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# Nursing Leadership Influence on Evidence-Based Practice Culture and Integration

Natalie Kay Lenhart
*Walden University*

# Walden University

College of Health Sciences

This is to certify that the doctoral study by

Natalie Kay Lenhart

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Dr. Diane Whitehead, Committee Chairperson, Health Services Faculty
Dr. Francisca Farrar, Committee Member, Health Services Faculty
Dr. Geri Schmotzer, University Reviewer, Health Services Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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Abstract

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MSN, Drexel University, 2008

BSN, Pennsylvania State University, 2001

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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## Abstract

Translating research to practice takes 10-20 years or more and evidence-based practice (EBP) integration remains at 10%-20%, despite recommendations requiring EBP-guided decisions. EBP integration has been associated with up to 30% decreases in healthcare system spending, improved quality outcomes, and increased staff satisfaction. Nurse leaders are accountable for EBP enculturation, yet rate quality and safety as the highest priority and EBP as the lowest. This knowledge gap perpetuates low EBP integration rates and hinders EBP enculturation. Asking whether EBP facilitative interventions for nurse leaders increase scores on organizational culture and readiness, beliefs, and EBP use scales addressed the knowledge gap via this quality improvement, pre/posttest pilot project. Multiple frameworks guided the project: the nursing process, Lewin's change management model, the Johns Hopkins Nursing EBP model, and the Five Practices of Exemplary Leadership® model. A comprehensive literature search validated the design using EBP facilitators: educational interventions, transformational leadership, strategic planning, and a systems perspective. Pre/posttest data garnered from 14 non-direct care nurse leaders on the Organizational Culture and Readiness for System-Wide Integration of EBP Scale, the EBP Beliefs Scale, and the EBP Implementation Scale was analyzed using 2-sample *t* tests. Individual questions on the scales revealed statistically significant differences correlating to the facilitative interventions, yet overall aggregate scores did not change significantly. The limited findings contribute to the existing body of knowledge, while positive social implications include resolving public health and safety issues, reversing fiscal irresponsibility, and overcoming resistance to change.

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# Dedication

This project developed from the frustrations of seeing my loved ones undergo medical treatments proven outdated and unsafe, requiring my role as a family member to be moved to a nurse advocate. Despite the trials I, and my loved ones, have endured, positive outcomes resulted, including this project. It is due to my mother, Janice Lenhart, my husband, M. Kenneth Berry, and God, that I have had the support and ability to complete this portion of my educational and advocational journey. My only hope is that evidence-based enculturation and integration continues for the patients' safety and quality of care; only then can nurses at the bedside of a loved one focus on being family, rather than being a nurse.

# Acknowledgments

This paper and project would not have been possible without the assistance of three key people throughout the academic journey. First, and foremost, Dr. Barbara Buchko is a predominant leader in evidence-based nursing practice and is responsible for assisting me in my growth as a nurse, a doctoral professional, and an evidence-based practitioner. Without her guidance, mentorship, support, permission to make mistakes, and freedom to design learning opportunities, none of the knowledge gained, wisdom transferred, or information translated and disseminated would have been possible. Second, I would like to thank Dr. Diane Whitehead who graciously accepted me into her class in order to accommodate an appropriate fit for my educational needs. This benevolence was evident throughout my project and paper development with encouragement, suggestions, and rationale. Finally, the analyzation of the findings, and the project itself, would not have been possible without the assistance of Mr. Theodore Bell. Mr. Bell gave of his time as a statistician within the health system research center within assisting my doctoral work, demonstrating interdisciplinary teamwork for which healthcare strives and this health system makes possible. Thank you all.

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Section 1: Nature of the Project

## Introduction

Evidence-based practice (EBP) has been integrated by only 10%–15% of clinicians with a 10- to 20-year lag to translate research to practice (Agency for Healthcare Research and Quality [AHRQ], 2001; Balas & Boren, 2000; Morris, Wooding, & Grant, 2011). The Institute of Medicine (IOM; 2008) set a goal that clinical integration of EBP should reach 90% by the year 2020, meaning that 90% of all clinical decisions should be based in evidence. This goal, set for safe, quality outcomes for the healthcare consumer, can only be reached when institutional change occurs by implementing an organizational EBP culture (Hyrkas & Harvey, 2010; Melnyk et al., 2016; Patelarou et al., 2013; Stokke, Olsen, Espehaug, & Nortvedt, 2014). Once this goal has been reached, it is projected that healthcare system spending can be reduced by up to 30% related to improved quality outcomes (Kelley, 2009; Liu, Lai, Ringel, Vaiana, & Wasserman, 2014; Melnyk, 2014; Price Waterhouse Coopers' Health Research Institute [PWC-HRI], 2009; Rubin et al., 2016). In general, quality outcomes encompass (a) patient outcomes in terms of safe, quality care, increased satisfaction, and decreased medical errors and adverse events; (b) staff outcomes in terms of increased retention, as well as increased autonomy and empowerment; (c) organizational outcomes in terms of increased efficiency and higher revenue; and (d) financial outcomes in terms of reduced readmissions—increased reimbursements—and decreased medical errors and adverse events, meaning decreased liability (Kelley, 2009; Liu et al., 2014; Melnyk, 2014;

Melnyk & Gallagher-Ford, 2014; PWC-HRI, 2009; Sandström, Borglin, Nilsson, & Willman, 2011; Scala, Price, & Day, 2016; Wilkinson, Nutley, & Davies, 2011).

This Doctor of Nursing Practice (DNP) project addressed changing the organizational culture to support EBP integration. Nursing leadership must relearn and rethink current administrative practices in order to overcome EBP barriers (Aarons, Ehrhart, Farahnak, & Hurlburt, 2015; Curry et al., 2015; Hauck, Winsett, & Kuric, 2013; Melnyk, 2016; Warren et al., 2016). Quality and safety directly correlate to EBP and must be considered when developing a DNP project to facilitate cultural change (Aarons et al., 2015; Aarons & Sommerfeld, 2012; Hyrkas & Harvey, 2010; IOM, 2008; Laibhen-Parkes, 2014; Krive, 2013; Melnyk et al., 2016; Merrill, Andrews, Brewer, & Brown, 2015; Patelarou et al., 2013). To accomplish this, nurse leaders must undergo education in order to understand, at a minimum, that the lack of institutional change is a safety concern for public well-being.

## Problem Statement

The local problem at the DNP project entity correlated directly to the EBP integration and organizational culture issues noted at a national level. An organizational survey regarding staff beliefs, use, and organizational culture and readiness indicated that EBP integration had not neared the IOM (2008) recommendation (Melnyk, Fineout-Overholt, & Mays, 2008; Stokke et al., 2014). According to a 2016 personal conversation with the system-wide director of EBP and research, staff retention created patient care shortages on units, which in turn contributed to the mindset that organizational change could not happen. Nurses and administration are held accountable to quality and safety

metrics, as well as regulatory and accreditation standards, and yet the inability to consistently meet many of these standards had still not prompted full EBP integration (Hauck et al., 2013; Schifalacqua, Shepard, & Kelley, 2012)

The American Association of Colleges of Nursing (AACN; 2015) declared the DNP scholarship focus should be in innovative, nongeneralizable—yet transferrable—new knowledge. Practice should be based on organizational and leadership essentials, so that innovation and change are based on existing evidence to create possible new knowledge or models of care delivery (AACN, 2015). As such, it was practical that this DNP quality improvement pilot project centered on a pre/posttest design with evaluation and recommendation inclusive of:

- an existing educational intervention for nursing leadership within a single entity of a multihospital organizational system;
- a practice change to encourage sustainability for EBP integration;
- lessons learned via evaluation in order to continue to build the existing body of knowledge surrounding EBP integration; and
- a model of education that could be foundational in order to propel other DNP projects.

Melnyk (2014) affirmed the requirement for innovative EBP DNP projects that contribute to current knowledge in order to impact safe, quality care and promote integration and translation of EBP at a rate faster than is currently occurring nationally and globally.

## Purpose Statement

Balas and Boren (2000) definitively demonstrated that it can take 17 years for research to become routine practice. Since that time, further research estimated that the period for knowledge translation ranges from 10- to 20-years (Brown, Johnson, & Appling, 2011; Melnyk, 2014; Morris et al., 2011). Nursing leaders must display evidence-based management practice (EBMP) as role models for staff EBP integration (Aarons & Sommerfeld, 2012; Krive, 2013; Merrill et al., 2015). Research regarding nurse leaders' roles in promoting EBP organizational culture and readiness, beliefs, and use has predominantly occurred within the last 5- to 10-years. However, the nurse leaders' gap in understanding EBP and its relationship to safe, quality care in the healthcare setting was continually demonstrated (Melnyk & Gallagher-Ford, 2014; Melnyk et al., 2016; Sandström et al., 2011; Scala et al., 2016; Wilkinson et al., 2011). Addressing this gap "assist[s nurse executives] in creating stronger cultures and environments for EBP . . . and [the] impact on clinical outcomes and return on investment" (Melnyk & Gallagher-Ford, 2014, p. 146).

The practice-focused question for this project was: Does the use of EBP facilitators as interventions for nursing leadership at a single healthcare entity increase scores on organizational culture and readiness, beliefs, and use of EBP scales? The use of specific, focused, EBP education, with active learning techniques, was the recommended intervention to begin change at an organizational level (Brown et al., 2011; Chang & Levin, 2014; Häggman-Laitila, Mattila, & Melender, 2016; Melnyk & Gallagher-Ford, 2014). Several interventions were developed to address the meaningful gap described

above, including the educational offering of the Johns Hopkins Nursing EBP101 course (see Appendix A for a basic listing of project activities and Appendix C for EBP101 course agenda).

## Nature of the Doctoral Project

In order to measure whether the interventions impacted organizational culture and readiness, beliefs, and use of EBP for the initial target population of 14 nurse leaders, a pre/posttest design was used. Three reliable and valid survey tools were combined into one electronic distribution two-weeks prior to the educational intervention for the pretest data collection: (a) The Organizational Culture and Readiness for System-Wide Integration (OCRSWI) of EBP; (b) The EBP Beliefs (EBP-B) Scale; and (c) the EBP Implementation (EBP-I) Scale (Fineout-Overholt & Melnyk, 2006). This same survey was sent electronically to the remaining 12 nurse leaders three months after the EBP101 educational intervention (see Appendix A for project activities and timing).

All data was gathered by the system-wide organization prior to the educational intervention and again several months after the main intervention and subsequent enculturation began. The system-wide Institutional Review Board (IRB) exempted the pilot project as part of a larger system-wide nursing leadership EBP enculturation program. Walden University's IRB approved the project with responsibility for data analysis and results reporting, assigning an approval number of 01-10-17-0647222. In order to ensure the data was not personally identifiable reporting of some demographic data was required at an aggregate level rather than ranges, such as highest education level completed, participant age, and years of experience. The de-identified data was obtained

by the me in raw form for statistical manipulation, and the system-wide organizational research center where the data was housed who also performed necessary statistical manipulation as needed. As such, this data was evidence to compare to the literature confirming that specific EBP-focused, active learning, hands-on interventions for nursing leaders could increase the scores on the organizational culture and readiness, beliefs, and use of EBP scales.

## Significance

The stakeholders consisted of me, a representation of the target population of the entity's 14 nurse leaders, the entity's chief nursing officer (CNO), the system-wide vice president of nursing, and the system-wide director of EBP and research, who acted as the preceptor and primary investigator. Additional stakeholders associated with the project included information technology, library support, administrative assistance, the system-wide Research and Innovation Council (RIC), the RIC nursing leadership EBP education subcommittee, the system-wide director of practice and quality, and field experts who voluntarily assisted secondary to their connection to the institution.

It was the target population's feedback after receiving a 1-hour introduction to EBP that led to the creation of this pilot project. Ultimately, the interest from these nurse leaders was invaluable to this quality improvement project and led to the overall system-wide program implementation (Kangas, 2011; Kinnevy & Sununu, 2010; Preskill & Jones, 2009; Secret, Abel, & Berlin, 2011). For the nurse leaders and the entity, overcoming resistance to change was a positive social modification. For this project, transforming thinking that had been engrained within our healthcare organizational

systems in order to improve patient outcomes was a major hurdle accomplished. The input of the stakeholders contributed to this social difference. Further alignment of the pilot project design (see Appendix A) with the organizational strategic plan, pertinent theories, and guiding frameworks, in accordance with the most recent literature at the highest evidence, was made possible through the input of these representatives (Chao & Goldbort, 2012; Preskill & Jones, 2009; Secret et al., 2011). This ensured the success of change management and the likelihood of project success, as it is estimated that 60 to 90 percent of healthcare projects fail (Garrety, Dalley, McLoughlin, Wilson, & Yu, 2012; Rose & Schlichter, 2013; Xu, Rondeau, & Mahenthiran, 2011).

Although assisting with a pilot for an overall program, I anticipated the outcomes would add to the body of knowledge surrounding changing organizational culture to support EBP integration. As this is a pilot project for a larger organizational system, the model will be transferred to the other major entities within the system, complete with lessons learned and subsequent modifications. Creating a model of facilitative interventions at the nurse leader level that incorporated components of alternative methods of thought regarding EBMP could lead to other pilot projects in other facilities. Once enough evidence is disseminated, a model could be suggested that is generalizable, policies could be put in place, and regulations could be established for the protection of the patient—the heart of healthcare. This is the basis of EBP and is expected by the American Nurses Association (ANA; 2015, 2016) *Standards of Professional Practice* for both nurses and nurse administrators.

## Summary

Research has not been translated into practice for 10- to 20-years, so the best available evidence is often not routinely integrated into current practice. The rationale for this problem is engrained deeply within healthcare organizational cultures. Nevertheless, research demonstrated that these organizational barriers could be removed with targeted education at the level of nursing leadership and administration. This education must include not only the steps of EBP, but also an active learning component, as well as buy-in from the stakeholders involved. A quality improvement, pre/posttest, pilot project was designed as part of a larger program design to encourage this organizational change. A single entity with 14 nurse leaders encompassed the setting and the target population. From this point forward, it is possible that with careful translation and dissemination, social change could result in EBP organizational culture models and frameworks, policy implementations, and regulatory guidance from which truly safe, quality patient outcomes develop.

In order to see these desires come to fruition, it was imperative to carefully design the EBP pilot project using the best available evidence for program/project design. From choosing the entity to ensuring that the appropriate theories and guiding frameworks were utilized for success, all decisions were made with input. Combining the strategic planning of the organization with relevant theories and pertinent literature provided the best insight for developing apposite project outcomes.

Section 2: Background and Context

## Introduction

The practice problem was inconsistent EBP integration due to healthcare leadership's inability to change organizational cultures in order to overcome the well-documented barriers to EBP implementation. The specific practice-focused question for this DNP project was: Does the use of EBP facilitators as interventions for nursing leadership at a single healthcare increase scores on organizational culture and readiness, beliefs, and use of EBP scales? The purpose of pursuing this project as a means of addressing this question was to lessen a gap in nurse leaders' knowledge relating to a correlation between safe, quality care and EBP integration. By focusing on the largest barrier—organizational culture—via facilitative interventions for nurse leaders, all other barriers should be removed for clinicians at the bedside. The planning of this project, however, was carefully guided and aligned with the involved entities and stakeholders.

## Concepts, Models, and Theories

The nursing process provided a fundamental theoretical framework to inform the doctoral project that guided problem analysis, program design, and both formative and summative evaluation. All nurses are educated regarding the cyclical phases of process, making this an ideal structure to support the project: Assessment, Diagnosis, Planning and Outcomes, Implementation, and Evaluation (ANA, 2016). Using these familiar stages, assessment promoted problem and population identification, diagnosis allowed stakeholders problem analysis, planning and outcomes revealed a needs assessment and

program design, while implementation and evaluation equated to data collection, analysis, and planned program review.

Nevertheless, a single scientific guide should never be the ultimate informant for a successful project when multiple frameworks exist to choose from based upon the project's needs (Aggleton & Chalmers, 1986; Häggman-Laitila et al., 2016; Hines, Ramsbotham, & Coyer, 2016; Maag, Buccheri, Capella, & Jennings, 2006; Schriner et al., 2010; White, 2012). As such, other models enhanced the project's design guided by the nursing process through alignment of stakeholder views and program components. One such example included the support of the Johns Hopkins Nursing evidence-based practice (JHNEBP) model. Three overriding phases—Practice, Evidence, and Translation—were used to integrate EBP employing a systematic approach (Dearholt & Dang, 2012; Newhouse, Dearholt, Poe, Pugh, & White, 2005a, 2005b; Scala et al., 2016). This model was used to appraise the evidence in the doctoral project (see Appendix B for evidence and appraisals), as well as within the context of the project itself. In addition, Kouzes and Posner (2002) developed The Leadership Challenge® model, which further informed the program via transformational leadership characteristics. Specifically, leaders are challenged to use the Five Practices of Exemplary Leadership® Model, including (a) model the way, (b) inspire a shared vision, (c) challenge the process, (d) enable others to act, and (e) encourage the heart (Kouzes & Posner, 2016). Transformational leadership characteristics have been consistently demonstrated to increase EBP integration and enculturation (Aarons & Sommerfeld, 2012; Melnyk, 2016; Melnyk & Gallagher-Ford, 2014; Patelarou et al., 2013; Sandström et al., 2011; Stetler,

Ritchie, Rycroft-Malone, & Charns, 2014; Stokke et al., 2014; Warren et al., 2016; Wilkinson et al., 2011).

Finally, change can be painful for both individuals and organizations; successful EBP integration requires a systems approach with purposeful change management (Häggman-Laitila et al., 2016; Peterson, 2014; Sandström et al., 2011; Schifalacqua et al., 2012; Sigma Theta Tau International [STTI], 2008; Stevens, 2013; Stokke et al., 2014; Yackel, Short, Lewis, Breckenridge-Sproat, & Turner, 2013). Lewin's (1947) change management model (CMM) and force field analysis (FFA) represented the simplification of change theories supporting consistency in theoretical frameworks with basic familiarity for most stakeholders. In order to transform individual and organizational behaviors so new processes may prevail using the CMM, the FFA provided measurable outcomes for a needs assessment and the project's planning and evaluation (Häggman-Laitila et al., 2016; Hodges & Videto, 2011; Lewin, 1947; Melnyk et al., 2016; Merrill et al., 2015; Scala et al., 2016; Secret et al., 2011; Stokke et al., 2014).

**Definitions of Terms**

The following terms are defined for this project.

*Evidence-based practice (EBP):* A process designed to support and inform clinical and administrative decision-making by combining (a) the best available scientific evidence with regulatory and accreditation requirements for practice, (b) individual clinical, staff, leadership, and management judgment and expertise, and (c) patient and staff preferences (Newhouse et al., 2005a; Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000; STTI, 2008; Stevens, 2013)

*EBP101 course*: An introductory course based on the JHNEBP model of EBP practice, evidence, and translation designed in a face-to-face, interactive modality, delivered in one 8-hour session, or two 4-hour sessions; this is also referred to as the educational intervention. Objectives included (a) discuss the importance of EBP; (b) develop an answerable population/problem-intervention-comparison-outcome (PICO) question; (c) demonstrate how to conduct a basic library search; (d) discuss the use of JHNEBP appraisal tool to identify the level and quality of evidence; (e) demonstrate the use of the JHNEBP evidence appraisal tools; (f) synthesize evidence and determine recommendations for practice; and (g) describe the steps in the translation process (see Appendix C and D for course agenda and evaluation).

*EBP beliefs*: An individual's self-assessed determination of the value of EBP, as well as a self-assessment of the individual's ability to implement EBP.

*EBP facilitators:* Behaviors, skills, or education demonstrated to increase the use of EBP, which were tailored as interventions for the nurse leaders as part of the methodology; these are also referred to as the interventions or facilitative interventions. These included (a) completing the Johns Hopkins EBP101 educational course; (b) verbalizing one strategy that could overcome a known EBP barrier in the entity; (c) brainstorming action plan ideas for EBP enculturation; (d) choosing EBP champions; (e) creating an entity-wide EBP strategic plan; and (f) selecting an EBP facilitating strategy to operationalize in entity.

*EBP implementation*: An individual's self-assessed determination regarding the individual's institution's current use of EBP throughout the facility.

*Nurse leaders*: Entity-based nondirect care registered nurses (RNs) with supervisory authority over nursing staff; positions included house supervisors, unit managers, clinical nurse educators, and general nursing managers.

