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Development of a Quality Improvement Program to Support Evidence-Based Nursing Practice

Heather Richards
Walden University

Walden University

College of Health Sciences

This is to certify that the doctoral study by

Heather Richards

has been found to be complete and satisfactory in all respects,
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Review Committee
Dr. Mattie Burton, Committee Chairperson, Nursing Faculty
Dr. Tanya Cohn, Committee Member, Nursing Faculty
Dr. Geri Schmotzer, University Reviewer, Nursing Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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Abstract

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Heather Richards

MS, Walden University, 2012

BS, Upper Iowa University, 2008

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Nurses are expected to perform evidence-based practice (EBP) at the point of care (POC) to promote positive outcomes through the quality and safety of patient care. The struggle for nurses on the surgical digestive unit in a hospital to adopt EBP is the lack of access and knowledge to evidence-based research at the POC. The utilization of information technology is an innovated approach to providing access and knowledge for EBP at the POC to improve patient outcomes. The project was to develop a quality improvement program to improve nursing access and knowledge of EBP resources. The program was to identify the type of e-nursing resources and necessary education to provide nurses access to evidence-based resources and the knowledge to utilize these resources in nursing practice. The purpose of the doctoral project was set to identify necessary resources to develop an evidence-based program for staff nurses to access evidence-based resources and improve nursing knowledge on EBP at the POC. The use of the Stevens's star model of knowledge transformation was the framework for the project, and use of the logic model guided the structure for program evaluation. The quantitative project used a 1 group pre- and post-survey design using a convenience sample (n =10). A final statistical analysis to determine effectiveness of the educational intervention was inconclusive. Quantitative descriptive data from pre- and post-survey results were used to summarize recommendations for the future development of an EBP quality improvement project with the use of information technology tools. The further dissemination of the findings could promote new methods to implement quality improvement programs to improve the quality and safety of patient care to promote positive health outcomes.

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Dedication

This doctoral project is dedicated to my son, Brandon Busari-Okoro, whose young spirit, knowledge, and kindness will take him far in life. The use of time, dedication, and hard work will help you achieve many things. I hope you see how small yet big achievements create positive rewards for others. You may not know this but you have always been my inspiration to continue to grow and be a better person as a way to inspire and prepare you for your own future. I share all my love and support in hopes for a bright future as you embark on your own personal journey in life.

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Section 1: Overview of the Evidence-Based Project

Introduction

Evidence-based practice (EBP) is a high priority for many healthcare organizations and nurse leaders. The transparency of health care is a driving force behind the use of EBP for improvements in the quality and safety of patient care (Stevens, 2013). Although EBP is essential to the quality and safety of patient care, there are several barriers preventing nurses from adopting EBP at the point of care (POC). Nurses' perceived barriers to EBP are the lack of time, knowledge, mentors, access, and leadership support (Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012). The use of information technology-based tools such as online e-nursing resources is an approach to providing access to EBP resources at the POC (Doran et al., 2010). E-learning resources and courses are an efficient way to provide nurses resources and training about EBP at the POC (Hadley et al., 2010). Nurses need to know how to apply the use and knowledge of the EBP resources effectively and efficiently to provide safe and high quality patient care.

EBP is the process to translate knowledge from the research for making clinical decisions that are integrated into nursing practice (Hart et al., 2008). There is a fast-growing sector of evidence-based research developed creating challenges for nurses to efficiently review, interpret, and apply the new evidence into clinical practice (Campbell, Umapathysivam, Yifane & Lockwood, 2015). EBP is essential to providing safe and quality patient care which is why nurses must have access to EBP resources and the

ability to apply the knowledge at POC (Allen, Lubejko, Thompson, & Turner, 2015). Furthermore, EBP adopted by healthcare professionals are striving to improve patient outcomes through the quality of care along with reducing healthcare cost (Melnyk, Fineout-Overholt, Stillwell, & Williamson, 2009). Providing nurses with readily available access and knowledge on EBP resources at the POC increases opportunities to improve patient outcomes.

Problem Statement

Nurses have multiple competing priorities with the expectation to provide quality care using current and relevant EBP. EBP is the ability to access and translate knowledge for problem-solving and clinical decision-making (Schaffer, Sandau, & Diedrick, 2013). The quantity of evidence-based research available has increased, creating challenges for nurses to access and apply the new evidence to practice (Doran et al., 2010). The issue for the nurses on the surgical and digestive care unit at a 325-bed hospital in Wisconsin is the minimal options for immediate access and knowledge of current EBP resources. The nurses need immediate access and education of EBP resources for problem-solving and clinical decision-making while performing patient care. Nurses who lack access and knowledge of EBP resources hinder and compromise patient care.

Limited access and knowledge of EBP resources has become problematic for nurses struggling to adopt EBP into routine patient cares. Heydari and Emami Zeydi (2014) described organizations with a lack of adequate access, authority, and time as barriers for nurses to adopt EBP. Additionally, a few common nursing perception themes for EBP barriers are the lack of access, time, resources, and knowledge (Mohsen, Safaan,

& Okby, 2016). The nurses' ability to access and apply knowledge of EBP resources is an essential component for providing timely clinical decision-making at the POC to achieve safe and quality patient care. The Institute of Medicine (IOM) addressed the gap between research and implementation in practice, thus challenging nurses to practice to the full extent of licensure with the use of evidence-based research (American Association of Colleges of Nursing, 2010). The use of information technology to support and integrate EBP resources into practice provides efficiencies through access and knowledge (Doran et al., 2010). Although nursing knowledge of EBP improved with the use of interactive online resources, there is still minimal access to the technologies for EBP support (Hines, Ramsbotham, & Coyer, 2015). The current gap-in-practice for nurses is the lack of access and knowledge of EBP resources that are barriers to EBP.

Purpose

The purpose of the project was to develop a quality improvement program to improve nursing access and knowledge of EBP resources. The program was to identify the type of e-nursing resources and necessary education to provide nurses access to evidence-based resources and the knowledge to utilize these resources in nursing practice. The use of technology assists with access to EBP resources and the knowledge to technically and critically research and use EBP resources is essential to apply the evidence to daily patient care (Long et al., 2016). The focus of the project was to assess and educate nurses on how to apply EBP with access to e-nursing resources at the POC. The practice-focused question was: What resources are needed to develop an evidence-

based program for staff nurses to access evidence-based resources and improve nursing knowledge on EBP at the POC? The project objectives were as follows:

1. By the end of this quality improvement project, an e-nursing resource will be identified for nurses to have access EBP resources.
2. By the end of this quality improvement project, nurses will be able to use and apply knowledge from e-nursing resources at the POC for clinical decision-making.

The common barriers for nurses to perform EBP are the lack of access, time, and knowledge (Melnyk, Gallagher-Ford, Long & Fine-Overholt, 2014). The development of a quality improvement process for access and knowledge of EBP resources begins by building an organizational culture of support for use of EBP. Nurses will be able to ask and receive answers to research questions during the POC with the access of EBP resources. Clinical decision-making at the POC with the use of EBP resources is likely to reduce the time delay in patient care thus increasing staff efficiencies. Finally, nurses accessing EBP resources at the POC are likely to provide high quality and safe patient care by having the knowledge to use and apply the evidence-based research in the clinical practice.

Nature of the Doctoral Project

After the identification of the problem, the next step of the project was to identify sources of evidence to approach the problem. I began my database searches with the use of the Walden library and the Internet to find literature consisting of peer-reviewed articles and credible websites. The literature search consisted of identifying current

approaches to overcome EBP barriers, how to assess nursing knowledge, education for EBP, the use of e-nursing resources, and what tools and methods have been demonstrated as effective. I used a literature matrix to conduct the comprehensive literature review with current available articles to process information for the project. Additionally, my plan was to participate in the decision-analysis of e-nursing resources at the organization to assist with identifying a credible e-nursing resource for nurses to access. The identification of e-nursing resources consisted of working closely with the informatics nurse manager and the interdisciplinary team designated for performing the decision-analysis. My role for this part of the project was observing the decision-analysis processes and assisting with gathering and analyzing data for the informatics nurse manager.

The second part of the project consisted of compiling an interdisciplinary project team for support, collaboration, and development of an EBP educational intervention for nurses. The project team was responsible for developing the quality improvement program goals and objectives to access and apply EBP resources at the POC. The use of the Stevens's star model of knowledge transformation served as the framework for the project design. The project was intended to teach and educate nurses how to access, use, and apply knowledge of EBP resources at the POC.

There was a need for a pre- and post evaluation of the quality improvement of the program. I used the Academic Center for Evidence-Based Practice Evidence-Based Readiness Inventory (ACE-ERI) as the measurement tool to provide information of nursing knowledge through the competent use of EBP (Stevens, 2013). Dr. Kathleen

Stevens granted permission to use the ACE-ERI through the Center for Advancing Clinical Excellence (see Appendix B). The dissemination of the ACE-ERI was part of the pre- and post assessment of the quality improvement program. The data collection process began by organizing the results from the pre-and post-assessment into an Excel spreadsheet for preparation of data entry into the Statistical Package for the Social Sciences (SPSS) data software. The use of the data within the SPSS assists with determining statistical significance between the two assessments.

The purpose of the project was to develop a quality improvement program to improve nursing access and knowledge of EBP resources. The program was to identify the type of e-nursing resources and necessary education to provide nurses access to evidence-based resources and the knowledge to utilize these resources in nursing practice. The intent of the program was to eliminate nursing barriers to EBP resources with the use of technology so that nurses could have access to these resources and the ability to use and apply knowledge of the EBP at the POC.

