to the UGCC course feedback, nursing faculty revised a foundations course with a more explicit connection and set of activities related to EBP. The librarian consulted on the content development for the course based upon the student responses from the research project. The EBP Competencies for Practicing Registered Nurses were reviewed to guide lesson planning (Melynk et al., 2014). The nursing faculty and librarian focused on establishing a broad definition of EBP in the course and addressing only three of the foundational competencies in order to match EBP better with the student’s level of development. These competencies also mirrored the areas of the nursing care process, another topic in the course. Based on this, the in-class lecture and discussion then aimed to help students walk through these competencies using clinical expertise they were developing that semester, particularly around health assessment and pulmonary hygiene. The new content module was piloted during the 2016-2017 academic year and further revisions are ongoing. In addition the librarian has provided a continuing education seminar on EBP instruction across the curriculum.

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Keywords:

BSN Curriculum, Evidence-based practice and Mobile technology

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Abstract Summary:

Evidence-based practice (EBP) is an expectation for nurses today. The portability of mobile devices creates possibilities for students to apply steps of the EBP process at the bedside. This project describes how curriculum mapping and a research project on BSN student iPads use helped with evaluating curricular integration of EBP.

Content Outline:

Introduction

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1. Curriculum assessment and evaluation
2. Mobile technology in the nursing curriculum

Methods

1. Curriculum Evaluation Process
2. Mixed methods study

Findings

1. Curricular revision plan
2. iPad usage in clinical coursework results
3. Student knowledge and perceptions of EBP in practice

Discussion: Integrating EBP into educational practice

1. Specific course revision
2. New opportunities for curriculum enhancement, faculty development

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