*Organizational culture and readiness for EBP*: An individual's self-assessed determination regarding the organization's movement toward EBP implementation.

## Relevance to Nursing Practice

The IOM requires 90% of all healthcare decisions to be based in evidence by the year 2020 in order for safe, quality care to occur; yet consistent EBP integration occurs at a rate of only 10%-15% (Aarons et al., 2015; Balas & Boren, 2000; IOM, 1999, 2008, 2011; Laibhen-Parkes, 2014; Patelarou et al., 2013). Rationale for this gap in practice included multifarious barriers such as knowledge and skills, attitudes regarding research, resources, education, budgetary constraints, and time; the largest barriers, and the hardest to facilitate, are that of leadership and organizational culture (Chang et al., 2013; Gallagher-Ford, 2014; Hauck et al., 2013; IOM, 2011; Melnyk, 2016; Melnyk et al., 2016; Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012; Patelarou et al., 2013; Solomons & Spross, 2011; Stetler et al., 2014; Stokke et al., 2014; Warren et al., 2016). Additionally, it takes 10-20 years or longer to translate research into practice, and it is nursing leadership that must be accountable for this knowledge translation. Nevertheless, nursing leadership's belief in EBP and their ability to implement, use, and support it result in a well-documented disconnect (AHRQ, 2001; Curry et al., 2015; Gallagher-Ford, 2014; Melnyk et al., 2016; Melnyk et al., 2012; Stetler et al., 2014; Stokke et al., 2014; Warren et al., 2016).

Varying levels of evidence, per the JHNEBP model (see Appendix B for evidence appraisals), demonstrated divergent solutions to address this practice problem. Consistent recommendations, however, included (a) educational interventions, (b) transformational leadership, (c) strategic planning, and (d) system approaches to EBP integration. Educational interventions succeeded when innovation and interactivity was present, and when used in conjunction with other EBP facilitators; the timing, pedagogy, or modality of the intervention did not appear to be of significant concern (Aarons et al., 2015; Brown et al., 2011; Chang et al., 2013; Häggman-Laitila et al., 2016; Harsh, Maltese, & Tai, 2011; Hines et al., 2016; Kim, Brown, Fields, & Stichler, 2009; Levin, Fineout-Overholt, Melnyk, Barnes, & Vetter, 2011; Liou, Cheng, Tsai, & Chang, 2013; Mansour & Porter, 2008; Melnyk et al., 2008; Patelarou et al., 2013; Tart, Kautz, Rudisill, & Beard, 2011; Yackel et al., 2013). Transformational leadership characteristics included using a shared vision, "walking the talk," leading by example, mentoring, shared decision-making, and respect; when these characteristics were present, EBP beliefs and cultural readiness for implementation increased (Aarons & Sommerfeld, 2012; Levin et al., 2011; Melnyk, 2016; Melnyk & Gallagher-Ford, 2014; Patelarou et al., 2013; Sandström et al., 2011; Scala et al., 2016; STTI, 2008; Stetler et al., 2014; Stokke et al., 2014; Warren et al., 2016; Wilkinson et al., 2011). In other words, leaders can augment EBP enculturation and integration. Strategic planning was the final theme that arose from the literature as a key component to quell the problem; by addressing EBP throughout the organization, including alignment with cultural goals, EBP use increased (Aarons et al., 2015; Alzayyat, 2014; Hauck et al., 2013; Melnyk et al., 2014; Melnyk et al., 2016; Scala et al.,

2016; STTI, 2008; Stetler et al., 2014; Yackel et al., 2013). Each strategy lent itself to the need for a systems perspective when approaching EBP integration and enculturation. Only then could an organization begin to thrive with safe, quality care at the forefront of practice (Häggman-Laitila et al., 2016; Peterson, 2014; Sandström et al., 2011; Schifalacqua et al., 2012; Stevens, 2013; Stokke et al., 2014; Yackel et al., 2013

The current project utilized an approach that addressed each component described in order to emphasize EBP benefits at a local level. Introducing 14 nurse leaders to an EBP101 course allowed each leader to appraise the evidence and develop an action plan for the entity. The EBP101 course delivered was designed with a PICO question asking what EBP strategies and behaviors by nurse leaders facilitate an EBP organizational culture and readiness, as well as nurses' perceptions of EBP beliefs and use (see Appendix C for course agenda). This interactive, innovative, hands-on approach provided direct examples of transformational characteristics that could be incorporated by the participants upon reflecting on the evidence (see Appendix C and D for course agenda and evaluation). In addition, the intervention focused on two primary AACN DNP essentials: EBP clinical scholarship and analytical methods, and organizational and systems leadership (AACN, 2006).

## Local Background and Context

The system-wide organization (the system) consists of six acute-care entities, a regional home healthcare provider, more than 140 practice sites, the region's only Level I accredited Trauma Center, as well as the only Primary Stroke Center in the region, according to a 2015 informational system website. Geographically, the system covers

four counties, extending to a minimum of four more secondary to multiple partnerships with individual entities (WSH, 2015). Over 15,000 direct employees work for the system, with approximately 2,800 nurses employed at the six acute-care entities alone.

The doctoral project was focused at one of the six main entities (the entity) within the system, consisting of 103 beds, 125 RNs, and 14 nurse leaders. With a Christ-Centered mission, the project entity is unique, and the newest addition to the system. Change, however, was abundant as staff transitioned to system employees and prepared for an electronic health record conversion. In addition, recent rumors regarding recruitment for future competition and a security incident fueled nursing dissatisfaction.

While one of the entities within the system obtained Pathways to Excellence recognition—the remaining four have been pursuing Pathways to Excellence or Magnet designation—the project entity did not have an infrastructure in place to begin to support best practice. According to a 2016 personal discussion with the entity's CNO, decisions were made based on personal and patient preferences, and nursing experiences. Shared governance, journal clubs, and role-modeling have been demonstrated to facilitate EBP integration, yet were not part of the organizational culture at the project entity (Alzayyat, 2014; Hauck et al., 2013; Levin et al., 2011; Melnyk, & Gallagher-Ford, 2014; Sandström et al., 2011; STTI, 2008; Stetler et al., 2014; Yackel et al., 2013).

The Director of Evidence-Based Practice and Nursing Research, served as the preceptor for this DNP project. Her position began as director for the largest of the system's entities, but evolved into director for the system, although no additional human resources have been supplied. Fortunately, this DNP candidate resides in the four county

area the system serves and served previously as a clinical faculty member supervising students at two of the six hospitals, as well as several of the partner hospital entities. The largest of the entities is known in the area for EBP, and I sought this system, entity, and preceptor as an opportunity that is unrivaled in the Central Pennsylvania area.

## Role of the DNP Student

This project was a pilot at one entity for a larger program within the system. While I have been involved in components of the program planning, as my DNP preceptor is responsible for its implementation, the pilot project was the focus of this DNP project. My preceptor was the primary investigator on-record for the system's IRB, and I was listed as the student—secondary—investigator. I had the privilege of driving the project design with guidance from my preceptor, inclusive of choosing the PICO, project entity, and target population.

I do not work for the institution—although I live in the eight county, plus, area served by it—but pursued work for my DNP project at this organization secondary to the reputation related to EBP and the preceptor. The initial system Director of EBP and Research was one of the original creators and authors of the JHNEBP model. My preceptor is the current system-wide Director of EBP and Research; she has worked closely with the previous director and obtained her doctorate at Johns Hopkins. Having the ability to pursue my scholarly passion in this EBP setting has been an experience unrivaled.

Approximately 5-years ago, I attended a webinar regarding Accountable Care Organizations. In that webinar, it was reported that Chief Nursing Officers (CNOs)

consistently regarded quality and safety as the most concerning issue that needed to be addressed within the institutions for which they were responsible. Despite that concern, the webinar continued to discuss that EBP was disregarded in a list of concerns for these same CNOs. This actually prompted my search for a doctoral program that would be a good-fit for me in order to pursue and address this distressing information. Despite in-depth research on this topic, this project has changed multiple times; I have looked at curricular changes for post-licensure Baccalaureate programs, developing surveys to address objectivity of the problem as opposed to self-perception, and a quasi-experimental design comparing multiple hospitals' nursing staff currently enrolled in school. Finally, enough research revealed that the appropriate knowledge translation was to focus on the nurse leaders' behaviors. In addition, the study from which the webinar reported those initial results were just published (Melnyk et al., 2016).

At the onset of the DNP degree pursuit, significant bias existed in terms of insisting the change must occur at the level of educational curricula. This bias has been resolved as my own education evolved and my own library of research articles relating to the topic now totals over 400 in number. The research has now allowed in-depth information, knowledge, and wisdom regarding concepts, theories, projects, literature analyses, research, and non-research undertakings. This, however, in and of itself, might have created a bias on its own. As all of this literature was reviewed, my own synthesis evolved further; consequently, any synthesis could be biased. The resolution for all of this was an objective grading of the literature (see Appendix B for evidence appraisals),

constant discussions with a doctorally prepared preceptor who specialized in EBP and research, and careful statements with citations.

## Summary

Lags in knowledge translation are not new, but without a solution to integrate EBP, the *so-what* outcomes described by Melnyk (2016) were ignored, leading to a further decline in quality care. EBP integration is not simply about ensuring the latest research is placed into practice, but rather that patient care is safe. In order for any patient to be secure in seeking professional health care, organizations must be financially sound. Without EBP enculturation, fiscal losses are innumerable, contributing to the cyclical decline in quality care. It is imperative that entities combine resources to work as a system in order to implement—and disseminate findings—projects that can address solutions for this lack of EBP integration.

## Section 3: Collection and Analysis of Evidence

### Introduction

Despite the fact that EBP integration has been recommended with 90% implementation by the IOM (2008) and that enculturation could demonstrate a 30% increase in net revenue (PWC-HRI, 2009; Rubin et al., 2016), time, knowledge, skills, resources, and money (Melnyk, 2016) impede this endeavor. As a result, the problem was that organizational barriers and a nonsupportive organizational culture hindered consistent EBP integration. The purpose of the doctoral project was to determine if EBP enculturation could occur by using EBP facilitators to address the gap in nursing leadership's knowledge whereby safe, quality care and EBP were not correlated. If nurse leaders could link safe, quality care outcomes via innovative, facilitative interventions addressing evidence-based administrative practice, then the infrastructure for EBP integration should begin to develop. Thus, all barriers for direct care RNs should decrease.

The literature revealed four consistent categorizations of facilitators to EBP enculturation summarized as (a) innovative educational interventions regarding EBP process and competencies, (b) transformational leadership communication and characteristics, (c), strategic planning inclusive of specific EBP components aligning to the organization and entity plans, and (d) a systems-perspective approach to EBP integration planning, design, and implementation (see Appendix B for evidence). Designed to utilize these facilitators, the doctoral project was guided by the nursing process and Lewin's CMM. Secondary frameworks included the JHNEBP model for

critical appraisal and the main educational intervention, EBP101, as well as the use of Kouzes and Posner's The Leadership Challenge® model and the Five Practices of Exemplary Leadership® model. Each framework aligned with the concepts that were predominant within the literature regarding the issues surrounding EBP enculturation.

The design of the doctoral project began with careful planning of a PICO question as the population, purpose, and basis of outcomes were inherent in practice questions formatted in this manner (Sackett et al., 2000). A literature review informed the planning and design, and implementation began with an IRB modification from an existing study exemption. Pre- and postintervention surveys, including (a) the OCRSWI for EBP Assessment, (b) the EBP-B Scale, and (c) the EBP-I Scale (Fineout-Overholt & Melnyk, 2006) were used to determine if EBP integration increased among the nursing leaders at the entity. These scales have been completed at all entities for all nursing staff within the system; the two newest entities—one of which was the project entity—completed the scale as part of the system-wide program prior to implementation of the doctoral initiative. The same scales were sent to the nurse leaders who attended the educational intervention prior to data analysis, which indicated if movement toward EBP integration and enculturation occurred.

## Practice-Focused Question

The overriding organizational system for the doctoral project covers a geographical area greater than eight counties in both Pennsylvania and Maryland. The project entity is an acute-care behavioral health entity within the northeastern portion of the system and was the seventh-largest provider in the nation at the time of the project

according to a 2016 report given by the entity CNO. Fourteen nurse leaders from the project entity created the focus of this pilot project; the preceptor and primary investigator was the system-wide director for EBP and research, and I was associated with the institution by geographical means.

An infrastructure for EBP integration and enculturation did not exist at the project entity at the onset of the pilot project. Patient preferences and clinician experiences were the basis of clinical decision-making at this entity, while proven EBP facilitators, such as journal clubs, strategic plans, shared governance, and EBP role-modeling were not yet in place (Hauck et al., 2013; Levin et al., 2011; Melnyk, & Gallagher-Ford, 2014; Sandström et al., 2011). Nationally, a gap in practice exists at the leadership level, whereby nursing administrators are not connecting quality and safety with EBP, thereby inhibiting EBP integration and enculturation (AHRQ, 2001; Curry et al., 2015; Melnyk et al., 2016; Melnyk et al., 2012; Stokke et al., 2014; Warren et al., 2016). In order to address these issues, a practice focused question— Does the use of EBP facilitators as interventions for nursing leadership at a single healthcare entity increase scores on organizational culture and readiness, beliefs, and use of EBP scales?—was developed.

To alleviate the gap in practice within the scope of the practice focused question, an educational offering—EBP101—was delivered to 14 nurse leaders at the project entity (see Appendix C for course agenda). The objectives for the EBP101 course were that the participant could (a) discuss the importance of EBP; (b) develop an answerable PICO question; (c) demonstrate how to conduct a basic library search; (d) discuss the use of JHNEBP appraisal tool to identify the level and quality of evidence; (e) demonstrate the

use of the JHNEBP evidence appraisal tools; (f) synthesize evidence and determine recommendations for practice; and (g) describe the steps in the translation process. These core objectives for the EBP101 course followed a suitably designed PICO question for nurse leaders: What EBP strategies and behaviors by nurse leaders facilitate an EBP organizational culture and readiness, as well as nurses' perceptions of EBP beliefs and use? In addition, this EBP101 PICO question correlated directly to the doctoral project practice focused question with the intended outcome of allowing nursing leaders to begin development of an infrastructure for EBP integration following the educational intervention. By concentrating on the best strategies to integrate EBP while learning about the EBP process, the gap in knowledge should decrease. As such, the target population should begin to correlate safe, quality care outcomes with EBP integration.

## Sources of Evidence

In order to measure the outcomes noted in the practice focused question, it was imperative to perform a thorough literature review, obtain pre/postsurvey results from three valid and reliable EBP scales, and elicit informal feedback to support any variables. The literature review was performed as the doctoral project was designed, and will continue until dissemination. The presurveys were completed as part of a larger system-wide project, but the data for this doctoral project was obtained from the system aggregate. The postsurveys were sent 3 months after the educational intervention, the EBP101 course, was completed in order to allow time for EBP enculturation to begin. Informal feedback, by nature, occurred throughout the entire project process.

Literature reviews are common, reliable, and rigorous methods to obtain evidence supportive of projects with small fiscal implications (Pölkki, Kanste, Kääriäinen, Elo, & Kyngäs, 2014). In this project, the literature informed the direction of the project for planning and implementation. Using multiple databases and systematic appraisal systems, such as presented by Dearholt and Dang (2012) in the JHNEBP model, the evidence obtained collaborated the need for a pilot study using innovative, facilitative EBP interventions (see Appendix B for evidence and appraisal). Furthermore, the literature revealed the need for a project design aimed at changing the organizational culture from the perspective of the leadership.

The EBP-B scale is a 16-item, 1-5 Likert scored self-assessment measuring whether an individual accepts the basic value of EBP, as well as the individual's ability to implement (Melnyk et al., 2008). Building upon this, the EBP-I scale is an 18-item, 1-5 Likert scored self-assessment measuring whether an individual believes EBP has been implemented within the individual's institution (Melnyk et al., 2008). Both the EBP-B and the EBP-I scales are reliable and valid instruments used consistently in similar projects, with an initial Cronbach's Alpha > 0.90 (Hauck et al., 2013; Melnyk et al., 2008; Melnyk et al., 2016; Stokke et al., 2014; Warren et al., 2016; Wilkinson, Hinchcliffe, Hough, & Chang, 2012; Yackel et al., 2013). The OCRSWI of EBP Assessment is a 19-item, 1-5 Likert scored scale self-assessment measuring an individual's perception of the organization's EBP culture as an aggregate. The OCRSWI is a valid and reliable instrument used to measure an organization's readiness to implement EBP that has yielded a Cronbach's Alpha > 0.90 (Hauck et al., 2013; Melnyk

et al., 2008; Melnyk et al., 2016; Stokke et al., 2014; Warren et al., 2016; Wilkinson et al., 2012; Yackel et al., 2013). Using these three surveys as pre- and postassessments measured whether the EBP organizational culture and readiness for EBP integration at the project entity increased as proposed.

Self-assessment surveys create the possibility of bias, despite validity and reliability, resulting in false conclusions (Charrier et. al., 2008). As such, informal feedback, formative and summative, was beneficial. In addition to qualitative, informal statements made by the participants and discussions with the preceptor, ongoing feedback from the project entity's CNO was planned to determine EBP enculturation progress. Likewise, an evaluation of the EBP101 course was expected from all participants in order to receive continuing education units from Pennsylvania State Nurses Association (see Appendix D for evaluation form), which aided in determining EBP beliefs and skill competencies.

Collection of the described sources of evidence allowed determination of EBP value and the readiness of the nurse leaders to implement an EBP infrastructure. Without reliable and valid data, outcome measurement would not have been feasible. Since the literature demonstrated similar projects using the same methodology within similar settings and population, it seemed appropriate that the practice question could be adequately measured via these means. The ability to triangulate the informal feedback with the surveys, as well as any other findings, decreased bias during dissemination; ultimately this augmented evidence translation via methodical, appropriate planning and implementation (Hyrkas & Harvey, 2010).

**Published Outcomes and Research**

A comprehensive literature review was performed over the course of three years of doctoral study. Repetitive searches of the following databases, both individually and through search engine gateways such as EBSCOhost, OVID, and Thoreau Multi-Database Search, yielded evidence included within this work.

- CINAHL
- Education Research Complete
- ERIC
- Joanna Briggs Institute Database EBP Database
- MEDLINE
- OVID Nursing Journals
- ProQuest Computing
- ProQuest Nursing and Allied Health Source
- PsycArticles
- PubMed
- SAGE Premier

General search terms used for the PICO(t) question included the following:

- Acute care; hospitals; nursing; nurses; NURS*
- Evidence-based practice; evidence based practice, EBP; evidence-based nursing, evidence based nursing, EBN; barriers; facilitators
- Education; educational interventions; EDUC*; competencies; training

- Leaders; leadership; LEADERS*; administrators; ADMIN*; managers; management; MANAGE*

Upon continuing the literature review, the above search terms exposed four distinct themes within the evidence. It was imperative to narrow the literature review and search terms to further investigate these avenues. Boolean Operators, Smart Text capabilities, and the use of MESH terminologies enhanced the search process. Table 1 delineates the themes with relevant search terms used to include and exclude relevant literature.

Table 1

*Literature Review Themes with Corresponding Search Terms*

| Literature theme | Sub-theme | Search terms |
|---|---|---|
| Innovative educational interventions | EBP Process and Competencies | Acute Care; Competencies; Hospitals; Pedagogy; Training; Technology; Hospitals; EBP*; EDUC*; NURS* |
| Transformational leadership | Communication and characteristics | Communication; Outcomes; Style; Transformational; ADMIN*; CHARACTER*; EBP*; LEADERS*; MANAGE*; NURS* |
| Strategic planning | EBP components and organizational alignment | Goals; Healthcare; Objectives; Outcomes; Stakeholders; Strategic Planning; ALIGN*; EBP*; ORGANIZATION* |
| EBP project design | Systems-perspective approach | Design; Implementation; Healthcare; Organizations; Planning; Project; Project Management; Systems; EBP*; MANAGE*; NURS* |

Ultimately 38 pieces of evidence were extracted in support of the need for this project (see Appendix B for evidence).

Due to the ongoing nature of this literature review, as well as the project in general, search criterion included articles from 2008 to present day, with the exception of one classic piece of evidence from 1986. Common filters to narrow all searches included peer-reviewed journals and academic journals, while exclusion criteria encompassed physician-only experiences, small international pilot studies, clinical trials, simulation, and academic-only settings. Expansion of the search in an effort to find quality evidence specifically linked to the topics of interest, used manual techniques, such as citation reviews of relevant articles, applying the *more articles like this* feature within the databases, and reviewing key words tagged in articles extracted. All of these techniques will continue until the project's final dissemination.

