

Implementing EBP Column

Improving Patient Care Through Nursing Engagement in Evidence-Based Practice

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This column shares the best evidence-based strategies and innovative ideas on how to facilitate the learning of EBP principles and processes by clinicians as well as nursing and interprofessional students. Guidelines for submission are available at [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1741-6787](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1741-6787)

INTRODUCTION AND BACKGROUND

The Medical University of South Carolina (MUSC) is a large academic health science center, with a 700-bed medical center (MUSC Health), and six colleges that train approximately 2,600 healthcare professionals annually. The MUSC Center for Evidence-Based Practice (EBP), housed jointly in the Library and the Quality Management department of the MUSC Hospital, aims to promote scientific inquiry, EBP, and quality outcomes at MUSC. Through education, the development of evidence-based clinical decision support tools and outcomes research, the Center for EBP has begun to transform the culture of MUSC into one that incorporates best evidence into clinical practice on both an individual and system level.

One of the strategies implemented by the Center for EBP to promote cultural change is an educational course: the EBP Nurse Scholars course, where nurses are taught about the theory, practice, and dissemination of EBP.

DETAILED DESCRIPTION OF STRATEGY

Nurses serve on the frontline of health care, and have a unique opportunity to improve patient care through EBP (Hockenberry, Walaen, Brown, & Barrera, 2008). The staff nurse is a critical link in bringing evidence-based changes into clinical practice. Best practice only occurs when staff continually ask questions about treatment and care, have the resources and skills necessary to search for and appraise research evidence, implement the evidence in practice, and evaluate its effectiveness (Dawes et al., 2005; Hockenberry et al., 2008).

MUSC's experience in preparing practicing nurses to do EBP was limited. To address this, the Center for EBP, in partnership with the Center for Professional Excellence, developed a 12-week, project-based course to prepare nurses to engage in EBP. The Center for Professional Excellence collaborates with

internal and external customers to create growth and development opportunities for registered nurses. Additionally, the center is responsible for Magnet application and designation. The EBP Nurse Scholars course provides nurses with a comprehensive overview of EBP, prepares them to frame clinical questions, perform literature searches, analyze and evaluate evidence, and translate that knowledge into something clinically meaningful. Members of the Center for EBP staff and library faculty provided lectures and individual consultations on framing clinical questions, conducting comprehensive literature searches, understanding statistics commonly reported in research articles, and appraising and summarizing evidence using the GRADE criteria. As part of the course, nurses selected a specific hospital policy and applied their knowledge to evaluating the evidence base for it. They then updated the policy to ensure it reflected current evidence and best practice.

RESULTS

The EBP Nurse Scholars course resulted in successful completion of 15 projects related to nursing care and practice, and led to significant practice improvements (Table 1). In addition, several nurses have presented their findings at regional and national conferences.

Pre- and post-course surveys demonstrated that the course improved nurses' confidence with EBP methods and skills related to research tools, statistical concepts, and study designs. Data collected included responses from students from two EBP Nurse Scholars courses: Spring 2013 and Spring 2014.

Participant Demographics

The majority of students who participated in the course were BSN-level nurses working with adult populations at MUSC.

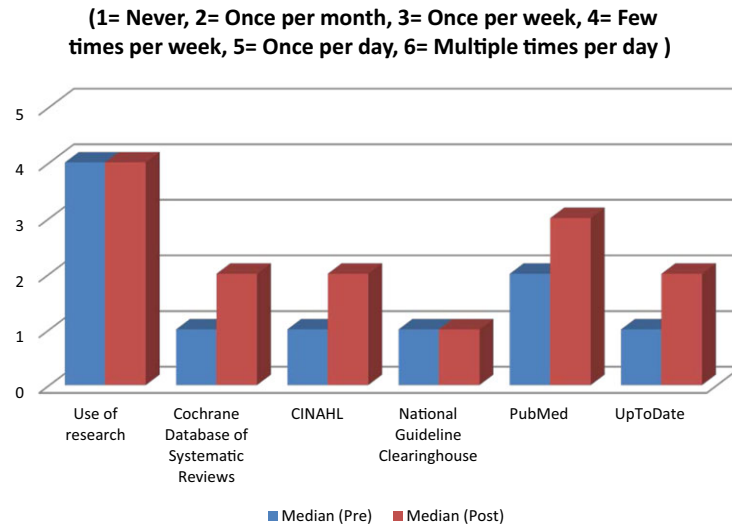


Figure 1. Use of research tools in practice.

Table 1. Examples of Completed EBP Nurse Scholars Course Projects

Abdominal X-Ray for NG/OG Tube Placement
Closed Arterial Line Lab Sampling System for PCICU Patients
Discharge Planning for Psychiatric Patients
Improving Care of Elderly in the Acute Care Setting
International Normalized Ratio Cut-Off for Heart Catheterizations
Lidocaine 4% for Nonemergent IV Starts
Oral Care for Infants
Peripheral Administration of Chemotherapy Agents
Postoperative Education
Postpyloric Feeding to Reduce Risk of Aspiration Pneumonia
Preoperative Bathing
Preventing Turniquet-Related Injuries in Patients Undergoing TKA
Safety of "Quick Start" Depo Provera
Thermoprotective Wraps in Very Low Birth Weight Infants

The majority of participants were ICU nurses, and students typically had 0–5 years of experience.