Significance

The identification and assessment of stakeholders early for the development of the quality improvement program was essential to define the individual and organization's needs and interest in the program. The engagement of stakeholders provides the support and motivation required for program implementation (Hodges & Videto, 2011). The stakeholders for this program are the staff nurses, clinical nurse leaders (CNL), clinical nurse manager (CNM), informatics nurse manager, director of nursing (DON), nurse educators, librarian supervisor, and information technology (IT)

manager. The stakeholders for this project participated in the decision-analysis of the e-nursing resources and were aware of the intentions of the quality improvement program for the surgical and digestive care unit. The listed stakeholders also had a role within the interdisciplinary project team to assist with the development and evaluation of the quality improvement program. The project team met routinely to ensure the program was on track with ongoing feedback from the team members. The ongoing involvement of managers and leaders is essential for improving program outcomes by providing real-time feedback (Compas, Hopkins, & Townsley, 2008). The direct involvement of the CNL and CNM for the unit entailed more time and input to gather unit specific details about the patient population. As the program progressed, more staff nurses became involved in the participation of the training of EBP resources with the intent to apply the knowledge to daily nursing practice.

The quality of healthcare is reliant upon health professionals using knowledge from credible research for the development of interventions or services to treat and manage targeted health outcomes (Stevens, 2013). Nurse leaders face the challenge to achieve the IOM 2020 goal that 90% of clinical decisions be evidence-based to improve health outcomes (Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012). EBP is growing at a fast rate with relevant data for bedside nurses to use for clinical decision-making at the POC, thus the need to have the knowledge to search and apply evidence-based research to patient care (Hart et al., 2008). Nurse leaders are facing the challenge to bridge the gap between EBP and nursing practice by providing nurses the support with tools, resources, and necessary education for applying EBP at the POC (Melnyk et al.,

2016). The quality improvement program design was to address the gap in EBP at the POC by providing the knowledge on how to apply evidence-based research with the use of e-nursing resources. The success of this doctoral project can guide future EBP education models on teaching nurses how to use and apply EBP knowledge with e-nursing resources at the POC.

The implementation of this doctoral project took place in an acute care hospital, but is not limited to this area. Nurses and other healthcare professionals would be able to use and implement this model in other contexts such as ambulatory care centers, home health, and other community services. Additionally, ancillary services such as rehabilitation therapies would be able to apply this use of e-nursing resources. Many times rehabilitation therapies and nursing interventions cross paths to provide an interdisciplinary approach to patient care. The use of the quality improvement project will enhance the ability to align EBP interventions with the establishment of using the same e-nursing resources and approach to gain knowledge.

Patients' health outcomes improve with the use of EBP through informed decision-making to choose interventions that work (Spruce, 2015). The doctoral project provided nurses the knowledge and resources to apply EBP at the POC. Having access and knowledge of the use of EBP resources means nurses are more likely to apply evidence-based interventions (Sidani et al., 2016). The use of evidence-based research at the POC supports EBP for better clinical decision-making to improve the safety and quality of patient care. The improvements in health outcomes help reduce morbidity and

mortality rates, thus generating a healthier population and creating potential for cost savings.

Summary

This doctoral project was to reduce the gap between nursing and EBP. EBP improves the quality and safety of patient care thus producing better health outcomes. Although nurses have a positive attitude towards EBP, there are barriers to overcome such as time, access, and knowledge (Mohseby, Safaari, & Okby, 2016). The design of the doctoral project was to improve nursing knowledge on how to access and use evidence-based research from e-nursing resources for clinical decision-making at the POC.

EBP has been emerging over the years with an abundance of research available, yet it takes decades for the use of the interventions at the POC (Melnyk, 2014). The lack of use is partially due to the limitations of access and knowledge of how to use evidence-based research. The design of the doctor of nursing practice (DNP) project was to address the barriers to the access and knowledge for EBP at the POC. The next section of this paper includes additional details on the background and context of the DNP project. The section includes information on the DNP project concepts, models, theories, and the relevance to nursing practice; as well as the local background and context. I also discuss my role and the roles of the project team members to provide details on the development of the program to address the gap between nursing and EBP.

Section 2: Background and Context

Introduction

EBP is an essential part of the delivery of health care to reduce cost and improve patient health outcomes (Melnyk, Finout-Overhotl, Gallagher-Ford, & Kaplan, 2012). Nurses face barriers of lack of access and knowledge to apply EBP at the POC. The doctoral project design was to address the barriers to reduce the gap between nursing and EBP. The purpose of the project was to develop a quality improvement program to improve nursing access and knowledge of EBP resources. The program was to identify the type of e-nursing resources and necessary education to provide nurses access to evidence-based resources and the knowledge to utilize these resources in nursing practice. The primary question for this project was: What resources are needed to develop an evidence-based program for staff nurses to access evidence-based resources and improve nursing knowledge on EBP at the POC?

The following section will include the description of the concept and model of the project design to identify the framework for the project. The section will also include a description of the background of EBP with nursing practice and the local organizational background. The final part of this section describes my role as a DNP student that includes the development and implementation of the doctoral project as well as the role of the project team.

Concepts, Models, and Theories

The implementation model for the project was the Stevens's star model of knowledge transformation, as the model provides the framework for a comprehensive

approach to translating evidence-based information into clinical decision-making at the POC (Stevens, 2013). The Stevens's star model was developed through the work of scholars at the Academic Center for Evidence-Based Practice (ACE) at the University of Texas Health Science Center and has been used extensively to provide the framework for EBP process.

The volume of evidence-based research is overwhelming and challenging for nurses to translate into clinical decision-making at the POC (Melnyk & Fineout-Overholt, 2015). The Stevens's star model design is to guide nurses through the steps to find, translate, and implement EBP at the bedside (Schaffer, Sandaue, & Diedrick, 2013). Correspondingly, the Stevens's star model uses the cycle of knowledge to develop an understanding of transforming experience into the discovery of new knowledge to apply into practice for real-time clinical decision-making (Melnyk & Fineout-Overholt, 2015). See Figure 1.

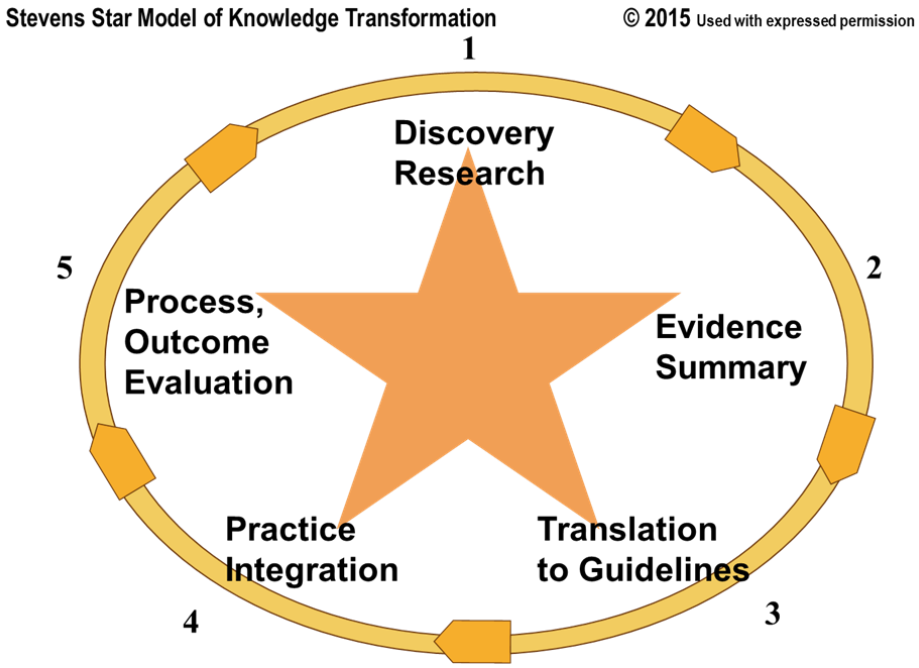

Figure 1: The Stevens Star Model Knowledge Transformation. “Copyrighted material (Stevens, 2015). Reproduced with expressed permission.

The model uses the five-point star for the knowledge transformation and implementation in the EBP process as follows (Stevens, 2013).

1. Discovery of new knowledge; representing primary research studies.
2. Evidence summary; the synthesis of all available knowledge compiled into a single statement.
3. Translation into guidelines; the creation of best practice clinical guidelines with the research evidence.
4. Practice integration; aligning and implementing practice to support EBP through clinical decision-making.
5. Evaluation; the impact the EBP has on quality improvement of health care and patient health outcomes.

The ACE-ERI is an assessment tool for identifying an individual's self-confidence to apply evidence-based research knowledge into clinical practice. Ilic, Nordin, Glasciou, Tilson, and Villanueva (2014) found the ACE tool to meet the satisfactory requirements for the Classification Rubric for EBP Assessment Tools in Education (CREATE) for reliability, validity, and use for future projects. The psychometric evaluation of the ACE-ERI tool validity had a reliability coefficient alpha > .90 (Stevens, Puga, & Low, 2012). The ACE-ERI is a two-part assessment tool: with one measuring the self-reported knowledge with the 15-question EBP Knowledge Test and the other using self-efficacy as the basis to measure one’s self-confidence of competencies of EBP

with the 20-item 6-point Likert-type scale (Orta et al., 2016). The Likert scale is frequently used in nursing research to identify an individual's opinion or attitude regarding an intervention (Grove, Burns, & Gray, 2013). The ACE tool can be administered either through an online or paper survey making it easier for nurses' participation.