The critical appraisal to determine the level—strength—and quality of each of these 38 articles was evaluated using the JHNEBP research and non-research appraisal tools. Of the 38 articles, 23 were considered research while 15 were considered non-research. Within the JHNEBP model, articles are considered high, medium, and low quality and graded with an *A*, *B*, or *C*, respectively (Dearholt & Dang, 2012). If the quality is determined to be low—a grade of *C*—it is not included within the evidence (Dearholt & Dang, 2012). Just over half, 57% of the research evidence, were considered to be of high quality, which was consistent with the non-research evidence as well at 53%. As such, the strength and quality of the evidence was strong enough to warrant a

quality improvement pilot study, at this point, per the JHNEBP translation recommendations.

**Archival and Operational Data**

The EBP-B Scale, EBP-I Scale, and OCRSWI of EBP Assessment were sent to all nurses and allied health professionals in the system in November 2015. At that time, the project entity was not part of the system. However, as part of the overriding system-wide EBP program (see Appendix A for alignment of pilot project mission to system-wide program) permission was obtained from the survey author and the system IRB to gather these data from the two additional entities. As part of the DNP and pilot project, the same survey was sent 3-months after the educational intervention to the remaining 12 nurse leaders from the initial target population in order to gather data for analysis.

These three assessments provided data to inform the practice problem by demonstrating the status of the nurse leaders' perceptions regarding EBP. It was possible with this data to determine a baseline belief for the nurse leaders regarding the value of EBP, the perception of the ability to implement EBP, the perception that EBP was currently implemented within the entity, and a determination of how ready the entity was to implement EBP. Three months after the educational intervention was implemented the same data provided outcomes to inform the DNP project.

The three surveys and the request to participate—informed consent—were sent electronically in one unified questionnaire at the end of July 2016, with an open response period through August 2016. The custom creation of the demographic form desired by the system, and the combination of the three questionnaires into one survey, occurred by

the author of the surveys. This augmented validity of the data, as does the fact that the data was collected and coded by the author as well. This provided an additional layer of protection against violating personally identifiable information; data was provided to the institution in aggregate form by the survey author. As such, access to the data was obtained directly from a third-party by the primary investigator. For me, retrieving the data was simply asking for the information—specifically the aggregate information for the nurse leaders from the project entity—from the primary investigator; I was approved as a student investigator on the overall study. This data was obtained in raw form for statistical manipulation and with statistical analyses performed by the system-wide organizational research center.

## Analysis and Synthesis

SurveyMonkey® was used as the host for the data by the survey author for both the pre- and post- survey. This web-based software provided HIPAA compliant questionnaires, data, and protection (SurveyMonkey, 2016). In addition, data analysis and coding was facilitated by the built-in features provided (SurveyMonkey, 2016). The survey author retrieved the data once the surveys were closed and ensured appropriate coding. The data were released to the primary investigator within the system for statistical manipulation. The system research center has two statisticians that performed appropriate analyses on the data; this included both manipulations utilizing SPSS and hand calculations as necessary. The primary investigator is physically housed within the system-wide research center, so communication with the statisticians was in-person and convenient. Finally, while any technological system can be hacked, there were safeguards

in place, inclusive of automatic encrypting of USB drives if placed into a system computer.

The actual survey data was analyzed using a two-sample t-test and the p-value was set ≥ 0.05 for all statistical analyses. Once the data was coded—and cleaned—the statistician performed additional testing as required. Any outliers or missing information will be discussed as limitations for the pilot project.

## Summary

In general, statistical analysis ensured baseline data and outcomes informed the doctoral project. In this instance, baseline data was obtained from three valid and reliable surveys—EBP-B, EBP-I, and OCRSWI—that have already been acquired for a larger project within the system. These same surveys were sent to the entity's nurse leaders for the DNP project 3-months after implementation of the educational intervention in order to collect data for outcome measures relating to EBP enculturation. Additional data to be obtained included informal feedback—in the form of the intervention evaluation and conversational statements—which strengthened the data interpretation. A literature review further substantiated the findings.

The system-wide program and the DNP pilot-project received IRB exemption from the system, and permissions for the use of the surveys were obtained from the survey author. The data was collected by the survey author via the use of Survey Monkey® which allowed for HIPAA compliance and data integrity. Data was coded by the survey author and sent to the primary investigator for statistical manipulation at the system-wide research center. Statistics for the small sample size of the doctoral pilot

project included descriptive statistics for the sample characteristics, and a two-sample t-test where $p \geq 0.05$ for the survey information. Any outliers, missing information, or other discovered issues as the project progressed are discussed as limitations and possible bias. Ultimately the project was expected to demonstrate an increase in the participants' perceptions regarding the value of EBP, ability to use EBP, the entity's use of EBP, and an overall movement toward EBP implementation.

Section 4: Findings and Recommendations

## Introduction

The use of EBP within the entity to guide practice had been lacking. The entity's nursing leadership knowledge of EBP enculturation was reflective of national statuses; nurse leaders desire to support staff nurses regarding EBP integration, but do not connect EBP use to safe, quality care. As a result, nurse leaders overlooked the value of EBP integration and knowledge at the administrative level, creating the lack of EBP enculturation throughout the entity. The purpose of the doctoral project was to decrease this knowledge gap and create a culture of EBP integration. As a result, the project was guided by the practice focused question of: Does the use of EBP facilitators as interventions for nursing leadership at a single healthcare entity increase scores on organizational culture and readiness, beliefs, and use of EBP scales?

Evidence was obtained over the course of three years via database gateways EBSCOhost, OVID, and Thoreau Multi-Database Search, including 11 databases, as well as via manual searches. Overall, 38 articles dating from 2008 to present were included in the final critical appraisal and evidence, approximately two-thirds of which were considered research and half were considered high quality (see Appendix B for evidence and appraisal). Ultimately, four categories of evidence were revealed within the literature to support this project: (a) educational interventions; (b) transformational leadership; (c) strategic planning; and (d) a systems-approach to project design. Based on the literature, the project was implemented and the primary pre/posttest data was collected at two points in time: prior to project implementation and three months following the educational

intervention of the JHNEBP EBP101 course. The quantifiable data was obtained in the form of the combined EBP surveys: EBP-B, EBP-I, and OCRSWI results. Additional data to validate the self-perception surveys was also collected:

- EBP101 course evaluation (see Appendix D for evaluation form),
- facility preceptor informal feedback/discussions,
- achievement actionable items by nurse leaders (see Appendix A goals and objectives), and
- CNO/Nurse leader anecdotal feedback.

The actual survey data was analyzed using a two-sample *t* test, with a *p* value set $\geq 0.05$ for all statistical analyses to compare the pre/posttest groups for demographic comparisons and overall project outcomes. Because this was a pilot project, both pre/posttest group sample sizes were small, so some additional nonparametric tests were run to validate the findings. The quantitative data, analysis, and synthesis of these findings are discussed within the *Findings and Implications* section below. The additional evidence was used to further validate the statistical data, eliminate bias, and provide appropriate recommendations for further studies, (Hyrkas & Harvey, 2010).

## Findings and Implications

The pilot project was implemented in September with the preintervention survey data gathered in July, 2016, as part of the system's larger program. As such, the preintervention survey was delivered to all nursing and allied health personnel within the entity. After the short-term goals and objectives were met by the entity nurse leaders, the

postintervention data was gathered in December, 2016, from 8 of the 12 nurse leaders who responded to survey (see Appendix A for project goals and objectives). These nondirect care RNs with supervisory authority over nursing staff remained employed at the entity from the original 14 nurse leaders who participated in the main EBP101 intervention. In order to determine whether the facilitative interventions increased scores on the organizational culture and readiness, beliefs, and use of EBP scales for the nurse leaders, data was analyzed according to demographic criteria and comparison between the two groups for each of the individual survey scores. The *p* value was set at 0.05 for all analyses and the system's statistician completed the analysis using SPSS.

**Demographic Comparisons**

The inclusion characteristics for the pre/postintervention samples included:

- Title = registered nurse
- Role = nurse leader
- Primary workplace = entity
- Employment status = full-time

As such, the preintervention sample for this pilot project included 14 nurse leaders and a 100% overall response rate was noted. The postintervention sample included 12 nurse leaders, but only 8 nurse leaders chose to participate in the survey, indicating a 67% response rate. Open survey time was extended in order to achieve higher response rates, but after 3 weeks, the decision was made to close the survey and analyze additional statistics, if needed, to determine group similarities. Possible explanations for the

decrease in response rates between the preintervention and postintervention sample include any, or a combination, of the below:

- The postintervention sample was delivered and open over the holidays, which could have hindered time issues in completion.
- Nurse leaders were reassigned to night-shift to cover for retention issues, while still maintaining job responsibilities, thereby shifting priorities.
- It is possible a subset of the sample did not buy-in to the change and therefore opted not to complete the postintervention survey. Voutilainen (2016) reports satisfaction can impact individual question response rate, overall influencing data completeness.

Differing characteristics used to compare the pre/postintervention samples were age and years of experience. While the eight nurse leaders who responded to the 3-month postintervention sample were part of the original 14 nurse leaders, the small sample size of the pilot study required demographic comparison of the pre/postintervention groups to ensure validity of the survey statistics and that appropriate statistical tests were calculated. Table 2 delineates comparison of the pre/postintervention groups using an independent sample *t* test with *p* value $\leq 0.05$. Since the *p* value is $\geq 0.05$, there are no statistical differences noted between the pre/postintervention group in terms of age or years of experience, the only differentiating criteria. The only other demographic characteristics collected were gender, which was 100% female for the entire study, and educational preparation. Educational preparation included diploma, associate's degree, bachelor's degree, master's degree, and doctorate degree. As the postintervention group

had only eight respondents, reporting the educational preparation had the potential to personally identify respondents. Likewise, ranges for age and years of experience are not displayed due to the same concern related to the small sample size. Statistical information was calculated and reported at an aggregate level.

Table 2

Demographic Pre/Postintervention Comparison

| | Pre ($n$ = 14) | Post ($n$ = 8) | |
|---|---|---|---|
| Characteristic | Mean (*SD*) | Mean (*SD*) | $p$ value |
| Age | 46.29 (11.458) | 39.25 (11.119) | 0.177 |
| Years of experience | 3.5 (1.092) | 3.25 (0.886) | 0.588 |

*Note.* Preintervention sample size $N$ = 14 with 100% response rate on survey. Postintervention sample size $N$ = 12 with 67% response rate on survey.

**Analysis of Organizational Culture and Readiness, Beliefs, and Use of EBP**

The EBP-B examined whether the nurse leaders accepted the value of EBP via 16 questions, which revealed an aggregate score from 16 to 80. The higher the score, the more positive the beliefs regarding EBP, with a score of 60 indicating a baseline belief in the value of EBP. Table 3 demonstrates two-sample *t* tests for equality of means, as well as a Mann Whitney U nonparametric analysis. While neither test demonstrated statistical significance, the preintervention mean fell slightly below the belief score of 60 indicative of nurse leaders' perception of their own individual ability to comprehend and use EBP. The preintervention score of 58.7 increased postintervention to 63.0, indicating movement toward EBP knowledge.

The EBP-I encompassed 18 questions from the survey and was scored from 0 to 72. The aggregate score within this individual survey indicated increased use of EBP by the nurse leaders, including skills such as:

- critically appraising evidence,
- developing a PICO(t) question,
- collecting data and evaluating outcomes,
- sharing existing research/evidence with others,
- accessing databases for EBP and research,
- changing care practices based on EBP, and
- promoting EBP to others.

Again, while no statistical difference was noted between the pre/postintervention groups, movement was noted within the overall score and three individual questions. The preintervention aggregate score was 25.1 as seen in Table 3, while an increase to 47.4 with a standard deviation of 16.8 was noted.

Finally, the OCRSWI aggregate scores exhibited in Table 3 do not show statistical significance either. However, consistent with the EBP-B and the EBP-I, movement from a preintervention score of 44.8 to a postintervention score of 60.6 establishes greater organizational readiness for EBP after implementation of the facilitative interventions. Scores for the OCRSWI range from 25 to 125, with higher scores ultimately reflecting EBP enculturation.

Table 3

*Pre/Postintervention Group Survey Data Comparison*

| | Pre | | Post | | | | |
|---|---|---|---|---|---|---|---|
| Survey | *n* | Mean (*SD*) | *n* | Mean (*SD*) | *t* (*df*) | *p* value[a] | *U* |
| EBP-B | 11 | 58.7 (8.3) | 7 | 63.0 (6.0) | -1.178 (16) | 0.256 | 0.525 |
| EBP-I | 9 | 25.1 (22.9) | 5 | 47.4 (16.8) | -1.899 (12) | 0.082 | 0.062 |
| OCRSWI | 13 | 44.8 (18.9) | 7 | 60.6 (17.9) | -1.816 (18) | 0.086 | 0.052 |

*Note*. Preintervention sample size $N = 14$ with varying response rates for individual survey questions relating to inclusion on EBP-B, EBP-I, and OCRSWI. Postintervention sample size $N = 12$ ($n = 8$) with varying response rates as described for preintervention sample.
[a]*p* value represents significance for two-sample *t* test for equality of means.

Despite a lack of statistical significance within the aggregate scores, two-sample *t* tests were run for the individual questions within each of the three surveys. Overall, 11 of the 59 questions from the three surveys demonstrated statistical significance from the preintervention survey to the postintervention survey. Upon investigating which questions revealed movement, it was important to notate the calculations for those questions with significance as it was found these questions related most to the facilitative interventions than others.

When comparing meaningful movement within the Likert score ratings, 5 of the 16 EBP-B questions showed a statistically significant difference as noted by the increase in means depicted in Table 4. In particular, respondents indicated clarity regarding the EBP process, assurance that critical appraisal of evidence is important, confidence that EBP will improve patient care, and knowledge regarding outcome measurement. Each of

these five questions indicated the facilitative interventions, and the educational intervention in particular appropriately conveyed the EBP process in a lasting manner.

Table 4

*EBP-B Survey Questions with Statistically Significant Increase*

| Question | Pre (n = 13) Mean (*SD*) | Post (n = 7) Mean (*SD*) | *t* (*df = 18*) | *p* Value[a] |
|---|---|---|---|---|
| I am clear about the steps of EBP | 3.38 (1.19) | 4.71 (0.49) | -2.797 | 0.012 |
| I believe that critically appraising evidence is an important step in the EBP process | 4.38 (0.51) | 4.86 (0.38) | -2.156 | 0.045 |
| I am sure that evidence-based guidelines can improve clinical care | 4.38 (0.65) | 5.00 (0.00) | -2.472 | 0.024 |
| I am sure that implementing EBP will improve the care that I deliver to my patients | 4.38 (0.65) | 5.00 (0.00) | -2.472 | 0.024 |
| I am sure about how to measure the outcomes of clinical care | 3.62 (1.04) | 4.57 (0.53) | -.2.250 | 0.037 |

*Note*. Preintervention sample size $N = 14$ with varying response rates for individual survey questions relating to inclusion on EBP-B. Postintervention sample size $N = 8$ with varying response rates as described for preintervention sample.
[a]*p* value represents significance for two-sample *t* test for equality of means; $p \geq 0.05$

Similarly, Table 5 displays three questions from within the EBP-I that demonstrated a statistically significant increase from a preintervention Likert score of less than neutral to a postintervention Likert score of confident. These three areas of largest increase included data collection, changing practice, and EBP promotion, which

was consistent with the additional data and achievable actions by the nurse leaders (see Appendix A for short-term goals and objectives).

Table 5

*EBP-I Survey Questions with Statistically Significant Increase*

| Question | Pre ($n$ = 9) Mean (*SD*) | Post ($n$ = 5) Mean (*SD*) | $t$ ($df$ = 12) | $p$ Value[a] |
|---|---|---|---|---|
| Collected data on a patient problem | 2.89 (1.69) | 4.80 (0.45) | -2.439 | 0.031 |
| Changed practice based on patient outcome data | 2.00 (1.32) | 4.00 (1.00) | -2.928 | 0.013 |
| Promoted the use of EBP to my colleagues | 2.22 (1.48) | 4.00 (1.00) | -2.379 | 0.035 |

*Note*. Preintervention sample size $N$ = 14 with varying response rates for individual survey questions relating to inclusion on EBP-I. Postintervention sample size $N$ = 8 with varying response rates as described for preintervention sample.
[a]$p$ value represents significance for two-sample $t$ test for equality of means; $p \geq 0.05$

Table 6 reflects statistical significance for three of the 25 individual questions in regard to knowing and using the system librarians for evidence searches, as well as for interprofessional doctorally-prepared colleagues assisting in providing evidence. While movement was not seen in the Likert score rating to above neutral, these scores are statistically significant as well as meaningful for this entity; this entity did not have EBP enculturation or integration prior to the quality improvement pilot project implementation. The three OCRSWI questions which demonstrated statistical significance reflect the movement toward a culture of EBP within the entity.

Table 6

*OCRSWI Survey Questions with Statistically Significant Increase*

| Question | Pre ($n$ = 13) Mean ($SD$) | Post ($n$ = 7) Mean ($SD$) | $t$ ($df$ = 18) | $p$ Value[a] |
|---|---|---|---|---|
| To what extent are there doctorally prepared researchers in your organization to assist in generation of evidence when it does not exist? | 0.62 (0.87) | 1.57 (0.79) | -2.419 | 0.026 |
| To what extent do librarians within your organization have EBP knowledge and skills? | 0.23 (0.44) | 2.57 (1.99) | -4.153 | 0.001 |
| To what extent are librarians used to search for evidence? | 0.46 (0.52) | 2.14 (1.46) | -3.794 | 0.001 |

*Note*. Preintervention sample size $N$ = 14 with varying response rates for individual survey questions relating to inclusion on OCRSWI. Postintervention sample size $N$ = 8 with varying response rates as described for preintervention sample.
[a]$p$ value represents significance for two-sample $t$ test for equality of means; $p \geq 0.05$

**Unanticipated Outcomes**

Makri and Blandford (2012) deem unanticipated outcomes as valuable when the outcome is timely, time-saving, impactful, and knowledge is enhanced. Value-added, unanticipated outcomes should be reported whether positive or negative. Two specific results in this quality improvement, pilot project required further rumination and dissemination. First, the entity had little to no EBP integration prior to implementation, but the preintervention aggregate scores did not appear to be reflective of this culture. With a preintervention EBP-B mean score of 58.7—knowing that a score of 60 indicates understanding and belief in EBP—it was unclear from where the knowledge arose. The

average age of the preintervention group was 46-years, but years of experience averaged only 3.5 years. The anecdotal explanation for this score becomes (a) the nurse leaders were unclear as to the individual questions' purposes, and/or (b) the nurse leaders applied the questions' purposes to formal educational projects rather than the entity culture. Upon discussion with the preceptor and the CNO, it was determined that both of these were distinct possibilities and a majority of the nurse leaders are currently in a formal educational program.

Additionally, the speed and the extent with which the entity began EBP enculturation and integration was unexpected. Nurse leaders were expected to:

- Complete EBP-B, EBP-I, OCRSWI survey (preintervention)
- Participate in EBP101 course
- Verbalize at least one strategy to overcome one EBP barrier noted in entity
- Brainstorm action plan items for EBP enculturation
- Choose nurse leader champion(s)
- Create an entity-wide EBP strategic plan
- Select one EBP facilitating strategy to operationalize in entity
- Complete EBP-B, EBP-I, OCRSWI survey (postintervention)

Within one month of the initial intervention of the EBP101 class, the entity's nurse leaders had completed all of the actionable items noted above and a meeting was occurring to assist the nurse leaders in facilitating an EBP strategic plan. In addition, three of the fourteen nurse leaders had volunteered to become EBP champions, each with individual strategies to operationalize. As a result, facilitation for a journal club, future

EBP101 courses for nurse leaders, EBP nurse fellowship opportunities, an EBP conference opportunity for attendance, and an EBP project pertinent to the entity ensued. These immediate actions for EBP integration fostering the enculturation for all staff confirms that while statistical significance in the quantitative data did not occur, the quantitative data was not incorrect. Further, this was completely unexpected within the entity's culture, which completely lacked EBP integration prior to the pilot project implementation.