Survey Results

Study data were collected and managed using Research Electronic Data Capture (REDCap) electronic data capture tools, hosted at MUSC. Due to the continuous nature of the

variables assessed in the pre- and post-tests for the EBP Nurse Scholars course, we used pre- and post-test median scores and the Mann-Whitney U test to measure significant changes in confidence with EBP methods, use of research tools in clinical practice, and understanding of statistical concepts and study designs. A complete listing of the survey questions can be found in Appendix 1, available with the online version of this article.

After the course, there were significant increases in nurses' confidence in critically reviewing literature ($p < .001$), their belief that EBP was necessary in nursing practice ($p = .052$), and their interest in improving skills necessary to use EBP in practice ($p = .002$). There were also significant increases in the use of EBP resources in clinical practice, including the Cochrane Database of Systematic Reviews ($p < .001$), CINAHL ($p < .001$), National Guideline Clearinghouse ($p = .049$), PubMed ($p = .005$), and UpToDate ($p = .018$), as well as in the understanding of statistical concepts and study design methods ($p < .001$). Pre- and post-test median scores representing the improvements in EBP resource utilization and understanding of research concepts are included in Figures 1 and 2.

The success of the EBP Nurse Scholars course led to the development of a project-based course for interprofessional teams of pediatric clinicians, all of which included a nurse. These teams received EBP education and worked together during this Interprofessional EBP course to frame clinical questions, systematically search for, and critically appraise and synthesize a body of research evidence for a particular disease topic. Based on their review of the evidence, teams developed clinical practice recommendations for each of the clinical questions they framed. These recommendations were used to develop admission and emergency department order sets which were integrated into MUSC's electronic

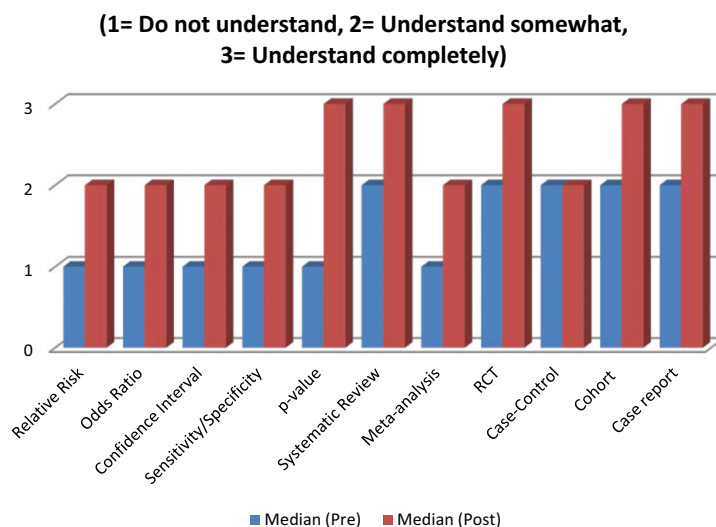


Figure 2. Understanding of Research Concepts.

medical record. Finally, participants who completed either the EBP Nurse Scholars course or the Interprofessional EBP course were invited to participate in an EBP Leadership Program. This program focused on implementation of their EBP project, evaluation of results, outcomes, and dissemination of findings.

Through these courses, the Center for EBP is transforming the institution's culture into one that builds EBP capacity, and incorporates best evidence into clinical practice on both an individual and system level.

DISSEMINATION

The Center for EBP staff has supported nurses in translating their projects into scholarly work. The EBP Leadership Program, the follow-up to the EBP Nurse Scholars course, provided nurses with the skills to both implement and evaluate practice change projects, but it also provided nurses with tools and resources for developing abstracts for poster and podium presentations. As a result of these efforts, numerous course participants have had their work accepted for presentation at regional and national conferences. The Center for EBP applied for and received a competitive, internally funded grant to support nurses in attending conferences where they present the results of their EBP projects. The grant covers the cost of printing a poster for nurses who have had abstracts accepted. Funding the printing cost of the posters further encouraged nurses to attend conferences, and present their work, and motivated departments and units to provide support for nursing engagement in EBP scholarly work.

Supporting professional growth and development is a nursing strategic priority at MUSC. To support and promote

nursing clinicians, three EBP Nurse Scholar projects were highlighted in MUSC's Magnet document. Additionally, videos of nurses engaging in the EBP process were produced and disseminated internally. The videos highlighted scholars performing a literature search, analyzing and evaluating evidence, and translating that knowledge in to changes in nursing practice. **WVN**



LINKING EVIDENCE TO ACTION

- Organizational cultures can be transformed through provision of EBP education and mentored implementation of EBP knowledge and skills.
- A project-based EBP education program can result in an increase in utilization of EBP resources, and in improvements in knowledge and attitudes related to EBP.
- The implementation and dissemination of EBP projects creates opportunities for nurses to participate in the development of scholarly products, and results in professional growth and development.

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