The use of the Stevens's star model provided the framework for of the doctoral project through the use of the five-point steps of the EBP process. The first point is the discovery of research, which is part of identifying and accessing e-nursing resources with the team decision analysis. The second point is the evidence summary, which uses an e-nursing resource to identify and interpret systematic reviews to develop a statement of evidence. The third point is the translation, which uses the evidence from an e-nursing resource and project team input for developing guides for practice. The fourth point is the integration into practice, which is the use of the evidence from e-nursing resources to assist with change in one's own practice with clinical decision-making at the point of care. Finally, the fifth point is evaluation, which is an assessment of the impact of the EBP program on quality improvement processes through outcome evaluation of practice change. The ACE-ERI tool competencies are used to measure the impact of the quality improvement program has on nurses EBP knowledge (Stevens, 2013).

The project team used the logic model to guide the structure of the program evaluation. The logic model has been a popular tool for program evaluations starting in the 1960s and flourished with the United Way of America's publication *Measuring Program Outcomes* in 1996 (Kettner, Moroney, & Martin, 2017). Savaya and Waysman

(2005) described the logic model as a way to capture the logical flow and links in the development of a program with the components of inputs, activities, outputs, and outcomes. The model provided a basis for a formative and summative evaluation of the program through the identifications of input resources required for program activities to meet intended program objectives and goals. The project team developed shared goals and objectives for the program using the model. See Figure 2.

Formative Evaluation		Process Evaluation	Outcome Evaluation	
Input Resources	Activities	Output	Outcome	Impact
• Clinical nurse manager, nurse leader, and nurse educator • Mission, Goal, Objectives • Stevens Star Model • Program Design • E-nursing resources decision analysis • E-nursing resource vendor • Examine current literature, existing education strategies and content for evidence-based practice	• Team meetings • Gain permission to use ACE-ERI and EBP assessment tool • Determine dissemination of survey • Design communication information for unit newsletters • Develop EBP education • Extensive review of decision analysis report and finalize decision for vendor	• Target population RNs on the surgical digestive • Staff awareness of quality improvement project • Nursing EBP education video • Plan of evaluation 2 weeks, 4 weeks, and 3 months	• Access e-nursing resources at the point of care • Improve nursing knowledge of EBP • Increase confidence for using EBP • Use evidence-based research for clinical decision making	• Improve patient care outcomes: o Reduce readmission rates o Reduce hospital acquired infection o Reduce falls o Reduce patient's length of stay

Figure 2. Logic model frameworks for Evidence-Based Practice Quality Improvement Program

The logic model guides the program planner by aligning the conceptual flows of program processes with the ability to address an issue while still focusing on the program goals (Kettner, Moroney, & Martin, 2013). The model describes the interrelationship of the program activities to meet the program objectives and goals (Hodges & Videto, 2011). Furthermore, the model supports the facilitation of shared goals among the project team members (Ball et al., 2017). The project team was able to use the guidance from the logic model to develop future recommendations for planning and implementing a quality improvement program using e-nursing resources to support EBP.

Relevance to Nursing Practice

The establishment of an EBP culture for nursing care is becoming a priority for many organizations to improve the quality of care provided to patients (Stevens, 2013). EBP entails using clinical expertise and knowledge to translate evidence-based research into practice for clinical decision-making to improve patient outcomes (Melnyk & Dineout-Overholt, 2015). Although EBP is necessary to improve patient care, there continues to be gaps in EBP for nursing. A survey of American Nurses Association (ANA) nurse members found that nurses value and are ready for EBP implementation, but lack the knowledge and skills to deliver (Melnyk, Fineout-Overholt, Gallagher, & Kaplan, 2012). Common barriers to EBP include the lack of time, access to evidence-based resources, knowledge to apply evidence-based research, culture, and organizational support for EBP (Melnyk et al., 2010). Nurse leaders are asked to create a corporate culture to support EBP through skill building workshops and access to resources and tools to develop the necessary knowledge for clinical decision-making at the POC

(Melnyk et al., 2016). Therefore, oorganizations are looking to information technologies as an approach to support EBP for nurses.

Using e-nursing resources supplies nurses with the necessary access to evidence-based studies. Although there are several types of e-nursing resources available, there is no defined method to identify the best type of e-nursing resource, as it depends on the individual and organizational needs (Campbell, Umapathysivam, Yifan, & Lockwood, 2015). But Campbell et al. (2015) suggested resources have ease of navigation in searching for information and an easily identifiable level of evidence. Other features such as speed, an adequate amount of information on the screen, and continuous connectivity were satisfaction points for nurses (Doran et al., 2010). Other types of criteria to consider for e-nursing resources are the mapping of literature about specific health conditions and the tracking of use of evidence summaries and citations (Khalil, Chamber, Munn, & Porritt, 2015). Finally, resources with relevant and concise information, a summary of evidence, systematic reviews, and clinical practice guidelines made it easier nurses to read and apply information to nursing practice (Lin, Murphy, & Robinson, 2010). The previously listed suggestions are a starting point to consider when identifying the criteria for an e-nursing resource, yet organizational needs should also be on the forefront of the decision analysis process.

E-nursing resources are essential for providing the evidence-based research, yet nurses will require the knowledge to use and apply the evidence at the POC. The dissemination of the evidence is vital for nurses to have the knowledge, skill, and attitude to perform EBP for improvements in quality and safety (Melnyk & Gallagher-Ford,

2015). The pressure to increase the use of EBP is driving innovative strategies for increasing nursing knowledge on evidence-based research (Melnyk, 2014). The uses of e-learning or web-based courses is growing, as is teaching methods to improve nursing knowledge on EBP (Allen, Lubejko, Thompson, & Turner 2015). One systematic review found an online and interactive e-learning strategy was more effective in the improvements of the participant's research knowledge than a face-to-face course (Hines, Ramsobtham, & Coyer, 2015). Another study found significant improvements in the cognitive and technical EBP skills with the use of integration of digital video discs (Fernandez, Tran, Ramjan, Ho, & Gill, 2014). Long et al. (2016) found the use of an evidence-based research tool accessible through computer, smartphone, or iPad improved nurses' research skills with the ability to define credible resources and apply population or problem, intervention, comparison, outcome, time, and setting (PICOTS) in case studies. Online learning strategies provide nurses the flexibility to perform learning at their pace allowing for time to grasp the knowledge required for EBP.

Education on EBP through an online method is a promising approach to enhance nurses' knowledge of evidence-based research. Nurses' perception of knowledge of EBP and research use has been found to improve through online learning modules with the support of leadership (Hart et al., 2008). Furthermore, EBP programs reignited the appreciation for delivering excellence in patient care with the development of knowledge to apply evidence-based research at the POC (Balakas, Sparks, Steurer, & Bryant, 2013). The design of this doctoral project was to address the gap in access and knowledge of EBP by supplying the knowledge to use e-nursing resources for clinical decision-making

at the POC. Nurses with the knowledge to access and apply evidence-based research at the POC can make informed clinical decisions to improve the quality and safety of patient care.

Local Background and Context

Many organizations struggle with the translation and use of evidence-based research. There is a significant amount of research about nurses having limited time, knowledge, and access to interpret evidence-based research at the POC (Campbell, Umapathysivam, Xue, & Lockwood, 2015). The local organization is no exception to the barriers for EBP. The local organization has multiple resources for evidence-based research, but struggles with providing nurses immediate access to use at POC. Nurses are also faced with the challenge of having the knowledge to utilize the evidence-based resources and apply to practice during direct patient care; thus the ongoing challenge to perform EBP at the POC. Healthcare systems need innovative strategies to implement the translation and use of EBP at the POC to improve patient outcomes and reduce healthcare cost (Melnyk, 2015).

The DNP project took place in an agency located in Wisconsin, a not-for-profit healthcare system including a 325-bed flagship hospital. Twenty-nine nursing departments are employing more than 1,500 nurses throughout the hospital. The nursing unit of focus for the DNP project has a 24-bed capacity providing care to a variety of digestive and surgical patients. The organization has Joint Commission Accreditation Health Care (JACHO) certification and is regulated by the Center for Medicare and Medicaid Services (CMS). The organization's strategic plan recently shifted goals to

focus on improving the health system by aligning with the Triple Aim initiative, which entails utilizing or refining resources to develop a competent workforce to meet shared goals (Earnest & Brandt, 2014). The organization's vision is to enhance the health and well-being of the served communities; while enriching every life, including the patients, families, and staff. The organization's mission is to be distinguished through patient care, education, research, and improved health in the communities served.

The organization's new approach within the healthcare system is set to improve health outcomes and reduce cost by enhancing patient care experiences. The healthcare initiative will challenge health professionals to redesign training and education to improve knowledge and skills for improvements in health outcomes with the use of EBP (Earnest & Brandt, 2014). The DNP project supports the organization's strategic plan by increasing the use of EBP at the POC with the use of e-nursing resources.