**Implications**

The specific problem for the entity noted staff retention issues resulting from satisfaction issues and a lack of empowerment, fiscal concerns, and general well-documented barriers to EBP implementation. Consistent with the literature, EBP cannot be integrated without a culture of EBP that has to begin with leadership (Melnyk et al., 2016; Warren et al., 2016; Yackel, Short, Lewis, Breckenridge-Sproat, & Turner, 2013). In this pilot project, the nurse leaders were given permission to implement EBP by the system and entity leadership, and it worked. Kouzes and Posner (2016), one of the supportive conceptual frameworks for this project, purport that transformational leadership can lead to positive outcomes through Five Practices of Exemplary Leadership®:

- Model the way
- Inspire a shared vision
- Challenge the process

- Enable others to act
- Encourage the heart

This pilot project, at the least, enabled others to act by using the first three practices; the heart was encouraged by speaking to the nurse leaders in terms of language that reached them within the facilitative interventions—i.e. the PICO question in EBP101 was a behavioral health administrative, interactive, hands-on, applicable, and meaningful question used to influence these leaders in their scope of practice regarding EBP. As a result of this, the individual nurse leaders found new ways to create change and empower those around them. The direct care nurses become more satisfied—which will be measured in future system-wide program studies—as they become more empowered, satisfied, and comprehend decisions secondary to understanding the evidence. The institution benefits fiscally by means of increased safe, quality care, increased third party payer reimbursements, and decreased staff turnover, which will also be measured in future system-wide program studies. Furthermore, the community benefits through increased quality of care, backed by EBP. Systems include the regional healthcare system, and similar entities that can replicate the study. The pilot project is expected to expand to other nurse leaders within the system's many entities. Finally, it was important to recognize that the approach to EBP enculturation was to be from a systems perspective, and by doing so, the basis of enculturation has been accomplished; each individual strategy and person have melded into a whole in order to promote safe, quality care at the forefront of clinical practice, the basis of EBP.

Medical errors are estimated to be the third leading cause of death, which is actually an increase in reportable adverse events since the landmark IOM (1999) report debuted. Based on these numbers, nothing has changed; in reality, the healthcare system actually may have decreased outcomes in its attempt to fix the system issues. However, this project produced evidence that positive social modifications are possible amidst the traditional healthcare thought processes. Overcoming resistance to change was possible, using Lewin's CMM, as nurse leaders increasingly changed the cultural landscape of the entity after receiving the facilitative interventions. It may take 10- to 20-years to translate research to practice, but the project demonstrated these nurse leaders understood their responsibility to speed EBP integration at the least (Balas & Boren, 2000; Brown et al, 2011; Melnyk, 2014; Morris et al., 2011). Refreezing has yet to be completed, but the evidence that change is underway is evident within the findings noted. Additionally, the principles of beneficence and nonmaleficence require healthcare providers to provide the safest, highest quality care possible while avoiding harm. Yet, the gap in knowledge that led to this project demonstrated the disconnect between safe, quality care and EBP, thereby violating the principles of beneficence and nonmaleficence by definition. If proven research exists that can be translated to our clinical practice area, healthcare providers are remiss by not doing so. This project demonstrated simple education and facilitation for nurse leadership can lead to a change in violation of these ethical principles. To change thought processes that have been engrained within the healthcare system is a positive social change indeed.

## Recommendations

Based upon the findings from the quality improvement pilot project, similar projects could be implemented that would potentially produce similar results. Careful planning to reproduce this study, should begin with strategic alignment of the project with the institution's strategic plan. Strategic alignment is part of a systems perspective, which is congruent with the four categorizations necessary to improve organizational culture and readiness, beliefs, and use of EBP that arose from the literature: (a) educational interventions, (b) transformational leadership, (c) strategic planning, and (d) system approaches to EBP integration (see Appendix B for literature). Strategic alignment should create nurse leadership buy-in, generating a foundation for change management and transformational leadership. Upon determination that a basis exists to implement the project, design of the facilitative interventions should begin.

In this DNP project, the Johns Hopkins EBP101 course was used as the educational intervention (see Appendix A for project goals, objectives, and activities; see Appendix C for the EBP101 course agenda). The objectives for the EBP101 course were for the participants to (a) discuss the importance of EBP; (b) develop an answerable PICO question; (c) demonstrate how to conduct a basic library search; (d) discuss the use of JHNEBP appraisal tool to identify the level and quality of evidence; (e) demonstrate the use of the JHNEBP evidence appraisal tools; (f) synthesize evidence and determine recommendations for practice; and (g) describe the steps in the translation process. Since Table 4, Table 5, and Table 6 indicated statistical significance related to these core objectives, any educational offering should follow these general objectives; however, the

EBP101 course, in itself, might not be the most appropriate course for every setting. In this DNP project, the JHNEBP model was a conceptual framework guiding the institution in EBP processes. If strategic alignment indicates differing models are more appropriate for the institution, using the core objectives in an innovative, interactive, hands-on educational activity should produce similar effects on the EBP-B, EBP-I, and OCRSWI assessments.

Another key consideration within this project was the use of a PICO question for the nurse leaders throughout the educational intervention that guided their discovery in alignment with their entity: What EBP strategies and behaviors by nurse leaders facilitate an EBP organizational culture and readiness, as well as nurses' perceptions of EBP beliefs and use? As intended, the effect of this question allowed nurse leaders to begin development of an infrastructure for EBP integration following the educational intervention.

Finally, if replicating this study, it is crucial that the educational intervention is not the end of the project. Continued support, mentoring, facilitation, and planned EBP activities must be part of the project implementation (see Appendix A for project objectives). If follow-up had not occurred regarding naming of EBP champion(s) or support and facilitation at the EBP strategic planning meeting, the continued evolution of the EBP enculturation may not have occurred. This project started with expectations of one facilitation strategy for implementation and the entity delved into integration with three facilitative strategies: journal club, an EBP project to change a protocol, and

execution of the EBP strategic plan. It is clear that any strategy chosen for implementation promotes EBP integration and enculturation.

## Strengths and Limitations of the Project

While the pilot project had meaningful findings for a short-term quality improvement study, there were limitations that require consideration. First and foremost is the issue of generalizability. Based on the results, these same methods, with minor modifications, will be applied to nurse leaders within the system's other entities; while the sample size was small, this was a pilot project within a larger system-wide program and the pilot was deemed successful by the system. However, even within the system there are differences among the nurse leaders in terms of practice and demographics that may cause concern when applying the project to a new aggregate. Second, the personnel and the sample size for this pilot project are small in number. While nonparametric statistical analyses were completed to ensure demographic comparisons, this does not negate the fact that larger sample sizes may produce more rigorous results. In addition, while unbiased evaluation was intended, the small number of personnel required the investigators to also be the project evaluators. This may have caused meaning behind outlying data when none may have existed. As expected, due to the short frequency and ongoing nature of the pilot project, no overall statistical significance was noted within the aggregate scores of the EBP-B, EBP-I, and OCRSWI. However, as individual questions showed statistical significances with anecdotal evidence noting promising movement, it appears the generalized scores note movement toward EBP enculturation and integration.

Regardless of the strengths and limitations for this pilot project, it is imperative that any attempt to address this topic in a future project consider the stakeholder buy-in—including the nurse leaders—prior to implementation. This particular project would not have succeeded without stakeholder willingness to support and participate, regardless of the initial beliefs, use, or enculturation surrounding EBP. In addition, while the educational intervention used was the Johns Hopkins Nursing EBP101 course, it is believed the success of the education was due in large part due to the consistency of this course with the literature recommendations surrounding innovation and interactivity regardless of timing, pedagogy, or modality (Chang et al., 2013; Hines et al., 2016; Kim et al., 2009; Liou, Cheng, Tsai, & Chang, 2013; Patelarou et al., 2013; Tart et al., 2011). Finally, transformational leadership should be a component of the education and enculturation, as it has been shown to improve beliefs, use, and EBP enculturation (Aarons & Sommerfeld, 2012; Melnyk & Gallagher-Ford, 2014; Patelarou et al., 2013; Sandström et al., 2011; Stetler et al., 2014; Warren et al., 2016). Sharing the vision, mentoring, facilitating the interventions and sustainability of the project, and modeling the way—all part of the leadership components championed by Kouzes and Posner (2002) based on transformational leadership—are an element of successful EBP enculturation; thus, transformational leadership is a fundamental factor when undertaking projects similar to this.

Section 5: Dissemination Plan

## Dissemination

Dissemination is of utmost importance for this DNP project as the implications have the potential to alleviate issues that to date healthcare has been unable to address. The DNP project has been accepted for poster presentation at an organization-sponsored research conference in March 2017. Additional status and outcome reports will be made to the entity and system by me and the preceptor at various formal and informal meetings. Oral presentations are being planned, as are publications, but the appropriate venues are being discussed at this time.

It is difficult to clarify the exact audience and venue for external dissemination due to the nature of the project. Assorted journals are reluctant to publish quality improvement studies, while others specialize in these papers. Compounding this, however, is the fact that this is a small pilot project, and additional periodicals are hesitant to publish results of this nature, secondary to the precautious aspect of the findings. Regardless, query letters will be sent to nursing administrative journals, nursing clinical educator journals, quality improvement journals, and general professional nursing journals. Finally, the audience is another diverse area of concern related to dissemination for this project. While it is the nurse leaders who have been the primary stakeholders and the population of interest, this aggregate is also the population resistant to the change; directing dissemination of a change initiative towards these individuals might not make the impact for increased change that is desired. Nevertheless, direct care nurses are not empowered to implement this project until a culture of EBP has begun. It is possible that

clinical educators, or the highest level of healthcare administration, are the most appropriate audiences for this project. Both conference and journal selection will take this rumination into consideration.

## Analysis of Self

The DNP project experience has provided me the opportunity for significant growth in a multitude of personal and professional roles that far exceeded my initial expectations. As I reflect upon this scholarly journey, I realize the AACN (2006) DNP essentials have been a framework for this evolution, not just a set of disconnected goals and objectives guiding the educational process. While the DNP project focused specifically on EBP, tied to the AACN (2006) DNP Essential III, "Clinical Scholarship and Analytical Methods for Evidence-Based Practice" (p. 11), the full appreciation of the complex interconnections between all the essentials has become evident. If I had solely excelled within this single essential, the DNP role would not be fulfilled. This advanced practice role can be defined by formal and informal nurse leaders who possess the knowledge, skills, and attitudes to address unique needs of various healthcare aggregates using innovation, evidence, conceptual frameworks, economic wisdom, political advocacy, technological savvy, social accountability, and systems thinking in order to deliver safe, quality care (Chism, 2013; Conrad & O'Dell, 2014; Zaccagnini, 2014).

As I complete this journey, I maintain my original status as senior partner in a nursing and allied health education and informatics consulting firm. I never believed that this position, which includes project management and creative design, would change after completion of the DNP project. I can confirm that I am not searching for new

employment. However, my skills within this role have been enriched, and I perform the tasks of the position with an innovative vision and analytical thinking. I also realize that the tasks are not rote—applicable to all—but rather individualized solutions unique to each aggregate. As time moves forward, increased advocacy and dissemination have risen to the forefront of my role, where these two characteristics were predominantly nonexistent in the past. If we do only what is asked of us, we do a disservice to those who are relying on us as leaders and professionals; I am determined to ensure that this project does not end here, but that change is sustained for improved healthcare outcomes.

In an effort to continue the project, it is imperative that the system program continues (see Appendix A for the project and program mission). While this pilot project has shown positive movement toward closing the gap in knowledge for nurse leaders related to the correlation of EBP and safe, quality care, it is the first step in a long process. As these results are promising, the first step is to disseminate the information both internally and externally. The literature has demonstrated EBP enculturation should begin with leadership, incorporating known EBP facilitators and removing as many barriers as possible. The challenge has been to speak to leadership encouraging the facilitative interventions aimed specifically toward their EBP knowledge. It is apparent that if this buy-in can occur, the nurse leaders will integrate EBP in their practice, which means support, mentoring, and facilitation of EBP will occur within the entity; EBP enculturation is possible but requires the right stakeholders and support at the right time.

## Summary

Nurse leaders are the heart of the culture of their institution. The knowledge, skills, and attitudes of these individuals is conveyed to the direct care nurses and the patients and populations served by the institution. Nurse leaders traditionally have understood that safe, quality care is of paramount importance. Despite this knowledge, nurse leaders do not correlate quality and safety with EBP. EBP, however, is part of the scope and standards of practice for nurses and nurse administrators (ANA, 2015, 2016). A goal of EBP integration into 90% of all clinical decisions by the year 2020 has been set by the IOM (2008). EBP is part of the regulatory, accreditory, and certification guidelines for healthcare facilities, yet the disconnect remains.

The DNP project addressed this gap in knowledge through a series of educational interventions, facilitation, and mentoring of EBP aimed directly at nurse leaders within one entity of a larger regional healthcare system. A quality improvement, pilot project using a pre/posttest method was designed and the project question to guide this endeavor was: Does the use of EBP facilitators as interventions for nursing leadership at a single healthcare entity increase scores on organizational culture and readiness, beliefs, and use of EBP scales? Ultimately, it was to be determined whether these activities could create a culture of EBP in an entity where EBP integration was nonexistent.

While the sample size was small and the overall scores of the predominant data were not statistically significant, movement toward organizational culture and readiness, belief in EBP, and use of EBP was noted. Statistical significance was noted within specific questions from each of the surveys, which were indicative of early enculturation,

such as understanding the EBP process, acknowledging the value of EBP, and disseminating evidence. Achievements of enculturation activities, such as creating an EBP strategic plan, implementing a journal club, and beginning a full EBP project pertinent to the entity, verified the statistical results and inauguration of EBP integration.

Whereas change has occurred, it is imperative that change is sustained. Part of the sustainability is my responsibility to continue the project and disseminate the current and future findings. In order for safe, quality care to occur, EBP integration must be prominent in clinical practice. The nurse leaders have begun EBP enculturation at this entity. This journey has provided the realization that the possibility exists for this long-entrenched thinking in healthcare regarding “the way that we have always done it” to be changed beyond this single entity. Specific EBP-focused, active-learning, innovative, facilitative interventions for nursing leaders can, indeed, increase the scores on organizational culture and readiness, beliefs, and use of EBP scales for nurse leaders within a single healthcare entity.

# References

Aarons, G. A., Ehrhart, M. G., Farahnak, L. R., & Hurlburt, M. S. (2015). Leadership and organizational change for implementation (LOCI): A randomized mixed method pilot study of a leadership and organization development intervention for evidence-based practice implementation. *Implementation Science, 10*(11). doi:10.1186/s13012-014-0192-y

Aarons, G. A. & Sommerfeld, D. H. (2012). Leadership, innovation climate, and attitudes toward evidence-based practice during a statewide implementation. *Journal of the American Academy of Child and Adolescent Psychiatry, 51*(4), 423-431. doi:10.1016/j.jaac.2012.01.018

Agency for Healthcare Research and Quality. (2001). *Translating Research into Practice (TRIP)-II: Fact Sheet.* Rockville, MD: Author. Retrieved from http://archive.ahrq.gov/research/findings/factsheets/translating/tripfac/trip2fac.html

Aggleton, P., & Chalmers, H. (1986). Nursing research, nursing theory and the nursing process. *Journal of Advanced Nursing*, *11*(2), 197-202.

Alzayyat, A. S. (2014). Barriers to evidence-based practice utilization in psychiatric/ mental health nursing. *Issues in Mental Health Nursing*, *35*(2), 134-143. doi:10.3109/01612840.2013.848385

American Association of Colleges of Nursing. (2006). *The Essentials of Doctoral Education for Advanced Nursing Practice.* Washington, DC: Author. Retrieved

from http://www.aacn.nche.edu/ccne-accreditation/standards-procedures-resources/baccalaureate-graduate/standards

American Association of Colleges of Nursing. (2015). *The doctor of nursing practice: Current issues and clarifying recommendations.* Washington, DC: Author. Retrieved from http://www.aacn.nche.edu/news/articles/2015/dnp-white-paper

American Nurses Association. (2015). *Scope and standards of practice for nurses* (3rd ed.). Silver Springs, MD: Author.

American Nurses Association. (2016). *Scope and standards of practice for nurse administrators* (2nd ed.). Silver Springs, MD: Author.

Balas, E. A. & Boren, S. A. (2000). Managing clinical knowledge for health care improvement. In J. Bemmel & A. T. McCray (Eds.), *Yearbook of medical informatics 2000: Patient-centered systems* (pp. 65-70). Stuttgart, Germany: Schattauer Verlagsgesellschaft. Retrieved from http://www.ihi.org/knowledge/Pages/Publications/Managingclinicalknowledgefor healthcareimprovement.aspx

Brown, C. R., Johnson, A. S., & Appling, S. E. (2011). A taste of nursing research: An interactive program introducing evidence-based practice and research to clinical nurses. *Journal for Nurses in Staff Development, 27*(6), E1-5. doi:10.1097/NND.0b013e3182371190

Chang, A., & Levin, R. F. (2014). Tactics for teaching evidence-based practice: Improving self efficacy in finding and appraising evidence in a master's evidence-based practice unit. *Worldviews on Evidence-Based Nursing, 11*(4), 266-269.

Chang, S. C., Huang, C. Y., Chen, S. Y., Liao, Y. C., Lin, C. H., & Wang, H. H. (2013). Evaluation of a critical appraisal program for clinical nurses: A controlled before-and-after study. *Journal of Continuing Education in Nursing, 44*(1), 43-48. doi:10.3928/00220124-20121101-51

Chao, C., & Goldbort, J. (2012). Lessons learned from implementation of a perinatal documentation system. *Journal of Obstetric, Gynecologic & Neonatal Nursing, 41*(5), 599-608. doi:10.1111/j.1552-6909.2012.01378.x

Charrier, L., Allochis, M., Cavallo, M., Gregori, D., Cavallo, F., & Zotti, C. (2008). Integrated audit as a means to implement unit protocols: A randomized and controlled study. *Journal of Evaluation in Clinical Practice*, *14*(5), 847-853.

Chism, L. A. (2013). Where do we go from here? The future of the DNP degree. In L. A. Chism (Ed.), *The doctor of nursing practice: A guidebook for role development and professional issues* (pp. 309-328). Burlington, MA: Jones & Bartlett Learning.

Conrad, D. & O'Dell, D. (2014). The rest of the story: Evaluating the doctor of nursing practice. In K. Moran, R. Burson, & D. Conrad (Eds.), *The doctor of nursing practice scholarly project: A framework for success* (pp. 385-410). Burlington, MA: Jones & Bartlett Learning.

Curry, L. A., Linnander, E. L., Brewster, A. L., Ting, H., Krumholz, H. M., & Bradley, E. H. (2015). Organizational culture change in U.S. hospitals: A mixed methods longitudinal intervention study. *Implementation Science, 10*(1), 29-29. doi:10.1186/s13012-015-0218-0

Dearholt, S. L., & Dang, D. (2012). *Johns Hopkins nursing evidence-based practice: Models and guidelines* (2nd ed.). Indianapolis, IN: Sigma Theta Tau.

Fineout-Overholt, E. & Melnyk, B. M. (2006). *Organizational culture & readiness for system wide integration of evidence-based practice*. Gilbert, AZ: ARCC Publishing.

Gallagher-Ford, L. (2014). Implementing and sustaining EBP in real world healthcare settings: A leader's role in creating a strong context for EBP. *Worldviews on Evidence-Based Nursing, 11*(1), 72-74. doi:10.1111/wvn.12022

Garrety, K., Dalley, A., McLoughlin, I., Wilson, R., & Yu, P. (2012). Managing collaboration across boundaries in health information technology projects. *Studies in Health Technology and Informatics, 178,* 58-63. doi:10.3233/978-1-61499-078-9-58

Häggman-Laitila, A., Mattila, L. R., & Melender, H. L. (2016). Educational interventions on evidence-based nursing in clinical practice: A systematic review with qualitative analysis. *Nurse Education Today, 43,* 50-59. doi:10.1016/j.nedt.2016.04.023

Harsh, J. A., Maltese, A. V., & Tai, R. H. (2011). Undergraduate research experiences from a longitudinal perspective. *Journal of College Science Teaching*, *41*(1), 84-91.