A recent survey of chief nurse executives found that more than one-third of the hospitals are not meeting the National Database of Nursing Quality Indicators (NDNQI) performance metrics and almost one-third were above the national core measures benchmark (Melnyk et al., 2016). The IOM has set a goal for 90% of clinical decisions to be evidence-based thus, requiring nurse leader support for staff nurses to meet patient care excellence through EBP at the POC (Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012). The organization's leaders are shifting the culture to support EBP at the POC to align with the National Patient Safety Goals (NPSG) as part of improving the NDNQI measures. A few measures of focus for the surgical digestive unit are hospital-acquired pressure ulcers (HAPU), hospital-acquired infections (HAI), falls, length of stay

(LOS), and unplanned readmissions. The overarching outcome for supporting nurses at the POC with access and knowledge of e-nursing resources promotes EBP to reduce HAPU, HAI, falls, LOS, and unplanned readmissions. The NDNQI and national core measures link between performance and reimbursements is another reason to use EBP for improvements in health outcomes.

Role of the DNP Student

The hospital is my place of employment, my job role is an advanced training consultant focusing on educating multiple roles on the electronic health record for the emergency and labor delivery departments. My role for the project was the project lead in the development of the quality improvement program for supporting EBP on the unit. Part of my role was to develop and lead the quality improvement program by collaborating with the nursing leadership and educators on the unit to assess and educate nurses on EBP resources. Additionally, my role involved participating in the decision analysis process for identifying EBP e-nursing resources for nurses to access evidence-based research. The decision-analysis was part of my practicum experience providing the real-life experience of interprofessional teams used to make a decision about appropriate e-nursing resource. Part my role in the decision-analysis was to provide the evidence-based recommendations for selecting e-nursing resources, participate in vendor demonstrations, data analysis, participate in meetings, and explore the resources to determine the use for incorporation into the quality improvement program.

My motivation for this project is the passion for using technologies such as e-nursing resources to improve nursing practice at the bedside. Healthcare delivery

systems are in a constant state of change with evidence-based research growing to support the change, yet the barriers to integrating the evidence is a challenge for many organizations. The use of technology is increasing for innovated approaches to overcome the barriers. An e-nursing resource is a tool providing an innovated approach to support EBP at the POC. The measures I took to prevent bias with the project was to work with interdisciplinary project team members to develop program goals, along with collaborating with a nurse from a different unit to assist with communication, survey distribution, collection, and results review. The doctoral project was a way for me to build and apply my nursing knowledge with the integration of technology tools to support the future of nursing practice.

Role of the Project Team

The development of a project team was to provide the interprofessional collaboration for improving the use of EBP at the POC for improving patient outcomes. The development of a quality improvement program requires a project team to establish and share a vision across systems for improving nursing practice at the POC with e-nursing resources. A project team creates the support for program development by using the knowledge, expertise, and skills from each other's discipline or specialty for formal decision-making (White & Dudley-Brown, 2012). The process of getting the team involved consisted of me sending an email to team members briefly describing the DNP project and invitation to participate in the initial meeting.

At the initial team meeting the group discussed and verified individual member's role, commitment, and expectations needed from each member to ensure a clear

understanding of purpose with the program. The team determined the mission, goals, objectives, and activities for supporting the development and sustainment of the quality improvement program. The development of a mission, goals, and objectives is an essential step to ensure stability of a program (Hodges & Videto, 2011). The team also defined which type of patient outcome will be the focus to measure for the summative evaluation. The team met routinely to ensure the program stayed on task by determining if objectives were met within the designated timeline set by the team. The team meetings provided opportunities for continuous communication and feedback on the progression of the program. The ongoing feedback from the team was vital to the success of the program as this provides an opportunity to make adjustments. There were also ad hoc meetings with some of the team members to develop more program specific materials that were brought back to the team for final approval. The following list of the team members and roles required for the project team:

- Clinical Nurse Manager (CNM): functioned as the facilitator for the surgical digestive unit to ensure staff collaboration with project team members and the available time to participate in the education program.
- Clinical Nurse Leader (CNL): role was to assist with communicating the needs of the surgical digestive unit, current nursing staff workflows, and mentor for nurses on the unit.
- Nurse Educator: role was to assist with providing input for education curriculum and communicating information to nursing staff.

- Librarian Supervisor: role was to provide input for searching and using e-nursing resources.
- Informatics Nurse Manager: role was to support and perform decision analysis workup for e-nursing resources and facilitate communication with the e-nursing resource vendors.
- Director of Nursing (DON): role was to act as a supporter for the program and make the final decision on vendor selection for e-nursing resources.
- Information Technology (IT) Manager: role was to provide technical support for nurses to access e-nursing resources.

Summary

The literature review identified the barriers for nurses to perform EBP at the POC. Health initiatives to improve patient outcomes and reduce healthcare cost are driving forces for nurses to improve nursing practice. For nurses to perform EBP, the barriers to access and knowledge of evidence-based research must be addressed. The use of the Stevens's star model was a respected implementation model useful to guide the development of the quality improvement program to identify e-nursing resources and the type of education necessary to develop nursing knowledge to apply and use the resources. The data collection and analysis of evidence was essential for the development of this doctoral project. The next section provides more details on sources of evidence for data collection and analysis.

Section 3: Collection and Analysis of Evidence

Introduction

EBP is necessary for nursing care to improve the quality and safety of patients for better health outcomes (Melnyk, Gallagher-Ford, Long, & Fineout-Overholt, 2014). Nurses are expected to engage in EBP, yet face the challenges of lack of access and knowledge of how to apply evidence-based research for clinical decision-making at the POC (Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012). The purpose of the project was to develop a quality improvement program to improve nursing access and knowledge of EBP resources. The program was to identify the type of e-nursing resources and necessary education to provide nurses access to evidence-based resources and the knowledge to utilize these resources in nursing practice. Research indicates that e-nursing resources are an approach to providing nurses access to evidence-based research, while e-learning is beneficial for nursing education to use and apply knowledge from resources into practice. The following section includes the project question and the sources of evidence needed to answer the question. The section also provides the description of steps performed for data analysis and synthesis.

Practice-focused Question

The organization was looking for innovative approaches to enhance the use of EBP at the POC to improve the quality and safety of patient care to improve outcomes. Common barriers to EBP are the lack of access to evidence-based resources at the POC and ability to apply the knowledge from research. To address these issues, the focus question for the project was: What resources are needed to develop an evidence-based

program for staff nurses to access evidence-based resources and improve nursing knowledge on EBP at the POC?

Nurses are expected to perform at the full extent of licensure, and therefore need to engage in EBP (American Association of Colleges of Nursing, 2010). The issue for the nurses on the surgical and digestive care unit in a hospital in Wisconsin is the minimal options for immediate access and knowledge of current EBP resources. The nurses need immediate access and education of EBP resources for problem-solving and making informed clinical decisions during patient care. Nurses lacking the access and knowledge of EBP resources hinder patient care.

The use of information technology to support and integrate EBP resources into practice provides efficiencies through access and knowledge (Doran et al., 2010). Even though nursing knowledge of EBP improved with the use of interactive online resources, there is still minimal access to the technologies for EBP support (Hines, Ramsbotham, & Coyer, 2015). The current gap-in-practice for nurses is the lack of access and knowledge of EBP resources thus causing barriers to support the use of EBP.

The purpose of the project was to develop a quality improvement program to improve nursing access and knowledge of EBP resources. The program was to identify the type of e-nursing resources and necessary education to provide nurses access to evidence-based resources and the knowledge to utilize these resources in nursing practice. The use of a quantitative method approach was to determine the effectiveness of the educational intervention with the utilization of a pre- and posttest design to measure the outcome.

The use of the ACE-ERI is a measurement providing information of nursing knowledge about the competent use of EBP (Stevens, 2013). Dr. Kathleen Stevens provided the permission to use ACE-ERI from the Center for Advancing Clinical Excellence. The ACE-ERI dissemination occurred by emailing all participating registered nurses (RNs) on the surgical digestive unit for a pre- and post-implementation assessment to determine the effects of the educational intervention for the quality improvement program.

The ACI-ERI is a self-rated survey that is used for assessing the knowledge and confidence of EBP, with 15 questions measuring knowledge, 20 questions measuring self-confidence of competencies and 10 collecting demographics (Orta et al., 2016). The data collection process began with the organization of the results from the pre-and post-implementation assessment into an Excel spreadsheet to prepare for the SPSS data input. The use of the SPSS data helps with determining a statistical significance between the two assessments. The results from the assessment assisted with the development of future recommendations for the quality improvement program to access and apply the knowledge of resources to perform EBP at the POC.

Sources of Evidence

The project team relied on the organizational decision-analysis to assist with the identification of the e-nursing resources. The use of the results from the pre- and post-survey questions was to determine the effects of the educational intervention. The purpose of the project was to develop a quality improvement program to improve nursing access and knowledge of EBP resources. The program was to identify the type of

e-nursing resources and necessary education to provide nurses access to evidence-based resources and the knowledge to utilize these resources in nursing practice.

The results from the pre- and post-survey assist to define the recommended resources and type of education required to improve the nursing knowledge of EBP with the use of information technology. The need for outcome evaluation is necessary to determine the impact the program has on patient outcomes. A pre- and post-implementation comparison of data from one or more of the performance metrics for HAPU, HAIs, falls, LOS, or unplanned readmission was considered for determining the impact the program has on patient outcomes. The project team decided which metric was to be used for the focus of the quality improvement program.

Evidence Generated for the Doctoral Project

The first step was the approval from the Walden University and the organization's institutional review board (IRB) to begin the project. After the approval process the CNL and CNM from the surgical digestive unit provided me a list of nurses' names staffing the unit. The list of names identified potential participants to recruit for the project. A blind copy email was sent to the potential nursing participants containing an informational description of the project and asking for consideration to participate in the project with the ability to consent through the initial survey link.