Hauck, S., Winsett, R. P., & Kuric, J. (2013). Leadership facilitation strategies to establish evidence-based practice. *Journal of Advanced Nursing, 69*(3), 664-674. doi:0.1111/j.1365-2648.2012.06053.x

Hines, S., Ramsbotham, J., & Coyer, F. (2016). Interventions for improving the research literacy of nurses: A systematic review. *JBI Database of Systematic Reviews & Implementation Reports, 14*(2), 256-294. doi:10.11124/jbisrir-2016-2378

Hodges, B. C. & Videto, D. M. (2011). Assessment for developing programs and intervention: The big picture. In B. C. Hodges & D. M. Videto (Eds.), *Assessment and program planning in health programs* (2nd ed., pp. 1-26). Sudbury, MA: Jones & Bartlett Learning.

Hyrkas, K., & Harvey, K. (2010). Leading innovation and change. *Journal of Nursing Management, 18*(1), 1-3. doi:10.1111/j.1365-2834.2010.01069.x

Institute of Medicine. (1999). *To err is human: Building a safer health system.* Washington, DC: The National Academies Press.

Institute of Medicine. (2008). *Evidence-based medicine and the changing nature of health care: 2007 IOM annual meeting summary–Appendix C: IOM roundtable on evidence-based medicine roster and background*. Washington, D.C.: National Academies Press. Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK52821/

Institute of Medicine. (2011). *The future of nursing: Leading change, advancing health*. Washington, DC: The National Academies Press.

Kangas, P. J. (2011). Stakeholder management 101. *Quality Progress, 44*(3), 72.

Kim, S. C., Brown, C. E., Fields, W., & Stichler, J. F. (2009, Jan. 13) Evidence-based practice-focused interactive teaching strategy: A controlled study. *Journal of Advanced Nursing, 65*(6), 1218–1227. doi:10.1111/j.1365-2648.2009.04975.x

Kinnevy, S. C., & Sununu, T. J. (2010). The relationship between program implementation and evaluation on the TCE/HIV projects. *Journal of Evidence-Based Social Work, 7*(1/2), 162-172. doi:10.1080/15433710903176054

Kelley, R. (2009). *Where can $700 billion in waste be cut annually from the U.S. healthcare system?* (White paper). Ann Arbor, MI: Thomson Reuters.

Kouzes, J. M. & Posner, B. Z. (2002). *Leadership challenge*. San Francisco, CA: Jossey-Bass.

Kouzes, J. M. & Posner, B. Z. (2016). *The five practices of exemplary leadership® model*. Retrieved from http://www.leadershipchallenge.com/About-section-Our-Approach.aspx

Krive, J. (2013). Building effective workforce management practice through shared governance and technology systems integration. *Nursing Economic$, 31*(8), 241-429.

Laibhen-Parkes, N. (2014). Evidence-based practice competence: A concept analysis. *International Journal of Nursing Knowledge, 25*(3), 173-182. doi:10.1111/2047-3095.12035

Levin, R. F., Fineout-Overholt, E., Melnyk, B. M., Barnes, M., & Vetter, M. J. (2011). Fostering evidence-based practice to improve nurse and cost outcomes in a community health setting: A pilot test of the advancing research and clinical practice through close collaboration model. *Nursing Administration Quarterly, 35*(1), 21-33. doi:10.1097/NAQ.0b013e31820320ff

Liou, S. R., Cheng, C. R., Tsai, H. M., & Chang, C. H. (2013). Innovative strategies for teaching nursing research in Taiwan. *Nursing Research, 62*(5), 335-43.

Liu, J. L., Lai, D., Ringel, J. S., Vaiana, M. E., & Wasserman, J. (2014). *Small ideas for saving big health care dollars* (Report No. RR-390-RC). Santa Monica, CA: RAND Corporation. Retrieved from http://www.rand.org/pubs/research_reports/RR390.html

Maag, M., Buccheri, R., Capella, E., & Jennings, D. (2006). A conceptual framework for a clinical nurse leader program. *Journal of Professional Nursing*, *22*(6), 367-372.

Makri, S., & Blandford, A. (2012). Coming across information serendipitously – Part 1A process model. *Journal of Documentation*, *68*(5), 684-705. doi:10.1108/00220411211256030

Mansour, T., & Porter, E. (2008). Educators' experience of teaching nursing research to undergraduates. *Western Journal of Nursing Research*, *30*(7), 888-904.

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. M. (2016). An urgent call to action for nurse leaders to establish sustainable evidence-based practice cultures and implement evidence-based interventions to improve healthcare quality. *Worldviews on Evidence-Based Nursing, 13*(1), 3-5. doi:10.1111/wvn.12150

Melnyk, B. M., Fineout-Overholt, E., Gallagher-Ford, L., & Kaplan, L. (2012). The state of evidence-based practice in US nurses: Critical implications for nurse leaders and educators. *Journal of Nursing Administration, 42*(9), pp 410-417.

Melnyk, B., Fineout-Overholt, E., & Mays, M. (2008). The evidence-based practice beliefs and implementation scales: Psychometric properties of two new instruments (corrected; published erratum appears in *Worldviews on Evidence-Based Nursing*, 2009, *6*(1), 49). *Worldviews on Evidence-Based Nursing*, *5*(4), 208-216. doi:10.1111/j.1741-6787.2008.00126.x

Melnyk, B. M., & Gallagher-Ford, L. (2014). Evidence-based practice as mission critical for healthcare quality and safety: A disconnect for many nurse executives. *Worldviews On Evidence-Based Nursing*, *11*(3), 145-146. doi:10.1111/wvn.12037

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

Merrill, K. C., Andrews, D., Brewer, B. B., & Brown, D. S. (2015). Elevating research: An important role for nurse leaders. *Nurse Leader, 13*(3), 63-65. doi:10.1016/j.mnl.2014.08.006

Morris, Z. S., Wooding, S., Grant, J. (2011). The answer is 17 years, what is the question: Understanding time lags in translational research. *Journal of the Royal Society Medicine*, *105*, 510-520.

Newhouse, R., Dearholt, S., Poe, S., Pugh, L. C, & White, K. (2005a). Evidence-based practice: Practical approach to implementation. *Journal of Nursing Administration, 35*(1), 35–40.

Newhouse, R., Dearholt, S., Poe, S., Pugh, L. C., & White, K. (2005b). *The Johns Hopkins Nursing Evidence-Based Practice Model.* Baltimore, MD: Johns Hopkins University School of Nursing, The Johns Hopkins Hospital.

Patelarou, A. E., Patelarou, E., Brokalaki, H., Dafermos, V., Thiel, L., Melas, C. D., & Koukia, E. (2013). Current evidence on the attitudes, knowledge, and perceptions of nurses regarding evidence-based practice implementation in European community settings: A systematic review. *Journal of Community Health Nursing, 30*(4), 230-244. doi:10.1080/07370016.2013.838501

Pölkki, T., Kanste, O., Kääriäinen, M., Elo, S., & Kyngäs, H. (2014). The methodological quality of systematic reviews published in high-impact nursing journals: A review of the literature. *Journal of Clinical Nursing*, *23*(3/4), 315-332. doi:10.1111/jocn.12132

Preskill, H. & Jones, N. (2009). *A practical guide for engaging stakeholders in developing evaluation questions.* Princeton, NJ: Robert Wood Johnson Foundation. Retrieved from http://www.rwjf.org/en/library/research/2009/12/a-practical-guide-for-engaging-stakeholders-in-developing-evalua.html

Price Waterhouse Coopers' Health Research Institute. (2009). *The price of excess: Identifying waste in healthcare spending.* Retrieved from http:// www.pwc.com/healthindustries.

Rose, J., & Schlichter, B. R. (2013). Decoupling, re-engaging: Managing trust relationships in implementation projects. *Information Systems Journal*, *23*(1), 5-33. doi:10.1111/j.1365-2575.2011.00392.x

Rubin, J., Taylor, J., Krapels, J., Sutherland, A., Felician, M., Liu, J. L., . . . Rohr, C. (2016). *Are better health outcomes related to social expenditure? A cross-national empirical analysis of social expenditure and population health measures* (Report No. RR-1252-RC). Santa Monica, CA: RAND Corporation. Retrieved from http://www.rand.org/pubs/research_reports/RR1252.html

Sackett, D. L., Straus, S. E., Richardson, W. S., Rosenberg, W., & Haynes, R. B. (2000). *Evidence-based medicine: How to practice and teach EBM*. London, United Kingdom: Churchill Livingstone.

Sandström, B., Borglin, G., Nilsson, R., & Willman, A. (2011). Promoting the implementation of evidence-based practice: A literature review focusing on the role of nursing leadership. *Worldviews on Evidence-Based Nursing*, *8*(4), 212-223. doi:10.1111/j.1741-6787.2011.00216.x

Scala, E., Price, C., & Day, J. (2016). An integrative review of engaging clinical nurses in nursing research. *Journal of Nursing Scholarship, 48*(4), 423-430. doi:10.1111/jnu.12223

Schifalacqua, M. M., Shepard, A., & Kelley, W. (2012). Evidence-based practice: Cost-benefit of large system implementation. *Quality Management in Health Care*, *21*(2), 74-80. doi:10.1097/QMH.0b013e31824d196f

Schriner, C. C., Deckelman, S., Kubat, M. A., Lenkay, J., Nims, L., & Sullivan, D. (2010). Collaboration of nursing faculty and college administration in creating organizational change. *Nursing Education Perspectives, 31*(6), 381-386. doi:10.1043/1536-5026-31.6.381

Secret, M., Abell, M. L., & Berlin, T. (2011). The promise and challenge of practice-research collaborations: Guiding principles and strategies for initiating, designing, and implementing program evaluation research. *Social Work, 56*(1), 9-20. doi:sw/56.1.9

Sigma Theta Tau International. (2008). Sigma Theta Tau International position statement on evidence-based practice: February, 2007 summary. *Worldviews on Evidence-Based Nursing, 5*(2), 57-59.

Solomons, N., & Spross, J. (2011). Evidence-based practice barriers and facilitators from a continuous quality improvement perspective: An integrative review. *Journal of Nursing Management, 19*(1), 109-120. doi:10.1111/j.1365-2834.2010.01144.x

Stetler, C. B., Ritchie, J. A., Rycroft-Malone, J., & Charns, M. P. (2014). Leadership for evidence-based practice: Strategic and functional behaviors for institutionalizing EBP. *Worldviews on Evidence-Based Nursing, 11*(4), 219-226. doi:10.1111/wvn.12044

Stevens, K., (2013). The impact of evidence-based practice in nursing and the next big ideas. *Online Journal of Issues in Nursing, 18*(2), Manuscript 4. doi:10.3912/OJIN.Vol18No02Man04

Stokke, K., Olsen, N. R., Espehaug, B., & Nortvedt, M. W. (2014). Evidence based practice beliefs and implementation among nurses: A cross-sectional study. *BMC Nursing, 13*(1), 8. doi:10.1186/1472-6955-13-8

SurveyMonkey. (2016). *HIPAA compliance with SurveyMonkey.* Retrieved from https://www.surveymonkey.com/mp/hipaa-compliance/

Tart, R. C., Kautz, D. D., Rudisill, K. D., & Beard, E. L. (2011). Bridging the theory-practice gap: A practice-relevant research course for RN to BSN students. *Nurse Educator, 36*(5), 219-223. doi:10.1097/NNE.0b013e3182297c78

Voutilainen, A. (2016). Meta-analysis: Complex relationships between patient satisfaction, age and item-level response rate. *Journal of Research in Nursing, 21*(8), 611-620. doi:10.1177/1744987116655595

Warren, J. I., McLaughlin, M., Bardsley, J., Eich, J., Esche, C. A., Kropkowski, L., & Risch, S. (2016). The strengths and challenges of implementing EBP in healthcare systems. *Worldviews on Evidence-Based Nursing, 13*(1), 15-24. doi:10.1111/wvn.12149

White, K. M. (2012). Change theories and models: Framework for translation. In K. M. White & S. Dudley-Brown (Eds.). *Translation of evidence into nursing and health care practice* (pp. 49-60). New York, NY: Springer Publishing Company.

Wilkinson, J. E., Nutley, S. M., & Davies, H. T. (2011). An exploration of the roles of nurse managers in evidence-based practice implementation. *Worldviews on Evidence-Based Nursing, 8*(4), 236-246. doi:10.1111/j.1741-6787.2011.00225.x

Wilkinson, S. A., Hinchliffe, F., Hough, J., & Chang, A. (2012). Baseline evidence-based practice use, knowledge, and attitudes of allied health professionals. A survey to inform staff training and organisational change. *Journal of Allied Health, 41*(4), 177-184.

Xu, H., Rondeau, P. J., & Mahenthiran, S. (2011). The challenge of implementing an ERP system in a small and medium enterprise—A teaching case of ERP project management. *Journal of Information Systems Education*, *22*(4), 291-296.

Yackel, E. E., Short, N. M., Lewis, P. C., Breckenridge-Sproat, S. T., & Turner, B. S. (2013). Improving the adoption of evidence-based practice among nurses in Army outpatient medical treatment facilities. *Military Medicine, 178*(9), 1002-1009. doi:10.7205/MILMED-D-13-00191

Zaccagnini, M. E. (2014). Traditional advanced practice roles for the DNP. In M. E. Zaccagnini & K. W. White (Eds.), *The doctor of nursing practice essentials: A new model for advanced practice nursing* (2nd ed., pp. 303-354). Burlington, MA: Jones & Bartlett Learning.

Appendix A: Mission Statement, Goals, Objectives, and Activities

| **Program Mission Statement:** The Primary Investigator (PI) and Doctor of Nursing Practice (DNP) student will assist nurse leaders at one system entity to change organizational culture in order to support evidence-based practice (EBP) by providing education in the form of the EBP101 course. The project mission will be considered complete when the nurse leaders identify a champion to be a liaison with the system-wide Director of EBP and Research and begin to assimilate EBP into leadership practice. This project supports the system-wide Research and Innovation Council's goal to increase EBP organizational culture and readiness for EBP integration in order to achieve Magnet and Pathways to Excellence status for all entities. | | |
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| **Goals (and Impact)** | **Objectives** | **Activities** |
| Short-Term: Nurse leaders will support EBP integration by identifying strategies to overcome barriers and operationalize facilitators.<br><br>Impact: Nurse leaders will develop an organizational culture that supports EBP. | • Nurse leaders will analyze at least five articles that review organizational EBP barriers and facilitators to culture change as evidenced by completing the Johns Hopkins Nursing evidence-based practice (JHNEBP) model evidence appraisal tools by 09/05/2016.<br>• Nurse leaders will verbalize at least one first-step strategy for overcoming an EBP barrier that currently exists for their staff by 09/05/2016.<br>• Nurse leaders will predict one EBP facilitator, including rationale, that would work for their staff as evidenced by creating a miniature JHNEBP action plan (translation) by 09/05/2016. | • Choose at least seven articles for review and analysis in EBP101 course by 07/11/2016.<br>• Complete JHNEBP evidence appraisal tools, as well as the synthesis and recommendations tool by 08/01/2016.<br>• Finalize EBP101 course materials by 08/05/2016<br>• Review EBP101 course materials with preceptor (PI) by 08/12/2016.<br>• Submit course materials to Chief Nursing Officer by 08/13/2016.<br>• Present course with active learning/teaching methods in 4-hour segments to no more than 20 nurse leaders (10 from the target entity population) at a time during August and September 2016. |

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| Intermediate-Term: Staff nurses' knowledge, attitudes, and beliefs about EBP will increase.<br><br>Impact: EBP will be integrated throughout the entity as a standard of practice. | • Primary Investigator and Secondary Investigator will obtain IRB approval as evidenced by approval letter in internal system by 07/20/2016.<br>• Director of EBP and Research will distribute pre-implementation survey (organizational culture and readiness, beliefs, and use) to all nursing staff and leadership at entity upon organizational IRB approval as evidenced by email to nursing elist to be completed by target population by 08/11/2016.<br>• Stakeholders will select at least one EBP champion for the entity from within the target population, as evidenced by registration for internal Jump Start classes and JHNEBP Boot Camp, no later than 12/15/2016.<br>• Identified Champion(s) will assume role of leading, mentoring, and facilitating EBP organizational culture as evidenced by instituting at least one evidence-based institutional strategy to overcome an EBP barrier or operationalize a facilitator by 01/15/2017.<br>• Director of EBP and research will distribute post-implementation survey to all nursing leadership at entity as evidenced by email to entity admin and CNO for completion by 12/15/2016. | • Submit organizational IRB modification forms in conjunction with preceptor (PI) by 06/23/2013<br>• Monitor internal system in conjunction with preceptor for additional information or corrections needed to IRB modification between 06/23/2013 and 07/20/2016.<br>• Ensure pre-implementation survey close date of 08/11/2016.<br>• Information submitted to target population regarding next steps: Jump Start classes and JHNEBP Boot Camp by 11/01/2016.<br>• Discuss selection of possible champions with Primary Intended Stakeholders no later than 09/16/2016.<br>• Meet with potential champions no later than 10/03/2016.<br>• Identify champion(s) and meet with selected person(s) no later than 11/01/2016.<br>• Support champion in implementation of at least one institutional EBP strategy between 10/15/2016 and 12/15/2016.<br>• Submit email with post-implementation survey to CNO and Admin with consent letter from IRB approval no later than 12/01/2016.<br>• Ensure post-implementation survey close date of 12/15/2016 |

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| Long-Term: EBP integration leads to improved clinical practices and patient care, improved worker retention and satisfaction, decreased financial risk, and increased local, regional, and national recognition.<br><br>Impact: Pilot Project at this entity serves as a role-model for the organizational system. | All previous objectives and activities lead to accomplishing this long-term goal, with the exception of dissemination of the pilot project information, analysis, and evaluation. |