Phase 1 was to identify the e-nursing resources the organization has decided to use through the organization's internal decision-analysis process entailing surveys from staff, vendor presentations, and a decision-analysis management tool for generating data for comparison of vendors. Although this was the first step, there were delays in the final

decision causing the DNP project team to make final decision of type e-nursing resources based on current availability of resources within the organization.

Phase 2 was to develop of an educational intervention entailing information about Stevens's star model and the steps to evidence-based practice. The information was compiled in a PowerPoint presentation with speak over voice and disseminated through a self-study private YouTube video.

Phase 3 involved sending the informed consent with information about the project and program through a blind copy email to all potential participants with the initial ACE-ERI survey link implying consent if took the survey.

Phase 4 occurred 2weeks after obtaining the initial survey results. The research analysist form the organization exported the results into an Excel document and sent to me through secure email. Then the EBP education presentation video was emailed through a blind copy to all potential participants.

Phase 5 occurred 2 weeks after sending the education presentation video. Then the second ACE-ERI survey link was blind copy emailed to all potential participants with a deadline to complete 2 weeks from the time the email sent. Because there were few results, the survey time was extended an additional week.

Phase 6 was for the research analysist form the organization to export the results into an Excel document and send to me through secure email. The organization of the results included inputting the data into an Excel document and SPSS for statistical analysis.

Phase 7 is the examination and comparison of the pre- and post implementation of patient performance metrics from the surgical digestive unit occurring at a later time by the project team at the organization.

The protection of the participants occurred through the collection of consent prior to participating in the project. Additionally, all surveys remained anonymous to protect the confidentiality of the participant through the use of a participation code created by participant. The data collected are securely stored in the DNP student's password protected computer and backed up on a password protected hard drive to maintain privacy and safeguards for the participants.

Analysis and Synthesis

The data collection began with the organization's research analysist exporting the data results into an Excel document from the online Survey Monkey. The original exported Excel document remained untouched for reference and to ensure the integrity of the data. The data analysis process began with the organization and compilation of the results in a separate Excel document for tracking and analysis purposes. The data entry process into the SPSS created the necessary information to perform the statistical descriptive analysis of the pre- and post-survey results. The data were confidential by leaving the participants identification anonymous and through the use of a participation code that participants created. The use of a participation code was to help identify if the survey was completed by the same participant for the pre-and post-survey results. All surveys were sent through a blind copy email to prevent participants from seeing any information about the other participants. Walden University and the organization's IRB

provided approval to the project prior to implementation to ensure all participants are protected from harm.

The process for identifying e-nursing provided the project team the type of resources available for nurses and to determine how nurses will access these resources at the POC. The project team further studied the e-nursing resources to develop the design of the intervention to ensure nurses have the knowledge and ability to access the e-nursing resources. The development of the educational intervention is essential to describing the process on how to perform research and translate the information for clinical decision-making at the POC reducing the gap in knowledge of EBP (Hines, Ramsbotham & Cover, 2015). The educational intervention entailed educating nurses on the Stevens's star model and steps to evidence-based practice via a detailed voice over PowerPoint placed in a private YouTube video. The data from the pre- and post-survey provided information to determine the effects of the educational video had on nurses' knowledge on how to access and apply evidence-based research for clinical decision-making at the POC.

Summary

The quantitative research method for the project design was intended to address the nursing gap of access and knowledge for EBP at the POC. The use of the Stevens's star model was the framework of the project design to provide the guidance of the five point processes for knowledge transformation. The project entailed participating in the decision-analysis for the identification of the e-nursing resource. The approval of the project lead to the process of gaining permission to proceed with the project from the IRB

at Walden University and the organization to protect participants within the project. The surgical digestive unit manager identified the participants of the program to participate in an educational intervention with the focus to improve knowledge of use evidence-based research for clinical decision-making at the POC. The effectiveness of the educational intervention was based on the pre- and post-test results of the ACE-ERI tool for further analysis of the project outcomes. The evaluation plan that will be conducted by the project team at the organization will provide more details on the impact the program has on patient outcomes. The next section entails information about the findings and implications from the survey results including proposed recommendations to close the gap to nurses' lack of access and knowledge of EBP resources. The section will also include the doctoral project team contributions and strengths and limitations of the project.

Section 4: Findings and Recommendations

Introduction

The purpose of the project was to develop a quality improvement program to improve nursing access and knowledge of EBP resources. The program was to identify the type of e-nursing resources and necessary education to provide nurses access to evidence-based resources and the knowledge to utilize these resources in nursing practice. Currently, there is a gap in practice related to the performance of EBP and the knowledge that nurses have regarding EBP resources. The primary question for the project was: What resources are needed to develop an evidence-based program for staff nurses to access evidence-based resources and improve nursing knowledge on EBP at the POC?

The results from the organizational site's decision-analysis guided the project team's decision-making for identifying the e-nursing resources for this doctoral project. Correspondingly, the project team used the results of the pre and post-survey questions to determine the effects of the educational intervention. The ACE-ERI tool was used for the pre- and post-survey results. The use of email provided the resource to send link to the online surveys to the potential participants. The organization's research analysist exported results from the online survey into an Excel document to be sent for further analysis. The quantitative data were then organized in an Excel document and inputted into the SPSS software for descriptive statistical analysis. The following section includes the description of the findings and implications, recommendations, DNP project team contribution, and the strengths and limitations of the project.

Findings and Implications

The initial ACE-ERI questionnaire including the12-item demographic questionnaire, 20-item questionnaire to assess confidence in EBP, and 15-item EBP knowledge test (including an additional one item question about organizational EBP resources) was sent to 47 potential participants before providing the educational video. The participants provided consent through the acceptance of taking the initial survey, by asking the participants to retain initial email to stay informed. The initial pre-survey participants (*n*=8) responding by eight completing the first section of the 20-item questionnaire to assess confidence in EBP and seven completing the whole questionnaire. After the initial survey results were retrieved, the educational video was sent to participants to complete a self-study review. The educational video included the following objectives:

- Define EBP
- Understanding the importance of EBP
- Know how to use and integrate EBP in daily cares
- Where to access EBP e-nursing resources
- Outcomes for using EBP

The use of the Stevens's star model of transformation the components of EBP, and the seven steps of EBP process were part of the development of the educational material.

After viewing the educational video, participants were asked to complete the postsurvey of the ACE-ERI including the same questions from the presurvey consisting of a 12-item demographic questionnaire, a 20-item questionnaire to assess confidence in

EBP, and the 15-item EBP knowledge test (including an additional one item question about organizational EBP resources). The participants (*n*=4) answered the survey with two completing the pre-survey, the final number of participants for statistical analysis was a sample size of two. The Cronbach's alpha reliability coefficient analysis of the composite of total scores for the Stevens's star model points displayed .909 with normal distribution. The sample size is too small for valid statistical analysis of comparison to determine if the educational video had a significant impact on the scores. The following analysis was completed using SPSS, version 21.

Sample Size and Missing Data

There were 10 participants who submitted surveys with only two completing both the pre- and post-survey. There was a 17% response return rate for the pre-survey and 9% response return rate for the post survey. Only 4% of the response return rate completed all sections of the pre and post-survey. Eight of the 10 completed the full demographics. Eight participants completed the first section of 20 questions on EBP confidence on the first survey with four participants completing the second survey. Seven participants from the eight completed knowledge assessment section on the first survey with all four completing the knowledge assessment for the second survey. No pattern was recognized for the missing data.

Demographic Data

The combined pre- and post-survey findings with eight of the 10 participants completing the demographics. The average age of the participants was 26-35 years of age with a standard deviation of .52. Over half of the participants had 0-5 years of

nursing experience with the others having 6-10 years. There were 88% of participants who had a bachelor's degree in education. There were 75% of participants that rated their EBP knowledge at a beginning level and their EBP experience from none to beginning level.

EBP Confidence Level Average per each Knowledge Star Point

The EBP confidence was measured using a Likert scale of 1 – 6 with 1 being very little confidence and 6 having a great deal of confidence. To figure the cumulative confidence level mean and standard deviation (SD) of each star point from the Stevens's star model of knowledge the mean and SD from each question was calculated through the SPSS. A descriptive frequency analysis was then run through SPSS to find the average mean and SD for the combined group of questions per star point for each survey. The number of questions per star point was as follows: discovery five, evidence summary four, translation three, integration six, and evaluation two, altogether equaling 20 questions. See Table 1.

Table 1

Cumulative Mean/SD for Pre &Post-Survey of EBP Confidence per Star Point

Test	Discovery		Summary		Translation		Integration		Evaluation	
	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)
Pre-survey	8	15(4.78)	8	12.25(6.18)	8	10.14(2.91)	8	22.75(8.92)	8	7.88(2.80)
Post survey	4	23.75(6.13)	4	18.25(4.99)	4	14.25(3.30)	4	30.25(6.29)	4	10.25(1.71)

The EBP Knowledge Assessment

The EBP knowledge assessment score was based on 15 questions from the ACE-ERI survey and one organizational specific in regards to access of e-nursing resources equaling a total score of 16 possible correct answers. See Table 2.

Table 2

Paired Sample of Correct Answers for Knowledge Assessment Pre- and Post-Survey

Test	Mean	N	SD
Presurvey	9.29	7	3.35
Postsurvey	11.3	4	2.06

The data show a slight increase in both nursing confidence level and knowledge of EBP through mean and standard deviation descriptions, yet there is not enough data to have a valid comparison to define the significant difference.

The primary limitation of the project was using a convenience sample of nurses from one unit, which resulted in a small sample size for statistical analysis. This type of sample can cause a sampling bias due to not getting a full representation of a population (Grove, Burns, & Gray, 2013). Response bias should be considered due to the low participant response rate. Additional limitations for the project were due to shifts in the organization's prioritization of projects, leading to some delays in implementation and overlapping of projects. The change in organizational prioritizations of the program caused limitations to nursing time and resources lead to the following:

- Education was an online self-study video versus in person or e-learning.
- A shift in project timeline causing overlapping of multiple project implementations

- A change in nursing roles and responsibilities
- Lack of participants
- The inconsistency of communication through the unit newsletter

The organization did not make a final decision to implement new e-nursing resources leading to a change in the direction of the type of e-nursing resources that were currently available to staff. The lack of new e-nursing resources may have caused a lack of interest in the project among participants. Other limitations to consider was the process for sending and using an online the survey through a blind copy email with an online link because there was no way of tracking who received or completed the survey. There are limitations to this type of survey because there is no type of validation to prove who took the survey. Because the survey was anonymous, I could not directly follow-up with a participant if the information was missing. Also, the self-study video was not trackable to validate the participants watched the video before taking the second survey. Furthermore, the time frame was short between survey, education, and second survey, which may have caused a small response rate from participants. The combination of these unanticipated limitations reduced the availability of nurses and resources for the project, causing time restraints and barriers to gain interest from participants. The lack of participation led to a small sample size, limiting statistical findings from the project results.

Although there is little statistical data, the descriptive findings show there is a need for nurses to increase their knowledge of EBP. Over half of the nurses rated their EBP knowledge at a beginning level with little to no EBP experience. To efficiently

improve EBP in nursing and healthcare systems, organizational support of resources and time is necessary. As noted throughout the project, barriers such as access, time, and knowledge continue to be a struggle for nurses to adopt EBP at the POC. The ability to access and apply EBP resources is essential to improve patient care. Increasing nursing knowledge enhances the exposure to EBP with the likeliness to increase nursing use of EBP at the POC.

The IOM has challenged the nursing profession to improve population health through increasing use of EBP for quality improvement. To improve patient health outcomes, an EBP culture must be developed to support informed clinical decision-making at the POC. The development of a supportive organizational EBP leads to the delivery of highest quality of care to promote better patient outcomes (Melnyk et al., 2009). The findings indicate the ongoing barriers to implementing EBP within a healthcare setting. Healthcare organizations may continue to struggle with adopting an EBP culture that is able to develop quality improvement measures to improve population health. Accessing and applying EBP resource knowledge throughout the organization may promote the use of EBP to develop efficient and effective patient care for quality improvement.

Recommendations

This doctoral project may improve the quality of patient care. The limitations of resources and dedicated time from the participants created barriers for valid results, leading to the following recommendations by the project team to develop an EBP quality improvement program:

- Have a set defined team with the priority to promote EBP
- Ensure the implementation of the new e-nursing resource plan aligns with current EBP educational video
- Make the self-study more interactive with the use of Captivate
- Mandate and track the educational self-study through an e-learning
- Provide nurses the time to complete the education and use the e-nursing resources
- Re-layer EBP education through unit newsletters and team meetings
- Have handout of EBP information and steps to use readily available on the nursing dashboard and at nurses station for ease of access.
- Resurvey nurses post tracking of education
- Once education is stabilize set a timeline to measure patient outcomes to determine if increase access and knowledge of EBP resources impacts patient outcomes defined by the team.

Contribution of the Doctoral Project Team

The primary project team contribution included working closely with the CNM, CNL, and nurse educator. The team helped define the mission, goals, and tasks for the project with the use of the logic model. The CNM and CNL were the two primary team members who assisted with decision-making for educational material and communication to nurses on the unit to promote the EBP quality improvement project. The nurse educator was unable to stay fully engaged due to medical leave. The team met routinely with additional communication through email to keep everyone informed of timelines

and task completion. My primary role was to lead the team meetings, develop the educational material with the final approval by the team, and keep the team informed of the project progress along with presenting final results from nursing surveys. Additionally, the team worked closely with the informatics nurse manager to identify the appropriate e-nursing resource. The informatics nurse manager led the decision analysis to determine the e-nursing resource while the final decision was to be made by the DON.

The decision analysis included nurses from several areas as well as the librarian supervisor and other ancillary staff. The purpose of the multiple roles was to capture the needs of other healthcare professional roles when making a decision about the type of e-nursing resource. The decisional analysis process included onsite demonstrations and access to three different types of e-nursing resources. The nurses and other ancillary staff were to test and provide feedback about the e-nursing resources to determine the usability of the products at the POC. My role in the decision analysis process was to collect and perform data analysis for survey results with a second review done by informatics nurse manager to ensure the validity of results. Although a recommendation was made to the DON, there was no final decision to implement new e-nursing resource.

Not implementing the new e-nursing resource resulted in the team using a new approach to provide nurses access to e-nursing resources, which entailed reviewing currently available resources. The organization currently has several e-nursing resources randomly spread throughout the system with multiple and inconsistent ways to access within the organization's internal electronic system. The multiple access points for the nurses have caused confusion and challenges for nurses to access and use at the POC.

The team decided which EBP e-nursing resources were pertinent at the POC to incorporate them into the education. The educational intervention included specific screenshots and directions on how to access current resources.

Initially, the decision was to create an e-learning video to be tracked through the organization's learning zone or in-person training. The organization did not have enough resources to provide the support for creating e-learning or to incorporate into in-person training. The team considered other options with the final decision to develop an educational video through a speak-over PowerPoint that was put into a YouTube video. The team was presented with research through literature to help determine the final content for the video to include the following objectives:

- Define EBP
- Understanding the importance of EBP
- Know how to use and integrate EBP in daily cares
- Where to access EBP e-nursing resources
- Outcomes for using EBP

The decision was also made to email the video link to the nurses for ease of access.

After the survey results were in the team met again to discuss the results of what went well or needs improvement. The team felt the education video was useful information and well put together. The CNM and CNL thought they were well informed throughout the project and like the ease of access to the survey and video. The team decided they could have done better communication via newsletter and rounding with nurses to keep them engaged. Furthermore, there was the discussion in regards to setting

aside dedicated time for staff to take the survey and the watch video. The CNM and CNL also thought it would be good to do in-person training to provide an opportunity for direct questions.

The team felt the issues with the project were the delay of implementing new e-nursing resource and too many overlapping projects. The team felt the current environment was overwhelming for nurses to learn with time constraints. Because of these factors the current state of the project is on hold until the final decision to implement the new e-nursing resource is made, the team felt this may gain more nursing interest. Once the decision is made by the organization to implement a new e-nursing resource the plan is to incorporate sections of the educational video into the new education so that it aligns with the e-nursing resources. The team is planning to continue to re-layer EBP information through newsletters and team meetings to promote EBP to create a better knowledge base. The group also discussed finding ways to incorporate the EBP education into nurse residency and onboarding process. For this to occur, the team feels there is a need to develop a strategic plan with the assistance of the DON, informatics nurse manager, librarian, and nursing researcher to promote the EBP in the organization.

Strength and Limitations of the Project

While the project results were unable to display statistical significance, there was strength in the implementation of the project. The team was able to promote a beginning level introduction of EBP to the nurses on the unit. The educational video was easily accessible to nurses and can be replicated for future purposes in the organization. The

survey was online making it easier for participants to access and reduce the errors in data collection. The team was able to stay informed through good communication and were flexible to new approaches along with adjusting the timeline.

The project process also included weakness such as limited time and resources to promote the EBP quality improvement project in an effective manner. Because the survey was anonymous, there was limited ability to track participants or follow-up with individuals with missing data. There was not a way to validate who was taking the survey and was untraceable. The project team decision to use a self-study video versus an e-learning caused the inability to track who watched the video. Because the video was untraceable there was not the ability to know if the participants watched the video prior to taking the second survey. The adjustment of the timeline caused the team to make new approaches with a shorter timeframe for implementation. An example was the change to the approach to developing the educational video from and e-learning to self-study YouTube video. The new e-nursing resource was not implemented by the organization within the timeframe of the project implementation. The communication to the nurses by the CNL and CNM was not distributed to the nursing staff in a timely manner which may have caused less awareness of the project.

The project results also validates the current barriers in healthcare to implement EBP, this may be caused by limited resources and time within the organization. Nurse leaders looking to allocate resources or prioritize projects should consider ways for nurses to have access to evidence-based research and knowledge to incorporate EBP at the POC to promote better patient health outcomes. A future recommendation for this

type of project is tocontinue to use a quantitative approach as this helps provide manageable data. The use of the Stevens's star model of knowledge transformation was helpful in developing the educational intervention and different methods for integrating EBP at the POC. The use of the logic model provided the project team guidance to define input and outputs to keep the project on track with the adjustment of the timelines. Empowering nurses to perform EBP is essential to nursing practice. Providing nurses the right tools to access EBP resources and the knowledge to use them is another step to promoting healthier patient outcomes.

Section 5: Dissemination Plan

The format I chose for the scholarly project dissemination of results is a stand and deliver presentation at a unit staff meeting. I plan to use a PowerPoint presentation with information that is tailored to the audience, while keeping it short. The PowerPoint creates the opportunity for me to present quick facts without overwhelming the audience and an opportunity for questions. The forum will allow for me to circle back to the nursing participants to provide and receive feedback for future recommendations. An advantage to this approach is the potential or discussions among the nurses to share knowledge and insight of the overall project process. A limitation of the approach is the limited availability of time, which may discourage staff from asking questions or prevent detailed discussions. Finally, the results will be shared with key nurse leaders to gain support for future EBP projects in the organization.