# Appendix B: Evidence Table and Appraisal

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Charrier, L., Allochis, M., Cavallo, M., Gregori, D., Cavallo, F., & Zotti, C. (2008, Oct.). Integrated audit as a means to implement unit protocols: A randomized and controlled study. *Journal of Evaluation in Clinical Practice*, *14*(5), 847-853. | To compare 2 protocol implementation strategies: Clinical–organizational integrated audits with feedback & presence of facilitators in the departments versus standard observation<br><br>To evaluate nursing operators of implementation strategy characterized by clinical–organizational integrated audits followed by feedback and presence of facilitators<br><br>To identify main difficulties in adopting behaviors consistent with protocol indications<br><br>To promote discussion and opinion exchange between operators and evaluator | RCT<br><br>Cluster-randomized, controlled, open trial methods<br><br>N=160 nurses<br><br>10 Departments of Hospital randomly assigned to control or experimental | Conducted within 18 months & divided into 5time points: preintervention investigation, three intermediate investigations with an interval of 3 months from one another and a final evaluation.<br><br>For almost all indicators, data show an increment in the adoption of correct practices | Carrying out an intervention aimed at improving adoption of 2 protocols as a whole, rather than single procedures<br><br>Audit intervention allowed highlighting subjective criticalities important in determining success or failure of implementation of effective practices | Time and human commitment needed for audit<br><br>Still could not improve some critical behaviors despite audits & observations<br><br>Hawthorne Effect | I-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Levin, R. F., Fineout-Overholt, E., Melnyk, B. M., Barnes, M., & Vetter, M. J. (2011). Fostering evidence-based practice to improve nurse and cost outcomes in a community health setting: A pilot test of the advancing research and clinical practice through close collaboration model. *Nursing Administration Quarterly*, *35*(1), 21-33. doi: 10.1097/NAQ.0b013e31820320ff | What is the effect of the ARCC model implementation on RNs beliefs, use, job satisfaction, and retention? | RCT<br><br>46 RNs (22 Exp.; 24 Control)<br><br>3 Regions in NYC' Visiting Nurse Service | EBP beliefs and use significantly increased with mentor.<br><br>Attrition decreased by 50% (increased retention) for the experimental group; no change for control group.<br><br>No statistical effect for either group R/T work satisfaction or productivity<br><br>Qualitatively, nurses reported greater sense of professionalism and increased respect for their nurse leaders demonstrated by collaboration. | Education alone will not change the organizational culture, mentoring and collaboration by nurse leaders increases the culture, beliefs and use (and contributes significantly to retention).<br><br>Implementing the ARCC model with mentors can increase nurses' beliefs regarding EBP and may augment attrition issues | Pilot study<br><br>Small convenience sample<br><br>Generalizability<br><br>Bias may have existed: PI was EBP mentor to experimental group<br><br>Admin in charge was supportive/facilitator, which leads to organizational culture: May have influenced results | I-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Liou, S. R., Cheng, C. R., Tsai, H. M., & Chang, C. H. (2013). Innovative strategies for teaching nursing research in Taiwan. *Nursing Research*, *62*(5), 335-43. | To determine whether teaching methodology increases engagement in EBP<br><br>Definitions:<br>o Traditional methods included didactic lecture, textbook readings, and research article critique<br>o Innovative methods based on millennial characteristics – student-centered approach | RCT<br><br>209 RN-BSN Students: Previous education is 5 yrs. 'Nursing College' (Diploma Program) and no research<br><br>Chang Gung University (Taiwan) | Same curriculum<br><br>Experimental group received innovative teaching methods<br><br>Role of the nurse educator to motivate and support students | Innovative methods resulted in higher engagement and knowledge regarding EBP<br><br>Attitudes toward research, 8 core competencies, value of teams, classroom engagement, & self-directed learning all increased<br><br>Enthusiasm for students, and appreciation for EBP and research increased when utilizing innovative teaching methodology | Did not list a power analysis<br><br>Empirical, but measuring based on qualitative characteristics (study design fit with outcomes) | I-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Aarons, G. A., Ehrhart, M. G., Farahnak, L. R., & Hurlburt, M. S. (2015, Jan.). Leadership and organizational change for implementation (LOCI): A randomized mixed method pilot study of a leadership and organization development intervention for evidence-based practice implementation. *Implementation Science: IS*, 10(11). doi: 10.1186/s13012-014-0192-y | To assess the feasibility, acceptability, and perceived utility of LOCI.<br><br>To assess preliminary effects of LOCI on supervisee-rated leader readiness and support behaviors.<br><br>H1: Leader participants in LOCI > control scores for feasibility, acceptability, & utility<br><br>H2: Qualitative data would support H1<br><br>H3: Clinicians supervised by LOCI leaders > control for Leader Readiness and Support for EBP<br><br>Full-Range Leadership (FRL) model | Mixed methods, two-arm randomized pilot study, quantitative surveys, qualitative data: surveys and focus groups<br><br>Supervisors randomly assigned to 6-month LOCI or to 2-session leadership webinar control<br><br>12 mental health service team leaders and their staff (n = 100)<br><br>3 different agencies providing mental health services in California | Quantitative and qualitative analyses support the intervention in regard to feasibility, acceptability, and perceived utility, as well as impact on leader and supervisee-rated outcomes<br><br>EBP Leader Readiness was not significant<br><br>LOCI promotes leaders being proactive & present while increasing leaders' knowledge of EBPs to address health issues<br><br>Organizational development interventions can improve workplace climate and patient-level outcomes<br><br>LOCI implementation intervention is feasible, acceptable strategy with utility to improve staff-rated leadership for EBP | LOCI: Viable strategy to support organizations in preparing for implementation and sustainment of EBP<br><br>LOCI promotes key leadership behaviors consistent with other approaches: Creating shared vision; demonstrate behaviors followers seek to emulate<br><br>Individual development in context of organizational development & change has potential to capitalize individual & organizational strengths<br><br>Strategies that assess, intervene, & support implementation at multiple organizational levels have greater likelihood of success in effective EBP deployment<br><br>A complementary approach leads to improved EBP implementation, sustainment, & public health impact.<br><br>Further studies needed: Rigor of LOCI impact on leader behaviors, implementation leadership, organizational context, and implementation outcomes | Small sample size<br><br>Self-reporting bias<br><br>Discrepancies in supervisor vs. clinician report of leader behavior which could not be pertinently examined for variability<br><br>Teams were in various stages of implementation & development creating variability in results<br><br>Strategies were measured in aggregate and may have had synergistic effects<br><br>Short time frame (6-months) | II-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Aarons, G. A. & Sommerfeld, D. H. (2012). Leadership, innovation climate, and attitudes toward evidence-based practice during a statewide implementation. *Journal of the American Academy of Child and Adolescent Psychiatry, 51*(4), 423-431. doi: 10.1016/j.jaac.2012.01.018 | To compare associations of transformational leadership (TL) & leader–member exchange (LME) with innovation climate (IC) & employee attitudes toward adoption & use of EBPs<br><br>H1: TL will be + associated with > IC<br><br>H2: TL will be + associated with LME<br><br>H3: LME will be + associated with > IC<br><br>H4: The effect of TL on IC will be mediated by LME<br><br>H5: TL will have a stronger positive relationship with IC for the EBPI group, but LME will be more important during SAU<br><br>H6: A more + IC will be associated with more + provider attitudes toward adopting EBP. | Longitudinal mixed-methods study<br><br>Treatment model was manipulated at the region level (n=6)<br><br>Teams in regions were randomized to coaching or not<br><br>140 case-managers in 30 teams participated in biannual web-based surveys<br><br>Oklahoma Children's Services system | Transformational leadership predicted higher innovation climate during implementation<br><br>Leader–member exchange predicted higher innovation climate during SAU.<br><br>Innovation climate was associated with more positive attitudes toward EBP for the EBPI group. | Strategies to enhance transformational leadership have potential to facilitate implementation efforts by promoting a strong climate for EBPI and positive provider attitudes toward adoption and use of EBP.<br><br>Leadership is important in moving innovations into large public service systems and community-based service organizations<br><br>Leader support for innovation implementation is important in improving organizational climate for implementation of innovation.<br><br>Improving leadership to improve subsequent team and provider buy-in, adoption, and use of EBPs should improve clinical outcomes. | Self-Reporting bias<br><br>Small sample size<br><br>TL and LME might have overlapping effects resulting in high inter-correlations | II-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Brown, C. R., Johnson, A. S., & Appling, S. E. (2011, Nov.-Dec.). A taste of nursing research: An interactive program introducing evidence-based practice and research to clinical nurses. *Journal for Nurses in Staff Development, 27*(6), E1-5. DOI: 10.1097/NND.0b013e3182371190 | To design, implement & evaluate EBP/Research educational intervention for nurses<br><br>To assess nurses' research attitudes<br><br>To develop and implement program and share knowledge with colleagues | Quasi-Experimental<br><br>Pre/Post Test<br><br>Experiential and educational intervention<br><br>111 Nurses → 42% with more than 15 yrs. Experience; 65% had BSN or higher<br><br>Mercy Medical Center, MD: Clinical Unit (Magnet Journey) | Percentage of participants who would initiate a nursing research project increased from 26% to 34%<br><br>No significant change in attitudes (80% positive prior) | Participation & mentoring increases use in practice<br><br>Structured educational & experiential program needed | Sample size: Staff ability to leave units to participate<br><br>Larger sample size may have provided different outcomes<br><br>Selection bias: High proportion of nurses with positive research attitudes<br><br>Convenience Sampling | II-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Curry, L. A., Linnander, E. L., Brewster, A. L., Ting, H., Krumholz, H. M., & Bradley, E. H. (2015). Organizational culture change in U.S. hospitals: A mixed methods longitudinal intervention study. *Implementation Science, 10*(1), 29-29. doi: 10.1186/s13012-015-0218-0 | To present theoretical foundation for the study, summarize key elements of the intervention, & describe the study methodology to evaluate intervention<br><br>H1: Positive, but less pronounced changes in facets of organizational culture & use of EBPs in peer hospital networks of intervention hospitals.<br><br>H2: Expect deep understanding of both the adoption and the spread of innovations by hospitals in a constantly changing environment, with emphasis on organizational culture.<br><br>Open systems theory<br><br>The Assess, Innovate, Develop, Engage, Devolve (AIDED) model of diffusion | Mixed methods, Longitudinal<br><br>Quantitative data: annual surveys<br><br>Qualitative data: in-person, in-depth interviews<br><br>2-year intervention<br><br>10 U.S. hospitals & peer hospital networks | 3 Components: a) Annual meeting of 10 hospitals; b) semi-annual workshops; & c) remote support for hospitals through web-based platform<br><br>Shifts in hospital organizational culture associated with lower mortality rates for AMI<br><br>Use of targeted EBP associated with lower mortality for AMI<br><br>In-hospital AMI mortality: processes across all intervention hospitals over time. | Organizational culture shapes the performance of institutions in important ways: Complex interventions promote hospital organizational culture change<br><br>Targeted EBP improves outcomes<br><br>As organization becomes EBP enculturated, quality and safety improves | Generalizability<br><br>Hospitals were not traditionally randomized; rigor not as strong<br><br>Data lag: Assessing secondary data instead<br><br>Hawthorne Effect: Social desirability response bias | II-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Kim, S. C., Brown, C. E., Fields, W., & Stichler, J. F. (2009, Jan. 13) Evidence-based practice-focused interactive teaching strategy: A controlled study. *Journal of Advanced Nursing*, *65*(6), 1218–1227. doi: 10.1111/j.1365-2648.2009.04975.x | To compare the knowledge, attitudes, use and future use of EBP between the experimental and control groups<br><br>To determine strength of E-FIT intervention as a predictor variable for the knowledge, attitudes, use and future use of EBP<br><br>Rogers' Diffusion of Innovation and Self-Efficacy Theory | Quasi-Experimental<br><br>Controlled, interventional, Pre/Post Test<br><br>N=233 Senior 4th yr. nursing students enrolled in Nursing Leadership Theory and Clinical Practicum Courses<br><br>N=91 for final pre/posttest completion<br><br>Two undergraduate BSN Programs (California) | Experimental group (n = 88) received the E-FIT strategy intervention<br><br>Control group (n = 120) received standard teaching<br><br>Knowledge, Attitudes and Behaviors Questionnaire for Evidence-Based Practice used to assess the effectiveness of the E-FIT strategy<br><br>No statistically significant differences in Attitudes toward Evidence-Based Practice and Future Use of Evidence-Based Practice | EBP-focused interactive teaching strategy was effective in improving knowledge and use of EBP among nursing students<br><br>Self-Confidence in clinical decision-making was a predictor for use and future use | Findings partly consistent with previous quasi-experimental interventional studies: First with control<br><br>Self-reported assessment<br><br>Long-term impact/ outcomes not measured<br><br>Lack of randomization & difference in timing of ed. Interventions: confounding variables or bias may limit internal validity of findings | II-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Chang, S. C., Huang, C. Y., Chen, S. Y., Liao, Y. C., Lin, C. H., & Wang, H. H. (2013). Evaluation of a critical appraisal program for clinical nurses: A controlled before-and-after study. *Journal of Continuing Education in Nursing, 44*(1), 43-48. | To determine whether educational interventions increase EBP usage, knowledge, and confidence<br><br>EBP lacking in Nursing curricula | Controlled before-and-after pre/post<br><br>Nurses at all levels of clinical ladder with interest in EBP → N=49 with 100% completion rate<br><br>1,676-bed Taiwanese medical center - National Health Research Institutes | Lectures, practice, & small group discussion integrated into 1-day educational intervention<br><br>Homework given → Critical appraisal of EBP<br><br>Created survey measured EBP knowledge, perceived confidence, & program effectiveness | A modest educational intervention can significantly improve knowledge of EBP use and appraisal<br><br>Perceived barriers can be overcome with simple education<br><br>Those 'charged' with implementing on unit showed knowledge improvement and confidence (motivation) | Generalization<br><br>Healthcare facilities: Environment barriers may be overcome fostering EBP/ Research culture<br><br>Formal Education: Initial barriers may be overcome earlier | II-B |
| Hines, S., Ramsbotham, J., & Coyer, F. (2016). Interventions for improving the research literacy of nurses: A systematic review. *JBI Database of Systematic Reviews & Implementation Reports, 14*(2), 256-294. doi: 10.11124/jbisrir-2016-2378 | What is the effectiveness of various educational interventions in order to improve research literacy for RNs?<br><br>Behavioral, educational, and socio-cognitive theories | Systematic Review<br><br>10 Studies: All research | Interactivity includes (but is not limited to):<br>○ Guided clinical projects<br>○ Journal clubs<br>○ Group discussions/activities<br>○ Hands-on role-play of research concepts | To increase research literacy among nurses, use educational interventions with interactivity<br><br>Theory guided interventions improved results<br><br>Length of education, or format of education, did not matter<br><br>Educational interventions based on a theory improve quality outcomes and patient outcomes. In addition, interactivity is key when intervening with any educational activity. The length and format of the activity do not matter. | Unable to perform meta-analysis due to lack of consistency in interventions and outcomes<br><br>Lack of strong evidence on topic<br><br>Search screening performed by one reviewer: However, no additional articles retrieved in reference checks; believed to be mitigated | II-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Harsh, J. A., Maltese, A. V., & Tai, R. H. (2011, Sept. 1). Undergraduate research experiences from a longitudinal perspective. *Journal of College Science Teaching*, *41*(1), 84-91. | What are the indicated benefits of participation in UREs?<br><br>Is the type or style of URE associate with certain perceived benefits?<br><br>URE = Undergraduate Research Experiences | Mixed-methods: Qualitative and Non-Experimental<br><br>Exploratory, semi-structured interviews, & surveys<br><br>Graduate school or beyond: Chemistry or physics<br><br>34% response rate<br>9 sub-populations: N=3014 national survey<br><br>Undergraduate Math, Science, & Technology Programs<br><br>Multiple site study | Gains related to the research process, laboratory skills, and familiarity with scientific methodologies<br><br>Survey responses grouped by research area (setting) and Undergraduate experiences | Exposure to authentic research considered most valued attribute<br><br>Role of URE prominent to build confidence for conducting research and developing basic lab techniques<br><br>Research setting (site "type") had limited effect on URE benefits<br><br>Should structure UREs with collaborative student-mentor model for most positive effect | Survey sampling: Membership lists might not represent target population<br><br>Sampling Bias | III-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Hauck, S., Winsett, R. P., & Kuric, J. (2013). Leadership facilitation strategies to establish evidence-based practice in an acute care hospital. *Journal of Advanced Nursing, 69*(3), 664-674. doi: 10.1111/j.1365-2648.2012.06053.x | What is the importance of direct care, indirect care, and nurse leaders' belief, use, and organizational culture and readiness before and after implementation of an EBP strategic plan? | Non-Experimental (Prospective, Descriptive, Comparative)<br><br>427 RNs (Pre) & 469 RNs (Post) → Categories: Direct Care, Indirect Care, Nurse Leaders<br><br>429 Bed, Non-teaching, Faith-based Hospital in Midwest | Seven strategies included with tactics/goals/times assessed for individual institutions:<br>o Establish EBP and NR support<br>o Facilitate RN venue/avenue to discuss EBP<br>o Mentors<br>o Champions on units<br>o Facilitate nurse leaders' promotion of EBP culture<br>o Disseminate EBP/NR outcomes with recognition<br><br>Improve EBP quality outcomes for/based on nursing sensitivity indicators | Strategic planning implementation can enculturate organization for EBP<br><br>Beliefs increased, but use remained low<br><br>Culture increased significantly!<br><br>Readiness increased and all acknowledged progress toward achievement of strategic plan initiatives<br><br>Overall, direct care RNs had lowest baseline scores and highest increases! | Cross-sectional convenience sample: Sampling to evaluate paired changes<br><br>Did not assess/evaluate individual implementations for impact: Individual implementations were synergistic | III-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Melnyk, B., Fineout Overholt, E., & Mays, M. (2008, 4th Qtr.). The evidence-based practice beliefs and implementation scales: Psychometric properties of two new instruments [corrected] [published erratum appears in Worldviews Evid Based Nurs 2009 1st Quarter;6(1):49]. *Worldviews On Evidence-Based Nursing, 5*(4), 208-216. doi: 10.1111/j.1741-6787.2008.00126.x | To report on the development and psychometric properties of 2 new scales: (1) the 16 item EBP Beliefs Scale that allows measurement of a person's beliefs about the value of EBP and the ability to implement it, and (2) the 18-item EBP Implementation Scale that allows measurement of the extent to which EBP is implemented<br><br>Transtheoretical Model of Health Behavior Change<br><br>Advancing Research and Clinical practice through close Collaboration (ARCC) model | Post-Test Intervention<br><br>N=394 nurses<br><br>Completed the scales after attending continuing education workshops<br><br>Residents of Arizona, Colorado, New Jersey, Ohio, and Texas in the U.S. who had attended previous CE Workshops by the authors in 2005-2006 | Cronbach's alpha was > .90 for each scale.<br><br>Principal components analysis indicated that each scale allowed measurement of a unidimensional construct.<br><br>Strength of EBP beliefs and the extent of implementation increased as educational level increased, and as responsibility in the workplace increased<br><br>Participants were divided into five subgroups on the basis of age decades. The strength of beliefs in EBP significantly increased with age<br><br>Role was significantly associated with EBP beliefs and implementation with nurse educators and faculty having significantly stronger beliefs in EBP and implementing EBP significantly more frequently than did staff nurses | While formal training in EBP was not prerequisite to beliefs about EBP, training facilitated implementation of EBP.<br><br>Graduate education increases appreciation of the positive impact of EBP and instills a desire to use EBP to improve patient outcomes<br><br>In order for EBP to be consistently implemented in health care organizations, a culture of best practice needs to be established, in which all nursing professionals, regardless of educational preparation, have an important role in advancing EBC.<br><br>Initial evidence was provided to support the reliability and validity of the EBP Beliefs and Implementation Scales in a heterogeneous sample of practicing nurses<br><br>Use of the scales in future research could generate evidence to guide EBP implementation strategies in practice and education.<br><br>Results could establish the extent to which EBP is being implemented and its effect on clinician satisfaction and patient outcomes | Test-retest reliability not measured: The instruments' stability is unknown<br><br>Cross-Validation needed for generalizability<br><br>Predictive Validity unknown: Recommend longitudinal studies<br><br>Sensitivity to intervention unknown: Controlled intervention study recommended | III-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Melnyk, B. M., Gallagher-Ford, L., Thomas, B. K., Troseth, M., Wyngarden, K., & Szalacha, L. (2016, Feb.). 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 | To describe the EBP beliefs and level of EBP implementation by chief nurse executives (CNEs)<br><br>To describe CNEs' perception of their hospitals' EBP organizational culture<br><br>To describe CNEs' top priorities<br><br>To describe the amount of budget invested in EBP<br><br>To describe hospital performance metrics | Descriptive survey<br><br>N=276 CNEs surveyed with the EBP-B scale, the EBP-I scale, & the Organizational Culture and Readiness scale for EBP: 3,901 initially; 7% Response with completion rate<br><br>68% Beds < 300<br><br>18% Magnet<br><br>> 2/3rds had < ½ BSN RNs<br><br>CMMS Core Measures & NDNQI also collected<br><br>Nationally (45 states & DC) | > 1/3rd of CNE hospitals not meeting NDNQI performance metrics<br><br>Almost 1/3rd CNE hospitals above core measures benchmarks (falls, pressure ulcers)<br><br>~ 25% not sure of EBP steps<br><br>44% not sure could implement EBP in time efficient manner<br><br>> 50% CNEs/CNOs believed EBP is not or somewhat practiced in organization<br><br>48% of CNEs unsure how to measure outcomes of services delivered to patients<br><br>> ½ not accessed databases in 8 wks.<br><br>72% allocate no to little fiscal resources<br><br>Only 3% cited EBP as top priority | EBP implementation of CNE hospitals is relatively low<br><br>CNEs believe EBP results in high-quality care, yet ranked low priority with little budget allocation<br><br>In order for Triple Aim to be reached, EBP needs to be foundation of care delivered, using an interprofessional team-based care model<br><br>To achieve higher healthcare quality & safety with lower costs, CNEs & hospital administrators need to invest in providing resources & EBP culture so clinicians can routinely implement EBP as foundation of care<br><br>Nurse executives must be provided with knowledge that EBP should be consistent foundation of care delivery as it is linked to improved outcomes, which are measurable & meaningful ROIs in EBP<br><br>Organizations need to provide evidence that policies & procedures are based on best evidence so clinicians are provided with rigorous EBP guidelines & mechanisms to support implementation | Convenience Sample<br><br>Low response rate<br><br>Generalizability | III-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Sandström, B., Borglin, G., Nilsson, R., & Willman, A. (2011, 4th Qtr.). Promoting the implementation of evidence-based practice: A literature review focusing on the role of nursing leadership. *Worldviews on Evidence-Based Nursing, 8*(4), 212-223. doi: 10.1111/j.1741-6787.2011.00216.x | How does nursing leadership influence the process of implementing EBP?<br><br>To uncover current knowledge about leadership & process of implementing EBP in nursing<br><br>Promoting Action on Research Implementation in Health Services (PARIHS)<br><br>Diffusion of Innovations | Literature Synthesis<br><br>7 papers (2 integrative reviews; 2 quantitative; 3 qualitative)<br><br>Inclusion: Healthcare professionals with focus on Leadership, clinical, & managerial leaders, & EBP process and implementation | Leadership is vital for implementing EBP process organizational enculturation<br><br>Leadership characteristics were intrinsic in the creation of a nursing milieu that is open & responsive to EBP implementation<br><br>Outcomes sorted to 3 areas: Characteristics of organization, leader, and culture | Certain leadership characteristics are needed to promote EBP implementation<br><br>Managers can promote EBP implementation by providing feedback, role-modeling, demonstrating EBP importance, and leading by example<br><br>EBP enculturation cannot occur without supportive leadership<br><br>Leadership is characterized by the sum, or > the sum, of personal qualities, formal education & context, & organization where practiced.<br><br>Future research focusing<br><br>More research is needed and leadership cannot be studied in isolation or without being clearly defined. | Only one included study appraised as high quality design<br><br>Limited to CINAHL, Medline, & Cochrane<br><br>Heterogeneous designs | III-A |