The topic of EBP is broad and it is an ongoing struggle for organizations nationwide to adopt a new practice. The final results do not have statistical data to support significance yet show valid issues with implementing EBP QI projects. The dissemination of this project can be shared at local nursing research conferences to promote the awareness of the problem. A poster board presentation will have fewer time restrictions, allowing for a broader audience to view the results.

Analysis of Self

The project was more challenging, yet also more rewarding, than initially anticipated. My current role as a practitioner is a mixture of leadership, informatics, and education. I found the topic of EBP to be very broad, discovered that it has different

meanings for nurses. I have not performed direct patient care for some time, thus have been distant to the routine duties at the POC. Although this is the case, I am aware of the expectations for a practitioner at the POC. The project helps further develop a broader understanding of the current barriers to EBP and the challenges nurses face to incorporate into routine practice. The preparation of the DNP role through the project has increased my ability to grow and find new methods to integrate collaboration among interprofessional teams, which is necessary to enhancing quality improvement.

As a scholar, the literature search was enlightening, yet overwhelming to review. I found myself developing several new skills throughout this project related to research development and data analysis. My skills for conducting research improved through working with other nurse researchers and learning to reach out when struggling, yet at times may have waited too long to ask for assistance. The future of this project is dependent on the implementation of a new e-nursing resource. The foundation of EBP knowledge is still valid and requires further research and support to integrate at the POC. As a professional scholar, I intend to continue to work with the organization to further develop and implement EBP methods for quality improvement.

The project manager role was one of the more comfortable roles to relate to because my experience has included other project implementation. The challenge was learning new skills to fit into the organization's priorities and timelines. Participating in the decision analysis for the e-nursing resources and working with nurse leaders was encouraging because I saw passion for EBP and genuine support of the project. The struggle with time constraints and decision making out one's control were challenging for

me to manage for this project and should be considered when managing a project as this may impact the overall results of the project. The experiences of the project are skills that can be carried over for future projects to improve nursing practice.

The project included many lessons to developing a quality improvement program and uncontrollable barriers to implementing a project in a hospital setting. An example is the IRB approval process from the organization and Walden University to implement the project. The two different IRBs required different data which was a challenge for me to separate the requirements, yet ensure the project aligned as planned. An experience gained from this project is to create a better approach to program development by beginning to work the details of the program earlier to prevent delays or miscommunication. Additionally, there was a delay in response to gain permission to use the ACE-ERI survey, and for future projects I would start this process earlier. Other challenges were the variety of shifts within the organization from student project process to the priority of projects within the organization. These created additional uncontrolled delays, thus leading to the adjustment in timelines in the project. The data analysis process was more challenging than anticipated, but I learned new skills with Excel and SPSS. Even though the project had several challenges, there is still a sense of reward for completing the process and learning new skills for future. Overall, the project may not have created the expected results but was able to validate the real-life struggles with project implementations.

Summary

Lack of access to and knowledge of EBP resources is a gap in practice for nurses and impacts the quality of patient care. The purpose of the project was to develop a quality improvement program to improve nursing access and knowledge of EBP resources. The program was to identify the type of e-nursing resources and necessary education to provide nurses access to evidence-based resources and the knowledge to utilize these resources in nursing practice. The project was seeking to answer the following question: What resources are needed to develop an evidence-based program for staff nurses to access evidence-based resources and improve nursing knowledge on EBP at the POC? There were no significant data to support a valid response to this question, yet recommendations could still be made based on the results. The project aligns with current research to express the barriers to implementing EBP quality improvement programs. Nurses accessing EBP resources in addition to having the knowledge to use and incorporate EBP at the POC is essential for improved clinical decision-making. EBP continues to be a priority for many healthcare organizations. The exploration of similar methods to implementing an EBP QI project with additional resources, time, and priority are likely to gain more interest to integrate EBP at the POC.

References

Allen, N., Lubejko, B. G., Thompson, J., & Turner, B. S. (2015). Evaluation of a web course to increase evidence-based practice knowledge among nurses. *Clinical Journal of Oncology Nursing*, *19*(5), 623-627. doi:10.1188/15.CJON.623-627

American Association of Colleges of Nursing. (2010). *Future of the nursing: Leading change, advancing health: A report from the Institute of Medicine (IOM) and the Robert Wood Johnson Foundation.* Retrieved from http://www.aacn.nche.edu/government/pdf/IOMFactSheet.pdf

Balakas, K., Sparks, L., Steurer, L., & Bryant, T. (2013). An Outcome of evidence-based practice education: Sustained clinical decision-making among bedside nurses. *Journal of Pediatric Nursing*, *28*(5), 479-485. doi: 10.1016/j.pedn.2012.08.007

Ball, L., Ball, D., Leveritt, M., Ray, S., Collins, C., Patterson, E., . . . Chaboyer, W. (2017). Using logic models to enhance the methodological quality of primary health-care interventions: Guidance from an intervention to promote nutrition care by general practitioners and practice nurses. *Australian Journal of Primary Health*, *23*(1), 53-60. doi:10.1071/PY16038

Campbell, J. M., Umapathysivam, K., Yifan, X., & Lockwood, C. (2015). Evidence-based practice point-of-care resources: A quantitative evaluation of quality, rigor, and content. *Worldviews on Evidence-Based Nursing*, *12*(6), 313-327. doi:10.1111/wvn.12114

Compas, C., Hopkins, K. A., & Townsley, E., (2008). Best practices in implementing and sustaining quality of care. A review of quality improvement literature.

Research in Gerontological Nursing, 1(3), 209-216. doi:10.3928/00220124-20091301-07

Doran, D. M., Haynes, R. B., Kushniruk, A., Straus, S., Grimshaw, J., Hall, L. M.,. . . .Jedras, D. (2010). Supporting evidence-based practice for nurses through information technologies. *Worldviews on Evidence-Based Nursing, 7*(1), 4–15.

Earnest, M. & Brandt, B. (2014). Aligning practice redesign and interprofessional education to advance triple aim outcomes. J*ournal of Interprofessional Care, 28*(6), 497-500. doi: 10.3109/13561820.2014.9333650

Fernandez, R. S., Tran, D. T., Ramjan, L., Ho, C., & Gill, B. (2014). Comparison of four teaching methods on evidence-based practice skills of postgraduate nursing students. *Nurse Education Today, 34*(1), 61-66. doi:10.1016/j.nedt.2012.10.005

Grove, S., Burns, N., & Gray, J. (2013). *The practice of nursing research: Appraisal, synthesis, and generation of evidence* (7th ed.). St. Louis, MO: Saunders Elsevier.

Hadley, J., Kulier, R., Zamora, J., Coppus, S., Weinbrenner, S., Meyerrose, B., . . .Mol, B. (2010). Effectiveness of an e-learning course in evidence-based medicine for foundation (internship) training. *Journal of the Royal Society of Medicine, 103*(7), 288-294. doi:10.1258/jrsm.2010.100036

Hart, P., Eaton, L., Buckner, M., Morrow, B., Barrett, D., Fraser, D., . . .Sharrer, R. (2008). Effectiveness of a computer-based educational program on nurses' knowledge, attitude, and skill level related to evidence-based practice. *Worldviews on Evidence-Based Nursing, 5*(2), 75-84.

Heydari, A., & Emami Zeydi, A. (2014). Barriers to and facilitators of research

utilization among Iranian nurses: A literature review. *Journal of Caring Sciences, 3*(4), 265-275. doi:10.5681/jcs.2014.029

Hines, S., Ramsbotham, J., & Coyer, F. (2015). The effectiveness of interventions for improving the research literacy of nurses: A systematic review. *Worldviews on Evidence-Based Nursing, 12*(5), 265-272. doi:10.1111/wvn.12106

Hodges, B. C., & Videto, D. M. (2011). *Assessment and planning in health programs* (2nd ed.). Sudbury, MA: Jones & Bartlett Learning.

Ilic, D., Nordin, R. B., Glasziou, P., Tilson, J. K., & Villanueva, E. (2014). Development and validation of the ACE tool: Assessing medical trainees' competency in evidence based medicine. *BMC Medical Education, 14*, 114. doi:10.1186/1472-6920-14-114

Kettner, P. M., Moroney, R. M., & Martin, L. L. (2017). *Designing and managing programs: An effectiveness-based approach* (5th ed.). Thousand Oaks, CA: Sage.

Khalil, H., Chambers, H., Munn, Z., & Porritt, K. (2015). Improving chronic diseases management through the development of an evidence-based resource. *Worldviews on Evidence-Based Nursing*, *12*(3), 139-144. doi:10.1111/wvn.12087

Lin, S. H., Murphy, S. L., & Robinson, J. C. (2010). Facilitating evidence-based practice: Process, strategies, and resources. *American Journal of Occupational Therapy*, *64*(1), 164-171.

Long, J. D., Gannaway, P., Ford, C., Doumit, R., Zeeni, N., Sukkarieh-Haraty, O.,. . . .Song, H. (2016). Effectiveness of a technology-based intervention to teach evidence-based practice: The EBR tool. *Worldviews on Evidence-Based*

Nursing, *13*(1), 59-65. doi:10.1111/wvn.12132

Melnyk, B. M. (2014). Speeding the translation of research into evidence-based practice and conducting projects that impact healthcare quality, patient outcomes and costs: The 'So What' outcome factors. *Worldviews on Evidence-Based Nursing*, *11*(1), 1-4. doi:10.1111/wvn.12025

Melnyk, B., & Fineout- Overholt (2015). *Evidence-based practice in nursing and healthcare: A guide to best practice* (3rd ed.). Wolters Kluwer Health.

Melnyk, B., Fineout-Overholt, E., Stillwell, S. B., & Williamson, K. M. (2009). Evidence-based practice: Step by step: Igniting a spirit of inquiry. *AJN, American Journal of Nursing, 109*(11), 49-52. 58. doi: 10.1097/01.NAJ.0000363354.53883.58

Melnyk, B. M., Fineout-Overholt, E., Fischbeck Feinstin, N., Li, H., Small, L., Wilcox, L., & Kraus, R. (2004). Nurses' perceived knowledge, beliefs, skills, and needs regarding evidence-based practice: Implications for accelerating the paradigm shift. *Worldviews on Evidence-Based Nursing, 1*(3), 185-193.

Melnyk, B.M., Fineout-Overholt E., Gallagher-Ford, L., & Kaplan, L. (2012). The state of evidence-based practice in US Nurses. *Journal of Nursing Administration, 42*(9), 410-417.

Melnyk, B. M., & Gallagher-Ford, L. (2015). Implementing the new essential evidence-based practice competencies in real-world clinical and academic settings: Moving from evidence to action in improving healthcare quality and patient outcomes. *Worldviews on Evidence-Based Nursing*, *12*(2), 67-69.

doi:10.1111/wvn.12089

Melnyk, B. M., Gallagher-Ford, L., Long, L. E., & Fineout-Overholt, E. (2014). The establishment of evidence-based practice competencies for practicing registered nurses and advanced practice nurses in real-world clinical settings: Proficiencies to improve healthcare quality, reliability, patient outcomes, and costs. *Worldviews on Evidence-Based Nursing, 11*(1), 5-15.

Melnyk, B. M., Gallagher-Ford, L., Thomas, B. K., Troseth, M., Wyngarden, K., & Szalacha, L. (2016). A study of chief nurse executives indicates low prioritization of evidence-based practice and shortcomings in hospital performance metrics across the United States. *Worldviews on Evidence-Based Nursing, 13*(1), 6-14. doi:10.1111/wvn.12133

Mohsen, M. M., Safaan, N.A., & Okby, O.M. (2016). Nurses perceptions and barriers for adoption of evidence based practice in primary care: Bridging the gap. *American Journal of Nursing Research, 4*(2), 25-33. doi: 10.12691/ajnr-4-2-1

Orta, R., Messmer, P. R., Valdes, G. R., Turkel, M., Fields, S. D., & Wei, C. C. (2016). Knowledge and competency of nursing faculty regarding evidence-based practice. *Journal of Continuing Education in Nursing, 47*(9), 409.

Savaya, R., & Waysman, M. (2005). The logic model: A tool for incorporating theory in development and evaluation of programs. *Administration in Social Work, 29*(2), 85-103. doi: 10.1300/J147v29n02_06

Schaffer, M. A., Sandau, K. E., & Diedrick, L. (2013). Evidence-based practice models for organizational change: Overview and practical applications. *Journal of*

Advanced Nursing 69(5), 1197–1209. doi: 10.1111/j.1365-2648.2012.06122.

Sidani, S., Manojlovich, M., Doran, D., Fox, M., Covell, C. L., Kelly, H.,. . . .McAllister, M. (2016). Nurses' perceptions of interventions for the management of patient-oriented outcomes: A key factor for evidence-based practice. *Worldviews on Evidence-Based Nursing*, *13*(1), 66-74. doi:10.1111/wvn.12129

Sinclair, P., Kable, A., & Levett-Jones, T. (2015). The effectiveness of internet-based e-learning on clinician behavior and patient outcomes: a systematic review protocol. *JBI Database of Systematic Reviews & Implementation Reports*, *13*(1), 52-64. doi:10.11124/jbisrir-2015-1919

Spruce, L. (2015). Back to Basics: Implementing evidence-based practice. *AORN Journal*, *101*(1), 106-112. doi:10.1016/j.aorn.2014.08.009

Stevens, K. (2013). The impact of evidence-based practice in nursing and the next big idea. *OIJN: The Online Journal of Issues in Nursing*, *18*(2). doi:10.3912/OJIN.Vol18No02Man04

Stevens, K. R. (2015). *Stevens Star Model of EBP: Knowledge Transformation.* Academic Center for Evidence-based Practice. The University of Texas Health Science Center at San Antonio.

Stevens, K.R., Puga, F., & Low, V. (2012). *The ACE-ERI: An instrument to measure EBP readiness in student and clinical populations.* Retrieved from: www.acestar.uthscsa.edu/institute/su12/documents/ace/8%20The%20ACE-ERI%20%20Instrument%20to%20Benchmark.pdf

White, K. M. & Dudle-Brown, S. (2012). *Translation of evidence into nursing and health care practice*. New York: Springer Publishing Company, LLC

Appendix A: EBP Educational Video

What is Evidence-based Practice and What does it Means to Nursing?

Topic	Slides
Learning Objectives	2
Definition of EBP	3
The Importance of EBP	4
Who is Responsible for EBP?	5
Challenges/Barriers to EBP	7-8
Knowledge Transformation	8
Stevens Star Model of Knowledge Transformation	9-10
Evidence-Based Practice	11
The Components of EBP	12
Understanding EBP Types of Evidence	13
Steps to EBP	14-33
What are the Outcomes of EBP?	34
What's Next?	35
Case Scenario with Steps to EBP and Knowledge Transformation	36-48
Yeah You Did it!	49
Summary	50
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Appendix B: Permission to use ACE-ERI Tool

Permission to use the ACE-ERI Survey:

From:
Sent: Sunday, November 12, 2017 12:58 PM
To:
Subject: Permission to use EBP Tool

Hi, Heather…
I am 'catching up' to correspondence that I had to put on hold during my grant submission.

Find attached the ERI and scoring instructions.
You may enter the ERI into SurveyMonkey.
I am the copyright holder and grant you permission to use the ERI and to develop the online survey.

Please let me know if I have answered all of your questions.

THANKS
DrS
…to the best of our knowledge

Appendix C Permission to use Stevens Star Model of Knowledge figure

From: Center for Advancing Clinical Excellence
Sent: Friday, September 8, 2017 9:32:36 AM
To:
Subject: RE: Permission to use EBP tools

Hi, Heather…
Thank you for your interest in the 'integrated" resources of the Star Model, EBP Competencies, and EBP Readiness Inventory!
I have included 'lots' of information and instructions below. Please let me know if we need to 'talk thorough' any of it…sometimes email is lacking communication power.

1. COMPETENCIES BOOKLET: Please provide your USPS mailing address and I will get the booklet on Essential EBP Competencies started out to you right away. (I have not yet received your payment but sometimes it takes a while for mail to 'find' its way to me. No worries.)

2. STEVENS STAR MODEL: I am happy to provide permission to you to use/reproduce the Stevens Star Model under the fair-use rule, with the stipulation that credit is cited, as you indicated. If later, you are re-publishing the copyrighted material (as in publishing in a journal or book), specific permission is required by the publisher. In that case, there is usually a template letter of permission from the publisher that I will readily sign. Please note that the model has been renamed to "Stevens Star Model of Knowledge Transformation." I have attached an image that you may use.

3. EBP READINESS INVENTORY: Given your use of the ERI for educational purposes, I can offer the EBP Readiness Inventory on a one-time, complementary basis; in return, I ask for several things.

a. If you would help me out a little, it would be great to have you contribute to the continuing instrument testing. This information would be appreciated:
b. Please provide the name/contact information for your supervising faculty.
c. Do you anticipate clearing the project through Human Subject committee (IRB)?

4. TERMS OF AGREEMENT: Please carefully note the terms of agreement:
    a. The ERI is based on self-efficacy theory and knowledge testing
        i. It is in 2 parts: Self-Confidence and Knowledge Test (15 items)
    b. There are 3 levels of competencies, as explained in the Essentials document: Basic, intermediate, and advanced.
        i. I recommend that you use the "basic" ERI, which contains 20 Likert items, a knowledge test, and a demographics section.
        ii. I anticipate that you will want to use plan to use the Basic ERI in paper-pencil format. (If you ever want to use the online survey (REDCap), there would be a nominal charge.)
    c. Please use the ERI as-is, without modification. Except, you may add a few items to the demographics section for your use.

   d. To activate my permission, you must contribute the de-identified data set from this use. Otherwise, we can strike a fee-for-use agreement.
   e. I continue to assess the psychometrics so the data may be aggregated with other datasets.
   f. Past use of the ERI suggests that it is sensitive enough to detect pre-post differences.
5. Upon your agreement, I will send a copy of the **Basic ERI** and knowledge test, with scoring rubric and grant permission for duplication and use of hard-copy.
6. Please provide **a brief (1-page) prospectus** for the study prior. This will add merit to your scholarly activity and will help you plan details for the actual administration of the ERI as well as what research questions you are asking. E.g., correlation between EBP Self Efficacy (ERI) and Knowledge; description across the 5 ERI sub scales. See the articles below to give you some ideas.

I would relish hearing your suggestions on how to improve/expand the Model.
I am also interested in how you located the Star and associated materials (ERI, Competencies).
It is exciting to see the requests for use escalate in the past year…

Thank you for your interest in improving care and patient outcomes.
Good luck with your presentation!

My best…

Dr. Stevens
…to the best of our knowledge