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|---|---|---|---|---|---|---|
| Stokke, K., Olsen, N. R., Espehaug, B., & Nortvedt, M. W. (2014, Mar.). Evidence based practice beliefs and implementation among nurses: A cross-sectional study. *BMC Nursing, 13*(1), 8. doi: 10.1186/1472-6955-13-8 | To map self-reported beliefs towards EBP and implementation among nurses<br><br>To investigate a positive correlation between EBP beliefs and implementation | Descriptive, comparative, cross sectional design<br><br>N=356 nurses (185 nurses: 52% rate of completion)<br><br>Nurses working at Norwegian specialist cancer hospital Sept. 20th to Dec. 6th 2010<br><br>Used EBP Beliefs & Implementation scales | Positive correlation between EBP beliefs implementation<br><br>Statistical significant positive, but moderate correlation between all subscales of EBP Beliefs: Knowledge, Resources, Value of EBP, & Difficulty and time, with EBP Implementation Scale<br><br>Highest correlation observed for beliefs related to knowledge<br><br>Significantly higher scores on EBP Beliefs for those educated<br><br>EBP working groups had significantly higher scores on EBP Beliefs<br><br>Beliefs and implementation are positively correlated<br><br>Beliefs related to knowledge have greatest effect on EBP implementation | Having knowledge and taking part in EBP working groups is important<br><br>EBP knowledge, skills, leadership & administrative support, financial & human resources, & developing collaborations with potential mentors are very important<br><br>Nurses have + attitude towards EBP, but practice it less<br><br>Nurses can be taught how to use & perform EBP, but ongoing support in facilitating EBP culture is necessary<br><br>Implementing EBP requires a system change implicating individuals, teams, and the organization<br>Effective change management plays fundamental role facilitating organizational environment that encourages EBP implementation<br><br>Lead management plays essential role in technical and facilitative leadership, organization's policies, procedures, values, established habits, routines, financial and human resources & supervision of clinical & non-clinical processes involved in EBP implementation. | Low response rate<br><br>Hawthorne Effect: Socially desirable response bias<br><br>Generalizability: One hospital, one point in time<br><br>Self-reporting bias | III-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Warren, J. I., McLaughlin, M., Bardsley, J., Eich, J., Esche, C. A., Kropkowski, L., & Risch, S. (2016, Feb.). The strengths and challenges of implementing EBP in healthcare systems. *Worldviews on Evidence-Based Nursing, 13*(1), 15-24. doi: 10.1111/wvn.12149 | To describe RNs attitudes, beliefs, & perceptions about readiness and implementation of EBP in multihospital healthcare system.<br><br>To examine differences by demographics, professional characteristics, and by nursing leadership vs. clinical nurses differed in beliefs, implementation behaviors, and perceptions of organizational readiness for EBP<br><br>What are RNs' individual beliefs and attitudes toward EBP?<br><br>What are self-reported behaviors for implementing EPB into practice?<br><br>What are perceptions of individual organization to integrate EBP (organizational readiness)? | Retrospective, descriptive, cross-sectional survey design<br><br>N=1608: 24% response rate (initial N=6800) from May-July 2012<br><br>9-hospital system located in mid-Atlantic region (MD & DC)<br><br>EBP Beliefs, Implementation, and Culture & Readiness Scales | Hospital healthcare systems standardizing practices based on EBP in effort to reduce inconsistencies in care & improve quality & patient safety while reducing costs.<br><br>Value-based purchasing aligns healthcare delivery & payment system with quality and costs<br><br>RNs in Magnet hospitals reported more resources and more positive beliefs about organizational readiness for EBP<br><br>There is a lack of human and fiscal resources to promote an EBP culture<br><br>RNs acknowledged lacked of confidence & skills to implement EBP, claimed to be knowledgeable accessing resources, but few reported performing activity | Transformational nurse leaders can share vision for implementing EBP and embrace Magnet principles<br><br>Transformational nurse leaders can allocate resources to create system-wide online EBP education plan with EBP competencies & tool kit to increase RN exposure to EBP and standardize practice<br><br>Promoting free & accessible EBP MOOCs & share best practices online & internationally<br><br>Magnet conferences help to lead, educate, and mentor nurses with strategies to systematically increase EBP uptake<br><br>Lack of autonomy, leadership support, and inclusion in clinical practice decision making, as well as physician resistance contribute to low EBP implementation by RNs<br><br>Younger RNs with fewer yrs. in practice showed more + reactions toward EBP and organizational readiness | Low response rate<br><br>Convenience Sample<br><br>Demographics of the sample were not representative of multihospital healthcare system<br><br>System-wide changes were occurring: May have affected results | III-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Häggman-Laitila. A., Mattila, L. R., & Melender, H. L. (2016). Educational interventions on evidence-based nursing in clinical practice: A systematic review with qualitative analysis. *Nurse Education Today, 43*, 50 59. doi: 10.1016/j.nedt.2016.04.023 | To gather, assess and synthesize the currently available evidence of educational interventions on evidence-based nursing | Systematic Review with Qualitative Analysis – Narrative Synthesis<br><br>8 Articles: Research – Quantitative & Qualitative from 2008 to 2015<br><br>Inclusion criteria: nurses or nurses and other healthcare professionals; Described EBN educational intervention, evaluated it, & reported outcomes | Most popular teaching/learning methods were lectures/didactic presentations and group work<br><br>Interventions encouraged learners to critically examine and evaluate practice<br><br>Interventions improved participants' capacity to identify need for research evidence in clinical practice | Interventions should provide participants with sufficient competences for implementing EBN steps focusing on evidence implementation in patient care<br><br>Outcome assessment of interventions should cover all learning categories of EBN focusing on medium to long-term effectiveness.<br><br>Curricula need to include learning goals on attitudes, knowledge, skills and practice focusing on implementation of evidence in patient care.<br><br>Combining relevant adult learning, organizational, and change theories is useful for successful EBN change and implementation | Heterogeneity<br><br>Only 1 RCT<br><br>Need to include detailed descriptions of contents, pedagogical solutions, learning contexts and intervention evaluation measurement in order to generalize | III-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Mansour, T., & Porter, E. (2008, Nov.). Educators' experience of teaching nursing research to undergraduates. *Western Journal of Nursing Research, 30*(7), 888-904. | For nurse educators, what is it like to teach research to undergraduate nursing students? | Qualitative: Descriptive phenomenology, cross-sectional design<br><br>60 potential participants with N=12 Doctorate Nurse Educators: 20% survey completed demographic and teaching experience<br><br>Research teaching experience = 4 mos. - 15 yrs.<br><br>Undergraduate Nursing Program (BSN) | Inclusion criteria were (a) having taught undergraduate research as a course or as part of a course at least once and (b) having access to an e-mail account.<br><br>Enhancing student abilities to learn about research and personal abilities to teach research | Teaching research is multifaceted<br><br>Challenge to make research relevant and concrete<br><br>Expected (Self) to give individual, time-consuming attention to students with the demands of maintaining own research<br><br>Focus was on defining process of pedagogy | Relatively low participation rate: Yet twice size needed for study<br><br>Cross-Sectional Design: Could have been longitudinal due to teaching<br><br>Email interviews as opposed to in-person<br><br>Generalizability: Participants from state, research institutions (most) | III-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Patelarou, A. E., Patelarou, E., Brokalaki, H., Dafermos, V., Thiel, L., Melas, C. D., & Koukia, E. (2013, Oct.-Dec.). Current evidence on the attitudes, knowledge, and perceptions of nurses regarding evidence-based practice implementation in European community settings: A systematic review. *Journal of Community Health Nursing, 30*(4), 230-244. doi: 10.1080/07370016.2013.838501 | To summarize the descriptive studies examining the existing attitudes, perceptions and knowledge toward EBP among nurses working in European Community settings | Systematic Review<br><br>6 quantitative cross-sectional studies (4 included postal surveys) | There is a gap in the existing knowledge regarding EBN<br><br>Attitudes toward EBN is more positive among nurses with knowledge of EBN & shorter professional experience.<br><br>Differences exist in non-community settings in regard to main facilitators of EBN implementation (research opportunities, proper education, & access to knowledge)<br><br>Medical dominance and physicians' resistance to change are considered the main barriers to EBP promotion and protocol application<br><br>A large # of nurse managers believe EBP implementation is not management responsibility or not qualified or experienced enough to embrace EBP | Make EBP education part of nursing curricula and postgraduate courses<br><br>Educational programs, workshops, and on-going learning activities play a significant role in nursing staff being involved in EBP<br><br>Mentoring promotes change agents for advanced or EBP experienced irrespective of workplace<br><br>The nurse manager needs to play central role in EBP implementation by ameliorating process obstructing factors<br><br>The recruitment of EBP-minded leadership and nurse managers' positive attitudes toward EBP can be vital to successful utilization of evidence among nursing staff | Single database PubMed<br><br>Time period between 1974 & 2012 for search: Included were 2004 to 2012<br><br>Heterogeneous studies included: Findings could not be definitive | III -B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Stetler, C. B., Ritchie, J. A., Rycroft-Malone, J., & Charns, M. P. (2014). Leadership for evidence-based practice: Strategic and functional behaviors for institutionalizing EBP. *Worldviews on Evidence-Based Nursing*, *11*(4), 219-226. doi: 10.1111/wvn.12044 | What are behaviors used by EBP leaders to facilitate EBP organizational (and individual) change, and who are those leaders? | Qualitative: Interviews, Focus Groups, Observations & Surveys<br><br>59 Nurse Leader interviews; 14 Focus groups; Document Reviews, Observations, Surveys<br><br>Two Acute Care Hospitals of similar size and composition | Leaders in an EBP organizational culture:<br>o Maintain and expect EBP as well as functionalize and operationalize EBP<br>o Role model EBP<br>o Use journal clubs<br>o Consistently use EBP language and expect its use | Alignment is key (planning/ organizing) along with strategic thinking and communication to build and sustain organizational EBP culture<br><br>Supportive behaviors of leaders remove organizational barriers to EBP<br><br>Strategic alignment was necessary for formal or informal leaders to institutionalize EBP.<br><br>Successful EBP leaders were transformational & instituted role-modeling, education, self-participation, & communication | Focused on context of organizational EBP culture and therefore could have missed some leader behavioral information<br><br>Credibility was limited by literature & theory cross-verification<br><br>Two sites only; an amazing number of interviews and data was retrieved. | III-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Wilkinson, S. A., Hinchliffe, F., Hough, J., & Chang, A. (2012, Winter). Baseline evidence-based practice use, knowledge, and attitudes of allied health professionals. A survey to inform staff training and organisational change. *Journal of Allied Health, 41*(4), 177-184. | To inform development of intervention program promoting application of evidence to Allied Health practice<br><br>To capture baseline measurements of the level of EBP self-efficacy, outcome expectancy, knowledge and use prior to training and organizational changes to support EBP<br><br>Social-Cognitive Theory | Prospective Online Survey<br><br>All 252 Allied Health staff invited: N=182 survey completion (72% response rate)<br><br>Clinicians from: Audiology, Nutrition & Dietetics, Occupational Therapy, Physiotherapy, Psychology, Social Work, & Speech Pathology<br><br>7 co-located public & private adults, children's & mothers' hospitals: 944 bed | Professional background, knowledge and training in EBP & research processes collected<br><br>Modification of 26-item EBP-self-efficacy scale including 2 additional items<br><br>8-Item EBP-outcome expectancy scale<br><br>7-Item non-validated quiz existing quiz used by hospital to assess EBP knowledge & use<br><br>EBP-use scores for social work and occupational therapy were significantly lower than from nutrition and dietetics, physiotherapy, and psychology | Despite positive attitudes about belief in and knowledge of EBP, self-reports of EBP processes do not indicate systematic application in allied health workplace<br><br>EBP self-efficacy and EBP outcome expectancy higher with previous training | Unexplained variance in models: Only partly explained the EBP constructs<br><br>Varied Disciplines | III-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Wilkinson, J. E., Nutley, S. M., & Davies, H. T. (2011). An exploration of the roles of nurse managers in evidence-based practice implementation. *Worldviews On Evidence-Based Nursing*, *8*(4), 236-246. doi: 10.1111/j.1741-6787.2011.00225.x | To explore & explain the EBPI role of NMs working in acute health care settings in Scottish Health Boards.<br><br>Pettigrew's contextual framework | Qualitative Case Study (documentary data, interview data, observational data of organizational context in form of field notes) | Important not to overstate progress level<br><br>Nurses felt medical dominance in decisions about the local development & EBP adoption was a significant hindrance<br><br>Inability of NMs to make EBPI roles more of reality relates to complex interplay of contextual factors, including wide responsibilities of NMs and incomplete understanding of EBPI processes<br><br>NMs underestimate EBPI complexity, viewing main responsibility with individual nurses despite evidence | EB nursing likely to have a higher profile in organizations where Nurse Directors and NMs champion and support it<br><br>Nurse Directors' and NMs' ambivalence about EBPI has negative effect on the value placed on it by their staff<br><br>Scope for NMs to become more supportive through actions: Greater presence in clinical areas; More explicit communication about EBP; More specific EBPI responsibility delegation<br><br>Scope for NMs to be more aware of EBPI organizational strategies and to act as direct link between various initiatives<br><br>Potential role for NMs as mediators between nursing and medical staff on EBPI issues identified, which could ameliorate a factor that hinders EBPI progress | Generalizability | III-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Sigma Theta Tau International. (2008, 2nd Qtr.). Sigma Theta Tau International position statement on evidence-based practice: February 2007 summary. *Worldviews on Evidence-Based Nursing, 5*(2), 57-59. | What is EBP and how should it be utilized in the workplace by nurses? | Position Statement (Summary)<br><br>None | EBP must take into account research, evidence, person-centered decision-making processes, clinical evidence (or "expertise"), and non-research information.<br><br>Diffusion and dissemination creates EBP uptake, which, in-turn, increases diffusion and dissemination | Organizations and practitioners alike, must be responsible for practice changes, championing EBP, and piloting/developing interactive strategies for EBP.<br><br>Basic recommendation is that EBP must take into account research, evidence, be person-centered in decisions, clinical expertise, and incorporate non-research information.<br><br>Diffusion and dissemination are cyclical to EBP uptake.<br><br>Organizations and practitioners are responsible for practice changes, championing EBP, piloting and developing EBP interactions. | None noted → It is a position statement summary, so it is short, but well supported | IV-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
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| Alzayyat, A. S. (2014). Barriers to evidence-based practice utilization in psychiatric/ mental health nursing. *Issues in Mental Health Nursing*, *35*(2), 134-143. doi: 10.3109/01612840.2013.848385 | What barriers exist, especially in behavioral health, to implementing EBP organizational cultures and how can these be overcome?<br><br>None | Expert Opinion<br><br>None | EBP hierarchy should be considered in context of levels of evidence that exist; it is okay that lower levels of evidence are in projects as that is what is part of behavioral health<br><br>Implications need to be consistently written in journals and disseminations need to be written in understandable terms in journals that direct care nurses (in behavioral health)<br><br>Other necessities include organizational facilitators, time, autonomy, training, and collaboration. | RCTs are not feasible for behavioral health.<br><br>Computer training (basic computer skills, internet and database search skills) is a necessity<br><br>EBP process and appraisal education is a necessity<br><br>Journal clubs need to be well managed, facilitated, and implemented<br><br>More behavioral health research needs to be integrated by collaborating researchers with clinicians and ensuring publications are written to be understood.<br><br>Linking implications to practice is necessary. Organizations must support in terms of time, autonomy, and interventions, such as computer and EBP competencies and well-managed journal clubs. | Opinions are own<br><br>Responsible for content | V-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Melnyk, B. M. (2014, Feb.). 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 | To review the "so what" outcome factor, which is the term used for conducting research with high impact potential to positively change healthcare systems, reduce costs, and improve outcomes for patients and their families | Expert Opinion<br><br>Editorial (Usually not included in Evidence, but has chapter in book upon which this editorial is based has become landmark) | "So what" is prevalence of problem?<br><br>"So what" will be end outcome of the EBP project once completed?<br><br>"So what" difference will the project make in improving healthcare quality, costs, & patient outcomes?<br><br>Who will care about the study's outcomes (e.g., healthcare providers, systems)?<br><br>Once you have outcomes from the project, what are you going to do with them besides presenting or publishing findings?<br><br>If an intervention is being developed/ tested, will it be feasible & cost-effective for providers, hospitals, or healthcare agencies to adopt & implement?<br><br>How will you get your research translated into clinical practice to improve care & patient outcomes? | Conduct studies with impact: Measure outcomes that tap healthcare quality, costs, & pt. outcomes ("so what" factors)<br><br>Conduct comparative-effectiveness trials supporting efficacious interventions to improve health outcomes<br><br>Prepare next generation of researchers & doctorally prepared clinicians to address "so what" factors in research & EBP or QI projects – form transdisciplinary teams for speed of translation<br><br>Teach key concepts early in education: Cost analysis & strategies to rapidly translate research-based findings into clinical practice; build healthcare & academic systems steeped in EBP enculturation<br><br>Encourage PhD students to do intervention studies when sufficient qualitative & descriptive research about problem exists<br><br>Grow more innovators not steeped in tradition; Accelerate use of technology in research & EBP<br><br>Address gaps in research that have poor/lacking evidence | None: Summary of chapter in book with additional references<br><br>Book chapter: Melnyk, B. M., & Morrison-Beedy, D. (2012). Setting the stage for intervention research: The "so what," "what exists" and "what's next" factors. In B. M. Melnyk & D. Morrison-Beedy (Eds.), designing, conducting, analyzing and funding intervention research. A practical guide for success (pp. 1-9). New York, NY: Springer Publishing. | V-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Melnyk, B. M. (2016, Feb.). An urgent call to action for nurse leaders to establish sustainable evidence-based practice cultures and implement evidence-based interventions to improve healthcare quality. *Worldviews on Evidence-Based Nursing, 13*(1), 3-5. doi: 10.1111/wvn.12150 | To synthesize current edition of Worldviews on Evidence Based Nursing Articles – Specifically the EBP organizational culture's effect on integration | Expert Opinion<br><br>Editorial (Normally would not be included in Evidence: References included) | EBP requires a change in behavior<br><br>Leading by example is critical for nurses in the organization to follow suit<br><br>Clinicians who do not believe in the value or relevance of an EBP intervention are unlikely to adopt and implement it in real world clinical settings.<br><br>EBP is the direct pathway to improving quality & outcomes as well as decreasing healthcare costs. | Educational efforts must be targeted to CNEs & CNOs along with nurse managers so it is understood that EBP is a critical direct pathway to achieving healthcare quality & safety as well as reducing healthcare costs<br><br>Without a culture & environment that support EBP, evidence-based care by clinicians is not likely to be consistently implemented & sustained<br><br>Without top support, role modeling, & monetary investment from nursing leaders, EBP will not flourish & healthcare outcomes will not be substantially improved.<br><br>Cultures & environments that include resources, EBP mentors, & easy to access tools for EBP must also be developed for evidence-based care to sustain.<br><br>Researchers must conduct more intervention research to gather evidence on what works best to facilitate EBP that sustains. | None | V-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Melnyk, B. M., & Gallagher-Ford, L. (2014). Evidence-based practice as mission critical for healthcare quality and safety: A disconnect for many nurse executives. *Worldviews On Evidence-Based Nursing, 11*(3), 145-146. doi: 10.1111/wvn.12037 | To synthesize current edition of Worldviews on Evidence Based Nursing Articles – Specifically the EBP disconnect for nurse executives | Expert Opinion<br><br>Editorial (Normally would not be included in Evidence: References included) | Nurse executives, in a national survey asked about priorities, ranked quality & safety at top of list, but EBP at bottom.<br><br>Indicates a disconnect between EBP & key healthcare outcomes among nurse leaders: Strong evidence supports EBC delivery results in achieving healthcare triple aim: High quality care, improved patient outcomes, & reduced costs<br><br>It is critical for nurse executives to be helped to understand the gap between EBP and impact on clinical outcomes and ROI<br><br>Nurse executives must be provided evidence on the link between EBP, outcomes, & ROI so they see value of allocating more of budgets to creating infrastructure to support & sustain EBP | EBP should not be considered an additional priority; EBP needs to be adopted as the formula for changing practice in order to achieve nurse executives' top priorities<br><br>Nurse executives & managers must understand what EBP is as a key strategy to improve healthcare quality and safety<br><br>Enculturation includes CNE role modelling, investing in EBP education & skills building for staff, & creating infrastructure to support & sustain EBP (including publicly navigating EBP barriers).<br><br>Nurse leaders must create exciting vision & strategic direction for EBP that is clearly communicated, valued, and executed within the organization.<br><br>Nurse Leaders & Managers must be EBP change agents | None | V-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Morris, Z. S., Wooding, S., Grant, J. (2011). The answer is 17 years, what is the question: Understanding time lags in translational research. *Journal of the Royal Society Medicine*, *105*, 510-520. | To review the literature describing and quantifying time lags in the health research translation process<br><br>To synthesize existing knowledge & offer a conceptual model to be used to standardize measurement and quantify future lags | Literature review | Two substantive gaps in knowledge: Time lag involved in and between discovery and development and the time lag between publication to practice<br><br>Only one study had 'implementation' into practice as endpoint.<br><br>Some lags are necessary to ensure safety and efficacy of implementing new research into practice | The current state of knowledge of time lags is of limited use to those responsible for R&D and knowledge transfer<br><br>Investment decisions effectively 'blindfolded' & effort is wasted with time lag.<br><br>Understanding lags first requires agreeing upon models, definitions, and measures, which can be applied in practice.<br><br>Also need to develop a process to gather these data | Inability to standardize terminology | V-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Scala, E., Price, C., & Day, J. (2016). An integrative review of engaging clinical nurses in nursing research. *Journal of Nursing Scholarship*, *48*(4), 423-430. doi: 10.1111/jnu.12223 | To review the literature for best practices for engaging clinical nurses in research<br><br>What are best practices for engaging clinical nursing staff in nursing research?<br><br>JHNEBP model | Integrative Review<br><br>19 Articles (3 Research; 16 Non-Research)<br><br>Research between 2005 & 2015<br><br>Findings grouped: Access to infrastructure; Leadership support; Strategic priorities & relevant interests; Educational tactics; Leveraging established networks & resources | Difficult to involve clinical nurses in research<br><br>Multiple factors for nursing leaders to consider when engaging clinical nurses in research | Perform a needs assessment specific to the organization and structure a multifaceted approach to support staff in conduct and dissemination of research<br><br>Positive assets for enculturation include: an employed nurse researcher, nursing research committee, links to IRB, partnerships and resources found in intra-professional disciplines, community, or academia<br><br>Research budget is essential to protect nursing's time and allow clinical nurses' involvement in research activities<br><br>Seek out and tap research champions at leadership & clinical staff level<br><br>Include research priorities: job descriptions, annual goals, & employee performance evals. | Only integrative review; no RCTs available or pertinent<br><br>Engagement usually measured by self-report | V-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Stevens, K., (2013, May 31). The impact of evidence-based practice in nursing and the next big ideas. *OJIN: The Online Journal of Issues in Nursing, 18*(2), Manuscript 4. doi: 10.3912/OJIN.Vol18No02Man04 | To describe the EBP movement & consider the impact of EBP on nursing practice, models and frameworks, education, & research<br><br>To explore selected influences of EBP trends on nursing & care quality, & the "next big ideas" for moving nursing & healthcare forward | Literature review | For successful EBP adoption and sustainability, it must be adopted by individual care providers, microsystem & system leaders, and policy makers, plus federal, state, local, & other regulatory & recognition actions are necessary<br><br>47 prominent EBP models identified in the literature<br><br>Improvement science focuses on generating evidence about employing EBP, providing research evidence to guide management decisions in EBP QI<br><br>Overriding goal of improvement science to ensure QI efforts are based on EBP for implementation | New knowledge must be transformed into clinically useful forms, effectively implemented across entire care team within systems context, and measured with meaningful impact on performance and health outcomes<br><br>All health leaders must come together for clinical education reform to address the 5 core competencies essential in bridging the quality chasm (pt. centered care, interdisciplinary team, EBP, QI approaches, and informatics)<br><br>NIH initiatives promulgated this field of science moving beyond the individual provider as the unit of analysis & focuses on groups, health systems, and the community<br><br>Challenges to EBP movement include nurses are not yet powerful interprofessional leaders or change influencers<br><br>Research must take on a systems approach, rather than individual approach<br><br>Multiple perspectives & sound evidence for transforming healthcare needed | None | V-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Yackel, E. E., Short, N. M., Lewis, P. C., Breckenridge-Sproat, S. T., & Turner, B. S. (2013). Improving the adoption of evidence-based practice among nurses in Army outpatient medical treatment facilities. *Military Medicine, 178*(9), 1002-1009. doi: 10.7205/MILMED-D-13-00191 | What are the strategies needed to implement an organizational culture that supports the beliefs, values, implementation, and engagement of EBP? | Quality Improvement, Pre/Posttest<br><br>295 Civilian and Military Staff (Medics, LPNs, Aides, RNs)<br><br>20 Clinics from 2 Outpatient Army Facilities in Virginia | OCRSIEP survey indicated significant increase from pre- to post- intervention (EBP101) for readiness<br><br>No major differences (readiness) between groups (facilities) noted<br><br>NCAT survey results indicated no significant difference from pre- to post- intervention for culture change<br><br>EBP beliefs were noted to be statistically different pre- and post- education<br><br>Implementation scores were negligible | Five specific strategies were conducive to creating the EBP Organizational culture:<br>o Strategic planning<br>o EBP education<br>o Mentoring/ championship<br>o Revision of policies, performance standards and appraisals, and job descriptions<br>o Resource updates: Linking to library and other computer access<br><br>Recommend EBP201 course in replication | Short time frame for implementation (6-months)<br><br>Small sample size<br><br>Need long-term outcomes in continued (longitudinal) study | V-A |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Aggleton, P., & Chalmers, H. (1986). Nursing research, nursing theory and the nursing process. *Journal of Advanced Nursing, 11*(2), 197-202. | To identify strategies useful for adoption pf nursing & nurse theories<br><br>To distinguish inductive & hypo-thetico-deductive approaches to the development of nursing theory<br><br>To clarify the relationship between conceptual models of nursing & nursing theories<br><br>To explore use of the nursing process as a research technique combining inductive and hypothetico-deductive commitments<br><br>Argues systematic use nursing process identifies set of research procedures facilitating development of nursing theory using insights from direct experience of practicing nurses & from existing conceptual nursing models | Expert Opinion | Nursing theory developed by observation through work day and by applying theoretical knowledge to every day work (inductive versus hypothetico-deductive methods)<br><br>Inductive theory tested with observation (qualitative); deductive methods tested with experiments<br><br>Useful to consider how nursing process contributes to nursing theory development<br><br>Nursing activities take place in overall economic and political frameworks which foreclose options for nursing care while facilitating others | The use of the nursing process can combine both inductive and hypothetico-deductive commitments in a set of research procedures by which existing conceptual models of nursing can be clarified and developed.<br><br>It is possible to develop coherent and systematic sets of guiding principles for use in planning & delivery of nursing care | None | V-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Chang, A., & Levin, R. F. (2014). Tactics for teaching evidence-based practice: Improving self-efficacy in finding and appraising evidence in a Master's evidence-based practice unit. *Worldviews on Evidence-Based Nursing, 11*(4), 266-269. | Bandura's four sources of information for self-efficacy | Pre- & post-test survey<br><br>60 post-graduate students in master's level EBP course-work: N=25 for completion of subscales of Self-Efficacy in EBP tool: Finding evidence & Appraising evidence | EBP project requiring a systematic review or clinical guideline in an area relevant to current clinical practice<br><br>Significant improvement in EBP self-efficacy subscales Finding Evidence & Appraising Evidence after EBP unit | Confidence level in EBP activities could be increased<br><br>Providing more mastery experiences in appraising systematic reviews, progressing from less to more complex systematic reviews enhances self-efficacy for appraising evidence<br><br>Verbal persuasion (feedback) to students when practicing appraising evidence skills, with reinforcement raises self-efficacy<br><br>Discussion & sharing of negative reaction & misinterpretation reducing strategies raises self-efficacy | Small sample<br><br>No comparison group | V-B |
| Merrill, K. C., Andrews, D., Brewer, B. B., & Brown, D. S. (2015). Elevating research: An important role for nurse leaders. *Nurse Leader, 13*(3), 63-65. doi: 10.1016/j.mnl.2014.08.006 | To review the feasibility of implementing nursing research by the ability to foster internal and external collaborations & partnerships when cost effectiveness may be an issue in supporting or funding research | Literature Review, Financial Evaluation | Supporting & encouraging participation of staff in surveys, focus groups, or clinical trials facilitates research process by increasing sample sizes to expedite valid & reliable research<br><br>Allowing graduate students to complete research projects on their units supports scholarship in staff & exposes coworkers to critical thinking outside norm | Nurses are accountable to assure we have knowledge needed to transform our models of care, our care delivery, and to assure our patients will receive safe, high-quality care<br><br>Build a robust research base that transforms our delivery model<br><br>Research in nursing leadership is often lacking for 2 reasons: Lack of funding and lack of participation | None | V-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Schifalacqua, M. M., Shepard, A., & Kelley, W. (2012). Evidence based practice: Cost-benefit of large system implementation. *Quality Mgmt in Health Care, 21*(2), 74-80. doi:10.1097/QMH.0b013e31824d196f | To understand the coordinated and cost-effective approach of designing EBPs for a large health care system<br><br>To discuss the journey of creating a system-wide EBP model and the standardized design process for each EBP | Quality Improvement (Cost Analysis)<br><br>138 staff members<br><br>Catholic Health Initiatives (70 hospitals, 40 long-term care facilities, located in 19 states) | EBP included as quality priority initiative in strategic plan with formal implementation the following year<br><br>Developed a toolkit | System, or coordinated efforts, can decrease care variability<br><br>System, or coordinated efforts, decreases costs of individual entity initiatives<br><br>Networking on the project enhanced clinician/staff satisfaction | No comparative hospital systems (size) for cost analysis<br><br>Generalizability<br><br>No initial established metrics | V-B |
| Secret, M., Abell, M. L., & Berlin, T. (2011). The promise and challenge of practice-research collaborations: Guiding principles and strategies for initiating, designing, and implementing program evaluation research. *Social Work, 56*(1), 9-20. doi: sw/56.1.9 | To present a set of guiding principles and strategies to facilitate the collaborative efforts of social work researchers and practitioners as they initiate, design, and implement outcome evaluations of human service interventions and programs<br><br>Empowerment evaluations<br><br>"Bench to trench" research<br><br>Co-learning approach | Quality Improvement/ Program Evaluation<br><br>Majority of team with Social-Work background<br><br>Prison-based parenting program evaluation as part of a collaborative effort with community practitioners | Each committed to goal of improving lives of children & families, rather than continuation of programs or jobs, & shared control of the research process.<br><br>Six key stages and guiding principles: Practice-research collaboration formed, strengthened, & sustained by spirit of discovery & shared leadership; use of comprehensive evaluation model to clarify & frame the eval. & program goals; selecting research method & measurement tools; commitment to keeping program first & recording everything; discussion & presentation of emerging findings; total team approach at dissemination stage | Durable & successful practice-research collaboration built from willingness & skill to create acceptable research conditions to tackle variety of human relationship factors<br><br>Focus on collaborative principles & key strategies led to success<br><br>Selecting research method requires conscious decision to evaluate processes and programmatic outcomes.<br><br>Collaboration of professionals resulted in statistically based theoretical model that shaped prison-based parenting program – Use of shared leadership and respect | Generalizability<br><br>Grant funded | V-B |

| Full Reference | Research Question(s)/ Hypotheses & Theoretical Framework | Study Design<br><br>Sample Size & Setting | Analysis & Results | Conclusions and Recommendations | Limitations | Evidence Grade - JHNEBP model |
|---|---|---|---|---|---|---|
| Tart, R. C., Kautz, D. D., Rudisill, K. D., & Beard, E. L. (2011, Sept./Oct.). Bridging the theory-practice gap: A practice-relevant research course for RN to BSN students. *Nurse Educator, 36*(5), 219-223. DOI: 10.1097/NNE.0b013e3182297c78 | To describe how an academic and hospital partnership created and taught a practice-relevant research course for RN to BSN students<br><br>Hayward's Evidence Based Information Cycle to create CVMC's model for EBP | Non-Experimental Study, Pilot Study: Quality Improvement<br><br>RN to BSN students taught by 1 instructor; 6 teams total<br><br>RN-BSN program (Blended) - University of North Carolina (Greensboro) in partnership with Catawba Valley Medical Center | Interactive blended course<br><br>Instructor taught substantial content, coordinated data collection and analysis, and ensured hospital staff ownership<br><br>Students participated in EBP process and presented formal reports of EBP project results<br><br>Focus on steps of EBP process with interactive lectures, student-pt. interaction, collected data analysis<br><br>Students' understanding of EBP process demonstrated by coursework | Intervening during education phase can influence nurses' opinions about research<br><br>Introducing RNs to a practice-relevant research course bridges theory-practice gap<br><br>Facilitators include 'qualitative findings' with description of partnership with nursing instructor and research/ EBP director in community hospital to teach practice-relevant research course | Substantial time for instructors<br><br>Without EBP/Research Person at clinical facility instructors have to coordinate with facility to arrange participation in ongoing EBP initiative<br><br>No comparison group | V-B |

# Appendix C: Educational Intervention Course (EBP101) Agenda

**An Introduction to Evidence-based Practice: A Participatory Workshop - Part I**

| | |
|---|---|
| 7:30 am – 8:00 am | **Continental Breakfast/Registration** |
| 8:00 am – 8:20 am | **Opening Remarks**<br>*System Director of EBP and Research*<br>*System VP of Nursing and Clinical Informatics*<br>*Entity Chief Nursing Officer and Patient Safety Officer* |
| 8:20 am – 8:40 am | **Introduction to Evidence Based Practice (EBP)**<br>**N. Kay Lenhart, DNP(c), MSN(Ed.), CNE, RN-BC**<br>*Walden University Doctor of Nursing Practice Candidate*<br>Definition of EBP<br>Importance of EBP |
| 8:40 am – 9:25 am | **Guidelines for Implementation – *System Director of EBP and Research***<br>Johns Hopkins Nursing EBP (JHNEBP) Model<br>Steps in the JHNEBP process<br>Answerable question<br>Complete the PICO form for today's question |
| 9:25 am – 9:40 am | **Break** |
| 9:40 am - 10:40 am | **Searching for Evidence: N. Kay Lenhart**<br>Basic literature search<br>Evidence resources<br>System library resources<br>Databases |
| 10:40 am – 11:50 pm | **Appraising Evidence – *System Director of EBP and Research***<br>Different types of evidence (Research and Non-research)<br>JHNEBP forms |
| 11:50 pm – 12:00 | **Program Wrap-up**<br>***System Director of EBP and Research***<br>**N. Kay Lenhart, DNP(c), MSN(Ed.), CNE, RN-BC**<br>Homework assignment:<br>Review assigned articles using the Hopkins tools prior to class |

**An Introduction to Evidence-based Practice: A Participatory Workshop - Part II**

| | |
|---|---|
| 7:30 am – 8:00 am | **Continental Breakfast/Registration** |
| 8:00 am – 8:45 am | **Appraising the Evidence**<br>**N. Kay Lenhart, DNP(c), MSN(Ed.), CNE, RN-BC**<br>***System Director of EBP and Research***<br>All participant systematic review appraisal using JHNEBP tools |
| 8:45 am – 9:15 am | **Appraising the Evidence (cont.)**<br>Small group breakout to appraisal assigned articles<br>Individual Evidence Table |
| 9:15 am – 9:30 am | **Break** |
| 9:30 am – 10:15 am | **Appraising the Evidence (cont.)**<br>Full group completion of Individual Evidence Table |
| 10:15 am - 10:45 am | **Summarizing the Evidence – N. Kay Lenhart**<br>Overall Evidence Summary Table<br>Recommendations for practice |
| 10:45 am – 11:45 am | **Translation: Moving Evidence to the Bedside**<br>***System Director of EBP and Research***<br>Fit, feasibility, and appropriateness of recommendation for translation<br>Translation pathway<br>Barriers and facilitators to implementation of an EBP project |
| 11:45 am – 12:00 pm | **Program Wrap-up -** ***System Director of EBP and Research***<br>Evaluation completion by participants |

Appendix D: Educational Intervention (EBP101) Evaluation Form

**CNE Activity Title: An Introduction to Evidence Based Practice: EBP 101**

1. Relationship of objectives to overall purpose and goal(s) for the program.

| | ***Excellent*** | ***Very Good*** | ***Good*** | ***Fair*** | ***Poor*** |
|---|---|---|---|---|---|
| The purpose of this activity is to enable the learner to demonstrate use of the Johns Hopkins Nursing Evidence Based Practice tools to appraise evidence to inform practice. | ☐ | ☐ | ☐ | ☐ | ☐ |

2. Degree to which you were able to meet each objective.

| | ***Excellent*** | ***Very Good*** | ***Good*** | ***Fair*** | ***Poor*** |
|---|---|---|---|---|---|
| • Discuss the importance of evidence-based practice (EBP). | ☐ | ☐ | ☐ | ☐ | ☐ |
| • Develop an answerable PICO question. | ☐ | ☐ | ☐ | ☐ | ☐ |
| • Demonstrate how to conduct a basic library search. | ☐ | ☐ | ☐ | ☐ | ☐ |
| • Discuss the use of JHNEBP appraisal tool to identify the level and quality of evidence. | ☐ | ☐ | ☐ | ☐ | ☐ |
| • Demonstrate the use of the JHNEBP evidence appraisal tools. | ☐ | ☐ | ☐ | ☐ | ☐ |
| • Synthesize evidence and determine recommendations for practice. | ☐ | ☐ | ☐ | ☐ | ☐ |
| • Describe the steps in the translation process. | ☐ | ☐ | ☐ | ☐ | ☐ |

3. The expertise of the presenter / content specialist.

| | *Excellent* | *Very Good* | *Good* | *Fair* | *Poor* |
|---|---|---|---|---|---|
| A. Presenter #1 (DNP Preceptor) | ☐ | ☐ | ☐ | ☐ | ☐ |
| B. Presenter #2 (DNP Scholar) | ☐ | ☐ | ☐ | ☐ | ☐ |

4. Appropriateness of the teaching strategies used (i.e. lecture, PowerPoint, question and answer sessions, etc.) for each presenter:

| | *Excellent* | *Very Good* | *Good* | *Fair* | *Poor* |
|---|---|---|---|---|---|
| A. Presenter #1 (DNP Preceptor) | ☐ | ☐ | ☐ | ☐ | ☐ |
| B. Presenter #2 (DNP Scholar) | ☐ | ☐ | ☐ | ☐ | ☐ |

| | *Excellent* | *Very Good* | *Good* | *Fair* | *Poor* |
|---|---|---|---|---|---|
| 5. Appropriateness of the physical facility: | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6. Did the program meet your expectations? | ☐ | ☐ | ☐ | ☐ | ☐ |

**Knowledge Gained:**

7. The increased knowledge I gained as a result of this program was:

8. List one new fact or concept learned from this lecture:

**Needs Assessment:**

| | *Yes* | *No* |
|---|---|---|
| 9. Would additional programs on today's topic be helpful? | ☐ | ☐ |
| 10. Should today's presenter be invited for future presentations? | ☐ | ☐ |

11. What other topics should be explored for future programming?

12. Comments: