Improving Evidence-Based Practice Using the Johns Hopkins

Nursing Evidence-Based Practice Model

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Abstract

The literature reports limited use of evidence-based practice (EBP) even though evidence

suggests that EBP promotes quality care and that EBP is insufficiently integrated into practice.

Inadequate EBP can jeopardize quality, safety, and patient outcomes. The purpose of this project

was to reduce the knowledge gap related to evidence translation with the JHNEBPM.   The

practice question guiding the DNP project was, "For nurses working at Naples Community

Hospital – Downtown (NCH), will the implementation of the Johns Hopkins Nursing EBP

Model (JHNEBPM) improve attitudes, knowledge, and perceptions of the ability to understand

the application of evidence-based practice (EBP) over 8-10 weeks?" A convenience sample of

registered nurses (n=65) in three units of one hospital completed pre- and post-intervention

surveys including the Evidence-Based Practice Beliefs survey (EBPB), the Evidence-based

Practice Implementation instrument (EBPI), the Organizational Culture and Readiness for

System-Wide Integration of EBP scales (OCRSIEP) surveys, and JHNEBPM knowledge

questionnaire.

The nine-week intervention involved web-based EBP education, an internal website for EBP,

and frequent rounding by the DNP student for formative evaluation. Findings showed an increase

in the mean scores for each the EBPB, EBPI, and OCRSIEP scales that were not statistically

significant. Knowledge of the JHNEBPM pre- and post-intervention identified a statistically

significant increase of participant perceived knowledge of the JHNEBPM. It is possible that EBP

beliefs, implementation, and organizational readiness could improve with enculturating EBP

through organizational support. JHNEBPM facilitated EBP by providing nurses with the

knowledge and tools necessary to implement EBP.

Dedication

"But Jesus looked at them and said, with men it is impossible, but not with God; for with God all things are possible" (Mark 10:27, New King James Version).

I give my thanks to God Almighty and his only begotten Son, Jesus Christ who gave me the courage, strength, and wisdom I needed to achieve completion of this project. I dedicate this paper to my loving husband, Jerry who has supported me every step of the way, and to my daughter, Jennifer who read my papers, helped with technology, and provided me with support throughout my journey.

Acknowledgements

Executive Summary

Purpose/Problem Statement

Nurses at Naples Community Hospital Downtown (NCH) relied on informal resources and experience with less reliance on research and protocols. The organization lacked a conceptual model to promote evidence-based practice (EBP). The nurses at NCH had varying levels of use and understanding of EBP for knowledge translation. Interviews with nursing leaders revealed that the nurses had mixed levels of experience with EBP, and existing resources were not ideal for supporting nursing involvement in EBP. The practice question guiding the DNP project was, "For nurses working at Naples Community Hospital – Downtown (NCH), will the implementation of the Johns Hopkins Nursing EBP Model (JHNEBPM) improve attitudes, knowledge, and perceptions of the ability to understand the application of evidence-based practice (EBP) over 8-10 weeks?" The purpose of this project was to reduce the knowledge gap related to evidence translation with the JHNEBPM.

Background/Project Intent

The literature reports limited use of evidence-based practice (EBP) even though evidence suggests that EBP promotes quality care, that EBP is insufficiently integrated into practice, and that inadequate EBP competencies can jeopardize quality, safety, and patient outcomes. Evidence-based practice was applied inconsistently throughout NCH. The Associate Chief Nursing Officer (ACNO) for Professional Practice stated that the Johns Hopkins model for EBP had been "adopted" by the facility without any nurse training in its use, resulting in the lack of formal adoption of the model. The ACNO also indicated that a need existed for a web-based format to guide nurses in education and implementation of EBP. It was anticipated that

knowledge of the conceptual model, along with web-based tools, would improve nurses'

attitudes, knowledge, and perceptions of the ability to understand the application of EBP.

Methods

Rogers' Diffusion of Innovation Theory provided the groundwork to operationalize the

DNP project. Rogers' Diffusion of Innovation was selected for this project due to its success in

implementing organizational EBP in numerous programs (Friesen et al., 2017; Funk,

Champagne, Wiese & Tornquist, 1991; Hanrahan et al., 2015; Melnyk et al., 2015; Stavor,

Zedreck-Gonzalez & Hoffmann, 2017). Institutional Review Board (IRB) approval was obtained

from both NCH and Chamberlain University as exempt quality improvement projects. Informed

consent was obtained by the participants progressing through the survey and educational

modules. Formative evaluation occurred throughout the project during tri-weekly unit visits by

the DNP student. It was during these evaluations that the DNP student provided guidance to the

participating nurses. Because this project examined education to address EBP beliefs,

knowledge, and perception of organizational culture for EBP, it made sense that the evaluation of

the project was summative.

The DNP project used a single group pretest-posttest design. A convenience sample of

nurses (n=65) working in three units of the hospital completed the Evidence-Based Practice

Beliefs survey (EBPB), the Evidence-based Practice Implementation instrument (EBPI), and the

Organizational Culture and Readiness for System-Wide Integration of EBP scales (OCRSIEP)

surveys before and after the intervention. In addition, the nurses were asked to rate their

experience with the JHNEBPM before and after the intervention. The DNP student hypothesized

that introduction of a conceptual model (the JHNEBPM) for EBP would improve EBP

knowledge, confidence, and utilization by nurses, narrowing the knowledge gap.

Data analysis of the DNP project required review and summarization of participant

responses for demographic information and knowledge of the JHNEBPM and the EBPB, EBPI,

and OCRSIEP scales. The demographic and summary data for both the pre and post-intervention

surveys were gathered from each of the surveys, summarized onto an Excel spreadsheet by

Survey Monkey® and then reviewed by the DNP student for data cleaning. The Excel

spreadsheet containing the survey data was formatted by the DNP student and uploaded into

IBM SPSS, version 26 for statistical analysis (IBM Corporation, 2019).

Intervention

The intervention included web based EBP education introducing the JHNEBPM, an internal

website for EBP, and rounding by the DNP student three times a week for formative evaluation.

The introduction of the JHNEBP conceptual model was completed with computer-based

education of nurses working in three different departments of the hospital. Training of the

JHNEBPM was augmented with a web-based program designed to support nurses with the tools

necessary to aid them in the provision of EBP. Formative evaluation was completed during unit

visits from the DNP student three times a week in each unit. At this time the DNP student

evaluated the nurses' understanding of the education and use of the new EBP internal website.

Results

The survey data were analyzed using a paired *t*-test with a 95% confidence interval

comparing the total means of the participant responses to the Likert type scales from the EBPB,

EBPI, and OCRSIEP surveys. The outcomes identified increases in each of the three surveys

(Table 6.1) that were not statistically significant after education, formative evaluation, and

implementation of an internal website containing EBP tools. The findings included the EBP

beliefs survey (p= .064), the EBP implementation survey (p=0.97), and the Organizational

Culture and Readiness for System-wide Integration of EBP survey (p=.221) (Table 6.2). A paired

t-test was completed to compare participant perceived knowledge of the JHNEBPM before and

after the intervention that identified a statistically significant increase of participant perceived

knowledge of the JHNEBPM (p=0.002) (Table 7.4).

Conclusions

The DNP project intervention supported nurses in the attitudes, knowledge, and

perceptions of the ability to understand the application of EBP resulting in a reduction of the

knowledge gap using the JHNEBPM. The improvement of EBP beliefs, implementation, and

organizational culture seen in the DNP project was not statistically significant and further study

with a larger sample or longer time may provide more significant results. Statistically significant

improvement in the perception of the participant knowledge of the Johns Hopkins Nursing

Evidence-Based Practice Model suggests that the use of a conceptual model can help nurses

implement EBP. The use of a conceptual model such as the JHNEBPM facilitated EBP by

providing nurses with the knowledge and tools necessary to implement EBP.

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CHAPTER 1: INTRODUCTION

Closing the Gap: Translating Research into Practice

Evidence-based practice (EBP) is essential for the provision of safe, effective, quality health care. We read about EBP in the literature and discuss it as a matter of actuality, but do we translate research evidence into nursing practice? The nurses at Naples Community Hospital – Downtown (NCH) had varying levels of use and understanding of EBP for knowledge translation. Interviews with nursing leaders revealed that the nurses had mixed levels of experience with EBP, and existing resources were not ideal for supporting nursing involvement in EBP. Stokke, Olsen, Espehaug, and Nortvedt (2014) wrote of recent studies from around the world that described nurses' limited use of EBP. Barriers to EBP included limited time, lack of authority, lack of nurses with EBP experience, few supportive leaders, and lack of resources (Stokke et al., 2014).

The purpose of this Doctor of Nursing Practice (DNP) project was to reduce the knowledge gap related to evidence translation at Naples Community Hospital Downtown (NCH-D) with the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model including web-based support to aid nurses in the translation of research evidence to promote evidence-based practice. This proposal reviewed the problem, project aims, and the significance of the problem at NCH.

Problem Statement

Nurses at Naples Community Hospital Downtown (NCH) relied on informal resources and experience with less reliance on research and protocols. The organization lacked a conceptual model to promote evidence-based practice (EBP). The practice question: For nurses

working at Naples Community Hospital – Downtown (NCH), will the implementation of the

Johns Hopkins Nursing EBP Model (JHNEBPM) improve attitudes, knowledge, and perceptions

of the ability to understand the application of evidence-based practice (EBP) over 8-10 weeks?

The introduction of the JHNEBP conceptual model was completed with computer-based

education of nurses working in three different departments of the hospital. Training of the

JHNEBPM was augmented with an internal website for EBP designed to support nurses with the

tools necessary to aid them in the provision of EBP. It was anticipated that knowledge of the

JHNEBPM conceptual model, along with web-based tools, would improve nurses' attitudes,

knowledge, and perceptions of the ability to understand the application of EBP.

Objectives and Aims

The purpose of the proposed DNP project was to reduce the gap of knowledge translation

using the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) with web-based

support to aid nurses in the translation of research evidence to promote evidence-based practice.

The following objectives were identified, which served to guide the DNP student during the

project:

- To compare EBP knowledge, confidence and utilization before and after EBP education

  and development of web-based tools supporting EBP use in in the critical care unit, the

  medical-surgical unit, and the behavioral health unit

- To identify the knowledge and confidence level of EBP among nurses in the critical care

  unit, the medical-surgical unit, and the behavioral health unit after completing EBP education

  and utilize web-based tools for research and EBP

- To explain the level to which nurses working in the critical care unit, the medical-surgical unit, and the behavioral health unit utilize EBP after completing EBP education and using web-based tools for research and EBP

- To improve EBP knowledge, confidence and utilization by nurses in the critical care unit, the medical-surgical unit, and the behavioral health unit after EBP education and implementation of web-based tools for research and EBP

Significance of the Practice Problem

Evidence-based practice is inadequately integrated into routine practice (Friesen-Storms, Moser, van der Loo, Beurskens, & Bours, 2015). The DNP student posited that an effective program for research and evidence-based practice (EBP) could aid NCH during the journey for Magnet® designation. The American Nurses Credentialing Center (ANCC) Magnet Recognition Program® and its major components are primary drivers in the effort to implement research and evidence-based practice for front-line nurses (ANCC, 2017). The New Knowledge, Innovations and Improvements section of the application for Magnet® designation (ANCC, 2017) required organizational support of nursing research, dissemination of findings, evaluation and use of evidence-based practice by clinical nurses, innovation in nursing, implementation of technology to enhance the patient experience and nursing practice, and the design and implementation of workflow improvements.

Azouman (2015) reported that the Institute of Medicine Roundtable on Evidence-Based Medicine in 2009 set a target that 90% of clinical decisions were to be supported by accurate, well-timed, and current information based on the best evidence available by 2020. Since the publication of the Triple Aim (Berwick, Nolan, & Whittington, 2008), healthcare professionals, including nursing, have engaged in the discussion about EBP as a method to find the best

evidence available to realize outcomes harmonious with the Triple Aim. The Triple Aim in

healthcare focuses on augmenting the patient experience, improving health, and reducing costs

(Arzouman, 2015).

Melnyk et al. (2016) found that many health care providers do not consistently implement

EBP despite their enthusiasm to practice based on the best evidence and positive outcomes of

EBP. According to Melnyk et al. (2016), barriers include time, organizational culture, and EBP

knowledge deficit. This information suggests probable appropriateness for this project at the

organization.

Nurses' evidence-based practice competencies have significant shortfalls that can

threaten healthcare quality, safety, and patient outcomes (Melnyk et al., 2018). The Quality and

Safety Education for Nurses (QSEN) launched a collection of competencies that was built on the

Institute of Medicine's competency recommendations for healthcare professionals that included

EBP (Melnyk et al., 2018). Melnyk et al. (2018) completed a cross-sectional descriptive study of

2,344 nurses from 19 hospitals or healthcare systems that measured EBP knowledge, beliefs,

implementation, and competencies. Findings revealed that nurses had not achieved competency

in meeting any of the 24 EBP competencies (Melnyk et al., 2018). Younger nurses and

individuals with greater levels of education reported higher competency levels ($p<0.001$). There

were no significant differences between Magnet® and non-Magnet facilities ($r=0.66$). Strong

positive correlations were observed between EBP competency and EBP beliefs ($r=.066$) and EBP

mentorship ($r=0.69$). Moderate positive correlations were observed between EBP competency

and EBP knowledge ($r=0.43$). A minimal correlation was observed between EBP competency

and culture ($r=0.29$) (Melnyk et al., 2018).

Numerous studies worldwide and in the United States had reported limited use of EBP despite evidence that EBP promotes quality patient care (Harper et al., 2017; Schaefer & Welton, 2018; Verloo, Desmedt, & Morin, 2016). A cross-sectional study (Stokke et al., 2014) (n=185, response rate 52%) reported a positive correlation between beliefs and implementation of EBP (r=0.59, p=<0.0001). Stokke et al. (2014) reported findings of four subscales of EBP beliefs including knowledge, resources, the value of EBP, and complexity/time that indicated the greatest correlation observed was of beliefs related to knowledge (r=0.38, p<0.0001).

Melnyk et al. (2016) completed a survey of chief nurse executives (CNEs) in the United States concerning their beliefs regarding EBP. According to Melnyk et al. (2016), CNEs believe that EBP leads to high-quality care, yet do not place high priority for allocation of budget. The EBP belief scores ranged from a minimum possible score of 16 to a maximum possible score of 80 with a mean score of 60.17, standard deviation 11.22. The EBP implementation scores ranged from a minimum possible score of zero to a maximum possible score of 72 with a mean score of 27.8, standard deviation 14.97.   The organizational culture and readiness scores ranged from a minimum possible score of 14 to a maximum possible score of 70 with a mean score of 41.9, standard deviation 11.08. (Melnyk et al., 2016). According to Melnyk (2016), these findings imply a reasonable account for the inadequacies of essential metrics of hospital performance.

The results of these studies present a concern because they signify that many nurses in the United States do not believe they are competent in EBP, and nursing executives support EBP but do not rank it high among budgetary allocations. Melnyk et al. (2018) suggested that education is a significant predictor of self-reported EBP competencies. The impact on patients, families, and communities can be reduced quality of care, reduced satisfaction of the patient

experience, and increased costs. The impact to the bottom line could be resultant reductions in

reimbursement or even financial penalties. Issues related to quality of care, and patient safety

could be impacted due to failure to implement the most current practice.

Evidence-based practice was applied inconsistently throughout the organization of

interest. The Associate Chief Nursing Officer (ACNO) for Professional Practice stated that the

Johns Hopkins model for EBP had been "adopted" by the facility without any nurse training in

its use, resulting in the lack of formal adoption of the model. The ACNO also indicated that a

need exists for a web-based format to guide nurses in education and implementation of EBP.

The practice at NCH involved annual departmental quality improvement projects that

demonstrated NCH's commitment to quality improvement efforts, but the hospital did not

employ the rigor necessary to implement EBP entirely. Metrics derived from patient safety

reports, the National Database for Nursing Quality Indicators (NDNQI), and the Hospital

Consumer Assessment of Healthcare Providers and Systems (HCAHPS) reports were reviewed

routinely to identify gaps in practice that could benefit the patients and families of NCH and the

surrounding community by improving quality, safety, the patient experience, and costs.

Improved metrics could result in improved reimbursement, financial reward for those above the

national benchmark, and reduced risk for financial penalties related to these metrics. This was a

mesosystem problem affecting the healthcare system as compared with the macrosystem

approach that deals with the healthcare industry.

Synthesis of the Literature

The themes that emerged from the integration of the studies are presented in the synthesis

of the literature. The issues identified relating to evidence-based practice (EBP) included the role

of leadership involvement and training, the part of the education of EBP, the role of conceptual

models to support EBP, and the role of valid instruments to measure the effect of EBP.

Databases used for the literature search included the Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE Complete, Open Access, and PubMed. Search criteria key words included evidence-based practice, EBP, evidence translation, leadership, education, organizational structure, studies, and EBP instruments. Inclusion criteria included Boolean indicators for EBP studies published within five years, full text, peer-reviewed, and in English. Studies higher than five years were generally excluded unless they provided benefit to the current literature.

These studies directly related to the population, intervention, comparison, outcome, time (PICOT) question for the DNP project, "For nurses working at Naples Community Hospital – Downtown (NCH), will the implementation of the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) improve attitudes, knowledge, and perceptions of the ability to understand the application of evidence-based practice (EBP) over 8-10 weeks?"

The purpose of the proposed DNP project was to reduce the gap of knowledge translation using the JHNEBPM with web-based support to aid nurses in the interpretation of research evidence to promote evidence-based practice. The evidence presented in the following paragraphs supported the PICOT question.

Evidence-Based Practice: Role of Leadership Training

Evidence supported the supportive role of leaders in the process of execution for the successful implementation of evidence-based practice (EBP) (Aarons, Ehrhart, Farahnak, & Hurlburt, 2015). Leadership and organizational change for implementation (LOCI) was supported by qualitative and quantitative analyses with the ability to improve the staff-rated leadership as measured in a survey for EBP implementation (Aarons et al., 2015). Aarons et al. (2015) conducted LOCI, a two-arm, randomized mixed method pilot study of the Full-Range

Leadership (FRL) model for EBP implementation. Self-report data from leaders were analyzed

utilizing *t*-tests comparing LOCI with control participants. The effect size was ascertained with

Cohen's *d* where 0.80 or more is representative of a substantial effect.

Aarons et al. (2015) reported findings for feasibility, acceptability, and utility of LOCI

with the potential to support EBP for developing leaders were substantially higher in the LOCI

group than the control group. The variables for feasibility, acceptability, and utility that were

measured on a zero to four scale. Scores for LOCI (n-5), Control (n=6) follow:

- Feasibility

    - Engagement in leader training: LOCI - M 3.20, SD 1.30, Control - M 1.67, SD

      0.82, *t*(*df*=9) -2.39, *p* 0.041, Cohen's *d* 1.45

    - Increased leadership knowledge: LOCI - M 3.40, SD 0.55, Control - M 1.33, SD

      0.52, *t*(*df*=9) -6.43, *p* 0.000, Cohen's *d* 3.89

- Acceptability

    - Applied learning: LOCI - M 3.60, SD 0.55, Control - M 1.00, SD 1.09, *t*(*df*=9)

      -4.8, *p* 0.001, Cohen's *d* 2.91

    - Leadership improvement: LOCI - M 3.00, SD 0.71, Control - M 0.83, SD 0.75,

      t(*df*=9) -4.88, *p* 0.001, Cohen's *d* 2.96

    - Ability to manage change: LOCI - M 2.80, SD 0.84, Control - M 0.50, SD 0.84,

      t(*df*=9) -4.54, *p* 0.002, Cohen's *d* 2.75

    - Change behavioral routines: LOCI - M 3.20, SD 0.84, Control - M 0.83, SD 0.75,

      t(*df*=9) -4.94, *p* 0.001, Cohen's *d* 2.99

    - Changed leadership behaviors: LOCI - M 3.20, SD 0.45, Control - M 1.00, SD

      0.89, *t*(*df*=9) -4.97, *p* 0.001, Cohen's *d* 3.01

- o   Increased emphasis on EBP: LOCI - M 3.00, SD 1.00, Control - M 0.83, SD

    0.75, *t*(*df*=9) -4.11, *p* 0.003, Cohen's *d* 2.49

- Utility

  - o   General utility: LOCI - M 3.60, SD 0.55, Control - M 1.00, SD 0.63, *t*(*df*=9)

      -7.20, *p* 0.000, Cohen's *d* 4.36

  - o   Utility for managing organizational change: LOCI - M 3.00, SD 0.71, Control -

      M 0.33, SD 0.82, *t*(*df*=9) -5.72, *p* 0.000, Cohen's *d* 3.46

  - o   Utility for implementing EBPs: LOCI - M 3.60, SD 0.55, Control - M 0.83, SD

      1.17, *t*(*df*=9) -4.84, *p* 0.001, Cohen's *d* 2.93

Aarons et al. (2015) reported scores for readiness and support using hierarchal linear models controlling for clinicians within leaders. Leader readiness was measured on a zero to four scale. Leader readiness for EBP for LOCI participants (n=29) improved from baseline mean of 2.05, standard deviation 0.80 to 2.11, standard deviation 0.94 at three-months and further improved at six-months to 2.18, standard deviation 0.93. The control group readiness for LOCI participants (n=39) declined from baseline mean of 1.46, standard deviation 0.90 to 1.33, standard deviation 0.99 at three-months and improved at six-months to 1.53, standard deviation 0.93. Leader support for EBP for LOCI participants (n=29) improved from baseline mean of 2.60, standard deviation 0.73 to 2.66, standard deviation 0.73 at three-months and further improved at six-months to 2.98, standard deviation 0.86.   The control group readiness for LOCI participants (n=39) declined from baseline mean of 2.14, standard deviation 0.71 to 2.12, standard deviation 0.62 at three-months and improved at six-months to 2.16, standard deviation 0.63.

Guerrero, Frimpong, Kong, Fenwick, and Aarons (2018) studied how a multilevel leadership model for how managers transformational leadership interceded by middle managers affects staff attitudes toward EBP implementation. The methodology involved hierarchal linear models to analyze multilevel data. Guerrero et al. (2018) reported a positive relationship of transformational leadership to EBP implementation by middle managers (standardized direct effect = 0.173, bootstrap *p*=0.034). Guerrero et al. (2018) reported a complicated relationship of transformational leadership to employee attitudes (standardized indirect effect=0.090, bootstrap *p*=0.012) and limited support of a complicated relationship for implementation of EBP to transformational leadership (standardized indirect effect 0.006, bootstrap *p*=0.091).

Evidence-Based Practice: Role of Education

In a systematic review of educational intervention studies for EBP, Albarqouni, Hoffmann, and Glasziou's (2018), findings were conveyed for 85 of 302 identified studies. Results reported that 54% (46 reviews) were randomized studies, and critical appraisal was the most frequently taught step of EBP at 74% (63 studies). The demographics of the studies included 51 (60%) postgraduate level participants and 63 (75%) medical professional educators. Only ten (12%) of the reviews taught subject matter encompassing all five EBP steps. Of the 85 studies, 52 (61%) appraised EBP skills, 39 (46%) EBP knowledge, 35 (41%) EBP attitudes, 19 (22%) EBP behaviors, 15 (18%) EBP self-efficacy, and seven (8%) determined responses to delivery of EBP teaching delivery. Albarqouni et al. (2018) wrote of the 24 instruments used in the included studies of which six were high quality (defined as having ≥three types of current validity evidence). These were used in 14 (29%) of the 52 studies that measured EBP skills; 14 (41%) of the 39 studies that measured EBP knowledge; and eight (26%) of the 35 studies that measured EBP attitudes.

A single-center study (n=225) used descriptive statistics to report findings of a study to evaluate the effectiveness of a web-based educational platform to deliver the educational matter to nurses (Allen, Lubejko, Thompson, & Turner, 2015). The instrument used to measure outcomes was a pre-test/post-test called the Evidence-Based Practice Questionnaire (EBPQ) (Upton & Upton, 2006). Independent *t*-tests were used to determine variances in summative pre-test and post-test scores. Allen et al. (2015) reported a statistically significant variance between pre-test (Mean (SD) = 52.6/5.6) and post-test. (Mean (SD) = 87.6/3.8). Knowledge scores among all EBP module participants (t [28] –20.3, $p=0.00$). These scores implied a significant difference in knowledge test scores before and after the EBP web-based module.

Friesen, Brady, Milligan, and Christensen, (2017) conducted a mixed-methods survey of a multihospital system (n=57) involving one pilot unit from each of the five hospitals. The intervention was a web based EBP education, including a mentor program for nurses. Quantitative data was collected with pre-test/post-test design using the EBP Beliefs (EBPB) and EBP Implementation scales (EBPI) (Melnyk, Fineout-Overholt, & Mays, 2008). The global scores for EBPI and EBPB improved over time. EBP beliefs pre-intervention (n=83) Mean (SD) 64.54(7.72) and post-intervention (n=57), Mean (SD) 65.89 (9.8). EBP implementation pre-intervention (n=83) Mean (SD) 32.9 (12.5) and post-intervention (n=57), Mean (SD) 36.9 (17.39). The change in EBP implementation was significant ($t = 1.75$, $df = 56$, $p < .05$, one-tailed), while EBP beliefs was not ($p > .1$). There was an improvement in the participants' separate responses to 11 of 16 statements on the EBPB. Improvements were observed for16 of 18 items on the EBPI scale. Qualitative data was collected during post-intervention focus groups. The focus groups identified five themes: learning and applying EBP, simplifying the process, achieving success and improvement, sustaining and reinforcing change, and

encountering challenges and barriers. Data analysis provided discernments about the effect of the

EBP educational intervention related to the participants (Friesen et al., 2017).

Ramos-Morcillo, Fernandez-Salazar, Ruzafa-Martinez, and Del-Pino-Cassado (2015)

conducted a quasi-experimental pretest-posttest design with a comparison group. The

intervention was a basic EBP course, including web-based and in-person education. The

comparison participants received different content for educational intervention. The evidence-

based practice questionnaire (EBPQ) (Upton & Upton, 2006) was used to assess EBP attitude,

knowledge and skills, and practice using pre-test/post-test design. The post-test was assessed at

21 and 60 days following the intervention. Effect of the educational intervention on EBP

knowledge, skills, attitudes, and practice was evaluated using a two-way mixed analysis of

variance. The between-subject effects of the EBP intervention for knowledge and skills F (*df*)

6.6(1) *p*=0.01, attitude 0.01 (1) *p*= 0.92, and practice 0.04(1) *p* 0.85. The interaction:

intervention times time for knowledge and skills F (*df)* 8.73(2) *p* <0.001, attitude F (*df*) 2.26 (2)

p= 0.11, and practice F (*df)* 2.16(2) *p* 0.12 (Ramos et al., 2015).

Pre-intervention scores for the intervention group for knowledge and skills reported

Mean 3.65, 95% confidence interval (CI) (3.29, 4.01) *p*≥0.05. Post-intervention at 21-days,

scores for the intervention group for knowledge and skills were reported to be Mean 4.89, 95%

CI (4.65-5.13) *p* <0.05, and at 60 days Mean 4.92, 95% CI (4.69,5.15) *p* <0.05. Pre-intervention

scores for the control group for knowledge and skills Mean 3.61, 95% CI (3.28, 3.93) *p*≥0.05.

Post-intervention at 21-days, scores for the control group for knowledge and skills were reported

to be Mean 4.07, 95% CI (3.68-4.47) *p* < 0.05, and at 60 days Mean 4.3, 95% CI (4.02-4.59) *p*

<0.05. (Ramos et al., 2015).

Pre-intervention scores for the intervention group for attitude: Mean 5.88, 95% CI (5.63, 6.13) $p \geq 0.05$. Post-intervention at 21-days scores for the intervention group for attitude were reported to be Mean 6.05, 95% CI (5.87,6.23) $p \geq 0.05$, and at 60 days Mean 5.85, 95% CI (5.58,6.11) $p \geq 0.05$. Pre-intervention scores for the control group for attitude: Mean 5.97, 95% CI (5.73, 6.21) $p \geq 0.05$. Post-intervention at 21-days, scores for the control group for attitude were reported to be Mean 5.85, 95% CI (5.56,6.13) $p \geq 0.05$, and at 60 days Mean 5.99, 95% CI (5.78,6.21) $p \geq 0.05$ (Ramos et al., 2015).

Pre-intervention scores for the intervention group for practice: Mean 3.56, 95% CI (3.13, 3.98) $p \geq 0.05$. Post-intervention at 21-days, scores for the intervention group for practice were reported to be Mean 4.14, 95% CI (3.70,4.58) $p \geq 0.05$, and at 60 days Mean 4.72, 95% CI (4.36,5.08) $p \geq 0.05$. Pre-intervention scores for the control group for practice: Mean 3.77, 95% CI (3.37, 4.17) $p \geq 0.05$. Post-intervention at 21-days, scores for the control group for practice were reported to be Mean 4.31, 95% CI (3.90,4.72) $p \geq 0.05$, and at 60 days Mean 4.47, 95% CI (4.11,4.82) $p \geq 0.05$ (Ramos et al., 2015).

Spiva et al. (2017) completed a two-group pre-test/post-test quasi-experimental, interventional design to evaluate the effects of web-based EBP education. A convenience sample 367 nurses and 66 mentors from a five-hospital system in the Southeastern United States participated in the study. Spiva et at. (2017) reported nurse mentors' knowledge, attitude, skill level, and organizational readiness related to EBP, $t = -8.64$, $p < .001$, and confidence, $t = -6.36$, $p < .001$, improved after EBP education. Nurses' knowledge, attitude, and skill level related to EBP, $t = -19.12$, $p < .001$, barriers to research utilization, $t = 20.86$, $p < .001$, EBP work environment $t = -20.18$, $p < .001$, and EBP nurse leadership, $t = -16.50$, $p < .001$, improved after a formalized structure was implemented.

Paired *t*-tests were performed to examine the effectiveness of a formal structure to enculturate EBP into practice. A *p*-value of ≤ 0.05 was believed statistically significant. Significant improvements in mentors' perceptions of knowledge $t = -5.65$, $p < .001$, attitude $t = -6.50$, $p < 0.001$, skill $t = -6.73$, $p < 0.001$, and confidence levels $t = -6.36$, $p < .001$, and organizational readiness related to EBP and research utilization $t = -8.25$, $p < .001$ were observed after completion of the training course. The EBP mentor program provided a complex organized course to instruct nurses to develop into EBP mentors (Spiva et al., 2017).

Evidence-Based Practice: Practice Framework

Registered nurses needed ongoing education to translate research to support patient care through evidence-based practice (EBP). Friesen, Brady, Milligan, and Christensen (2017) examined a structured EBP education using a conceptual model to guide the process. Friesen et al. (2017) completed a mixed-methods study in a multihospital system, including five hospitals. One pilot unit was selected from each hospital participating. According to Friesen et al. (2017), the successful adoption of a specific EBP model requires education to support this innovation. A theoretical model used to support the study included the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM).

The educational program included a web-based site where nurses could obtain course material, including the JHNEBPM materials. The JHNEBPM materials provided a comprehensive review of EBP and a guide for nurse implementation and understanding of EBP. Classroom instruction and web-based materials were used to support nurses and nurse mentors knowledge of implementing EBP. Quantitative data were collected with pre-test/post-test design using the EBP Beliefs (EBPB), and EBP Implementation scales (EBPI) as reported earlier in this paper and repeated below for reader convenience (Melnyk, Fineout-Overholt, & Mays, 2008).

The global scores for EBPI and EBPB improved over time. EBP beliefs pre-intervention (n=83)

Mean (SD) 64.54 (7.72) and post-intervention (n=57), Mean (SD) 65.89 (9.8). EBP

implementation pre-intervention (n=83) Mean (SD) 32.9(12.5) and post-intervention (n=57),

Mean (SD) 36.9 (17.39). The change in EBP implementation was significant ($t = 1.75$, $df = 56$,

$p< .05$, one-tailed), while EBP beliefs was not ($p>.1$). There was an improvement in the

participants' separate responses to 11 of 16 statements on the EBPB. Improvements were

observed for 16 of 18 items on the EBPI scale. Qualitative data was collected during post-

intervention focus groups. The focus groups identified five themes: learning and applying EBP,

simplifying the process, achieving success and improvement, sustaining and reinforcing change,

and encountering challenges and barriers. Data analysis provided discernments about the effect

of the EBP educational intervention related to the participants (Friesen et al., 2017).

        The Iowa model is another conceptual model that provided a systematic process for

nurses to implement EBP (Hanrahan et al., 2015). The Iowa Model was used as the practice

framework used to guide a systematic framework where nurses rated the degree that current

practices adhered to EBP or *sacred cows*. The study reviewed *sacred cows* in the literature and

emerging *sacred cows*. These practices were subjected to an evaluation process to summarize

EBP, inspect policies, review existing practice, rank performance, and ascertain priorities. After

this, the methods were reviewed, and evidence supporting them was synthesized to determine if

there was adequate evidence supporting EBP, complete pilot testing to determine whether or not

change is appropriate, then integrate findings to generate interest, build a consensus, stimulate

action and implementation, and track integration to sustain use.

        Review of existing policies and practices exposed the presence of *sacred cows*.   The

initiative increased awareness of *sacred cows* resulting in practice and policy amendments that

resulted in a significant decrease in catheter-associated urinary tract infections and elimination of

basins for bathing to use commercially prepared bathing cloths. With the implementation of the

catheter-associated urinary tract infection (CAUTI) plan, catheter utilization decreased by 3%,

and the use of non-indwelling products increased (condom catheters 41% and straight catheters

13%). Staff surveys indicated improved knowledge about the effectiveness of bathing without a

basin. The Iowa model and increased awareness improved the use of EBP in this study.

Evidence-Based Practice: Psychometric Properties of Instruments to Measure

Harper et al. (2017) completed a non-experimental, descriptive, correlational study using

a web-based survey to identify EBP practices utilizing a convenience sample of 3,397 members

of the Association for Nursing Professional Development (ANPD). It is essential to locate valid

instruments to measure the effect of interventions aimed at improving EBP. The EBP beliefs

(EBPB), EBP Implementation (EBPI) scales (Melnyk, Fineout-Overholt, & Mays, 2008), and

Organizational Culture and Readiness for System-Wide Integration of EBP (OCRSIEP) scales

that provide valid instruments to measure the attitudes and practice knowledge nurses possess for

EBP and organizational and cultural readiness for EBP (Melnyk, Fineout-Overholt, Giggleman,

& Cruz, 2010).

The EBPB instrument measured the value of and ability to implement EBP by the

participant completed by a 16-question survey (Melnyk, Fineout-Overholt, & Mays, 2008). The

EBPI instrument measured the frequency of use of specific EBP processes over the previous

eight-weeks with an 18-item, five-point Likert-type scale (Melnyk et al., 2008). The procedures

included evidence appraisal, development of a population, intervention, comparison, and

outcome (PICO) question, and using evidence to modify practice. The OCRSIEP was a 19-item,

five-point Likert type survey designed to measure the perceived level of commitment to EBP

among staff (Melnyk et al., 2010).

Harper et al. (2017) reported that each of the three scales established construct, content,

and face validity. Strong internal consistency, ranging from .88 to .95, has been reported for each

of the three scales (Melnyk, Fineout-Overholt, Giggleman, & Cruz, 2010; Thorsteinsson, 2013;

Wallen et al., 2010; Warren, Montgomery, & Friedmann, 2016). Cronbach's alphas reported

were .89 for EBPB, .96 for EBPI, and .94 for OCRSIEP for this study (Harper et al., 2017).

Harper et al. (2017) reported findings for the EBP scales (Melnyk et al., 2008) as follows

Mean =/- SD. The possible range of scores for EBPB was 16-80, the sum of items 64.3 +/- 8 and

Mean 4 +/- 0.5. The possible range of scores for EBPI was 18-90, the sum of items 80.6+/-17.7

and Mean 3.4 +/- 0.7. The possible range of scores for OCRSIEP was 25-125, the sum of items

80.4+/-18.6 and Mean 3.2 +/- 0.7. According to Harper et al. (2017, p. 172), the highest-scoring

items for the EBPB included "EBP results in the best care for patients" and "EBP guidelines can

improve clinical care." The EBPI scale had only one item scoring over three, which specifies

completion of task four, or five times in the past eight weeks, this was "Promoted the use of EBP

to my colleagues." The highest scoring items on the OCRSIEP were "Do staff nurses have

access to computers and electronic research databases?" and "Do you believe EBP is practiced?"

The lowest scoring item was, "Are there advance practice nurses who are EBP mentors?"

(Harper et al., 2017, p. 172). These scores suggest the need for providing education to nurses

supporting EPB, including the use of web-based modules for training. The use of valid

instruments can give reliable results to measure the outcomes of the DNP project.

Practice Recommendations

The studies discussed in the sections above validate the PICOT question for the DNP project, "For nurses working at Naples Community Hospital - Downtown (NCH), will the implementation of the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) improve attitudes, knowledge, and perceptions of the ability to understand the application of evidence-based practice (EBP) over 8-10 weeks?"

Evidence reinforced the supportive role of leaders in the implementation process for the successful implementation of evidence-based practice (EBP) (Aarons, Ehrhart, Farahnak, & Hurlburt, 2015). Leadership and Organizational Change for Implementation (LOCI) was supported by qualitative and quantitative analyses with the ability to improved staff-rated leadership for EBP implementation (Aarons et al., 2015). Guerrero et al. (2018) studied how a multilevel leadership model for how managers transformational leadership interceded by middle managers affects staff attitudes toward EBP implementation. Findings supported a positive relationship of transformational leadership to EBP implementation by middle managers with an indirect association of transformational leadership to employee attitudes.   Leadership education and involvement of the EBP process are critical to consider in this project.

Albarqouni et al. (2018) in a systematic review of EBP wrote of the 24 instruments used in the included studies of which six were high quality (defined as having ≥three types of current validity evidence). These were used in 14 (29%) of the 52 studies that measured EBP skills; 14 (41%) of the 39 studies that measured EBP knowledge; and eight (26%) of the 35 studies that measured EBP attitudes. These studies highlighted the importance of knowledge and skills for EBP that could be achieved through education and leadership. Allen et al. (2015) reported findings from a single-center study (n=225) indicating significant effects of a web-based

educational platform to deliver the educational matter to nurses to support EBP. Friesen et al. (2017); Ramos et al. (2015); and Spiva et al. (2017) reported significant improvement for EBP implementation after web-based educational programs indicating support of this type of application for the DNP project intervention. Qualitative data revealed themes that could provide insight into the development of an educational platform for EBP (Friesen et al., 2017).

A practice framework is essential to the effective implementation of EBP. The practice framework selected for the DNP project was the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM). The JHNEBPM model was chosen because of its utility from prior implementation at the DNP project site and because it aligned with the organizational mission to be a world-class leader of excellence in health care. Lastly, it was crucial to select an appropriate, valid instrument for measuring the DNP project data. The EBPB, EBPI, and OCRSIEP surveys had been reviewed for construct, content, and face validity with strong internal consistency (Harper, et al., 2017).

Evidence-Based Practice: Verification of Chosen Option

The evidence-based practice intervention provided EBP education to nurses through a web-based format using recognized conceptual model, the JHNEBPM. This model offered a toolkit of resources, compliments of the authors, Johns Hopkins Hospital. The literature review supported the intervention.

CHAPTER 2: THEORETICAL FRAMEWORK

Theoretical Framework

The nursing theory selected for the DNP project was Jean Watson's Theory of Human Caring. Jean Watson, a nursing theorist, developed the nursing theory, Human Caring, and the Caritas. Watson published numerous works about the philosophy of human caring and the science of caring as it is applied in nursing. Watson (2019) described caring science as a humanitarian method of nursing based on the principle that there is a connection between everything in the universe. The perspective of caring science is grounded on an interpersonal ontology of the universal connection. The philosophy of caring science incorporates reflective, subjective, and interpretive inquiries in addition to scientific and empirical examinations. The caring philosophy is open to new areas of investigation that study multiple ways of knowing, such as intuitive, personal, aesthetic, and kinesthetic (Watson, 2010).

The fundamental concept of Watson's theory (Watson, 2010) highlights transpersonal caring between the nurse and patient where caring is a shared, mutual, and transcendent force that transcends both the patient and the nurse, described as caring moments. Caring moments occur when the nurse bonds with the essence of the patient, stimulating self-discovery and self-awareness, resulting in an authentic presence. "Caring is inclusive, circular, and expansive" (Watson, 2010). Caring encompasses the concepts of caring for self, caring for patients, caring for the environment, and, caring for the universe (Watson, 2010). Watson (2008) defined ten Carative factors that evolved into *Caritas* Processes, derived from the Latin, *Caritas*, meaning to cherish those processes vital to nursing. The ten Caritas processes described by Watson (2010, p. 2) are:

1. *Practicing loving-kindness and equanimity within the context of caring consciousness.*
2. *Being authentically present and enabling, and sustaining the deep belief system and subjective life world of self and one being cared for.*
3. *Cultivating one's spiritual practices and transpersonal self, going beyond ego self.*
4. *Developing and sustaining a helping-trusting, authentic caring relationship.*
5. *Being present to, and supportive of the expression of positive and negative feelings.*
6. *Creatively using self and all ways of knowing as part of the caring process; engaging in artistry of caring-healing practices.*
7. *Engaging in genuine teaching-learning experience that attends to wholeness and meaning, attempting to stay within other's frame of reference.*
8. *Creating healing environment at all levels, whereby wholeness, beauty, comfort, dignity, and peace are potentiated.*
9. *Assisting with basic needs, with an intentional caring consciousness, administering 'human care essentials,' which potentiate alignment of mind-body-spirit, wholeness in all aspects of care.*
10. *Opening and attending to mysterious dimensions of one's life-death; soul care for self and the one being cared for; "allowing and being open to miracles"* (p. 2).

The NCH Healthcare System, including Naples Community Hospital – Downtown (NCH) had previously adopted Watson's Caring model as the theory to provide a foundation for professional nursing practice. The Caring Model (Watson, 2008) aligned with the organizational values for excellence in the provision of care. The organizational alignment by NCH and the use of Watson's Caring Model for enculturating evidence-based practice by other organizations resulted in the logical inclusion of Watson's Caring model as the theoretical basis for the DNP project.

The organizational culture at NCH developed over multiple years, including the use of Watson's theory as a foundation for embracing a shared governance model that evolved because of the caring relationships established throughout the organization. Schlagel and Jenko (2015) developed the vision of the patient sphere with a template driving nursing practice using

Watson's Model of Caring. According to Schlagel and Jenko (2015), the design and evolution of a professional practice model incorporated the value of nursing through the Ten Caritas Processes. According to Watson (2006), a "values-based, theory-guided approach to caring, helps to make visible a caring model for professional nursing and system survival would meet the needs of practitioners and patients alike" (p. 49).

The Caring Model (Watson, 2008) was used to support nursing research at one organization (Schlagel & Jenko, 2015). Use of Watson's Caring Model in other organizations suggested the model could serve as a foundation for the implementation of evidence-based practice (EBP) at NCH. At NCH, the Caring Model is exemplified, using Caritas number one, the Practice of Loving Kindness and Equanimity by recognizing nurses and other caregivers with awards such as the Daisy and Caring awards. Implementation of a nurse recognition award called the Compassionate Care award stemmed from Watson's Caring Theory (Norman, Rossillo & Skelton, 2016). Watson's Caring Model supported the implementation of EBP at NCH through a number of the Caritas processes: authentic presence, practice of loving-kindness, discernment, caring-trusting relationships, cultivation of sensitivity, creatively using one's self, regular use of problem-solving, engaging in teaching-learning experiences, and creating a healing environment (Watson, 2008).

Specific Caritas processes that guided the DNP project included Caritas one, "practicing loving-kindness and equanimity within context of caring consciousness" (Watson, 2008, p.31), and Caritas six, "creatively using self and all ways of knowing as part of the caring process; engaging in artistry of caring-healing practices" (Watson, 2008, p.31). Caritas six guided by engaging nurses in the systematic problem-solving process that supported EBP. Nurses were

supported throughout the DNP project through self-caring processes that aided them in their own

evolution of work, such as the implementation of EBP seen in Caritas one.

Implementing innovations such as EBP required the use of a model to support the

change. Nursing theory guided nursing practice through beliefs and values that motivate their

practice and influences positive outcomes (Dyess, Boykin, & Rigg, 2010). NCH was supportive

of Watson's theory as evidenced by the NCH vision statement, "NCH will be a world-class

leader of excellence in healthcare."

Change Model

Rogers' Diffusion of Innovation Theory provided the groundwork to operationalize the

DNP project. Rogers' theory described how a pioneering idea becomes absorbed into a particular

environment (Friesen, Brady, Milligan & Christensen, 2017). Rogers' Diffusion of Innovation

was selected for this DNP project due to its success in implementing organizational EBP in

numerous programs (Friesen et al., 2017; Funk, Champagne, Wiese & Tornquist, 1991;

Hanrahan et al., 2015; Melnyk et al., 2015; Stavor, Zedreck-Gonzalez & Hoffmann, 2017).

Mohammadi, Poursaberi, and Salahshoor (2018) reported that the process for the

diffusion of innovation required communication through conduits over time for specific

adherents of a social system. Rogers explained that variants in patterns of behavior in individual

responses to change were communicated through six distinct behavior patterns that existed along

a continuum from enthusiastic involvement to consummate denunciation. Rogers' categorized

these behaviors into six classes he dubbed: "innovators, early adopters, early majority, late

majority, and laggards" (Agency for Clinical Innovation (ACI), 2019, p. 1).

The ACI (2019) described the behaviors dubbed by Rogers: Innovators are the first ones

to adapt; they are the risk-takers. Early adopters are generally the leaders of opinions, but more

detached than innovators. The early majority take a bit longer to adopt change and are

infrequently leaders of views. The late majority accept an innovation after the standard part of

the group has accepted the idea. Laggards are the last of the group to change; they are opposed to

change and tend to be older individuals. The variable behaviors presented by these groups were

considered when implementing the education of the Johns Hopkins Nursing Evidence-Based

Practice Model (JHNEBPM). The distribution of these qualities influenced the relative success

of the project.

The diffusion of innovation was abstracted in five stages: "knowledge, persuasion,

decision, implementation, and confirmation" (Pashaeypoor, Ashktorab, Rassouli & Alavi-Majd,

2016, p. 87). Pashaeypoor et al. (2016) described the phases of diffusion of innovation:

Phase 1: Knowledge

Knowledge happened when a person or party was subjected to the existence of the

change, and, as a result, acquired some insight into how it works. Providing knowledge of EBP

with the JHNEBP model was the first step toward implementation. The initial phase of

innovation was to provide education to nurses about EBP so they could make informed decisions

about whether they should implement EBP (Pashaeypoor et al., 2016). Education was provided

to the nurses involved in the DNP project through diverse methods including web-based,

handouts, site visits to their departments and an internal website to house research and EBP

materials to improve EBP knowledge, confidence, and utilization by the nurses involved in the

DNP project. An intranet site was established to house materials for and links to promote EBP.

Spiva et al. (2017) developed a successful internal website as a repository for EBP resources,

toolkits, and links to databases, and EBP educational material.

Phase 2: Persuasion

Persuasion transpired when a person or party developed an attitude about innovation, whether positive or negative. According to Pashaeypoor et al. (2016), Rogers deemed a person's decision to accept or reject a change process was dependent on recipient and disseminator variables, observed features of the innovation such as relative advantage, compatibility, testability, and observability. Based on Rogers' assertions, persuasion occurred through education to the nurses involved regarding the usefulness of the JHNEBPM to promote EBP for nurses and patients, that EBP can be compatible with their workflow, that the EBP can be tested through rapid cycle improvement, and that the change stemming from EBP implementation can be measured for growth. Pashaeypoor et al. (2016) reported findings that relative advantage, compatibility, testability, and observability of EBP had a substantial positive effect on the adoption of EBP. Comparative advantage signified the benefits of EBP to nursing duties, and compatibility signified the alignment, consistency, and appropriateness of EBP to the work of nursing. Observability denotes the extent to which the outcomes of EBP could be seen, and trialability suggested the scope to which EBP was able to be studied (Pashaeypoor et al., 2016).

Phase 3: Decision

Decision ensued when a person or group participated in actions that led to a judgment to take on or cast off the innovation. The decision was made after the nurses weighed the relative value they perceived when they completed the JHNEBPM education to implement EBP with web-based support. It was essential to measure nurses' existing beliefs, knowledge, and utilization for the adoption of EBP before and after the education, and may influence the nurse's choice to accept or reject the innovation of EBP. The measurement was accomplished through pre- and post-implementation using the EBP beliefs (EBPB), EBP Implementation (EBPI), and

Organizational Culture and Readiness for System-Wide Integration of EBP (OCRSIEP) scales (Melnyk et al., 2010). The nurses' decision to implement EBP was affected by their knowledge of the JHNEBPM.

Phase 4: Implementation

Implementation followed when a person or party placed an innovation into use. Stavor et al. (2017) wrote that attributes of the adopter included the nurses' EBP values, skills, and awareness; characteristics of the organization include environment, barriers, and limitations; qualities of the JHNEBPM (the innovation) and features of the exchange including presentation and user-friendliness of the knowledge tools that were consistent with Rogers' Diffusion of Innovation. Support throughout the implementation of the JHNEBPM was provided through EBP mentors. Pashaeypoor et al. (2016) suggested that efforts to present EBP features can enhance its acceptance.

Phase 5: Confirmation

Confirmation happened when a person or group pursued support for a decision already made about the innovation but may withdraw a declaration if subjected to opposing ideas to the change. Post-implementation EBPB, EBPI, and OCRSIEP surveys measured the extent of adoption of the innovation (Melnyk, Fineout-Overholt, & Mays, 2008). Pashaeypoor et al. (2016) wrote that the use of Rogers' model could bring about a transformation of opinion needed for successful change.

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Conclusion

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The use of a model to support innovations such as EBP was important because nursing theory guides nursing practice through beliefs and values that motivate nurses' practice and influences positive outcomes (Dyess, Boykin, & Rigg, 2010). Watson's caring model aligned

with the NCH organizational values for excellence in the provision of care. Other organizations

have used Watson's Caring Model for enculturating evidence-based practice resulting in the

logical inclusion of Watson's Caring model as the theoretical basis for the DNP project.

Rogers' Diffusion of Innovation theory supported the groundwork to operationalize the

DNP project. Rogers' theory described how a pioneering idea becomes absorbed into a particular

environment (Friesen, Brady, Milligan & Christensen, 2017). Rogers' Diffusion of Innovations

has demonstrated success in implementing organizational EBP in numerous programs (Friesen et

al., 2017; Funk, Champagne, Wiese & Tornquist, 1991; Hanrahan et al., 2015; Melnyk et al.,

2015; Stavor, Zedreck-Gonzalez & Hoffmann, 2017).

CHAPTER 3: PROJECT DESIGN AND METHODS

The design and method of the DNP project, a quality improvement project, were to determine nurses' beliefs, knowledge, and implementation of EBP in three units of the hospital after an educational intervention supported with web-based learning materials. The participating groups include the Critical Care Unit, the Behavioral Health Unit, and the Medical-Surgical Unit. The nurses' beliefs, knowledge, and implementation of EBP were measured before and after the educational intervention.

The nurses at Naples Community Hospital - Downtown (NCH) had varying levels of use and understanding of EBP for knowledge translation. Interviews with nursing leaders revealed that the nurses had mixed levels of experience with EBP, and current resources were not ideal for supporting nursing involvement in EBP.

Organizational Need

Evidence-based practice (EBP) was essential for the provision of safe, effective, quality health care. The nurses at Naples Community Hospital - Downtown (NCH) had varying levels of use and understanding of EBP for knowledge translation. An organizational needs assessment for evidence-based practice (EBP) was conducted to identify strategic priorities, define proposed outcomes, and channel decisions for actions. NCH lacked a conceptual model for the implementation of EBP and demonstrated inconsistent utilization of evidence-based practice according to discussions with Associate Chief Nursing Officer (ACNO) for Professional Practice.   The ACNO for professional practice was dedicated to promoting research and EBP and provides support for the program. The basis of the inconsistent utilization of EBP stemmed from knowledge deficit, lack of EBP mentors and facilitators, belief that EBP is too time-consuming, lack of experience, lack of resources, and lack of organizational requirements to

implement EBP. The literature cited these barriers and a non-supportive culture for EBP as the

main barriers to implementing EBP (Melnyk et al., 2016). NCH demonstrated strong support for

implementing EBP.

The professional practice section of nursing administration supported EBP through

several venues. Various human resources were dedicated to promoting EBP and professional

practice, including a professional practice coordinator, research and EBP coordinator, a medical

library, and a broad-based education department. In addition to the human resources provided to

support EBP, the hospital also employed related support service staff. These staff included a

Lean Transformation Department, an Instructional Designer, and Information Technology

personnel who assist with project management for clinical departments. It is through these

support services that the education and data collection support was realized for the DNP project.

Interviews with the ACNO conducted in March 2019 revealed gaps in EBP performance.

The ACNO reported that EBP was not enculturated in the organization and although the Johns

Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) was the hospital chosen model

for EBP, training had not been completed for its implementation. The ACNO suggested that a

DNP project could include formal training for nurses using the JHNEBPM to implement EBP,

including web-based support of educational materials supporting research and EBP. The ACNO

recommended three nursing units that would be good candidates to participate in a pilot project.

The three groups identified for possible inclusion of the EBP implementation project included

the Critical Care Unit, the Behavioral Health Unit, and the Medical-Surgical Unit.

During interviews with the directors of the Critical Care Unit, the Behavioral Health

Unit, and the Medical-Surgical Unit, the directors of these units each reported their staff had

mixed levels of experience with EBP and would be willing to participate in a pilot program to

improve their knowledge of EBP. The Director of Critical Care stated that he believed his staff

needed primary education about EBP and that the training may create the spirit of inquiry

necessary to promote EBP. All three directors reported that a web-based platform for education

would be conducive to the needs of their staff and agreed that the provision of a conceptual

model such as the JHNEBPM would aid their team in the implementation of EBP. During an

interview with the medical librarian on May 23, 2019, the librarian reported a knowledge deficit

among nurses and ancillary staff regarding the completion of useful literature searches for

evidence.

Organizational Support

The organization was supportive of EBP to improve the quality of care and the patient

experience with a DNP project focused on providing education and web-based resources to

support EBP. The ACNO of Professional Practice via a letter of support confirmed

organizational support (Appendix G). The directors of these nursing units supported the EBP

project during an interview. Unstructured random interviews of front-line nurses were

conducted during May 2019. The front-line nurses interviewed indicated they would support

instruction for EBP implementation during a meeting of the Central Council of the Shared

Governance structure.

Project Stakeholders

The stakeholders for the DNP project included the participating nurses, nurse managers,

nurse directors, educators, librarians, information technology experts, and the DNP student

project leader. Interviews with the stakeholders were conducted to acquire information and

obtain consensus for a strength, opportunity, weakness, threat (SWOT) analysis (Appendix F).

SWOT analysis

Heath, Johansen, Lurati, and Zamparini (2018) wrote that a SWOT analysis was one of the most frequently utilized tools in planning and strategy development. The fundamental goal of the SWOT analysis was to outline a strategy in terms of goals and objectives (Heath et al., 2018). The primary objectives for the organizational dynamics related to the problem were determined through the SWOT analysis (Appendix F).

Strengths

Strengths of the Naples Community Hospital - Downtown (NCH) included the dedication of the senior leaders for the promotion of EBP. The leadership committed to effecting practice change with EBP. NCH provided acute care services to meet the needs of the community. Comprehensive health care services were supported through affiliation with the Mayo Clinic. The hospital had a newly reorganized shared governance structure where front-line nurses supported EBP. NCH was on the Magnet® journey. The American Nurses Credentialing Center developed the Magnet® Recognition Program. Magnet® was globally acknowledged as the highest credential of health care organizations for the highest attainment of nursing excellence (Graystone, 2018).

Weaknesses

Weaknesses of Naples Community Hospital - Downtown (NCH) included inconsistent utilization of EBP, mixed levels of EBP experience, lacked a conceptual model for the implementation of EBP, had little involvement of front-line nurses in the Research and EBP Council of the hospital's shared governance structure, and lacked nurses with EBP expertise. The hospital had the ability to improve EBP beliefs, knowledge, and implementation with education and systems to support nurses.

Opportunities

Opportunities at Naples Community Hospital - Downtown (NCH) included a knowledge deficit of nurses and ancillary staff for EBP implementation, limited access to EBP information, no web-based platform to house EBP resources, and had little to no experience with literature search and review. Development of an EBP educational program and a web-based format to house EBP resources may have improved EBP at the hospital, potentially resulting in improved outcomes and patient satisfaction.

Threats

The identified threats at NCH included potential damage to the credibility of the organization, competitors shared the same pool for human resources and can thin the pool of potential professional candidates sought by NCH, and lacked effective research-supported EBP that could have threatened the Magnet® journey. These threats could have been reduced and/or eliminated through effective utilization of EBP.

Barriers and Facilitators

The barriers for implementation of EBP were consistent with the literature citing multiple barriers such as limited time, lack of authority, lack of nurses with EBP experience, supportive leaders, and lack of resources (Stokke, Olsen, Espehaug, & Nortveldt, 2014). Verloo, Desmedt, and Morin (2017) reported additional barriers, including the level of nursing education, years of experience, lack of support, and time. These barriers aligned with the SWOT analysis suggesting the need for EBP education, EBP trained leaders, and resources to support EBP.

Facilitators identified in the SWOT analysis included organizational support for EBP promoting practice change, a shared governance structure, full-time research and EBP coordinator, affiliation with an academic institution (Mayo Clinic), and taking steps in the

Magnet® journey. The organizational culture supported an EBP culture through organization-

wide departmental quality improvement projects where results were presented at an annual

quality conference. These facilitators made an educational intervention and web-based format to

house EBP material achievable.

Project Schedule

The EBP project schedule was developed. The project itself took ten weeks from pre-

implementation surveys through project presentation and final project paper. The map for the

project presented a visual depiction of the project timeline (Appendix C).

Resources Needed

The resources required for the project presented minimal impact to the organization

(Appendix D). Educational materials included paper and ink for handouts provided by the host,

snacks provided during unit-level meetings, and electronic and hard copy books for participant

reference that were added to the library.

Project Manager Role

The DNP student was accountable for the development and implementation of the

evidence translation project using the Johns Hopkins Nursing Evidence-Based Practice Model

(JHNEBPM) to promote EBP at the hospital. The DNP student presented the EBPB, EBPI, and

ORSIEP surveys to project participants just before the education of the JHNEBPM and

actualization of the EBP intranet site housing EBP materials. The polls were distributed in the

electronic education system via Survey Monkey® to assist in data collection. Data was analyzed

and reviewed by the DNP student in collaboration with a statistician to report project findings.

Finally, the DNP student presented the project findings to the hospital, Chamberlain University

College of Nursing, and the author of the instruments used in discovery.

Plans for Sustainability

The project was sustained through the last stage of Rogers' Diffusion of Innovation, confirmation, and supported by Caritas number one, the "Practice of Loving Kindness and Equanimity" (Watson, 2008, p. 31). Confirmation transpired when a person or group pursued support for a decision already made (Pashaeypoor, Ashktorab, Rassouli, & Alavi-Majd, 2016). Support during and after the implementation of the JHNEBPM was provided through EBP mentors supported by the Research and EBP coordinator. The EBP mentors are members of the Research and EBP Council arm of the organizational shared governance structure and thus actively involved in supporting EBP at the unit level.

Project Vision, Mission, and Objectives

Vision

The vision of the DNP project was to improve quality patient care through the implementation of evidence-based practice (EBP). The DNP project aligned with the organizational vision "NCH will be a world-class leader of excellence in healthcare" (NCH, 2019), through the implementation of EBP. Patient satisfaction and quality of care was achieved when supported with EBP by Watson's Model of Caring, the theoretical foundation for nursing seen in the Naples Community Hospital - Downtown (NCH) professional practice model. It was through Watson's theory, Caritas six, "creatively using self and all ways of knowing as part of the caring process; engaging in artistry of caring-healing practices" (Watson, 2008, p.31) that nurses engaged in the systematic problem-solving process that supported EBP.

Mission

The mission of the DNP project was to reduce the gap of knowledge translation through the use of the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) with web-

based support to aid nurses in the translation of research evidence to promote evidence-based

practice. The project mission aligned with the NCH mission "Helping everyone live a longer,

happier, and healthier life" (NCH, 2019). A longer, healthier life can occur with the use of the

most current EBP. Studies reviewed previously highlighted the importance of knowledge and

skills for EBP that could be achieved through education and leadership (Albarqouni et al., 2018;

Allen et al., 2015; Friesen et al., 2017; Ramos et al., 2015; and Spiva et al., 2017).

Objectives

The short-term and long-term objectives of the DNP project discussed the immediate and

long-term effects of the project. The short-term objectives started after completing EBP

education and implementation of web-based tools for research and EBP focused on knowledge

and confidence for the project population, the nurses who are participating in the project. The

short-term objectives were to identify nurses' knowledge and beliefs about EBP, compare EBP

knowledge, confidence and utilization, describe EBP utilization, and improve EBP knowledge,

confidence, and use. These short-term objectives were realized during the project. The long-term

aim will commence upon project completion. It will be to sustain the projected improvement of

EBP knowledge, confidence and utilization among the project population, then expand the

education to the rest of the organization.

Risks and unintended consequences of the project may exist. They included but were not

limited to a small convenience sample that may introduce respondent bias and a limited

timeframe for project implementation. Although three different nursing units were selected to

participate in this project, this population may also represent respondent bias. The tri-weekly

unit visits may have introduced questions from participants introducing a risk of variation of

content due to various questions asked by students. This risk was reduced by sharing questions

and answers from these visits on a question and answer document that was shared with all

participants after the education phase of the intervention was completed. Other risks stemmed

from weaknesses identified during the strength, weakness, opportunity, and threat (SWOT)

analysis that were not corrected during the project.

PICOT Question

The following population, intervention, comparison, outcome, time (PICOT) question

served as the foundation for the DNP project: "For nurses working at Naples Community

Hospital – Downtown (NCH), will the implementation of the Johns Hopkins Nursing Evidence-

based Practice Model (JHNEBPM) improve attitudes, knowledge, and perceptions of the ability

to understand the application of evidence-based practice (EBP) over 8-10 weeks?".

Population

The population for the DNP project was the Registered Nurses working in the Critical

Care, Medical-Surgical, and Behavioral Health units at NCH. The Critical Care Unit had 41

Registered Nurses. The Medical Surgical Unit had 35 Registered Nurses and the Behavioral

Health Unit had 17 Registered Nurses. There were three directors and two managers over the

participating units who were Registered Nurses that also joined the project. The total of eligible

Registered Nurse participants was 97 and actual Registered Nurse participants was 65.

The nurses were recruited through their managers and directors at a meeting, and the

DNP student met with the nurses at numerous meetings before the implementation of the DNP

project. Informed consent was obtained before the implementation of the project by the nurses

proceeding through educational modules in the computer-based training program. The

participants were all Registered Nurses employed by NCH. The inclusion criteria for

participants was that they were Registered Nurses working in one of the three units, as

mentioned earlier. Nurses hired after implementation of the project were be excluded from data collection.

Intervention

The EBP practice change that was implemented in the DNP quality improvement project was the introduction of the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) to improve EBP knowledge, attitudes, and implementation. The introduction of the JHNEBPM occurred during web-based educational programs for participants. The education for the participants was a structured web-based evidence-based practice training highlighting the JHNEBPM. Friesen, Brady, Milligan, and Christensen (2017) reported significant improvement of EBP implementation with structured EBP education using the JHNEBPM conceptual model to guide the process.

An intranet website was established on the organization's private network where EBP materials were loaded. The website included a folder of the JHNEBPM tools to guide the user in the JHNEBPM. Significant positive effects were reported for a web-based educational platform to deliver the educational matter to nurses to support EBP (Allen, Lubejko, Thompson, & Turner, 2015; Spiva et al., 2017). Significant improvement for EBP implementation was reported after web-based educational programs indicating support of this type of application (Friesen, Brady, Milligan, and Christensen, 2017; Ramos-Morcillo, Fernandez-Salazar, Ruzafa-Martinez, Del-Pino-Cassado, 2015; & Spiva et al., 2017). Qualitative data revealed themes that could provide insight into the development of an educational platform for EBP (Friesen et al., 2017).

The unit-based nursing leaders participated to demonstrate transformational leadership skills in support of the EBP project for their staff. Research has suggested that transformational

leaders support EBP (Aarons, Ehrhart, Farahnak, & Hurlburt, 2015; Guerrero, Frimpong, Kong, Fenwick, & Aarons, 2018).

Comparison

The nurses at NCH had varying levels of use and understanding of EBP for knowledge translation. Interviews with nursing leaders revealed that the nurses had mixed levels of experience with EBP, and that existing resources were not ideal for supporting nursing involvement in EBP. There were no guidelines directing EBP at NCH. The comparison was measured by outcomes from valid EBP surveys conducted before and after the intervention.

Outcome

The introduction of the JHNEBPM conceptual model was completed with computer-based education of nurses working in three different departments of the hospital that was augmented by a web-based program designed to support nurses with the tools necessary to aid them in the provision of EBP. It was anticipated that knowledge of the conceptual model, along with web-based tools, would improve nurses' attitudes, knowledge, and perceptions of the ability to understand the application of EBP.

The impact of the intervention was measured by three EBP surveys and demographic data conducted via Survey Monkey® to aid in categorizing findings. Demographic data collected included participant information, including age, years of experience in nursing, primary role in nursing, race/ethnicity, gender, educational level, level of experience with JHNEBPM, and unit of employment. These demographics helped in analyzing the data per the relevant category to help answer the PICOT question.

The surveys took approximately 15 minutes collectively to complete and were conducted during weeks one and two for pre-implementation data as well as weeks nine and ten of the ten-

week project timeframe for post-intervention data. The EBP surveys were the EBP beliefs survey

(EBPB), EBP Implementation (EBPI) scales (Melnyk, Fineout-Overholt, & Mays, 2008), as well

as the Organizational Culture and Readiness for System-Wide Integration of EBP (OCRSIEP)

scales (Melnyk, Fineout-Overholt, Giggleman & Cruz, 2010). These scales provided valid

instruments to measure the attitudes and practice knowledge nurses possessed for EBP and

organizational and cultural readiness for EBP (Harper et al., 2017). Permissions to use the EBPB,

EBPI, and OCRSIEP surveys were received from the authors (Appendix D).

The EBPB instrument measured the value of and the ability to implement EBP by the

participant, measured by a 16-question survey (Melnyk, Fineout-Overholt, & Mays, 2008). The

EBPI instrument measured the frequency of use of specific EBP processes over the previous

eight-weeks with an 18-item, five-point Likert-type scale (Melnyk et al., 2008). The procedures

include evidence appraisal, development of a population, intervention, comparison, and outcome

(PICO) question, and using evidence to modify practice. The OCRSIEP was a 19-item, five-

point Likert-type survey designed to measure the perceived level of commitment to EBP among

staff (Melnyk et al., 2010).

Harper et al. (2017) reported that each of the three scales established construct, content,

and face validity. Strong internal consistency, ranging from .88 to .95, had been reported for each

of the three scales (Melnyk et al., 2010; Thorsteinsson, 2013; Wallen et al., 2010; Warren,

Montgomery, & Friedmann, 2016). Cronbach's alpha scores reported were .89 for EBPB, .96

for EBPI, and .94 for OCRSIEP for this study (Harper et al., 2017).

Time Frame

The time frame for the implementation of the DNP project was nine-weeks, with pre-

implementation data collection beginning two weeks before the educational intervention.

Feasibility

The Associate Chief Nursing Officer (ACNO) for Professional Practice stated that the Johns Hopkins model for EBP had been adopted by the facility without any nurse training in its use, resulting in the lack of formal adoption of the model. The ACNO also indicated that a need exists for a web-based format to guide nurses in education and implementation of EBP. A wealth of resources was available at NCH to help implement and complete the DNP project within an eight-to ten-week time frame. Support from senior leaders was vital to carry out the mission and vision of the project. The support for this DNP project came from the ACNO for professional practice.

The ACNO for professional practice, a transformational leader, was dedicated to promoting research and EBP and provided support for the program. Anticipated barriers were lack of EBP mentors and facilitators, belief that EBP is too time-consuming, and lack of organizational requirements to implement EBP. These barriers were overcome through resources supported by the professional practice section of nursing. The Shared Governance structure helped overcome the lack of EBP mentors and facilitators by obtaining support from the Research and EBP council arm of the shared governance structure to provide mentorship of EBP. Support from EBP tools were housed on a specially designed website to reduce the angst about the length of time needed to implement EBP. The organization lacked formal requirements for EBP. It tried through nursing and other clinical groups to effect this positive change. These resources ensured the timely completion of the DNP project.

Sample and Setting

The setting for the proposed DNP project was Naples Community Hospital - Downtown (NCH), a not-for-profit, academic healthcare system in Naples, Florida comprised of two acute-

care hospitals with a total of 713 licensed beds and multiple facilities throughout the Collier

County Florida area (NCH Healthcare System, 2016). NCH provided extensive services to the

community. Inpatient services included medical, surgical, cardiac, orthopedic, pediatric,

obstetrics, rehabilitative, psychiatric, oncology, emergency treatment, and diagnostics.

Outpatient services included rehabilitation, home care, walk-in centers, wound healing, wellness,

nutrition, and more. NCH was affiliated with the Mayo Clinic and took advantage of the

expertise they had to offer (NCH Healthcare System, 2016). The mission of NCH stated, "NCH

will be a world-class leader of excellence in healthcare". The vision of NCH stated, "Helping

everyone live a longer healthier, happier life" and the value statement of NCH was "Excellence

in every patient experience" (NCH, 2019). The mission, vision, and values were represented in

the NCH organizational culture in the healthcare system and the community.

The healthcare system used a matrix organizational structure across the hospitals and

offsite facilities. There was one Chief Executive Officer (CEO), one Chief Operating Officer

(COO), one Chief Financial Officer (CFO), one Chief Nursing Officer (CNO), one Chief

Nursing Informatics Officer (CNIO), and one Associate Chief Nursing Officer for Professional

Practice who collectively oversaw the entire organization. Nursing operations were guided by

two Associate Chief Nursing Officers (ACNOs), one at each hospital. These ACNOs provided

shared operational responsibility for the offsite facilities. Beneath the senior leadership

positions, the organization was guided by directors who oversaw service-lines and had managers

reporting to them in the various departments. The intervention occurred at the downtown hospital

in three nursing units: Critical Care, Medical-Surgical, and Behavioral Health. The Medical-

Surgical unit had a 36-bed capacity with typical patient types, including post-operative general

surgery patients and medical conditions such as diabetes, renal disease, gastrointestinal concerns,

and substance abuse withdrawals. General medical, surgical, and neurological patients were seen in the 22-bed Critical Care Unit. The Behavioral Health Unit had 12 inpatient beds and had a mixed variety of psychiatric and addiction patients. All three units had unit-based practice councils that supported shared governance. Most nurses participating had associate degrees, some had bachelor's degrees, and a few had master's degrees. Patient backgrounds in the hospital were reflective of the community, primarily Caucasian and Hispanic and a mix of other ethnicities.

Implementation Plan/Procedures

The project leader (DNP student) loaded the demographic survey, the EBP beliefs (EBPB), EBP Implementation (EBPI), and Organizational Culture and Readiness for System-Wide Integration of EBP (OCRSIEP) scales (Appendix D) into Survey Monkey® to enable reliable summarization of the data (Melnyk, Fineout-Overholt, & Mays, 2008; Melnyk et al., 2010). Before implementation, the project leader presented the purpose of the project to the participants at their unit meetings. It was during these informational meetings that informed consent was discussed with the participants. Participation was encouraged but was not mandatory.

Before the education began, the participants who consented to participate completed demographic information and the EBPB, EBPI, and OCRSIEP surveys on Survey Monkey® (Melnyk et al., 2008; Melnyk et al., 2010). These surveys provided valid instruments to measure the attitudes and practice knowledge nurses possess for evidence-based practice (EBP) and organizational and cultural readiness for EBP (Harper et al., 2017). The results of these surveys provided baseline information from which post-education results were compared.

The EBP education granted continuing education units (CEUs) to participants and offered drawings for gift cards to local restaurants as incentives to participate. During the three portions of the project, completion of the pre-intervention survey, completion of the web based EBP module, and completion of the post-intervention survey drawings for gift cards to local restaurants added incentive for participation.

The education and gift cards represented the first two stages of Rogers' Theory of Innovation, Knowledge and Persuasion (Pashaeypoor, Ashktorab, Rassouli, & Alavi-Majd, 2016). The subsequent phases, decision, implementation, and confirmation occurred after completion of the educational process. Decision and implementation were measured by analysis of results from the EBPB and EBPI surveys and OCRSIEP scales (Melnyk et al., 2008; Melnyk et al., 2010). Rogers' last phase, confirmation extended beyond the length of the project when a change in practice occurred and was sustained.

The intervention plan was to provide web based EBP education to the participants. The educational objective for the web-based sessions was to define evidence-based practice. The participants discussed the importance of nursing practice based on evidence, explained the seven steps of EBP, and distinguished among the three systems of inquiry: research, EBP, and quality improvement. A presentation described how Watson's Theory of Caring aligned with EBP at Naples Community Hospital - Downtown (NCH). Conceptual models for EBP were reviewed, leading up to a presentation of the planned conceptual model, The Johns Hopkins Nursing EBP Model.

The Johns Hopkins Nursing EBP Model (JHNEBPM) was examined in detail. The JHNEBPM involved a three-step process referred to as Practice question, Evidence, and Translation (PET) (Appendix E). Each of the PET steps were reviewed in detail, guiding the

participants to use the JHNEBPM tools to support their EBP and quality improvement projects. The final aspects of the training included an overview of quality improvement methodologies and the elements of project planning. The medical library education discussed completing a literature search, identifying a credible website, and using the NCH medical library.

A research and EBP intranet site was opened to staff during the educational program and remains open to all nurses to sustain EBP practice. The intranet website was developed to be the repository for EBP material that included EBP education, a link to the medical library, JHNEBPM materials, posting of staff generated EBP projects, and materials related to the institutional review board (IRB). The EBP education PowerPoint presentations were posted to the site, along with other research and EBP education tools as they were developed. The intranet site was a comprehensive research and EBP repository that was readily accessible to nurses and other professionals who desire to implement a research or EBP project. During the implementation, the project leader visited each of the participant units tri-weekly for formative evaluation of the EBP process using the JHNEBPM process and discussed any questions the participants had.

After completion of the web-based presentations, availability of web-based materials, and tri-weekly project leader unit visits, the participants verified the previous demographic information, and repeated the EBPB, EBPI, and OCRSIEP scales via Survey Monkey® (Melnyk et al., 2008; Melnyk et al., 2010). Results from the survey were summarized and analyzed for differences from the pre-education survey. A statistical analysis was completed, and the results were disseminated internally at the Annual Research, Evidence-Based Practice, and Quality Improvement Conference.

Data Collection Procedures

A quantitative methodology with a pretest-posttest design producing interval data derived

from total means was used to analyze the survey data. Nominal and ordinal data were used for

demographic information and survey questions. The participating nurses completed the EBPB,

the EBPI, and the OCRSIEP instruments via an electronic survey conducted with Survey

Monkey® before and after the intervention (Melnyk et al., 2008; Melnyk et al., 2010). Survey

Monkey® assured compliance with the Health Insurance Portability and Accountability Act

(Survey Monkey®, 2019). The response rates to each of the survey questions were summarized

and the DNP student uploaded the data into IBM SPSS, version 26 software for statistical

analysis (IBM Corporation, 2019).

Pre-Intervention

Meetings were conducted with the nurse participants the weeks of August 19, 2019 and

August 26, 2019, before the intervention. During these meetings, a summary of the DNP project,

the demographic questions, EBPB, EBPI, and the OCRSIEP surveys were discussed with the

participants (Melnyk et al., 2008; Melnyk et al., 2010). Time was allowed for questions and

answers. Participation was encouraged but not mandatory. After the presentation, the participants

were advised that informed consent to participate in the project would occur through their

agreement to proceed in the web-based platform with the surveys and web-based education. Both

the NCH and Chamberlain University Institutional Review Boards deemed the project to be an

exempt quality improvement project. After acknowledging informed consent, the participants

were asked to complete the demographic, EBPB, EBPI, and OCRSIEP surveys on the web-based

education platform via Survey Monkey® (Melnyk et al., 2008; Melnyk et al., 2010).

Intervention

Web-based EBP education sessions started the week of August 12, 2019 consisting of an overview of EBP using the JHNEBPM. A discussion about the three systems of inquiry: research, evidence-based practice, and quality improvement was introduced. A review of the seven steps of evidence-based practice incorporated the importance of nursing practice that is based on evidence. An outline of how Watson's Theory of Caring aligned with EBP at Naples Community Healthcare System (NCH) was presented. A discussion of conceptual models of EBP introduced the JHNEBPM and process as the conceptual model selected by NCH. A review of quality improvement methodologies was presented with a focus on the plan, do, study, act methodology for rapid cycle improvement, followed by an overview of the elements of project planning. The web-based education presented an overview of conducting a literature search, evaluating website credibility, and using the facility medical library.

The DNP student visited each of the participant units tri-weekly and upon request to discuss any questions, assist with implementation, and answer questions the participants had about the EBP process using the JHNEBPM. Questions asked by nurse participants during unit visits by the DNP student were added to a Question and Answer (Q&A) handout as frequently asked questions (FAQs) and were uploaded to the research and EBP intranet site. The question and answer handout reduced extraneous variables by providing consistent information to participants.

An intranet website for research and EBP went live for hospital staff on August 12, 2019 to coincide with the educational components of the project. The research and EBP intranet site contained links to relevant resources to promote research and EBP. The intranet website was also the repository for EBP documents. Folders included tools for using the JHNEBPM, materials

needed to submit projects/studies for review by the Institutional Review Board (IRB), and

EBP/research projects provided by staff. New folders were added when appropriate topics were

presented.

There was a link on the research and EBP intranet site to the medical library where

additional links for databases supporting EBP were located. The medical library was open

Monday through Friday and had a medical librarian to assist. The medical library provided

access to such databases as AskMayoExpert, Cumulative Index of Nursing and Allied Health

Literature (CINAHL), EBSCO, Joanna Briggs, LexiComp, Medline, Medline Plus, Mosby

Online Procedure Manual, and more.

Hard copy and electronic textbooks were available to hospital staff to support EBP. These

included Dang and Dearholt's (2018) *Johns Hopkins Nursing Professional Practice Model* (3rd

ed.) and Melnyk and Fineout-Overholt's (2019) *Evidence-based practice in nursing &*

healthcare a guide to best practice (4th ed.) among other texts. The medical library included a

literature search service that provided access to full-text literature/articles that were available at

no cost to hospital staff, including pieces from publishers who charged fees for use.

The Research and EBP council (REBPC) of the Shared Governance structure received

EBP education from the project leader to enable REBPC members to mentor participants for

EBP processes during and after the intervention to increase and sustain EBP beliefs, knowledge,

and implementation.

Post-Intervention

After the educational programs, the participants were asked to verify demographic

information, update their knowledge of JHNEBPM, and repeat the EBPB, EBPI, and OCRSIEP

surveys via Survey Monkey® the week of October 21, 2019. The EBPB, EBPI, and OCRSIEP

surveys produced interval data from the mean totals derived from the Likert-type scales and were summarized on a spreadsheet for upload to statistical analysis software (Melnyk et al., 2008; Melnyk et al., 2010).

Recruitment and Selection

Education for EBP using the JHNEBPM and implementation of an intranet site for EBP materials was part of a quality improvement project to improve attitudes, knowledge, and perceptions of the ability to understand EBP of nurses working in three departments of NCH.

Nurses working in the Critical Care, Medical Surgical, and Behavioral Health units at NCH – Downtown (NCH) were recruited as a convenience sample to represent a sample of nurses working at NCH. These participants were asked to provide informed consent for their participation in the EBP project during meetings with the project leader/DNP student and was authorized by the participant by initiating the computer-based learning modules. Inclusion criteria for the project included all registered nurses working full or part-time in one of the three units as mentioned above, including managers and directors. Exclusion criteria for the project were those hired or transferred into these units after implementation and those opting out of participation.

The project was quantitative using a pretest-posttest design. Quantitative study design can improve self-reported levels of intention to understand and develop research after an educational intervention using pre-test/post-test methods (McNab, Berry, & Skapetis, 2019). Similar techniques can quantitatively measure self-reported beliefs, knowledge, and use of EBP. Because this project examined education to address EBP beliefs, knowledge, and perception of organizational culture for EBP, it makes sense that the evaluation of the project is summative. The data collection tools were not designed to collect formative data.

The objective of a project was to discover the status, consequence, and reason for inconsistent utilization of EBP (Shavelson, 2018). The EBPB, EBPI, and OCRSIEP surveys helped us identify the status of EBP beliefs and utilization (Melnyk et al., 2008; Melnyk et al., 2010). The literature had identified many possible outcomes for failing to implement EBP. The surveys were able to isolate reasons for the present state of EBP knowledge, beliefs, and practice for the participants at NCH. Participants completed the EBPB, EBPI, and OCRSIEP surveys (Melnyk et al., 2008; Melnyk et al., 2010) before the EBP education during the weeks of August 19, 2019 and August 26, 2019, and then repeated the week of October 21, 2019, after the training.

Data Analysis Plan

Participant responses of the EBPB, EBPI, and the OCRSIEP scales were reviewed and summarized. The plan for data analysis was to analyze the summary data for both the pre- and post-intervention surveys (Melnyk et al., 2008; Melnyk et al., 2010). Data was gathered and summarized onto an Excel spreadsheet by Survey Monkey® and reviewed by the DNP student. The Excel spreadsheet containing the survey data was formatted by the DNP student and uploaded into IBM SPSS, version 26 for statistical analysis (IBM Corporation, 2019).

A paired *t*-test compares two sample means from the same population concerning the same variable at two different times as seen in a pre-test-post-test design (Shier, 2004). A paired *t*-test was completed to test whether there is a significant difference between the two sample means for the pre and post-implementation surveys. A two-sample *t*-test examined the difference between the two sample means for pre and post-education (Larson & Farber, 2012). Consultation with a statistician was done throughout the project to guide the DNP student in data collection and to verify the accuracy of the DNP student's data analysis.

The data was examined to characterize the extent to which outcomes of the practice question were met. The population, intervention, comparison, outcome, and time (PICOT) question was: For nurses working at Naples Community Hospital Downtown (NCH), will the implementation of the Johns Hopkins Nursing EBP Model (JHNEBPM) improve attitudes, knowledge, and perceptions of the ability to understand the application of evidence-based practice (EBP) over 8-10 weeks? Summary data was reviewed with the participating nurses, managers, directors, and senior leaders during group and individual meetings. The project manager (the DNP student) believed that the multimodal EBP education, addition of a research and EBP intranet site, and library tools would result in improved attitudes, knowledge, and perceptions of the ability to understand the application of EBP. Analysis of the participant evaluations from the web-based education identified areas of success and opportunities to use for planning future classes to keep the momentum going and sustain the excitement for EBP.

An overview of the project and resulting data was disseminated to internal and external stakeholders on a poster presentation during the NCH Annual Research and Quality Improvement Conference. It was through this public presentation that EBP was seen by the community as something of value to the organization.

Instrumentation

According to Melnyk et al. (2008) and Melnyk and Fineout-Overholt (2005), the EBPB, EBPI, and the ORSIEP scales (Appendix D) measured quantitative data that was based on a Likert-type scale producing interval data. According to Harpe (2015), Likert and Likert-type scales provided researchers the ability to measure aspects such as self-confidence and performance that were not directly observable. Likert and Likert-type scales were based on an interval scale as they were developed through psychological scaling and were developed to be

used and analyzed as a group (Harpe, 2015; Vonalgo, 2017). Likert and Likert-type rating scales

obtain quantitative data from non-physical phenomena (Harpe, 2015; Vonglao, 2017). The data

was measured on an interval scale. Parametric testing such as *t*-test or analysis of variance may

be used for data analysis of an interval scale (Harpe, 2015).

Permission to use the EBPB, EBPI and the ORSIEP scales (Melnyk et al., 2008; Melnyk

et al., 2010) was received from the authors (Appendix E). Extraneous variables were controlled

through the provision of the same education for all participants. Questions from the nurses

arising during classes were collected during question and answer sessions at DNP student unit

visits and was provided to the nurses after the conclusion of the intervention.

The 16-question EBPB instrument employed a five-point Likert-type scale to measure the

participant's value of and ability to implement EBP based on responses; the higher scores

signified significant beliefs (Harper et al., 2017). The EBPI instrument measured the frequency

of use over the previous eight weeks for specific EBP processes using an 18-item, five-point

Likert-type scale (Harper et al., 2017). The methods measured by the EBPI included evidence

appraisal, development of a population, intervention, comparison, and outcome (PICO) question,

and use of evidence to modify practice. Higher scores signified more frequent implementation of

EBP. The 19-item OCRSIEP used a five-point Likert-type scale designed to measure available

EBP resources and the perceived level of commitment to EBP for implementation (Harper et al.,

2017). Higher scores of the OCRSIEP signified a greater level of commitment to EBP.

Instrument Reliability and Validity

The EBPB, EBPI, and OCRSIEP scales all demonstrated construct, content, and face

validity (Melnyk, Fineout-Overholt, Giggleman, & Cruz, 2010; Thorsteinsson, 2013; Wallen et

al., 2010; Warren, Montgomery, & Friedmann, 2016). Cronbach's alphas reported by Harper et

al. (2017) were 0.89 for EBPB, 0.96 for EBPI, and 0.94 for OCRSIEP. Psychometric properties

of the EBPB and EBPI scales reported Cronbach's alpha >0.90 for each scale where the strength

of EBP beliefs and EBP implementation increased as the educational level increased ($p <.001$)

(Melnyk et al., 2008). For the OCRSIEP scale, Wallen et al. (2010) reported Cronbach's alpha

that ranged from 0.93-0.94 comparable to earlier psychometric testing that showed values over

0.90.

Ethics and Human Subjects Protection

The DNP project was approved by both the NCH and Chamberlain University IRBs as a

quality improvement project. The DNP project abided by the policies of the NCH and

Chamberlain IRBs. Informed consent was obtained electronically after IRB approvals from the

project participants who agreed to participate by completing the surveys and educational

modules. Participants were also informed during meetings and a participant letter that their

participation was desired but not mandatory and that their consent could be withdrawn at any

time. Participants were informed of the reasons for and purpose of the project. They were

advised of the participation requirements, including their responsibility for completing the

EBPB, EBPI, and the ORSIEP surveys before and after EBP education (Melnyk et al., 2008;

Melnyk et al., 2010). Participants were informed that the surveys were anonymous and that their

personal information was confidential. The DNP student was able to discover if participants

completed the surveys and attended the educational sessions but did not know of their responses

to survey questions.

Data collection was done through secure web-based participant responses in Survey

Monkey®. The DNP student/project manager and NCH did not know of, nor attempt to obtain

any personal information of the participants. Participant data was preserved with confidentiality

and security over time through secured electronic files. The electronic files were password

protected in the project leader's computer that was in a private locked office. The electronic data

files will be maintained for seven-years and then deleted from electronic files.

CHAPTER 4: RESULTS AND DISCUSSION OF DNP PROJECT

Healthcare professionals, including nurses, have engaged in the discussion about evidence-based practice (EBP) since the publication of the Triple Aim (Berwick, Nolan, & Whittington, 2008). The Triple Aim in healthcare focuses on augmenting the patient experience, improving health, and reducing costs (Arzouman, 2015). More recently, the Institute of Health (IHI) described the Quadruple Aim. According to IHI, many organizations added a fourth element that described joy in work, adding a provider element to the patient-focused Triple Aim (Feeley, 2017). The IHI Triple Aim and its subsequent fourth element have stimulated health care organizations to increase their focus on EBP to improve care and the patient experience and to reduce costs.

The Associate Chief Nursing Officer for Professional Practice reported that EBP was inconsistently utilized at NCH, suggesting probable appropriateness for implementing an EBP program at the organization. The literature reported that EBP was unsatisfactorily assimilated into regular practice (Friesen-Storms, Moser, van der Loo, Beurskens, & Bours, 2015). An effective program for research and EBP may have aided NCH during its journey for Magnet® designation through implementation of research and EBP (ANCC, 2017). Melnyk et al. (2016) reported that many providers of health care did not implement EBP on a regular basis regardless of their passion to practice based on the best evidence and positive outcomes associated with EBP. According to Melnyk et al. (2016), barriers to EBP implementation included time, organizational culture, and EBP knowledge deficit.

The purpose of the proposed DNP project was to reduce the gap of knowledge translation using the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) with web-based support and formative evaluation to aid nurses in the translation of research evidence to promote

EBP. The objectives of the DNP project were to compare EBP knowledge, confidence and

utilization; to identify the knowledge and confidence level of EBP; to explain the level of EBP

implementation; and to improve EBP knowledge, confidence and utilization by nurses in the

Critical Care, Medical Surgical, and Behavioral Health units after completion of EBP education

and implementation of web-based tools for research and EBP. These objectives were met with

completion of the project.

The purpose of this section was to interpret and present the findings from the DNP

project as they related to the purpose of the project. Demographic information including their

knowledge of the JHNEBPM was collected from the participants who were selected as a

convenience sample from three units of the hospital, the Critical Care, Medical Surgical, and

Behavioral Health units. The instruments used for measuring the findings were the EBP beliefs

(EBPB), EBP Implementation (EBPI) scales (Melnyk, Fineout-Overholt, & Mays, 2008), and the

Organizational Culture and Readiness for System-Wide Integration of EBP (OCRSIEP) scales

(Melnyk, Fineout-Overholt, Giggleman & Cruz, 2010) (Appendix D).

Summary of Methods and Procedures

The following population, intervention, comparison, outcome, time (PICOT) question

served as the foundation for the DNP project: "For nurses working at Naples Community

Hospital – Downtown (NCH), will the implementation of the Johns Hopkins Nursing Evidence-

based Practice Model (JHNEBPM) improve attitudes, knowledge, and perceptions of the ability

to understand the application of evidence-based practice (EBP) over 8-10 weeks?"

The project leader (DNP student) loaded the demographic survey including the

JHNEBPM knowledge question, the EBP beliefs (EBPB), EBP Implementation (EBPI), and

Organizational Culture and Readiness for System-Wide Integration of EBP (OCRSIEP) scales

(Appendix D) into Survey Monkey® to enable reliable summarization of the data (Melnyk, Fineout-Overholt, & Mays, 2008; Melnyk et al., 2010). These scales provided valid instruments to measure the attitudes and practice knowledge nurses possess for EBP and organizational and cultural readiness for EBP (Harper et al., 2017). The surveys were administered before and after the EBP education and supplemental EBP implementation activities.

Before implementation, the project leader presented the purpose of the project to the participants during numerous meetings. It was during these informational meetings that informed consent was discussed with the participants. Consent was obtained electronically by the participants' initiation of the computer-based training (CBT). Participation was encouraged but was not mandatory. Of the 97 eligible to participate, 65 participated. The number of actual participants (n=65) included 67% of the available nurses, and 79% of these nurses were personally contacted by the DNP student.

Continuing education units (CEUs) were given to participants that completed the EBP education, pre- and post-intervention surveys. Four gift cards to local restaurants were awarded to the actual participants from a random drawing as incentive to participate. The education and gift cards represented the first two stages of Rogers' Theory of Innovation, knowledge and persuasion (Pashaeypoor, Ashktorab, Rassouli, & Alavi-Majd, 2016). The subsequent phases of Rogers' Theory of Innovation include decision, implementation, and confirmation, and occurred after completion of the educational process, implementation of internal EBP website, and formative evaluation (Pasheypoor et al., 2016). Decision and implementation were measured by analysis of results from the EBPB and EBPI surveys and OCRSIEP scales (Melnyk et al., 2008; Melnyk et al., 2010). Rogers' last phase, confirmation, extended beyond the length of the project

hen the DNP student provided ongoing support for nurses' EBP and quality improvement projects.

The DNP project was approved by both the NCH and Chamberlain University Institutional Review Boards (IRBs) as an exempt quality improvement project. The DNP project abided by the policies of the NCH and Chamberlain University IRBs. After the IRB approvals, informed consent was confirmed electronically from the project participants who consented to participate by initiating the surveys and educational modules. Participants were informed during meetings and a participant letter that their participation was desired but not mandatory and that their consent could be withdrawn at any time. Participants were informed of the reasons for and purpose of the project. They were advised of the participation requirements, including their responsibility for completing the EBPB, EBPI, and the ORSIEP surveys before and after EBP education (Melnyk et al., 2008; Melnyk et al., 2010). Participants were informed that the surveys were anonymous and that their personal information is confidential.

Data collection was completed through secure web-based participant responses in Survey Monkey®. The DNP student/project manager and NCH will not know of, nor attempt to obtain any personal information of the participants. Participant data is being preserved with confidentiality and security over time through secured electronic files. The electronic files were password protected in the project leader's computer that was in a private locked office. The electronic data files will be maintained for seven-years and then deleted from electronic files.

The project used a pretest-posttest design to measure quantitative results obtained from the total means of Likert type questions in the EBPB, EBPI, and OCRSIEP surveys. Quantitative study design could improve self-reported levels of intention to understand and develop research after an educational intervention using pre-test/post-test methods (McNab, Berry, & Skapetis,

2019). Similar techniques could quantitatively measure self-reported beliefs, knowledge, and use of EBP. Because this project examined education to address EBP beliefs, knowledge, and perception of organizational culture for EBP, it makes sense that the evaluation of the project is summative. The data collection tools were not designed to collect formative data. Formative evaluation was completed during the intervention when the DNP student visited the participating units three times a week to answer questions and provide support for the EBP education and use of the internal website developed to aid nurses in the implementation of EBP.

The internal website developed at the start or the intervention contained a variety of tools including the JHNEBPM tools to guide nurses in EBP. The website included links from the hospital library to databases such as the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Elton B. Stephens Co. (EBSCO), Joanna Briggs, and Medline Plus. Simple access to databases facilitates EBP practice. The site included the Institutional Review Board (IRB) policies and practices with links to forms for submission of projects to the IRB. A compendium of EBP articles is included in a file the user may access with a single click. Other resources include instructional videos for searching the literature and links to other resources such as the National Institute of Health (NIH), Public Library of Science (PLOS) and many more. Use of this website was discussed and demonstrated during formative evaluation sessions.

The EBPB instrument measured the value of and ability to implement EBP by the participant completed by a 16-question Likert type survey (Melnyk, Fineout-Overholt, & Mays, 2008). The EBP belief scores ranged from a minimum possible score of 16 to a maximum possible score of 80. The EBPI instrument measured the frequency of use of specific EBP processes over the previous eight-weeks with an 18-item, five-point Likert-type scale (Melnyk et al., 2008). The EBP implementation scores ranged from a minimum possible score of zero to a

maximum possible score of.   The OCRSIEP is a 19-item, five-point Likert type survey designed to measure the perceived level of organizational commitment to EBP among staff (Harper et al., 2017). The organizational culture and readiness scores ranged from a minimum possible score of 14 to a maximum possible score of 70.

Harper et al. (2017) reported that each of the three scales established construct, content, and face validity. Strong internal consistency, ranging from .88 to .95, had been reported for each of the three scales (Melnyk, Fineout-Overholt, Giggleman, & Cruz, 2010; Thorsteinsson, 2013; Wallen et al., 2010; Warren, Montgomery, & Friedmann, 2016). Cronbach's alphas reported were .89 for EBPB, .96 for EBPI, and .94 for OCRSIEP for this study (Harper et al., 2017).

According to Melnyk et al. (2008) and Melnyk and Fineout-Overholt (2005), the EBPB, EBPI, and the ORSIEP scales measure quantitative data that is based on a Likert-type scale producing interval data. According to Harper (2015), Likert and Likert-type scales provide researchers the ability to measure aspects, such as self-confidence and performance, that are not directly observable. Likert and Likert-type scales are based on an interval scale as they are developed through psychological scaling and are developed to be used and analyzed as a group (Harpe, 2015; Vonalgo, 2017). Likert and Likert-type rating scales obtain quantitative data from non-physical phenomena (Harpe, 2015; Vonglao, 2017). The data was measured on an interval scale. Parametric testing such as t-test or analysis of variance may be used for data analysis of an interval scale (Harpe, 2015). This is the form of parametric testing that was used for the project.

The EBPB, EBPI, and OCRSIEP surveys (Melnyk et al., 2008, 2010) helped to identify the status of nurses EBP beliefs and utilization at NCH like those reported by Shavelson (2018) and Melnyk et al. (2008, 2010). The literature identified several likely outcomes for failing to implement EBP, such as reduced quality, safety, and patient satisfaction that was also reflected

in the survey responses. The surveys helped to isolate reasons for the present state of EBP

knowledge, beliefs, and practice for the participants at NCH. Participants completed the EBPB,

EBPI, and OCRSIEP surveys (Melnyk et al., 2008; Melnyk et al., 2010) (Appendix D) before

and after EBP education, DNP student formative evaluation, and implementation of an internal

website containing tools for research and EBP.

Data analysis of the DNP project required review and summarization of participant

responses for demographic information and knowledge of the JHNEBPM and the EBPB, EBPI,

and OCRSIEP scales. The demographic and summary data for both the pre and post-intervention

surveys were gathered from each of the surveys, summarized onto an Excel spreadsheet by

Survey Monkey® and then reviewed by the DNP student for data cleaning. The Excel

spreadsheet containing the survey data was formatted by the DNP student and uploaded into

IBM SPSS, version 26 for statistical analysis (IBM Corporation, 2019).

The survey data were analyzed using a paired *t*-test with a 95% confidence interval

comparing the total means of the participant responses to the Likert type scales from the EBPB,

EBPI, and OCRSIEP surveys. A paired *t*-test was completed to test whether there was a

significant difference between the two sample means for the pre and post-implementation

surveys. A paired-sample *t*-test examines the difference between the two sample means for pre

and post-education (Larson & Farber, 2012). The individual questions on the EBPB, EBPI, and

OCRSIEP surveys were not developed for statistical analysis because the individual questions

are not a measure of the general phenomenon of interest (Harpe, 2015). Likert-type scales can be

evaluated by comparing the total means (Larson & Farber, 2012).

Findings included: EBP beliefs pre-intervention (n=65) Mean (SD) 61.25 (8.763) and

post-intervention (n=65), Mean (SD) 63.92 (8.92). The possible range of EBPB scores was 16-

80. The change in EBP beliefs was not significant ($t = 1.887$, $df = 64$, $p = .064$, two-tailed).

There was an improvement in the participants' separate responses to 15 of 16 statements on the

EBPB (Tables 3.1, 3.2, 6.1, and 6.2). EBP implementation pre-intervention (n=59) Mean (SD)

18.34 (20.12) and post-intervention (n=63), Mean (SD) 24.25 (21.963). The possible range of

EBPI scores was 18-90. The change in EBP implementation was not significant ($t = 1.686$, $df =$

64, $p = .097$, two-tailed). Improvements were observed for 17 of 18 items on the EBPI scale

(Tables 4.1, 4.2, 6.1, and 6.2). OCRSIEP pre-intervention (n=61) Mean (SD) 84.69 (29.504) and

post-intervention (n=63), Mean (SD) 88.94 (20.775). The possible range of OCRSIEP scores

was 25-125. The change in OCRSIEP was not significant ($t = 1.236$, $df = 64$, $p = .221$, two-

tailed). Improvements were observed for 18 of 25 items on the OCRSIEP scale (Tables 5.1, 5.2,

6.1, and 6.2). The outcomes identified increases in each of the three surveys (Table 6.1) that

were not statistically significant.

Table 6.1

Paired Samples Statistics

Pairs	Survey names	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	EBPB pre intervention	61.25	65	8.763	1.087
	EBPB post intervention	63.94	65	8.920	1.106
Pair 2	EBPI pre intervention	18.34	65	20.120	2.496
	EBPI post intervention	24.25	65	21.963	2.724
Pair 3	OCRSIEP pre intervention	84.69	65	29.504	3.660
	OCRSIEP post intervention	88.94	65	20.775	2.577

Note: This table describes the mean totals from each of the surveys that were used to complete

statistical analysis using a paired *t*-test.

Findings for the EBPB, EBPI, and OCRSIEP instruments, though not statistically

significant were increased after education, formative evaluation, and implementation of an

internal website containing EBP tools. Consultation with a statistician was done throughout the

project to guide the DNP student in data collection and to verify the accuracy of the DNP

student's data analysis.

Table 6.2

Paired Samples t-Test

Pairs	Survey Names	Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	EBPB pre intervention - EBPB post intervention	-2.692	11.504	1.427	-5.543	.158	-1.887	64	.064
Pair 2	EBPI pre intervention - EBPI post intervention	-5.908	28.248	3.504	-12.907	1.092	-1.686	64	.097
Pair 3	OCRSIEP pre intervention - OCRSIEP post intervention	-4.246	27.703	3.436	-11.111	2.618	-1.236	64	.221

Note: This table shows the pairs of total means used to determine the statistical significance of the differences in each of the three surveys.

Participant experience with the Johns Hopkins Nursing EBP Model was measured at the

beginning and conclusion of the intervention to ascertain the level of experience the participants

had with the model. It was discovered that 63.1% (n=41) of the participants described their level

of experience with the JHNEBPM as none before the intervention (Table 2.0) and the no

experience responses were decreased to 29.2% (n=19) after the intervention. There were

increases in perception of level of experience with JHNEBPM after the intervention. Before the

intervention, participants rated their experience at beginning-level 26.2% (n=17) and increased to

52.3% (n=34) after the intervention. Similarly, the intermediate-level responses increased from

9.2% (n=6) before the intervention to 16.9% (n=11) after the intervention. There was no change

in the level of advanced experience responses (Tables 7.2 and 7.3). The mean result for

JHNEBPM knowledge improved from a mean score of 1.49 before the intervention to a mean

score of 1.91 after the intervention. The median reported score improved from 1.00 (no

experience) to 2.00 (beginning experience) after the intervention (Figures 8 and 9). A paired *t-*

test was completed to compare participant perceived knowledge of the JHNEBPM before and

after the intervention that identified a statistically significant increase of participant perceived

knowledge of the JHNEBPM (p=0.002) (Table 7.4).

Figure 8

Knowledge of Johns Hopkins Nursing Evidence-Based Practice Model Before Intervention

Knowledge of the Johns Hopkins Nursing Evidence-based Practice Model Before Intervention

Legend: 1-No experience 2-Beginning experience 3-Intermediate experience 4-Advanced experience

Note: This graph shows the level of JHNEBPM knowledge reported by participants before the

intervention.

Figure 9

Knowledge of Johns Hopkins Nursing Evidence-Based Practice Model After Intervention

Legend: 1-No experience 2-Beginning experience 3-Intermediate experience 4-Advanced experience
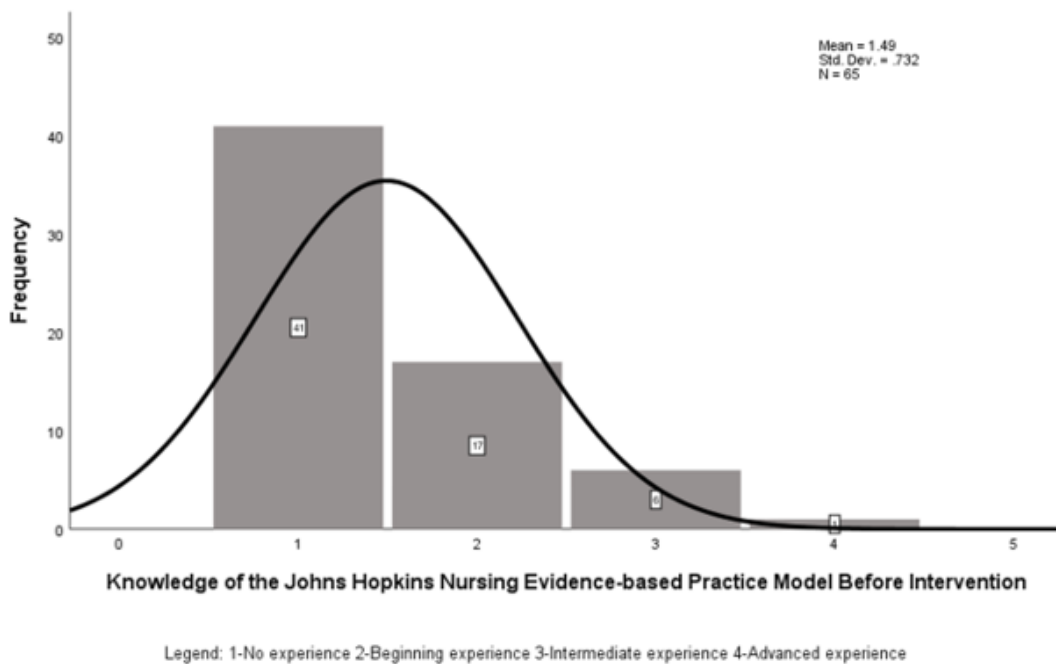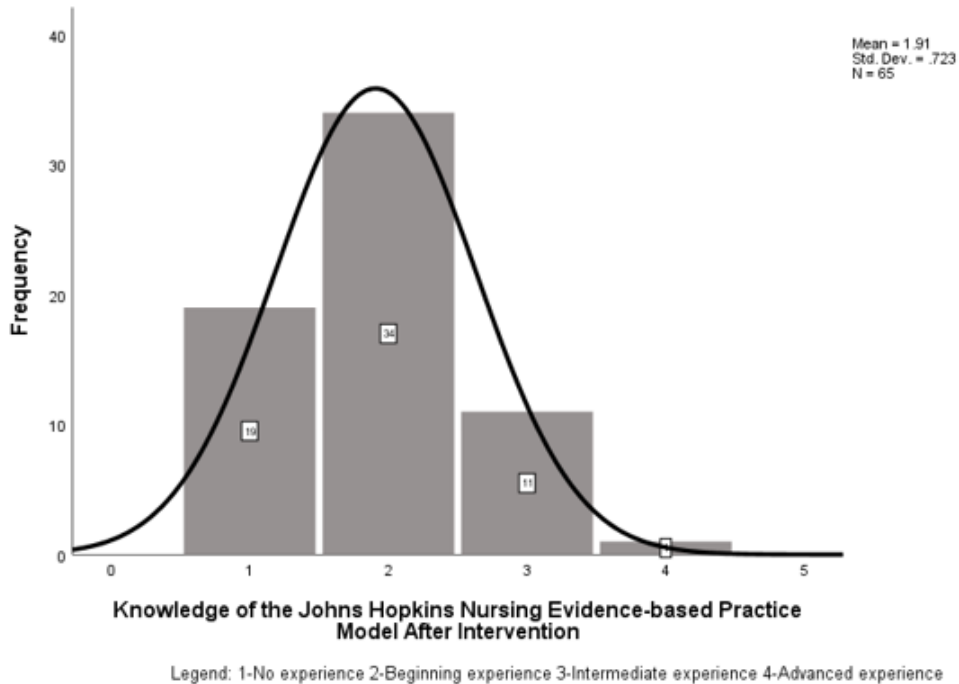
Note: This graph shows the level of JHNEBPM knowledge reported by participants after the intervention.

Summary of Sample and Setting Characteristics

The target population for the DNP project included all registered nurses working in the Critical Care, Medical Surgical, and Behavioral Health units at Naples Community Hospital – Downtown (NCH) who were recruited as a convenience sample to represent a cross-section of nurses working at NCH. There were 97 nurses eligible to participate. Of these, 82 were contacted by the DNP student via meetings in the participants' units on all shifts. Those unable to attend the meetings were provided project information by the DNP student by interoffice mail and through their managers.

The setting for the proposed DNP project was Naples Community Hospital - Downtown (NCH), a not-for-profit, academic healthcare system in Naples, Florida comprised of two acute-care hospitals with a total of 713 licensed beds and multiple facilities throughout the Collier County Florida area (NCH Healthcare System, 2016). NCH provides extensive services to the community. Inpatient services include medical, surgical, cardiac, orthopedic, pediatric, obstetrics, rehabilitative, psychiatric, oncology, emergency treatment, and diagnostics. Outpatient services include rehabilitation, home care, walk-in centers, wound healing, wellness, nutrition, and more. NCH is affiliated with the Mayo Clinic and can take advantage of the expertise they have to offer (NCH Healthcare System, 2016). The mission of NCH stated, "NCH will be a world-class leader of excellence in healthcare". The vision of NCH stated, "Helping everyone live a longer healthier, happier life" and the value statement of NCH was "Excellence in every patient experience" (NCH, 2019). The mission, vision, and values were represented in the NCH organizational culture in the healthcare system and the community.

The healthcare system used a matrix organizational structure across the hospitals and offsite facilities. There was one Chief Executive Officer (CEO), one Chief Operating Officer (COO), one Chief Financial Officer (CFO), one Chief Nursing Officer (CNO), one Chief Nursing Informatics Officer (CNIO), and one Associate Chief Nursing Officer for Professional Practice who collectively oversaw the entire organization. Nursing operations were guided by two Associate Chief Nursing Officers (ACNOs), one at each hospital. These ACNOs provided shared operational responsibility for the offsite facilities. Beneath the senior leadership positions, the organization was guided by directors who oversaw service-lines and managers who reported to them in the various departments. The intervention occurred at the downtown hospital in three nursing units: Critical Care, Medical-Surgical, and Behavioral Health.

The Medical-Surgical unit had a 36-bed capacity with typical patient types including

post-operative general surgery patients and with medical conditions such as diabetes, renal

disease, gastrointestinal concerns, and substance abuse withdrawals. General medical, surgical,

and neurological patients were seen in the 22-bed Critical Care Unit. The Behavioral Health

Unit had 12 inpatient beds and saw a mixed variety of psychiatric and addiction patients. All

three units had unit-based practice councils.

It was important to note that NCH was on the Magnet® journey at the time of the DNP

project. The participation by nurses in the DNP project supplemented requirements for the

section "New Knowledge, Innovations, and Improvements" of the American Nurses

Credentialing Center (ANCC) Magnet® criteria (ANCC, 2017). The DNP project was supported

by the organization and would be considered to support nursing research in the section "New

Knowledge, Innovations, and Improvements (ANCC, 2017, p.9)".

The criteria listed in this section of the ANCC (2017) Magnet® manual met by

completion of this DNP project included: "1) The organization supports the advancement of

nursing research. 2) Nurses disseminate the organization's nursing research findings to internal

and external audiences. 3) Clinical nurses evaluate and use evidence-based findings in their

practice. 4) Innovation in nursing is supported and encouraged. 5) Nurses are involved with the

design and implementation of technology to enhance the patient experience and nursing practice.

6) Nurses are involved in the design and implementation of work-flow improvements and space

design to enhance nursing practice (ANCC, 2017, pp. 9-10).

The organization supported the advancement of nursing research through promotion of

individual and group nursing research, including the DNP project. Dissemination of nursing

research findings was accomplished at the organizational annual research, evidence-based

practice, and quality improvement conference. Unit-based shared governance reported the

analysis of their EBP findings at the bimonthly Nursing Congress. Innovation in nursing was

supported by several methods including awards at conferences, recognition at meetings, and

presentations at the nursing leadership conference. The DNP project initiated an internal website

for EBP to provide EBP tools for nurses to improve patient care. The internal website for EBP

contained forms and tools nurses need to improve workflow when initiating EBP projects.

Participating nurses were generally female (n=56). Participant ages were nearly equally

distributed from 26-60 years of age (Table 2.0). The Critical Care Unit had the largest percentage

of participating nurses at 44.6% (n=29). The remainder of the participating nurses were evenly

distributed between the Behavioral Health and Medical Surgical Units (Table 2.0). It was

interesting to note that the bulk 69.2% (n=45) of participating nurses' years of experience was

split between two groups, zero to five years and over twenty years (Table 2). The basic education

for almost half (n=30) or 46.2% of the population included Associates Degree or Diploma

nurses; 33.8% (n=22) of the nurses participating held Bachelor's degrees; 18.5% (n=12) held

Master's Degrees; and 1.5% (n=1) held a Doctoral Degree (Table 2). Ethnicity of nurses

compared with that of the local population.

The participants were asked to rate their experience with the Johns Hopkins Nursing

Evidence-based Practice Model (JHNEBPM) before and after the intervention and improved

their mean experience rating from one (no experience) to two (beginning experience) (Table

7.1).

Major Findings

Evidence supports the use of evidence-based practice (EBP) in reducing costs and

improving the quality of care. The purpose of the proposed DNP project was to reduce the gap of

knowledge translation using the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) with web-based support to aid nurses in the translation of research evidence to promote evidence-based practice. The identified objectives served to guide the DNP student during the project. The objectives were met even though the results were not statistically significant. Further study with a larger sample may provide results that are statistically significant.

Objective one compared EBP knowledge, confidence and utilization before and after EBP education and development of web-based tools supporting EBP use in in Critical Care, Medical Surgical, and Behavioral Health units. This objective was measured using the EBPB and EBPI surveys to measure outcomes. Although the findings were not statistically significant, there were increases in both EBPB and EBPI survey responses after the intervention. Objective two was identification of the knowledge and confidence level of EBP among nurses in the critical care unit, the medical-surgical unit, and the behavioral health unit after completing EBP education and utilizing web-based tools for research and EBP. This objective was measured by the EBPB survey. Though not statistically significant, the EBPB survey did identify increases of the knowledge and confidence level of EBP among nurses after the intervention.

Objective three was to explain the level that nurses working in the Critical Care, Medical Surgical, and Behavioral Health units utilized EBP after completing EBP education and using web-based tools for research and EBP. This objective was measured by increased positive responses for EBP implementation by the EBPI and OCRSIEP surveys that were not statistically significant. Objective four was to improve EBP knowledge, confidence and utilization by nurses in the Critical Care, Medical Surgical, and Behavioral Health units after EBP education and implementation of web-based tools for research and EBP. This objective was measured by the

EBPB and EBPI surveys. Although the improvements in the results for each of these surveys were not statistically significant, additional studies with a larger sample and more time could provide results with greater significance.

Melnyk, Fineout-Overholt, Giggleman, and Cruz (2010) found significant positive relationships in EBP beliefs and implementation strongly related to organizational culture. The Melnyk et al. (2010) findings reported similarities in the improvement observed with the DNP project. The DNP project findings were like findings observed in the literature but should only be viewed as a local project finding.

Although the improvement of EBP knowledge, skills, and attitude was not statistically significant, there was improvement. According to Ramos-Morcillo, Fernandez-Salazar, Ruzafa-Martinez, and Del-Pino-Cassido (2015), EBP knowledge, skills, and attitude improve with a basic EBP course with on-line and face-to-face learning. The DNP project provided on-line education supported with formative evaluation throughout the intervention by the DNP student during tri-weekly visits to the participating units and a new internal website that provides user-friendly access to EBP tools.

The DNP project was guided by the JHNEBPM. The JHNEBPM uses a simple three-step process to guide nurses in EBP that is now accepted by nurses at the host organization. The change in JHNEBPM knowledge was significant ($t = 3.162$, $df = 64$, $p = .002$, two-tailed). Participants reported statistically significant greater knowledge of the JHNEBPM after the intervention (Table 7.4). This implies that knowledge of the JHNEBPM could influence the beliefs, implementation, and organizational culture of the organization's evidence-based practice patterns if the knowledge continued to improve. This is encouraging since nurses

characteristically categorize appraising and leveling evidence as the most demanding part of the

EBP process.

Table 7.4

Paired Samples Test for JHNEBPM knowledge after DNP Intervention

		Paired Differences							
			Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean			Lower	Upper	t	df	
Pair 1	Knowledge of the Johns Hopkins Nursing Evidence-based Practice Model Before Intervention - Knowledge of the Johns Hopkins Nursing Evidence-based Practice Model After Intervention	-.415	1.059	.131	-.678	-.153	-3.162	64	.002

Note: Participants reported a statistically significant increase in knowledge of the Johns Hopkins

Nursing Evidence-Based Practice Model (JHNEBPM) after the intervention.

CHAPTER 5: IMPLICATIONS IN PRACTICE AND CONCLUSIONS

Implications for Nursing Practice

At the beginning of the project the DNP student suggested that an effective program for research and evidence-based practice (EBP) could aid Naples Community Hospital (NCH) during the journey for Magnet® designation. Naples Community Hospital continues its journey toward Magnet® status. The participation by nurses in the DNP project supplemented requirements for the section "New Knowledge, Innovations, and Improvements" of the American Nurses Credentialing Center (ANCC) Magnet® criteria (ANCC, 2017). The DNP project was supported by the organization and would be considered to support nursing research in the section "New Knowledge, Innovations, and Improvements (ANCC, 2017, p.9)".

EBP at NCH involved annual departmental quality improvement projects that demonstrated NCH's commitment to quality improvement efforts, but the hospital did not employ the rigor necessary to implement EBP entirely. This was a mesosystem problem affecting the healthcare system. Ineffective implementation of EBP is documented in much of the literature, making this a macrosystem problem as well. Subsequent to the conclusion of the DNP project the organizational annual EBP/Quality Improvement projects for 2021 will require more rigor with greater leadership accountability.

Azouman (2015) reported that the Institute of Medicine Roundtable on Evidence-Based Medicine in 2009 set a target that 90% of clinical decisions were to be supported by accurate, well-timed, and current information based on the best evidence available by 2020. NCH embraced the Triple Aim (Berwick et al., 2008) and created two new positions: Professional Practice Coordinator and Research, EBP, IRB Coordinator. Each would report to the Associate

Chief Nursing Officer for Professional Practice. These roles support nursing professional practice, the shared governance structure, and evidence-based practice in the organization.

The practice question guiding the DNP project was, "For nurses working at Naples Community Hospital – Downtown (NCH), will the implementation of the Johns Hopkins Nursing EBP Model (JHNEBPM) improve attitudes, knowledge, and perceptions of the ability to understand the application of evidence-based practice (EBP) over 8-10 weeks?" The purpose of this project was to reduce the knowledge gap related to evidence translation with the JHNEBPM.

The DNP project intervention supported nurses in the attitudes, knowledge, and perceptions of the ability to understand the application of EBP resulting in a reduction of the knowledge gap using the JHNEBPM. The use of a conceptual model such as the JHNEBPM facilitated EBP by providing nurses with the knowledge and tools necessary to implement EBP. The shared governance structure at NCH empowered nurses to transform healthcare with EBP implementation that is safe, effective, and efficient resulting in improved quality, patient experience, and reduced costs. A new central council of the shared governance structure is the Research, EBP, and QI Central Council. The council is in its infancy but has sparked interest with front-line nurses subsequent to the DNP project implementation.

The findings for the Evidence-Based Practice Beliefs (EBPB), Evidence-Based Practice Implementation (EBPI) and Organizational Culture and Readiness for System-Wide Integration of EBP (OCRSIEP) surveys were all improved after the EBP education, initiation of an EBP website, and formative evaluation sessions, despite not reaching statistical significance. A larger sample size may provide more evidence to make an informed decision about EBP implementation at NCH. The findings for the JHNEBPM revealed increased knowledge of the JHNEBPM after the DNP project implementation that were statistically significant ($p=.002$).

These findings suggest improved knowledge of EBP methods could lead to improved EBP beliefs, knowledge and implementation.

Recommendations

Owing to the limited findings from the EBPB, EBPI, and OCRSIEP surveys no conclusions can be drawn except at the organizational level where cautious analysis could indicate improvement in all three areas. A larger study involving the entire organization may provide data that is more reliable for the nursing profession, nursing leaders and society.

The organization has now considered implementing another EBP project based on the findings of the DNP project. The DNP student has initiated a relationship with nationally recognized experts in EBP to bring an EBP immersion course to NCH. The EBP immersion will be provided to nursing leaders and those in leadership roles in the shared governance structure using actual problems in the organization to learn how to implement EBP at an organizational level.

Nursing educators should be involved in enculturating EBP from initial nursing orientation and general nursing courses that include elements of EBP. This education should include a conceptual model such as the JHNEBPM and use of the organization's new EBP website. Involvement of EBP for every aspect of nursing will promote EBP and demonstrate the value of EBP for the organization to the community.

The identified objectives served to guide the DNP student during the project. The objectives were met even though the results were not statistically significant. Further study with a larger sample may provide results that are statistically significant. Each of the following objectives included the Critical Care, Medical Surgical, and Behavioral Health Units. Objective one was to compare EBP knowledge, confidence and utilization before and after EBP education

and development of web-based tools supporting EBP use. Objective two was to identify the

knowledge and confidence level of EBP among nurses after completing EBP education and

utilize web-based tools for research and EBP. Objective three was to explain the level to which

nurses utilize EBP after completing EBP education and using web-based tools for research and

EBP. Objective four was to improve EBP knowledge, confidence and utilization by nurses after

EBP education and implementation of web-based tools for research and EBP. There was

improvement demonstrated in each of these objectives; however, the improvement was not

statistically significant. Additional study with a larger sample could provide results with greater

significance.

The organizational culture and readiness scores ranged from a minimum possible score of

25 to a maximum possible score of 125 with a mean score of 84.69, standard deviation 29.5 pre-

implementation and mean score of 88.94, standard deviation of 20.78 post-implementation. The

findings were not statistically significant but did indicate some improvement after the

intervention. Like the EBPB and EBPI findings, additional study may provide more significant

results. The DNP project findings were similar to findings observed in the literature but should

only be viewed as a local project finding.

Recommendations for future research could include implementation of a similar project

at the organizational level. Consideration should be given to look at types of EBP assessment and

education such as measuring EBP competency that was not discussed in this project. These

issues could be elaborated on with getting buy-in for EBP from mid-level and senior nursing

managers. The EBP immersion with national experts may help guide NCH for improvement of

EBP processes at an organizational level. This must begin with senior nursing leaders and be

built into the organizational budget as a priority item. Policymakers should be encouraged to add

financial incentives for organizations that promote EBP to support the Triple Aim: that 90% of

clinical decisions were to be supported by accurate, well-timed, and current information based on

the best evidence available by 2020.

Discussion

Limitations included the relatively small sample size, non-random convenience sample,

and few participating departments that could represent respondent bias. In the future, repeating

the project at an organizational level may provide more meaningful data for the organization and

the nursing profession. The strengths of this project included its close relationship to the

organizational mission, vision, and values. Following the mission, vision, and values of an

organization can provide greater support of a project's success. Support of the EBP concept must

be inherent to the leaders so that front-line nurses will also buy-in to operationalizing EBP.

It is important for all registered nurses to have requisite knowledge and competency for

EBP. Evaluation of nurse and organizational preparedness for implementing EBP is an important

part of the strategy to enculturate EBP throughout the organization. This can be accomplished by

an EBP performance requirement for all nurse leaders. Inclusion of EBP competencies in the

nurses' annual review and shared governance functions will promote EBP implementation across

the organization.

The findings in this DNP project found improvement in nurses' beliefs, implementation,

and organizational readiness. Although the improvement was not statistically significant, there

was an improvement in each of the three areas measured that contribute to EBP. Therefore, these

results cannot be used outside of this population and setting. Additional study at NCH may

expand the project to include the entire organization, to possibly achieve statistical significance.

Additionally, this DNP project found that introduction of a conceptual model such as JHNEBPM improved nurse knowledge to improve EBP practice.

Plans for Dissemination

The results of the DNP project were disseminated to NCH after completion of the project. An annual Research and Evidence-based Practice conference was hosted by NCH and was conveniently scheduled to coincide with the project completion. The purpose of the annual conference was to present demonstrated improvement of current healthcare and/or department challenges and innovative or new solutions to support the improvement of patient outcomes or efficiency of department outcomes. Desired topics for the conference were those that aligned with the Institute of Health (IHI) triple aim to optimize health system performance related to 1) improving the patient experience of care, 2) improving the health of populations, and 3) reducing the per-capita cost of health care. Conference presenters had the option to present podium or poster presentations. Improving EBP in an organization meets all the IHI triple aim recommendations.

The DNP project is also being shown during a podium presentation in April 2020 at a regional level for a state school of nursing. The podium presentation will include the outcomes of the DNP project and introduce the nursing students to the concept of EBP. The DNP student was invited to speak after the Dean of the Health Sciences reviewed the project.

Poster and podium sessions at national, state, and regional meetings provide opportunities for professionals to share and obtain information relevant to the profession. The submission process is very specific and similar in content for most professional abstract submissions. Abstract submission generally asks the author his or her preference of podium presentation, poster presentation, or small group presentation often called roundtable discussions. The DNP

project abstract was submitted during the planning phase of the NCH conference. The DNP

project was approved by the conference committee, then presented at the conference with a

poster presentation. The conference was designed for organization medical and clinical staff and

was open to members of the community who support the hospital.

The DNP student is submitting the final DNP project for publication in the Journal of

Nursing Administration (JONA™) after completing the DNP degree. The journal touts its

purpose as the authoritative source for patient care leadership and development. The target

audience for JONA™ includes nurse executives, directors of nursing, and nurse managers in

hospital, community health, and ambulatory care environments. Real-world, original, and

solution-oriented submissions provide the tools needed to shine in executive practice in changing

healthcare systems. Articles are peer-reviewed, selected and developed with an editorial board.

The DNP student selected this journal because its audience would be interested in the topic of

EBP. Evidence-based practice (EBP) is necessary for quality of care and patient safety. The

audience includes leaders in nursing from all types of settings who may find the project

manuscript of interest for supporting EBP in their own organizations.

Conclusions and Contributions to the Profession of Nursing

The practice question: For nurses working at Naples Community Hospital -Downtown

(NCH), will the implementation of the Johns Hopkins Nursing EBP Model (JHNEBPM)

improve attitudes, knowledge, and perceptions of the ability to understand the application of

evidence-based practice (EBP) over 8-10 weeks?

Evidence-based practice (EBP) is essential for the provision of safe, effective, quality

health care. The nurses at Naples Community Hospital – Downtown (NCH) had varying levels

of use and understanding of EBP for knowledge translation. The organization lacked a

conceptual model to promote evidence-based practice (EBP). Introduction of a conceptual

model can facilitate the use of EBP. The Johns Hopkins Nursing Evidence-Based Practice Model

(JHNEBPM) was selected for the project since it had already been approved as the

organizational model. The JHNEBPM provided a structured methodology to translation of

research in findings reported by Friesen, Brady, Milligan, and Christensen (2017). The positive

results for improvement of knowledge of the JHNEBPM suggested that its utilization as a

conceptual model could improve EBP practice. According to Friesen et al. (2017), a structured

EBP education program with mentoring can improve attitudes, knowledge, and skills of nurses

for EBP. Additional implications suggested the use of Johns Hopkins EBP model and Rogers'

theory of innovation could augment nurses EBP attitudes, knowledge and skills.

Despite the design limitations, findings may suggest that EBP beliefs, implementation,

and organizational readiness could improve with education and organizational attention to

enculturating EBP. Ramos-Morcillo, Fernandez-Salazar, Ruzafa-Martinez, and Del-Pino-

Cassado (2015) reported that online and face-to-face education of an EBP course could improve

EBP competence of nurses. Harper et al. (2017) suggested that the role nursing leadership

demonstrates with EBP is instrumental to its implementation. Guerrero, Frimpong, Kong,

Fenwick and Aarons (2018) reported a correlation of implementation by middle managers to

transformational leadership of senior managers. Implications suggest the need for effective

leadership to implement change. This held true for the success of the DNP project because it was

supported by senior leadership as well as the directors and managers of the participating units.

Plans to implement an EBP immersion was approved by the senior nursing leaders to sustain the

momentum gained during the DNP project and demonstrate the commitment of NCH to

enculturating EBP.

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: IS*, *10*, 11. Retrieved from

   https://www.ncbi.nlm.nih.gov/pubmed/25592163allen

Agency for Clinical Innovation (ACI) (2019). *Change Management Theories and Models –*

   Everett Rogers. Agency for Clinical Innovation. Retrieved from

   https://www.aci.health.nsw.gov.au/resources/toolkits

Albarqouni, L., Hoffmann, T., & Glasziou, P. (2018). Evidence-based practice educational

   intervention studies: A systematic review of what is taught and how it is measured. *BMC*

   Medical Education, *18*(1), 177. Retrieved from

   https://www.ncbi.nlm.nih.gov/pubmed/30068343

Allen, N., Lubejko, B. G., Thompson, J., & Turner, B. S. (2015). Evaluation of a web course to

   increase evidence-based practice knowledge among nurses. *Clinical Journal of Oncology*

   Nursing, *19*(5), 623–627. Retrieved from

   https://www.ncbi.nlm.nih.gov/pubmed/26414582

American Nurses Credentialing Center (ANCC) (2017). Criteria for nursing excellence: New

   knowledge, innovations & improvements. Silver Spring, MD. American Nurses

   Credentialing Center.

Arzouman, J. (2015). Evidence-based practice: Share the spirit of inquiry. *MEDSURG Nursing*,

   24(4), 209–211. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/26434030

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The Triple Aim: Care health, and

    cost. *Health Affairs*, *27*(3), 759–769. Retrieved from

    https://www.healthaffairs.org/doi/full/10.1377/hlthaff.27.3.759

Dang, D. & Dearholt, S.L. (2018). *Johns Hopkins nursing evidence-based practice: Model and*

    guidelines (3rd ed.). Indianapolis, IN: Sigma Theta Tau.

Dyess, S., Boykin, A., & Rigg, C. (2010). Integrating caring theory with nursing practice and

    education connecting with what matters. *Journal of Nursing Administration*, *40*(11), 498–

    503. Retrieved from https://doi.org/10.1097/NNA.0b013e3181f88b96

Feeley, D. (2017). The triple aim or the quadruple aim? Four points to help set your strategy

    [Blog post]. Retrieved from http://www.ihi.org/communities/blogs/the-triple-aim-or-the-

    quadruple-aim-four-points-to-help-set-your-strategy

Friesen, M. A., Brady, J. M., Milligan, R., & Christensen, P. (2017). Findings from a pilot study:

    Bringing evidence-based practice to the bedside. *Worldviews on Evidence-Based*

    Nursing, *14*(1), 22–34. Retrieved from https://doi.org/10.1111/wvn.12195

Friesen-Storms, J. H. H. M., Moser, A., van der Loo, S., Beurskens, A. J. H. M., & Bours, G. J.

    J. W. (2015). Systematic implementation of evidence-based practice in a clinical nursing

    setting: A participatory action research project. *Journal of Clinical Nursing, (1–2)*, 57.

    Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/25258116

Funk, S. G., Champagne, M.T., Wiese, R.A., & Tornquist, E.M. (1991). BARRIERS: The

    barriers to research utilization scale. *Applied Nursing Research, 4*(1), 39-45. Retrieved

    from https://www.ncbi.nlm.nih.gov/pubmed/1741634

Graystone, R. (2018). So you're thinking about the journey to Magnet® recognition…? *The Journal of Nursing Administration*, *48*(4), 180–181. Retrieved from https://journals.lww.com/jonajournal/Fulltext/2018/04000/So_You_re_Thinking_About_t he_Journey_to_Magnet_.3.aspx

Guerrero, E., Frimpong, J., Kong, Y., Fenwick, K., & Aarons, G. (2018). Advancing theory on the multilevel role of leadership in the implementation of evidence-based health care practices. *Health Care Management Review, 1*, 1-1. doi:10.1097/HMR.0000000000000213

Hanrahan, K., Wagner, M., Matthews, G., Stewart, S., Dawson, C., Greiner, J., … Williamson, A. (2015). Sacred cow gone to pasture: A systematic evaluation and integration of evidence-based practice. *Worldviews on Evidence-Based Nursing*, *12*(1), 3–11. Retrieved from https://doi.org/10.1111/wvn.12072

Harpe, S. E. (2015). How to analyze Likert and other rating scale data. *Currents in Pharmacy Teaching and Learning, 7*(6), 836-850. doi:10.1016/j.cptl.2015.08.001

Harper, M. G., Gallagher-Ford, L., Warren, J. I., Troseth, M., Sinnott, L. T., & Thomas, B. K. (2017). Evidence-based practice and US healthcare outcomes: Findings from a national survey with nursing professional development practitioners. *Journal for Nurses in Professional Development*, *33*(4), 170–179. Retrieved from 3https://www.ncbi.nlm.nih.gov/pubmed/28441160

Heath, R. L., Johansen, W., Lurati, F., & Zamparini, A. (2018). Communication SWOT analysis. In R. L. Heath and W. Johansen (Eds.), *The International Encyclopedia of Strategic Communication*. doi:10.1002/9781119010722.iesc0203

IBM Corporation (2019). *IBM SPSS Statistics for Windows*, Version 26.0. Armonk, NY: IBM

    Corporation

Larson, R. & Farber, B. (2012). Hypothesis testing with two samples. In R. Larson & B. Farber,

    Eds. *Elementary Statistics.* Upper Saddle River, NJ: Prentice Hall

McNab, M., Berry, A., & Skapetis, T. (2019). The potential of a lecture series in changing intent

    and experience among health professionals to conduct research in a large hospital: A

    retrospective pre-post design. *BMC Medical Education*, *19*(1), 124. Retrieved from

    https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-019-1548-4

Melnyk, B. M., & Fineout-Overholt, E. (2019). *Evidence-based practice in nursing & healthcare

    a guide to best practice* (4th ed.). Philadelphia: Wolters Kluwer.

Melnyk, B. M., Fineout-Overholt, E., Giggleman, M., & Cruz, R. (2010). Correlates among

    cognitive beliefs, EBP implementation, organizational culture, cohesion, and job

    satisfaction in evidence-based practice mentors from a community hospital system.

    Nursing Outlook, 58(6), 301-308. doi: 10.1016/j.outlook.2010.06.002

Melnyk, B.M., Fineout-Overholt, E., & Mays, M.Z. (2008). The evidence-based practice beliefs

    and implementation scales: Psychometric properties of two new instruments. *Worldviews

    on Evidence-Based Nursing*, *5*(4), 208–216. Retrieved from

    https://sigmapubs.onlinelibrary.wiley.com/doi/10.1111/j.1741-6787.2008.00126.x

Melnyk, B. M., & Gallagher-Ford, L. (2015). Implementing the new essential evidence-based

    practice competencies in real-world clinical and academic settings: Moving from

    evidence to action in improving healthcare quality and patient outcomes. *Worldviews on

    Evidence-Based Nursing*, *12*(2), 67–69. Retrieved from

    https://sigmapubs.onlinelibrary.wiley.com/doi/full/10.1111/wvn.12089

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.

   https://sigmapubs.onlinelibrary.wiley.com/doi/10.1111/wvn.12133

Melnyk, B. M., Gallagher-Ford. L., Zellefrow, C., Tucker, S., Thomas, B., Sinnott, L. T., & Tan,

   A. (2018). The first U.S. study on nurses' evidence-based practice competencies indicates

   major deficits that threaten healthcare quality, safety, and patient outcomes. *Worldviews

   on Evidence-Based Nursing*, *15*(1), 16–25. Retrieved from

   https://sigmapubs.onlinelibrary.wiley.com/doi/abs/10.1111/wvn.12269

Mohammadi, M. M., Poursaberi, R., & Salahshoor, M. R. (2018). Evaluating the adoption of

   evidence-based practice using Rogers's Diffusion of Innovation Theory: A model testing

   study. *Health Promotion Perspectives*, *8*(1), 25. Retrieved from

   https://www.ncbi.nlm.nih.gov/pubmed/29423359

NCH Healthcare System (2016). *NCH Healthcare system: Community needs assessment.* NCH

   Healthcare System. Retrieved from https://www.nchmd.org/docs/default-

   source/documents/annual-reports/health-needs-assessment/column-2/community-health-

   needs-assessment---full-document.pdf?sfvrsn=977bd475_4

NCH Healthcare System (NCH) (2019). *About us.* Online report. Retrieved from

   https://www.nchmd.org/about-us

Norman, V., Rossillo, K., & Skelton, K., (2016). Creating healing environments through the

   theory of caring. *AORN Journal*, *104*(5), 401–409. Retrieved from

   https://www.ncbi.nlm.nih.gov/pubmed/27793250

Pashaeypoor, S., Ashktorab, T., Rassouli, M., & Alavi-Majd, H. (2016). Predicting the adoption

   of evidence-based practice using "Rogers' diffusion of innovation model.*" Contemporary

   Nurse: A Journal for the Australian Nursing Profession, 52*(1), 85-94. Retrieved from

   https://www.ncbi.nlm.nih.gov/pubmed/27229770

Ramos-Morcillo, A.J., Fernandez-Salazar, S.F., Ruzafa-Martinez, M., Del-Pino-Cassado (2015).

   Effectiveness of a brief, basic evidence-based practice course for clinical nurses.

   Worldviews on Evidence-based Nursing 12(4), 199-207. Retrieved from

   https://doi.org/10.1111/wvn.12103

Schaefer, J., & Welton, J. (2018). Evidence based practice readiness: A concept analysis. *Journal

   of Nursing Management, 26*(6), 621-629. doi:10.1111/jonm.12599

Schlagel, L. C., & Jenko, M., (2015). Creating a Caritas culture in a community hospital setting:

   A labor of love. *International Journal for Human Caring*, *19*(4), 66–72. https://doi-

   org.chamberlainuniversity.idm.oclc.org/10.20467/1091-5710.19.4.66

Shavelson, R. J. (2018). Methodological perspectives: Standardized (summative) or

   contextualized (formative) evaluation? *Education Policy Analysis Archives*, *26*(48), 1-18.

   Retrieved from https://files.eric.ed.gov/fulltext/EJ1176517.pdf

Shier, R. (2004). *Statistics: Paired t-tests*. Mathematics Learning Support Center. Retrieved from

   http://www.statstutor.ac.uk/resources/uploaded/paired-t-test.pdf

Spiva, L., Hart, P. L., Patrick, S., Waggoner, J., Jackson, C., & Threatt, J. L. (2017).

Effectiveness of an evidence-based practice nurse mentor training program. *Worldviews on Evidence-Based Nursing*, *14*(3), 183–191. Retrieved from

https://www.researchgate.net/publication/315611770_Effectiveness_of_an_Evidence-Based_Practice_Nurse_Mentor_Training_Program

Stavor, D. C., Zedreck-Gonzalez, J., & Hoffmann, R. L. (2017). Improving the use of evidence-based practice and research utilization through the identification of barriers to implementation in a critical access hospital. *Journal of Nursing Administration*, *47*(1), 56–61. doi:10.1097/NNA.0000000000000437.

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

Survey Monkey®. (2019). *HIPAA compliance with Survey Monkey®.* Retrieved from https://www.surveymonkey.com/mp/hipaa-compliance/

Thorsteinsson, H. S. (2013). Icelandic nurses' beliefs, skills, and resources associated with evidence-based practice and related factors: A national survey. *Worldviews on Evidence-Based Nursing, 10(2)*, 116-126. doi:10.1111/j.1741-6787.2012.00260.x

Upton, D., & Upton, P. (2006). Development of an evidence-based practice questionnaire for nurses. *Journal of Advanced Nursing, 53*(4), 454-458. doi:10.1111/j.1365-2648.2006.03739.x

Verloo, H., Desmedt, M., & Morin, D. (2017). Beliefs and implementation of evidence-based practice among nurses and allied healthcare providers in the Valais hospital, Switzerland.

Journal of Evaluation in Clinical Practice, *23*(1), 139–148. Retrieved from

https://www.ncbi.nlm.nih.gov/pubmed/27687154

Vonglao, P. (2017). Application of fuzzy logic to improve the Likert scale to measure latent

variables. *Kasetsart Journal of Social Sciences, 38*(3), 337-344.

doi:10.1016/j.kjss.2017.01.002

Wallen, G. R., Mitchell, S. A., Melnyk, B., Fineout-Overholt, E., Miller-Davis, C., Yates, J., &

Hastings, C. (2010). Implementing evidence-based practice: Effectiveness of a structured

multifaceted mentorship programme. *Journal of Advanced Nursing, 66(12),* 2761-2771.

doi:10.1111/j.1365-2648.2010.05442.x

Warren, J. I., Montgomery, K. L., & Friedmann, E. (2016). Three-year pre-post analysis of EBP

integration in a Magnet-designated community hospital. *Worldviews on Evidence-Based

Nursing, 13(1)*, 50-58. doi:10.1111/wvn.12148

Watson, J. (2006). Caring theory as an ethical guide to administrative and clinical

practices. *Nursing Administration Quarterly*, *30*(1), 48. Retrieved from

https://www.ncbi.nlm.nih.gov/pubmed/16449884

Watson, J., (2008). *The philosophy and science of caring (Revised Edition)*. Denver, CO:

University Press Colorado

Watson, J., (2010). *Core concepts of human caring*. Watson Caring Science Institute webpage

supplement. Retrieved from https://www.watsoncaringscience.org/jean-bio/caring-

science-theory/

Watson, J., (2019). *Caring science theory*. Online publication. Retrieved from

https://www.watsoncaringscience.org/jean-bio/caring-science-theory/

Appendices, Tables, and Figures

Appendix A

Summary of Primary Research Evidence

Citation	Question or Hypothesis	Theoretical Foundation	Research Design (include tools) and Sample Size	Key Findings	Recommendations/ Implications	Level of Evidence
Aarons, G. A., Ehrhart, M. G., Farahnak, L. R., & Hurlburt, M. S. (2015).	The main goal of this pilot study was to assess the feasibility, acceptability, and perceived utility of LOCI. We also assessed preliminary effects of LOCI on supervisee-rated leader readiness and support behaviors.	Full-range leadership (FRL) model	2-arm randomized mixed-method pilot study LOCI – n=41 Control – n=59 Managers n=6 Control – n=6 Self-report survey Focus groups	Leadership and organizational change for implementation (LOCI) was supported by qualitative & quantitative analyses with ability to improved staff-rated leadership for EBP implementation. 79 references	These study results suggest the need of leadership for EBP implementation. S-randomized control study W – pilot study O – small sample size makes it difficult to achieve generalizability T – all components of leadership training were not applied	Level I-B
Guerrero, E., Frimpong, J., Kong, Y., Fenwick, K., & Aarons, G. (2018).	To test a multilevel leadership model examining the extent to which top managers_ transformational leadership, as mediated by	Not specified. Authors referred to the importance for foundational theories of implementation effectiveness.	N=427 Used hierarchal linear models with robust standard errors to analyze multilevel data	Support for Hypothesis 1. Transformational leadership was positively related to middle managers implementation	Findings from this study suggest a correlation of implementation by middle managers to transformational leadership of senior	Level I-A EBP attitude scale (Aarons et al., 2010)

implementation leadership of middle managers (i.e., those who supervise direct clinical services), affects staff attitudes toward evidence-based practices (EBPs) and their implementation.		Three arms: EBP attitudes EBP implementation for CMT EBP implementation of MAT EBP attitude scale (Aarons et al., 2010) Cronbach's alpha for transformational leadership was 0.92	leadership (standardized direct effect =.173, bootstrap p = .034). Hypothesis 2 was also supported. Transformational leadership was indirectly associated with employee attitudes toward EBPs via middle managers_ implementation leadership (standardized indirect effect = .090, bootstrap p =.012). Did not find support for Hypothesis 3. Transformational leadership was indirectly associated with delivering CMT through middle managers_ implementation leadership, but only with marginal statistical significance (standardized	managers. The implications lead to suggesting the need for effective leadership to implement change. S-Focus of the effect of transformational leadership of senior managers for middle managers. W-Cross-sectional only one manager each in middle and top management roles and only three employees per workgroup. O-Staff attitudes should be assessed. T-Study examined direct and indirect relationships, not causal or temporal relationships. Transformational leadership important for developing climate for innovation &	Cronbach's alpha for transformational leadership was 0.92

				indirect effect = .006, bootstrap p = .091). Findings did not support an indirect relationship between transformational leadership and implementation of MAT. 41 references	positive attitudes toward EBP.	
Allen, N., Lubejko, B. G., Thompson, J., & Turner, B. S. (2015).	The aims of this project were to evaluate ONS's EBP web course regarding the currency and accuracy of the content; demographic characteristics; change in knowledge test scores from pre- to postcourse completion; effectiveness of the Ask the Expert mentoring option within the course; and course completers' attitudes,	none	Single center study – N=225 1 excluded	Web-based educational platform has been demonstrated as an effective, desirable mechanism to deliver educational content to nurses. 17 references	The implications of these results suggest nurses need to supplement EBP education regardless of education level or experience. It also implies the usefulness of a web-based platform to provide educational material. S- statistical analysis used to evaluate data. W – possible missing or incomplete data due to retrospective review	Level I-A

	knowledge, and practice of EBP through implementation of the Evidence-Based Practice Questionnaire (EBPQ) (Upton & Upton, 2006).				O – EBPQ participation was underused and could use additional studies of supplement with another tool to measure practice. T – Data pre-2013 were subject to missing or incomplete data	
Friesen, M. A., Brady, J. M., Milligan, R., & Christensen, P. (2017).	The aim of this study was to assess a demonstration project intended to pilot and evaluate a structured EBP education with mentoring innovation for nurses in a multihospital system.	Johns Hopkins EBP model, ARCC model, Rogers Theory of Innovation	N=57 Mixed methods study – multihospital system (5 hospitals) One pilot unit from each of the hospitals. Quantitative data – pre-test/post-test design Qualitative data collected with post-intervention focus groups.	Analysis of the survey data provided insights about the effect of the innovation related to the participants. The overall scores for EBPI and EBPB increased over time. The change in implementation was significant ($t = 1.75$, $df = 56$, $p < .05$, one-tailed), whereas beliefs was not ($p > .1$). There was an improvement in the participants' individual responses to 11 of 16	Recommendations/implications suggest that a structured EBP education program with mentoring can improve attitudes, knowledge, and skills of nurses for EBP. Additional implications suggest the use of Johns Hopkins EBP model and Rogers' theory of innovation can augment nurses EBP attitudes, knowledge and skills	Level I-A

				statements on the EBPB. Improvements were noted for 16 of 18 items on the EBPI scale. 40 references	S-Used specific EBP model W-Small pilot project O-Did not allow for tracking over time T-The study did not track costs	
Ramos-Morcillo, A.J., Fernandez-Salazar, S.F., Ruzafa-Martinez, M., Del-Pino-Cassado (2015).	To evaluate the effectiveness of a brief basic online and face-to-face educational intervention to promote EBP attitudes, knowledge and skills, and practice in clinical care nurses.	Theory of planned behavior	N=109 convenience sample N=54 - intervention group N=55 comparison group Quasi-experimental pretest-posttest design with a comparison group	The intervention was a brief, basic EBP course with online and face-to-face learning. The comparison group received an educational intervention with different content. The evidence-based practice questionnaire (EBPQ) was used to evaluate EBP attitude, knowledge and skills, and practice before the intervention, and at 21 and 60 days following the intervention. Two-way mixed analysis of variance was conducted. The between-subject	Implications for this study suggest that EBP knowledge, skills, and attitude improve with a basic EBP course with on-line and face to face learning. S-Use of theory added strength to the intervention W-Sample was not random O-Only short-term effects were analyzed. Additional study over time may provide value. T- Voluntary participation may introduce bias	Level II-A EBPQ questionnaire (Upton & Upton, 2006)

				effects of the EBP intervention for knowledge and skills F (*df*) 6.6(1) *p*0.01, attitude 0.01 (1) *p* 0.92, and practice 0.04(1) *p* 0.85. The interaction: intervention times time for knowledge and skills F (*df*) 8.73(2) *p* <0.001, attitude F (*df*) 2.26 (2) *p* 0.11, and practice F (*df*) 2.16(2) *p* 0.12. Post-intervention scores improved for knowledge and skills, attitude, and practice arms. 51 references		
Spiva, L., Hart, P. L., Patrick, S., Waggoner, J., Jackson, C., & Threatt, J. L. (2017).	To investigate the effectiveness of a mentor training program on mentors' perceptions of knowledge, attitude, skill, and confidence levels, and organizational readiness related to	no	n=66 mentors n=367 nurses A two-group pretest–posttest quasi-experimental, interventional design Convenience sample	Nurse mentors' knowledge, attitude, skill level, and organizational readiness related to EBP, t = −8.64, p < .001, and confidence, t = −6.36, p < .001, improved after training. Nurses' knowledge, attitude,	The implications of this study suggest that organizational support of EBP mentor program with multifaceted, structured process to educate nurses to become EBP mentors while providing support throughout the	Level-II-A EBNQ (Nagy, Lumby, McKinley, & Macfarlan e, 2001)

	evidence-based practice (EBP) and research utilization; and to investigate the effectiveness of creating a formalized structure to enculturate EBP in order to prepare nurses to incorporate EBP into clinical practice on nurses' perceptions of knowledge, attitude, skill levels, barriers, nursing leadership, and organizational support related to EBP and research utilization.			and skill level related to EBP, t = −19.12, p < .001, and barriers to research utilization, t = 20.86, p < .001, EBP work environment t = −20.18, p < .001, and EBP nurse leadership, t = −16.50, p < .001, improved after a formalized structure was implemented. Paired t-tests comparing means and standard deviations for pre- and post-survey scores. Clinical nurses' knowledge t = −14.52, p < .001, attitude t = −18.83, p < .001, skills t = −13.37, p < .001, and perception of nurse leader t = −16.50, p < .001 51 references	training program may be useful for success of the DNP project. S-Data from inclusion of mentors and nurses provided value to contribute to the DNP project W-Sample was not randomized O-Study did not evaluate actual implementation of EBP. This could be evaluated in a future study. T-Possible bias introduced when mentor training was delayed	BARRIERS scale (Funk et al., 1991)
Melnyk, B.M., Fineout-Overholt, E., & Mays, M.Z. (2008).	The aim of this study was to report on the development and psychometric properties of two	Transtheoretical model of health behavior change	N= 394 Convenience sample of nurses attending continuing	Cronbach's alpha was > .90 for each scale. Principal components analysis indicated	46 references S-Validated psychometric	Level I-A

	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.	Advancing Research and Clinical Practice through close collaboration model (ARCC)	education workshops volunteered to complete the scales.	that each scale allowed measurement of a unidimensional construct. Strength of EBP beliefs and the extent of EBP implementation increased as educational level increased ($p < .001$) and as responsibility in the workplace increased ($p < .001$).	properties of two instruments

W-Convenience sample may introduce bias

O-Cross-validation studies are needed to confirm factor structure to establish reliability and validity in other populations

T- Test-retest reliability was not measured so stability of instrument is unknown | |
| Hanrahan, K., Wagner, M., Matthews, G., Stewart, S., Dawson, C., Greiner, J., … Williamson, A. (2015). | A large, complex, academic medical center department of nursing compared SC to EBP. Nurses systematically reviewed and rated the degree to which current practices adhered to best-evidence versus SC. This initiative, "Sacred Cow: Gone to Pasture," was developed, | Iowa Model and Rogers' stages of innovation | Systematic evaluation for a quality improvement effort | Review of organization-specific policies and procedures and reports of actual practices revealed that SC persist, even in a center internationally recognized as a leader in EBP. The SC initiative caught the attention of busy clinicians and raised awareness of SC and the importance | The implications of this study suggest that sacred cows may be a focus to gain the attention of nurses involved in the project through Roger's theory of innovation in support of EBP. The study further suggests the use of nursing theory to support | Level III-A |

	structured, implemented and followed a phase plan using the Implementation Strategies for Evidence-Based Practice to help to support adoption and integration.				of adherence to EBP. The SC initiative resulted in policy and practice changes and sparked new EBP and research, resulting in numerous improvements, including a significant decline in catheter-associated urinary tract infections and shifting from basins to commercially prepared cloths for patient bathing. 41 references	organizational change. S-First systematic evaluation to evaluate sacred cows W-Organizational quality improvement effort may not be generalizable O-Single center review may reduce generalization. T-None identified.	
Harper, M. G., Gallagher-Ford, L., Warren, J. I., Troseth, M., Sinnott, L. T., & Thomas, B. K. (2017).	The aims of this study were threefold: 1. Describe NPD practitioners' EBP beliefs, EBP implementation, and perceptions of organizational culture and readiness for EBP. 2. Determine organizational infrastructures for	No	N=3,397 Non-experimental, descriptive, correlational study Convenience sample	It is essential to locate valid instruments to measure the effect of interventions aimed at improving EBP. The EBP beliefs (EBPB), EBP Implementation (EBPI), and Organizational Culture and Readiness for System-Wide	The implications of this study suggest the need to find valid instruments to measure EBP beliefs, implementation, and organizational readiness. It also supported the use of Melnyk's EBPB, EBPI, and OCRSIEP surveys as valid instruments	Level III-A EBP beliefs (EBPB), EBP Implementation (EBPI), and Organizational Culture and

	EBP and NPD practitioners' awareness of and engagement in these infrastructures. 3. Characterize the relationships among study variables.			Integration of EBP (OCRSIEP) scales (Melnyk, Fineout-Overholt, & Mays, 2008) provide valid instruments to measure the attitudes and practice knowledge nurses possess for EBP, and organizational and cultural readiness for EBP. 27 references	to use for the DNP project. S-Large sample size promotes generalizability W-Single group may introduce bias. O-Low response to survey suggests alternative modes could be employed. T-Convenience sample could have expanded to other groups to reduce bias.	Readiness for System-Wide Integration of EBP (OCRSIEP) scales (Melnyk, Fineout-Overholt, & Mays, 2008)

Legend:

Appendix B

Summary of Systematic Reviews (SR)

Citation	Question	Search Strategy	Inclusion/ Exclusion Criteria	Data Extraction and Analysis	Key Findings	Recommendation/ Implications	Level of Evidence
Albarqouni L., Hoffmann, T., & Glasziou, P. (2018).	Despite the established interest in evidence-based practice (EBP) as a core competence for clinicians, evidence for how best to teach and evaluate EBP remains weak. The authors sought to systematically assess coverage of the five EBP steps, review the outcome domains measured, and assess the properties of the instruments used in studies evaluating EBP educational interventions.	The authors conducted a systematic review of controlled studies (i.e. studies with a separate control group) which had investigated the effect of EBP educational interventions. We used citation analysis technique and tracked the forward and backward citations of the index articles (i.e. the systematic reviews and primary studies included in an overview of the effect of EBP teaching) using Web of Science until May 2017. We extracted information on	302 screened, 85 included (54% RCT, EBP step 3 most frequently taught 63 (74%), 46 (54%) studies were randomized trials, 51 (60%) included postgraduate level participants, and 63 (75%) taught medical professionals.	EBP Step 3 (critical appraisal) was the most frequently taught step (63 studies: 74%). Only 10 (12%) of the studies taught content which addressed all five EBP steps. Of the 85 studies, 52 (61%) evaluated EBP skills, 39 (46%) knowledge, 35 (41%) attitudes, 19 (22%) behaviors, 15 (18%) self-efficacy, and 7 (8%) measured reactions to EBP teaching delivery. Of the 24 instruments used in the included studies, 6 were high-quality (achieved ≥3 types of established validity evidence)	Most studies focused on teaching only *some* of EBP steps (primarily critical appraisal of evidence) & did not use high quality instruments to measure outcomes.	The implications for this systematic review suggest the need to focus on all EBP steps, rather than evidence appraisal only when educating nurses on EBP. The review also points out the importance of using valid quality instruments to measure EBP outcomes. S- systematic review W – screening & data selection by only one author O - lack of high-quality validated instruments T – Purported first systematic review for evaluation of instruments used in	Level I-A PRISMA flowchart of systematic reviews.

Citation	Question	Search Strategy	Inclusion/ Exclusion Criteria	Data Extraction and Analysis	Key Findings	Recommendation/ Implications	Level of Evidence
		intervention content (grouped into the five EBP steps), and the outcome domains assessed. We also searched the literature for published reliability and validity data of the EBP instruments used.		and these were used in 14 (29%) of the 52 studies that measured EBP skills; 14 (41%) of the 39 studies that measured EBP knowledge; and 8 (26%) of the 35 studies that measured EBP attitude.		EBP was limited to controlled studies only of educational studies. Previous studies have identified and evaluated all EBP instruments.	

Legend:

Appendix C

Project Schedule

Activity	NR702								NR705							
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Meet with faculty/preceptor	☒	☐	☐	☒	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐
Introduction, Problem Statement, Objectives and Aims, and Significance of Practice Problem sections of proposal	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Synthesis of Literature, Practice Recommendations, and Evidence-Based Practice: Verification of Chosen Option sections of proposal	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Theoretical Framework and Change Model sections of proposal	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Organizational Need, Organizational Support, Project Stakeholders, Barriers and Facilitators,	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Project Schedule, Resources Needed, Project Manager Role, and Plans for Sustainability sections of the proposal																
Project Vision, Mission and Objectives, PICOT Question (Population, Intervention, Comparison, Outcome, and Timeframe), Feasibility, Sample and Setting sections of the proposal	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Implementation Plan/Procedures, Data Collection Procedures, Recruitment and Selection, Data Analysis Plan, Instrumentation, Instrument Reliability and Validity, Ethics and Human Subjects Protection sections of the proposal	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Refine/finalize proposal	☐	☐	☐	☐	☐	☒	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐
Preparation of project for submission to Chamberlain and NCH IRBs	☐	☐	☐	☐	☐	☐	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐
Presentation to NCH IRB for approval	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐
Submission to Chamberlain IRB for approval.	☐	☐	☐	☐	☐	☐	☐	☐	☒	☒	☒	☐	☐	☐	☐	☐

Activity																
Contact statistician	□	□	□	☒	☒	□	□	□	□	□	□	□	□	□	□	□
Meet with Directors	☒	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒
Group meeting with staff participants	□	☒	☒	□	□	□	□	□	□	□	□	□	□	□	□	□
Select/obtain permission for data collection instruments	☒	☒	□	□	□	□	□	□	□	□	□	□	□	□	☒	□
Meet with librarian	□	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□
Electronic pre-intervention EBPB, EBPI, and OCRSIEP surveys to participants	☒	□	□	□	□	□	□	□	□	□	□	□	□	□	☒	☒
Develop/refine educational modules for intervention	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□
Web-based education for participants.	□	□	□	□	□	□	□	□	□	□	□	□	□	□	☒	☒
Develop/construct/refine web-based housing for EBP materials.	☒	□	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒
Implement web-based housing for EBP materials.	□	□	□	□	□	□	□	□	□	□	□	□	□	□	☒	☒

	NR707								**NR709**							
Activity	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Meet with faculty/preceptor	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□	☒	□
Web-based education for participants.	☒	☒	☒	☒	☒	☒	☒	□	□	□	□	□	□	□	□	□
Refine web-based intranet site for EBP materials.	☒	☒	☒	☒	☒	☒	☒	□	□	□	□	□	□	□	□	□

Electronic post-intervention EBPB, EBPI, and OCRSIEP surveys to participants	□	□	□	□	□	□	⊠	⊠	□	□	□	□	□	□	□	□
Begin data collection.	□	□	□	□	□	□	□	□	⊠	□	□	□	□	□	□	□
Meet with statistician to analyze data.	□	□	□	□	□	□	□	⊠	⊠	⊠	□	□	□	□	□	□
Present project at NCH Quality Improvement Conference.	□	□	□	□	□	□	□	□	□	□	□	⊠	□	□	□	□
Present project to Chamberlain DNP committee.	□	□	□	□	□	□	□	□	□	□	□	□	□	□	⊠	□
Finalize and submit final project paper	□	□	□	□	□	□	□	□	□	□	□	□	⊠	□	□	□
	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□

Appendix D

Data Collection Tools for Evaluation:

- Demographic information and Johns Hopkins Nursing Evidence-Based Practice Model Knowledge rating

- EBP beliefs scale (EBPB) (Melnyk, B., Fineout-Overholt, E., & Mays, M. (2008)

- EBP Implementation Scale (EBPI) (Melnyk, B., Fineout-Overholt, E., & Mays, M. (2008)

- Organizational Culture & Readiness for System-Wide Integration of Evidence-based Practice Survey© (OCRSIEP) (Melnyk et al., 2010)

Demographic Information

1. Your age
 	
   a. 19-25 years
   b. 26-35 years
   c. 36-50 years
   d. 51-60 years
   e. Over 60 years
	2. Years of nursing experience
	
	   a. 0-5 years
	   b. 6-10 years
	   c. 11-15 years
	   d. 16-20 years
	   e. 21+ years

3. Primary role in nursing
 	
   a. Staff nurse
   b. Charge nurse
   c. Manager/Director
   d. Educator
   e. Quality management
	4. Race/Ethnicity
	
	   a. Caucasian
	   b. African/American
	   c. American Indian/Alaskan Native
	   d. Asian/Pacific Islander
	   e. Hispanic
	   f. Other (please specify)
	
	   _____

5. Gender
 	
   a. Female
   b. Male
	6. Highest degree earned
	
	   a. Associates Degree/Diploma
	   b. Baccalaureate
	   c. Masters
	   d. Doctorate

7. Rate your knowledge of the Johns Hopkins Nursing Evidence-based Practice Model (JHNEBPM)
 	
   a. No experience
   b. Beginning level
   c. Intermediate level
   d. Advanced level
	8. What unit do you primarily work in?
	   a. CCU
	   b. Behavioral Health
	   c. Medical Surgical

EBP Beliefs Scale

Below are 16 statements about evidence-based practice (EBP). Please circle the number that best describes your agreement or disagreement with each statement. There are no right or wrong answers.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I believe that EBP results in the best clinical care for patients.	1	2	3	4	5
2. I am clear about the steps of EBP.	1	2	3	4	5
3. I am sure that I can implement EBP.	1	2	3	4	5
4I believe that critically appraising evidence is an important step in the EBP process.	1	2	3	4	5
5. I am sure that evidence-based guidelines can improve clinical care	1	2	3	4	5
6. I believe that I can search for the best evidence to answer clinical questions in a time efficient way.	1	2	3	4	5
7. I believe that I can overcome barriers in implementing EBP.	1	2	3	4	5
8. I am sure that I can implement EBP in a time efficient way.	1	2	3	4	5
9. I am sure that implementing EBP will improve the care that I deliver to my patients.	1	2	3	4	5
10. I am sure about how to measure the outcomes of clinical care.	1	2	3	4	5
11. I believe that EBP takes too much time.	1	2	3	4	5
12. I am sure that I can access the best resources in order to implement EBP.	1	2	3	4	5
13. I believe EBP is difficult.	1	2	3	4	5
14. I know how to implement EBP sufficiently enough to make practice changes.	1	2	3	4	5
15. I am confident about my ability to implement EBP where I work.	1	2	3	4	5
16. I believe the care that I deliver is evidence-based.	1	2	3	4	5

EBP Implementation Scale

Below are 18 questions about evidence-based practice (EBP). Some healthcare providers do some of these things more often than other healthcare providers. There is no certain frequency in which you should be performing these tasks. Please answer each question by circling the number that best describes **how often each item has applied to you in the past 8 weeks.**

In the past 8 weeks, I have:

	0 times	1-3 times	4-5 times	6-8 times	>8 times
1. Used evidence to change my practice.	0	1	2	3	4
2. Critically appraised evidence from a research study.	0	1	2	3	4
3. Generated a PICO question about my practice.	0	1	2	3	4
4. Informally discussed evidence from a research study with a colleague.	0	1	2	3	4
5. Collected data on a clinical issue.	0	1	2	3	4
6. Shared evidence from a study or studies in the form of a report or presentation to more than 2 colleagues.	0	1	2	3	4
7. Evaluated the outcomes of practice change...	0	1	2	3	4
8. Shared an evidence-based guideline with a colleague.	0	1	2	3	4
9. Shared evidence from a research study with a patient/family member.	0	1	2	3	4
10. Shared evidenced from a research study with a multi-disciplinary team member.	0	1	2	3	4
11. Read and critically appraised a clinical research study.	0	1	2	3	4
12. Accessed the Cochrane database of systematic reviews.	0	1	2	3	4
13. Accessed an evidence-based guideline.	0	1	2	3	4
14. Used an evidence-based guideline or systematic review to change clinical practice where I work.	0	1	2	3	4
15. Evaluated a care initiative by collecting patient outcome data.	0	1	2	3	4
16 Shared the outcome data collected with colleagues.	0	1	2	3	4
17. Changed practice based on patient outcome data.	0	1	2	3	4
18. Promoted the use of EBP to my colleagues.	0	1	2	3	4

Organizational Culture & Readiness for System-Wide Integration of Evidence-based Practice Survey

Below are 19 questions about evidence-based practice (EBP). Please consider the culture of your organization and its readiness for system wide implementation of EBP and indicate which answer best describes your response to each question. There are no right or wrong answers.

Item	None at All	A Little	Somewhat	Moderately	Very Much
1. To what extent is EBP clearly described as central to the mission and philosophy of your institution?	1	2	3	4	5
2. To what extent do you believe that EBP is practiced in your organization?	1	2	3	4	5
3. To what extent is the nursing staff with whom you work committed to EBP?	1	2	3	4	5
4. To what extent is the physician team with whom you work committed to EBP?	1	2	3	4	5
5. To what extent are there administrators within your organization committed to EBP (i.e., have planned for resources and support [e.g., time] to initiate EBP)?	1	2	3	4	5
6. In your organization, to what extent is there a critical mass of nurses who have strong EBP knowledge and skills?	1	2	3	4	5
7. To what extent are there nurse scientists (doctorally prepared researchers) in your organization to assist in generation of evidence when it does not exist?	1	2	3	4	5
8. In your organization, to what extent are there Advanced Practiced Nurses who are EBP mentors for staff nurses as well as other APNs?	1	2	3	4	5
9. To what extent do practitioners model EBP in their clinical settings?	1	2	3	4	5
10. To what extent do staff nurses have access to quality computers and access to electronic databases for searching for best evidence?	1	2	3	4	5
11. To what extent do staff nurses have proficient computer skills?	1	2	3	4	5
12. To what extent do librarians within your organization have EBP knowledge and skills?	1	2	3	4	5
13. To what extent are librarians used to search for evidence?	1	2	3	4	5
14. To what extent are fiscal resources used to support EBP (e.g. education-attending EBP conferences/workshops, computers, paid time for the EBP process, mentors)	1	2	3	4	5
15. To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among:					
a. Administrators?	1	2	3	4	5
b. Physicians?	1	2	3	4	5
c. Nurse Educators?	1	2	3	4	5
d. Advance Nurse Practitioners?	1	2	3	4	5
e. Staff Nurses?	1	2	3	4	5
16. To what extent is the measurement and sharing of outcomes part of the culture of the organization in which you work?	1	2	3	4	5
Item	None	25%	50%	75%	100%
17. To what extent are decisions generated from:					
a. direct care providers?	1	2	3	4	5
b. upper administration?	1	2	3	4	5
c. physician or other healthcare provider groups?	1	2	3	4	5
Item	Not ready	Getting Ready	Been Ready but Not Acting	Ready to Go	Past Ready & onto Action
18. Overall, how would you rate your institution in readiness for EBP	1	2	3	4	5
Item	None at All	A Little	Somewhat	Moderately	Very Much
19. Compared to 6 months ago, how much movement in your organization has there been toward an EBP culture. (place a hatch mark on the line to the right that indicates your response)	1	2	3	4	5

Appendix E

- Permissions to use EBPB, EBPI, and OCRSIEP data collection tools

- Permissions to use the Johns Hopkins Nursing Evidence-Based Practice tools

- Johns Hopkins Evidence-Based Practice Model

Terri,

Thank you for the completed signed form. Please treat this email as permission to use the tools as explained in the application request.

Attached are PDF copies of the tools.

Have a good weekend.
Bindu

_____

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thomas.3279@osu.edu

JOHNS HOPKINS NURSING EVIDENCE-BASED PRACTICE MODEL AND TOOLS

HERE ARE YOUR JHNEBP TOOLS (AND A SURPRISE GIFT)!

Thank you for your submission. We are happy to give you permission to use the JHEBP model and tool in adherence of our legal terms mentioned noted below:

- You may not modify the model or the tools without written approval from Johns Hopkins.

- All reference to source forms should include "©The Johns Hopkins Hospital/The Johns Hopkins University."

- The tools may not be used for commercial purposes without special permission.

- If interested in commercial use or discussing changes to the tool, please email ijhn@jhmi.edu. Click **HERE** to access the zipped file of the tools.
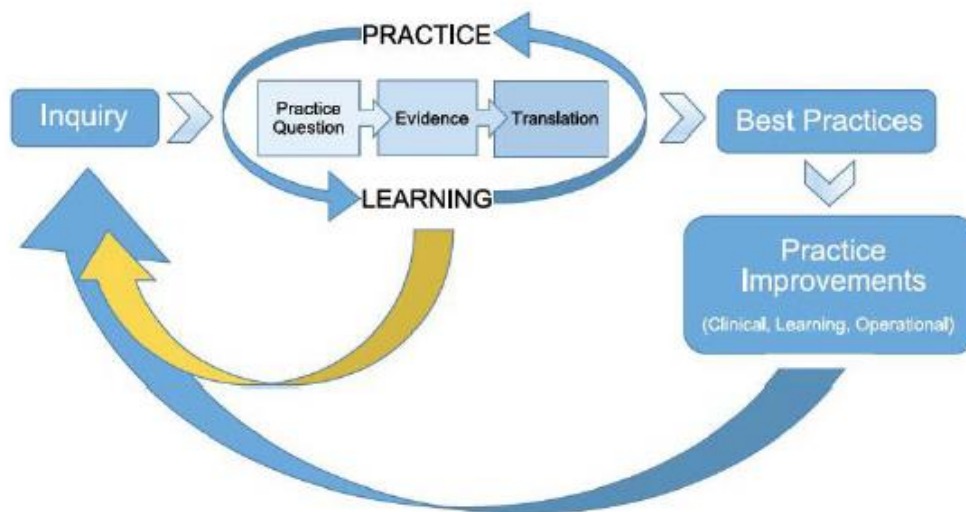
Please note: If you choose to use the Johns Hopkins Nursing Evidence-Based Practice Model and Tools in any other way, another form will need to be submitted.

Johns Hopkins Nursing Evidence-Based

The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model is a powerful problem-solving approach to clinical decision-making, and is accompanied by user-friendly tools to guide individual or group use. It is designed specifically to meet the needs of the practicing nurse and uses a three-step process called PET: practice question, evidence, and translation. The goal of the model is to ensure that the latest research findings and best practices are quickly and appropriately incorporated into patient care.

Appendix F

SWOT Analysis of EBP at NCH

Strengths	Weaknesses
o Dedicated leadership support of research and evidence-based practice (EBP). o Leadership commitment to affect a practice change promoting EBP. o Dedicated FTE for Research & EBP o Annual Quality Conference o Affiliation with Mayo Clinic o Shared governance support of EBP. o On Magnet® journey.	o Inconsistent utilization of EBP. o Mixed levels of EBP experience. o Lack of conceptual model for implementation of EBP. o Little front-line nurse involvement in Research and EBP council of the shared governance structure. o Lack of nurses with EBP expertise.
Opportunities	**Threats**
o Knowledge deficit of nurses and ancillary staff for EBP implementation. o Access to EBP information. o Lack of a web-based platform to house EBP resources. o Little to no experience with literature search and review.	o Damage to credibility of the organization. o Competitors could recruit professional candidates from NCH for a culture of research supported EBP. o Lack of effective research supported EBP can threaten potential Magnet® status.

Appendix G

- Informed Consent

- Participant Letter

- Letter of Support

- Invitation for poster presentation (dissemination)

INFORMED CONSENT FOR PARTICIPATION IN
A QUALITY IMPROVEMENT STUDY

Study Title:

Closing the Gap: Translating Research into Practice

Researcher(s):

Terri McGuire, DNP student, MSN, RN, CPHQ, CPHRM

What is the purpose of this study?

The purpose of this Doctor of Nursing Practice (DNP) project is to reduce the knowledge gap related to evidence translation at Naples Community Hospital (NCH) with the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model including web-based support to aid nurses in the translation of research evidence to promote evidence-based practice.

What will I be asked to do if I choose to be in this study?

You will be asked to complete secured electronic demographic information and surveys before and after evidence-based practice education that ask you about your beliefs, knowledge, and utilization of evidence-based practice. The demographic information will ask your age range, years of nursing experience, primary role in nursing, race/ethnicity, gender, educational level, knowledge of the Johns Hopkins Nursing Evidence-based Practice Model, and the unit you work in. You will be asked to participate in an on-line educational program about evidence-based practice.

How much time will I be asked to devote to this study?

The electronic surveys will take approximately 15-minutes before and after the educational component of the project. The web-based education will take one to two hours dependent on the rate that you progress through the modules.

What are the possible risks or discomforts that I might experience?

There are no actual risks with this project. No personal identifiers will be taken. Perceived risk may involve fear of loss of personal information.

What are the possible benefits for me or others?

Possible benefits you may receive from the educational curriculum depicted in this project include greater efficiency related to use of evidence-based practice and enriched job satisfaction that lead to better patient outcomes. There is no guarantee that you will benefit from being in this project.

What alternatives are available?

The alternative to not participating in this project will be to continue your work as designated by Naples Community Hospital Health System (NCH).

Do I have to participate?

Participation is voluntary.

What will happen if I do not participate?

There will be no repercussions to you if you choose not to participate.

What will happen if I leave the study?

There will be no repercussions to you if you choose to leave the study.

Will it cost me anything to participate?

There is no cost to you for participating in this project.

Will I get paid anything if I participate?

You will not be paid for participation, but if you choose to participate, NCH will pay you for the time you spend completing the education, pre and post education surveys.

How will my confidentiality and privacy rights be protected?

All data collected will be reviewed, analyzed, and securely kept in an electronic file. In the event of any publication or presentation stemming from this study, no personally identifiable information will be disclosed.

In this study:

- Identifiable private information or specimens *(private information or specimens that can be traced back to you)* will be collected:

    Yes ☐   No x

What are my rights?

- If you choose to be in this study, you have the right to be treated with respect, including respect for your decision to stop being in the study.

- You are free to stop being in the study at any time.

- Choosing not to be in this study or to stop being in this study will not result in any penalty to you or loss of benefits to which you are otherwise entitled.

- You will be given any information that either the researcher or the IRB reasonably believes is important to your choice about whether to be in this research study.

- If you want to speak with someone who is not directly involved in this research, or if you have questions about your rights as a research subject, contact the Chamberlain University Institutional Review Board (IRB) Office via email at irb@chamberlain.edu.

Who do I contact for any questions about this study?

Terri McGuire at 239-624-3242

Is there anything else I need to know?

The aforementioned information communicated everything you need to know to be a participant in this project.

This quality improvement study was reviewed and approved by the Chamberlain University

Institutional Review Board and the NCH Institutional Review Board. The goal is to assure that

the study protects the rights and safety of the participants of this quality improvement study.

I have read informed consent and the quality improvement study has been explained to me. I have been given the opportunity to ask questions and my questions have been answered. If I have additional questions, I have been told whom to contact. I agree to participate in the quality improvement study described above if I begin the electronic modules containing the pre and post-education EBP surveys and educational modules.

____electronic assent_____   _____

Signature of Subject   Date

Participant letter

Dear Participant,
The purpose of this Doctor of Nursing Practice (DNP) project is to reduce the knowledge gap related to evidence translation at Naples Community Health System - Downtown (NCH) with the Johns Hopkins Nursing Evidence-Based Practice (JHNEBPM) model including web-based support to aid nurses in the translation of research evidence to promote evidence-based practice. You are being invited to participate in a quality improvement study. The translation of evidence into practice has a substantial role in safeguarding quality care, patient safety, and improved patient outcomes. Evidence-based practice influences clinical decision-making and patient outcomes.
Your participation is voluntary. You may elect not to participate in this study at no risk to you or your position at NCH-D. There are no risks or costs for participating in this study. If you agree to participate, please complete the Informed Consent form in the education module.
If you choose to participate in this study you will be asked to complete secured electronic demographic information and surveys before and after evidence-based practice education that ask you about your beliefs, knowledge, and utilization of evidence-based practice. The demographic information will ask your age range, years of nursing experience, primary role in nursing, race/ethnicity, gender, educational level, knowledge of the Johns Hopkins Nursing Evidence-based Practice Model, and the unit you work in. You will be asked to participate on-line educational programs about evidence-based practice.
The electronic surveys will take approximately 15-minutes before and after the educational component of the project. The web-based education will take from one to two hours dependent on the rate that you progress through the modules. You will not be paid for your participation. You will receive continuing education hours and be placed in a drawing for one of four $25 restaurant gift cards after completion of all modules. The surveys and educational module will be available on HealthStream from August 12, 2019 through October 18, 2019. Your survey responses are anonymous. All individual data will be confidential and will not be available to anyone at NCH-D. The summary results of this study may be used in reports, presentations, and publications and your personal identifying information will not be included. You will receive the benefit of obtaining knowledge about EBP and the JHNEBPM.
If you want to speak with someone who is not directly involved in this research, or if you have questions about your rights as a research subject, contact the Chamberlain University Institutional Review Board (IRB) Office via email at irb@chamberlain.edu.

Letter of Support

NCH Healthcare System

May 3, 2019

To Whom It May Concern,

This letters serves as validation for **Terri McGuire** in support of her pursuit of the DNP and completion of the required clinical hours needed to complete the program. This includes supporting her while she completes her project, "Involving use of strategies/conceptual models in a pilot program including a web-based platform to reduce the gap for conducting and disseminating research and evidence-based practice." Additionally, she will be able to implement her project at our organization.

Please feel free to reach out to me if you have further questions.

Sincerely,

Ilia Echevarria

Ilia Echevarria, PhD, MS, RN, CCRN-K, NEA-BC, CENP, CHES
Associate Chief Nursing Officer, Professional Practice
NCH Healthcare System
350 Seventh Street North
Naples, FL 34102
Office: 239-624-4992

July 12, 2019

Dear Mrs. McGuire,

Congratulations! Your abstract, Closing the gap: Translating research into practice, has been accepted for a **poster presentation** at the annual Allen Weiss Research, Evidence-Based Practice, and Quality Improvement Conference. On behalf of the research conference planning committee, we would like to thank you for your submission. This conference represents scholarly and evidence-based topics related to the advancement of science and healthcare outcomes and aligns well with your work.

Your presentation will be delivered to an audience of multi-professionals that include direct and non-direct care clinicians and healthcare administrators.

Below you will find details regarding your presentation:

POSTER PRESENTATION SCHEDULED

Session Title: Closing the gap: Translating research into practice
Date: Friday, January 24th 2019
Time: 1:15-2:30 pm, poster session
Location: NCH Baker Hospital, Naples, FL, Telford Auditorium

You will receive additional information regarding poster set-up and registration.

We look forward to your participation in this event and ask that you **confirm your attendance and your presentation title** by replying to this email. If you have any further questions about the event or need additional clarification, please contact Ilia Echevarria at ilia.echevarria@nchmd.org or 239-624-4992.

Sincerely,

The NCH Research Conference Planning Committee

Appendix H

Plan for Educational Offering

OBJECTIVES	CONTENT (Topics)	TEACHING METHODS	TIMEFRAME	EVALUATION METHOD
Define evidence-based practice (EBP)	Evidence-based practice is based on the combination of the best available: <u>Scientific evidence.</u> <u>Experiential evidence.</u> <u>Patient values & expectations.</u>	Discuss concepts of EBP in online format.	15 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 1.
Distinguish among the three systems of inquiry: research, quality improvement, and EBP.	**Research** Purpose to generate new knowledge or validate existing knowledge. Studies involve systematic, scientific inquiry to answer questions or test hypotheses. Extensive literature review to identify gaps in knowledge. Researchers publish their study findings. **Evidence-based practice (EBP)** Translation of evidence into clinical decision-making.	Discuss concepts of EBP in online format.	15 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 2.

	Most best-evidence is derived from research, and goes beyond research to include clinical knowledge, patient preferences and values.		
	Literature review to find best current evidence.		
	Purpose of EBP is to use the best evidence available for patient-care decisions.		
	Quality Improvement (QI)		
	Systematic, data-guided approach to improve processes or outcomes.		
	The key is to define the outcome that needs improvement, identify how it will be measured, develop a plan for implementing an intervention, and collecting data prior to and after the intervention.		
	Doesn't require extensive literature reviews and rigorous critical appraisal.		

Explain the seven-steps of EBP	<u>Cultivate a spirit of inquiry.</u> <u>Ask a burning clinical question.</u> Problem-focused triggers Knowledge-focused triggers <u>Collect the most relevant and best evidence.</u> <u>Critically appraise the evidence.</u> Consider the level and strength of evidence using hierarchy of evidence. <u>Integrate evidence with clinical expertise, patient preferences, and values in making a practice decision or change.</u> <u>Evaluate the practice decision or change.</u> <u>Disseminate EBP results.</u>	Discuss concepts of EBP in online format.	30 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 3.
Discuss the importance of nursing practice based on evidence.	Increasing complexity of health care delivery systems involves <u>5 factors</u> that challenge nurses to guide their practice including:	Discuss concepts of EBP in online format.	15 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 4.

	Quality & Safety Movement Massive growth of new knowledge Long delays integrating new evidence into clinical practice Growth of new knowledge with delays integrating the knowledge results in deciding best care knowledge for patient care Pressure by the savvy consumer.			
Explain how Watson's Theory of Caring aligns with EBP at NCH.	<u>Watson's Theory of Caring previously adopted by NCH</u> Foundation for professional nursing practice <u>Watson's Caring model aligns with NCH values for excellence.</u> Logical inclusion of Watson's caring model for implementation of EBP <u>Evolution of the professional practice model at NCH</u> Incorporated the value of nursing	Discuss concepts of EBP in online format.	15 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 5.

	through the Ten Caritas Processes. A "values-based, theory-guided approach to caring, helps to make visible a caring model for professional nursing and system survival would meet the needs of practitioners and patients alike" (Watson, 2008, p. 49). Caritas six engages nurses in the systematic problem-solving process that supports EBP. Caritas one supports nurses in their evolution of work.			
Describe conceptual models for EBP.	A systematic approach to using the available evidence is necessary using a formal process involving: Specific criteria for evidence appraisal to augment practice efficiency and effectiveness Methods to translate evidence into practice.	Discuss concepts of EBP in online format.	15 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 6.

	Aspects of Conceptual models or frameworks: Identify a clinical problem or practice question Searching for best evidence Critical appraisal of the evidence for strength, quality, quantity, and consistency Recommendation for action based on the evidence appraisal Implementation of recommendation Evaluation of the recommendation as it relates to desired outcomes			
Describe the Johns Hopkins Nursing EBP Model and process.	A powerful problem-solving approach Includes the 3 domains of professional nursing Nursing practice Education Research User friendly tools Goal Implementation of latest research findings into patient care. Three-step process called PET Practice question Evidence Translation	Discuss concepts of EBP in online format.	60 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 7.

Describe QI methodologies.	RCPI – Rapid Cycle Performance Improvement Plan Do Study Act (PDSA) The Institute for Healthcare Improvement (IHI) recommends the model for improvement Six Sigma Lean Methodology Lean Six Sigma	Discuss concepts of EBP in online format.	15 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 8.
Explain the elements of project planning.	The problem statement Problem/population, Intervention, Comparison, Outcome (PICO) – JHNEBP Appendix B Examination of the evidence JHNEBP Appendices D, E, F, G, & H Support and approval Present a high-level overview of project to senior leadership. Complete a stakeholder analysis to obtain buy-in – JHNEBP Appendix C	Discuss concepts of EBP in online format.	15 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 9.

	Project title The project title should be a simple statement of the work to be done Purpose - Clear and compelling Aims - Statements of what will be accomplished			
Describe a literature search, website credibility, using the medical library at NCH.	How to complete an effective literature search. How to determine website credibility. How to use the medical library.	Discuss concepts of library utilization for EBP in online format.	45 minutes	Evaluation form section: Rate effectiveness of this continuing nursing education activity question 10.

Tables

Table 1

Budget

EXPENSES		REVENUE	
Direct		Billing	$0.00
Salary and benefits	$0.00	Grants	$0.00
Supplies	$50.00	Institutional budget support	$0.00
Services	$0.00		
Statistician	$0.00		
Gift cards from DNP Student	$100.00		
Indirect			
Overhead	$0.00		
Total Expenses	$150.00	Total Revenue	$0.00
Net Balance $150.00			

Note: This table reports the project budget.

Table 2.0

Demographic Characteristics of Participants (n=65)

Demographic	n (%)
Gender	
Female	56 (86.2)
Male	9 (13.9)
Age range, years	
19-25	1 (1.5)
26-35	17 (26.2)
36-50	18 (27.7)
51-60	19 (29.2)
Over 60	10 (15.4)
Nursing Education	
Associate degree/Diploma	30 (46.2)
Bachelor's degree	22 (33.8)
Master's degree	12 (18.5)
Doctoral Degree	1 (1.5)
Years of Nursing Experience	
0-5	22 (33.8)
6-10	8 (12.3)
11-15	8 (12.3)
16-20	4 (6.2)
Over 20	23 (35.4)
Primary Work Area	
Critical Care Unit	29 (44.6)
Behavioral Health Unit	17 (26.2)
Medical Surgical Unit	19 (29.2)
Primary Role	
Staff Nurse	49 (75.4)
Charge Nurse	11 (16.9)
Manager/Director	3 (4.6)
Quality Management	2 (3.1)
Ethnicity	
Caucasian	46 (70.8)
African American	3 (4.6)
American Indian/Alaskan Native	1 (1.5)
Asian/Pacific Islander	3 (4.6)
Hispanic	9 (13.8)
Other	3 (4.6)

Note: This table reports the sample demographics.

Table 3.1

Evidence-based Practice Beliefs (EBPB) Pre-Intervention

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
I believe that EBP results in the best clinical care for patients.	65	3	5	272	4.18	.705
I am clear about the steps of EBP.	65	2	5	245	3.77	.745
I am sure that I can implement EBP.	65	3	5	258	3.97	.684
I believe that critically appraising evidence is an important step in the EBP process.	65	3	5	270	4.15	.643
I am sure that evidence-based guidelines can improve clinical care.	65	3	5	278	4.28	.696
I believe that I can search for the best evidence to answer clinical questions in a time efficient way.	65	3	5	255	3.92	.692
I believe that I can overcome barriers in implementing EBP.	65	3	5	260	4.00	.685
I am sure that I can implement EBP in a time efficient way.	65	3	5	254	3.91	.678
I am sure that implementing EBP will improve the care that I deliver to my patients.	65	3	5	270	4.15	.690
I am sure about how to measure the outcomes of clinical care.	65	2	5	246	3.78	.760
I believe that EBP takes too much time.	65	1	5	192	2.95	1.192
I am sure that I can access the best resources in order to implement EBP.	65	2	5	245	3.77	.745
I believe EBP is difficult	65	1	5	181	2.78	1.125
I know how to implement EPB sufficiently enough to make practice changes.	65	2	5	243	3.74	.776
I am confident about my ability to implement EBP where I work.	65	2	5	249	3.83	.741
I believe the care I deliver is evidence-based.	65	3	5	263	4.05	.694
Valid N (listwise)	65					

Note: This table reports the individual results for the EBPB survey pre-implementation.

Table 3.2

Evidence-based Practice Beliefs (EBPB) Post-Intervention

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
I believe that EBP results in the best clinical care for patients.	65	3	5	278	4.28	.650
I am clear about the steps of EBP.	65	2	5	267	4.11	.687
I am sure that I can implement EBP.	65	2	5	266	4.09	.701
I believe that critically appraising evidence is an important step in the EBP process.	65	2	5	272	4.18	.635
I am sure that evidence-based guidelines can improve clinical care.	65	3	5	284	4.37	.575
I believe that I can search for the best evidence to answer clinical questions in a time efficient way.	65	1	5	266	4.09	.744
I believe that I can overcome barriers in implementing EBP.	65	3	5	268	4.12	.625
I am sure that I can implement EBP in a time efficient way.	65	2	5	265	4.08	.714
I am sure that implementing EBP will improve the care that I deliver to my patients.	65	3	5	277	4.26	.619
I am sure about how to measure the outcomes of clinical care.	65	2	5	260	4.00	.771
I believe that EBP takes too much time.	65	1	5	205	3.15	1.228
I am sure that I can access the best resources in order to implement EBP.	65	2	5	261	4.02	.718
I believe EBP is difficult.	65	1	5	203	3.12	1.166
I know how to implement EPB sufficiently enough to make practice changes.	65	1	5	259	3.98	.800
I am confident about my ability to implement EBP where I work.	65	2	5	260	4.00	.685
I believe the care I deliver is evidence-based.	65	3	5	265	4.08	.669
Valid N (listwise)	65					

Note: This table reports the individual results for the EBPB survey post-implementation.

Table 4.1

Evidence-based Practice Implementation (EBPI) – Pre-intervention

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Pre-Implementation - In the past 8 weeks, I have: Used evidence to change my practice.	59	0	4	90	1.53	1.223
Pre-Implementation - In the past 8 weeks, I have: Critically appraised evidence from a research study.	59	0	4	66	1.12	1.190
Pre-Implementation - In the past 8 weeks, I have: Generated a PICO question about my practice.	59	0	4	50	.85	1.172
Pre-Implementation - In the past 8 weeks, I have: Informally discussed evidence from a research study with a colleague.	59	0	4	74	1.25	1.347
Pre-Implementation - In the past 8 weeks, I have: Collected data on a clinical issue.	59	0	4	70	1.19	1.345
Pre-Implementation - In the past 8 weeks, I have: Shared evidence from a study or studies in the form of a report or presentation to more than 2 colleagues.	59	0	4	55	.93	1.244
Pre-Implementation - In the past 8 weeks, I have: Evaluated the outcomes of practice change.	59	0	4	68	1.15	1.297
Pre-implementation - In the past 8 weeks, I have: Shared an evidence-based guideline with a colleague.	59	0	4	72	1.22	1.219
Pre-Implementation - In the past 8 weeks, I have: Shared evidence from a research study with a patient/family member.	59	0	4	64	1.08	1.179
Pre-Implementation - In the past 8 weeks, I have: Shared evidence from a research study with a multi-disciplinary team member.	59	0	4	61	1.03	1.286
Pre-Implementation - In the past 8 weeks, I have: Read and critically apprised a clinical research study.	59	0	4	73	1.24	1.278
Pre-Implementation - In the past 8 weeks, I have: Accessed the Cochrane database of systematic reviews.	59	0	4	54	.92	1.406
Pre-Implementation - In the past 8 weeks, I have: Accessed an evidence-based guideline.	59	0	4	67	1.14	1.181
Pre-Implementation - In the past 8 weeks, I have: Used an evidence-based guideline or systematic review to change clinical practice where I work.	59	0	4	58	.98	1.266
Pre-Implementation - In the past 8 weeks, I have: Evaluated a care initiative by collecting patient outcome data.	59	0	4	70	1.19	1.383
Pre-Implementation - In the past 8 weeks, I have: Shared the outcome data collected with colleagues.	59	0	4	65	1.10	1.348
Pre-Implementation - In the past 8 weeks, I have: Changed practice based on patient outcome data.	59	0	4	65	1.10	1.255
Pre-Implementation - In the past 8 weeks, I have: Promoted the use of EBP to my colleagues.	59	0	4	70	1.19	1.279
Valid N (listwise)	59					

Note: This table reports the individual results for the EBPI survey pre-implementation.

Table 4.2

Evidence-based Practice Implementation (EBPI) – Post-intervention

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
In the past 8 weeks, I have: Used evidence to change my practice.	63	0	4	116	1.84	1.310
In the past 8 weeks, I have: Critically appraised evidence from a research study.	63	0	4	95	1.51	1.343
In the past 8 weeks, I have: Generated a PICO question about my practice.	63	0	4	77	1.22	1.288
In the past 8 weeks, I have: Informally discussed evidence from a research study with a colleague.	63	0	4	91	1.44	1.228
In the past 8 weeks, I have: Collected data on a clinical issue.	63	0	4	86	1.37	1.395
In the past 8 weeks, I have: Shared evidence from a study or studies in the form of a report or presentation to more than 2 colleagues.	63	0	4	84	1.33	1.257
In the past 8 weeks, I have: Evaluated the outcomes of practice change.	63	0	4	85	1.35	1.334
In the past 8 weeks, I have: Shared an evidence-based guideline with a colleague.	63	0	4	90	1.43	1.304
In the past 8 weeks, I have: Shared evidence from a research study with a patient/family member.	63	0	4	91	1.44	1.317
In the past 8 weeks, I have: Shared evidence from a research study with a multi-disciplinary team member.	63	0	4	91	1.44	1.412
In the past 8 weeks, I have: Read and critically apprised a clinical research study.	63	0	4	88	1.40	1.339
In the past 8 weeks, I have: Accessed the Cochrane database of systematic reviews.	63	0	4	64	1.02	1.338
In the past 8 weeks, I have: Accessed an evidence-based guideline.	63	0	4	96	1.52	1.435
In the past 8 weeks, I have: Used an evidence-based guideline or systematic review to change clinical practice where I work.	63	0	4	93	1.48	1.446
In the past 8 weeks, I have: Evaluated a care initiative by collecting patient outcome data.	63	0	4	90	1.43	1.467
In the past 8 weeks, I have: Shared the outcome data collected with colleagues.	63	0	4	91	1.44	1.511
In the past 8 weeks, I have: Changed practice based on patient outcome data.	63	0	4	94	1.49	1.458
In the past 8 weeks, I have: Promoted the use of EBP to my colleagues.	63	0	3	54	.86	1.148
Valid N (listwise)	63					

Note: This table reports the individual results for the EBPI survey post-implementation.

Table 5.1

Organizational Culture and Readiness for System-wide Integration of Evidence-based Practice (OCRSIEP) – Pre-implementation

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
To what extent is EBP clearly described as central to the mission and philosophy of your institution?	61	2	5	234	3.84	.934
To what extent do you believe that EBP is practiced in your organization?	61	2	5	242	3.97	.894
To what extent is the nursing staff with whom you work committed to EBP?	61	1	5	225	3.69	.958
To what extent is the physician team with whom you work committed to EBP?	61	1	5	235	3.85	.997
To what extent are there administrators within your organization committed to EBP (i.e., have planned for resources and support [e.g., time] to initiate EBP)?	61	1	5	240	3.93	.964
In your organization, to what extent is there a critical mass of nurses who have strong EBP knowledge and skills?	61	2	5	218	3.57	.939
To what extent are there nurse scientists (doctoral prepared researchers) in your organization to assist in generation of evidence when it does not exist?	61	1	5	198	3.25	1.164
In your organization, to what extent are there Advanced Practiced Nurses who are EBP mentors for staff nurses as well as other APNs?	61	1	5	208	3.41	1.039
To what extent do practitioner's model EBP in their clinical settings?	61	1	5	220	3.61	1.037
To what extent do staff nurses have access to quality computers and access to electronic databases for searching for best evidence?	61	1	5	229	3.75	.960
To what extent do staff nurses have proficient computer skills?	61	2	5	242	3.97	.856
To what extent do librarians within your organization have EBP knowledge and skills?	61	1	5	217	3.56	1.103
To what extent are librarians used to search for evidence?	61	1	5	200	3.28	1.171
To what extent are fiscal resources used to support EBP (e.g. education, attending EBP conferences/workshops, computers, paid time for the EBP process, mentors)?	61	1	5	217	3.56	1.162
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among administrators?	61	1	5	218	3.57	1.147
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among physicians?	61	1	5	217	3.56	1.073
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among nurse educators?	61	1	5	234	3.84	1.052
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among advanced nurse practitioners?	61	1	5	219	3.59	1.101
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among staff nurses?	61	1	5	220	3.61	1.130
To what extent is the measurement and sharing of outcomes part of the culture in the organization in which you work?	61	1	5	224	3.67	1.060
To what extent are decisions generated from: direct care providers?	61	1	5	193	3.16	1.083
To what extent are decisions generated from: upper administration?	61	1	5	229	3.75	1.090
To what extent are decisions generated from: physician or other healthcare provider groups?	61	1	5	220	3.61	1.037
Overall, how would you rate your institution in readiness for EBP?	61	1	5	197	3.23	1.086
Compared to 6 months ago, how much improvement in your organization has there been toward an EBP culture?	61	1	5	209	3.43	1.087
Valid N (listwise)	61					

Note: This table reports the individual results for the OCRSIEP survey pre-implementation.

Table 5.2

Organizational Culture and Readiness for System-wide Integration of Evidence-based Practice (OCRSIEP) – Post-implementation

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
To what extent is EBP clearly described as central to the mission and philosophy of your institution?	63	2	5	252	4.00	.842
To what extent do you believe that EBP is practiced in your organization?	63	2	5	254	4.03	.822
To what extent is the nursing staff with whom you work committed to EBP?	63	2	5	235	3.73	.902
To what extent is the physician team with whom you work committed to EBP?	63	2	5	241	3.83	.959
To what extent are there administrators within your organization committed to EBP (i.e., have planned for resources and support [e.g., time] to initiate EBP)?	63	2	5	248	3.94	.982
In your organization, to what extent is there a critical mass of nurses who have strong EBP knowledge and skills?	63	2	5	229	3.63	.938
To what extent are there nurse scientists (doctoral prepared researchers) in your organization to assist in generation of evidence when it does not exist?	63	1	5	222	3.52	1.120
In your organization, to what extent are there Advanced Practiced Nurses who are EBP mentors for staff nurses as well as other APNs?	63	1	5	230	3.65	1.019
To what extent do practitioners' model EBP in their clinical settings?	63	1	5	239	3.79	.970
To what extent do staff nurses have access to quality computers and access to electronic databases for searching for best evidence?	63	2	5	247	3.92	.903
To what extent do staff nurses have proficient computer skills?	63	2	5	248	3.94	.801
To what extent do librarians within your organization have EBP knowledge and skills?	63	1	5	235	3.73	1.019
To what extent are librarians used to search for evidence?	63	1	5	223	3.54	1.060
To what extent are fiscal resources used to support EBP (e.g. education, attending EBP conferences/workshops, computers, paid time for the EBP process, mentors)?	63	1	5	231	3.67	1.032
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among administrators?	63	1	5	228	3.62	.991
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among physicians?	63	1	5	233	3.70	1.057
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among nurse educators?	63	2	5	252	4.00	.898
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among advanced nurse practitioners?	63	2	5	242	3.84	.902
To what extent are there EBP champions (i.e., those who will go the extra mile to advance EBP) in the environment among staff nurses?	61	1	5	220	3.61	1.130
To what extent is the measurement and sharing of outcomes part of the culture in the organization in which you work?	61	1	5	224	3.67	1.060
To what extent are decisions generated from: direct care providers?	61	1	5	193	3.16	1.083
To what extent are decisions generated from: upper administration?	61	1	5	229	3.75	1.090
To what extent are decisions generated from: physician or other healthcare provider groups?	61	1	5	220	3.61	1.037
Overall, how would you rate your institution in readiness for EBP?	61	1	5	197	3.23	1.086
Compared to 6 months ago, how much improvement in your organization has there been toward an EBP culture?	61	1	5	209	3.43	1.087
Valid N (listwise)	59					

Note: This table reports the individual results for the OCRSIEP survey post-implementation.

Table 6.1

Paired Samples Statistics

Pairs	Survey names	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	EBPB pre intervention	61.25	65	8.763	1.087
	EBPB post intervention	63.94	65	8.920	1.106
Pair 2	EBPI pre intervention	18.34	65	20.120	2.496
	EBPI post intervention	24.25	65	21.963	2.724
Pair 3	OCRSIEP pre intervention	84.69	65	29.504	3.660
	OCRSIEP post intervention	88.94	65	20.775	2.577

Note: This table describes the mean totals from each of the surveys that were used to complete statistical

analysis using a paired *t*-test.

Table 6.2

Paired Samples t-Test

Pairs	Survey Names	Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	EBPB pre intervention - EBPB post intervention	-2.692	11.504	1.427	-5.543	.158	-1.887	64	.064
Pair 2	EBPI pre intervention - EBPI post intervention	-5.908	28.248	3.504	-12.907	1.092	-1.686	64	.097
Pair 3	OCRSIEP pre intervention - OCRSIEP post intervention	-4.246	27.703	3.436	-11.111	2.618	-1.236	64	.221

Note: This table shows the pairs of total means used to determine the statistical significance of the differences in each of the three surveys.

Table 7.1

Knowledge of Johns Hopkins Nursing EBP Model Before and After Intervention

		Knowledge of the Johns Hopkins Nursing Evidence-based Practice Model Before Intervention	Knowledge of the Johns Hopkins Nursing Evidence-based Practice Model After Intervention
N	Valid	65	65
	Missing	0	0
Mean		1.49	1.91
Median		1.00	2.00
Std. Deviation		.732	.723

Note: This table shows a comparison of the mean and median reported knowledge level of the JHNEBPM before and after the intervention.

Table 7.2

Knowledge of Johns Hopkins EBP Model Before Intervention

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No experience	41	63.1	63.1	63.1
	Beginning level	17	26.2	26.2	89.2
	Intermediate level	6	9.2	9.2	98.5
	Advanced level	1	1.5	1.5	100.0
	Total	65	100.0	100.0	

Note: This table shows the frequency of reported JHNEBPM knowledge before the intervention. Of note 63.1% reported no experience.

Table 7.3

Knowledge of Johns Hopkins EBP Model After Intervention

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No experience	19	29.2	29.2	29.2
	Beginning level	34	52.3	52.3	81.5
	Intermediate level	11	16.9	16.9	98.5
	Advanced level	1	1.5	1.5	100.0
	Total	65	100.0	100.0	

Note: This table shows the frequency of reported JHNEBPM knowledge after the intervention. Of note:

Those reporting no experience decreased to 29.2% and those reporting beginning level experience also

increased to 52.3% and intermediate level increased to 16.9%.

Table 7.4

Paired Samples Test for JHNEBPM knowledge after DNP Intervention

| | | | Std. | | 95% Confidence Interval | | | | Sig. (2- |
		Mean	Deviation	Std. Error Mean	Lower	Upper	t	df	tailed)
					Paired Differences				
					of the Difference				
Pair 1	Knowledge of the Johns Hopkins Nursing Evidence-based Practice Model Before Intervention - Knowledge of the Johns Hopkins Nursing Evidence-based Practice Model After Intervention	-.415	1.059	.131	-.678	-.153	-3.162	64	.002

Note: Participants reported a statistically significant increase in knowledge of the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBPM) after the intervention

Figures

Figure 1

Age Group
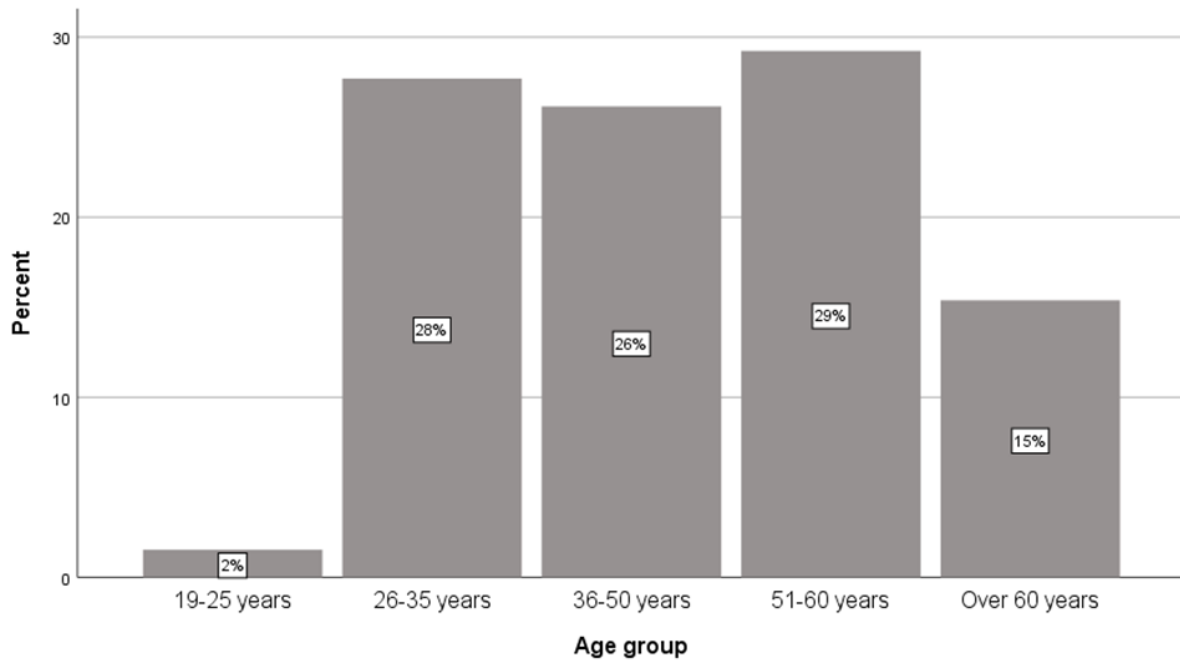
Note: The bulk of the participating nurses ages was between 26-60 years.

Figure 2

Years of Nursing Experience
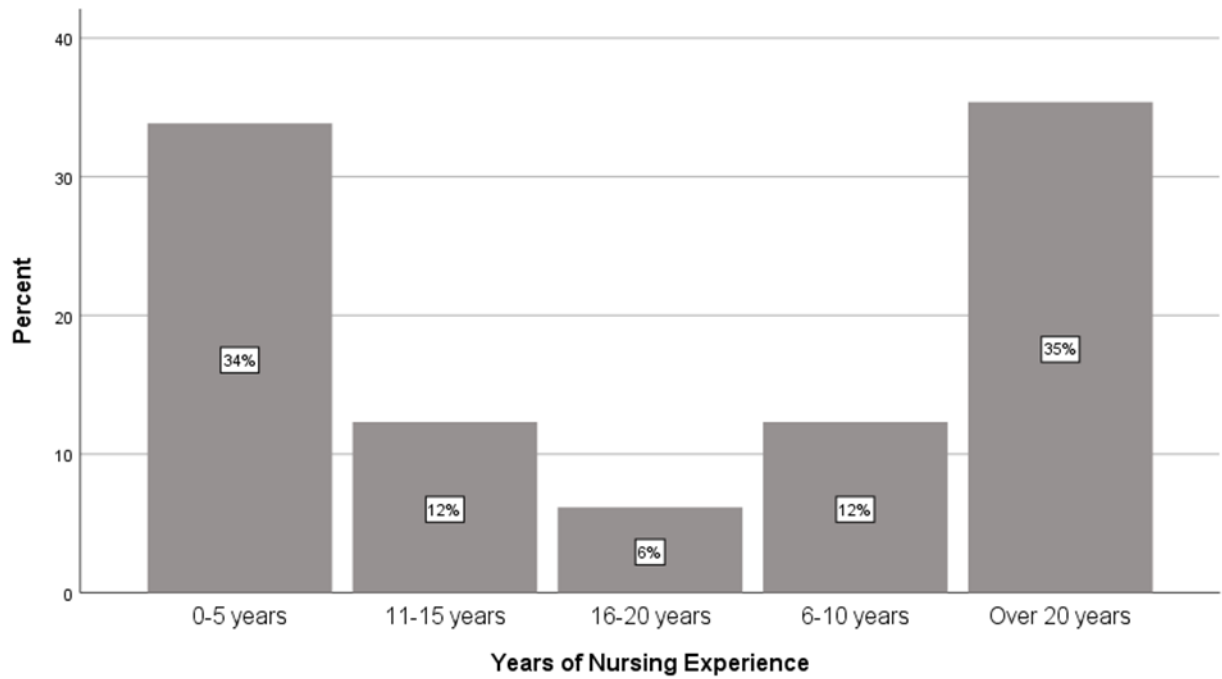
Note: This graph shows the distribution of participants by years of nursing experience.

Figure 3

Primary Role
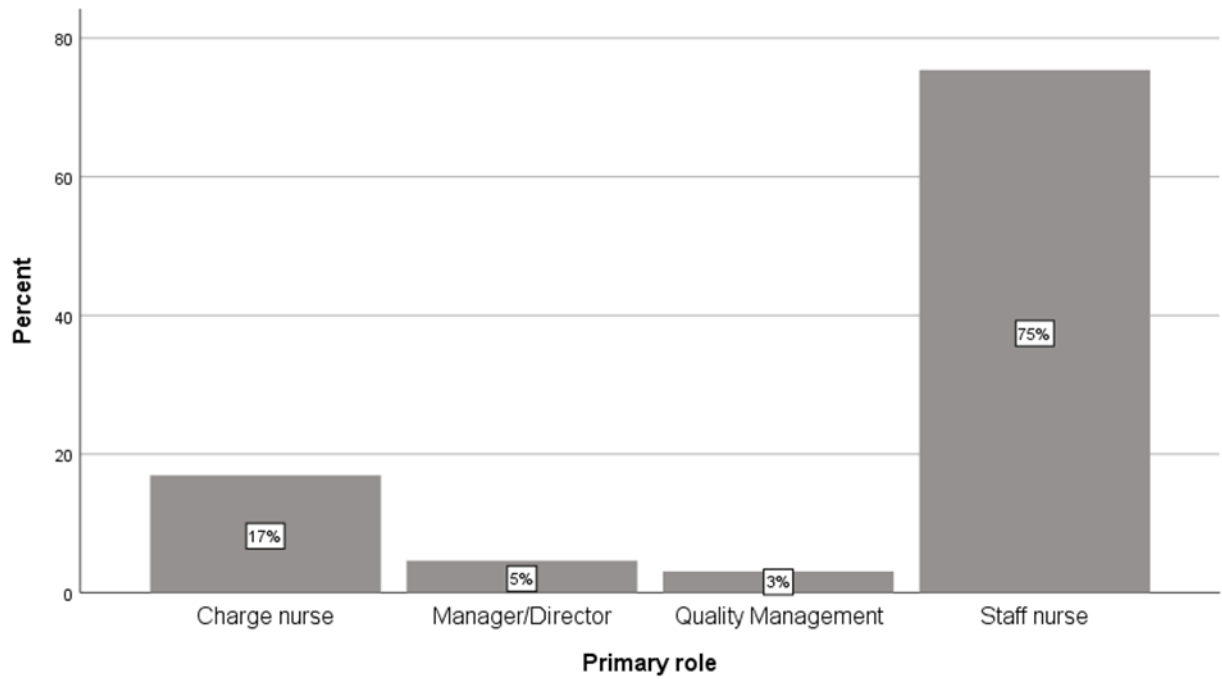
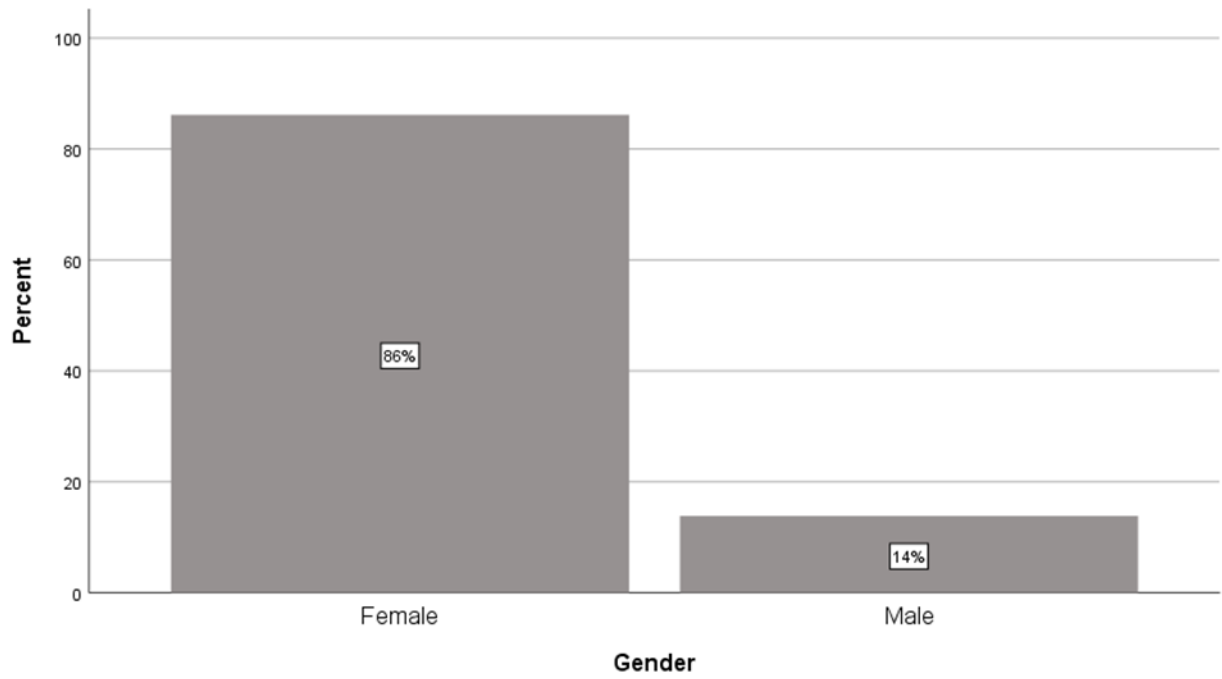Note: This graph shows the distribution of participants by role.

Figure 4

Race Ethnicity
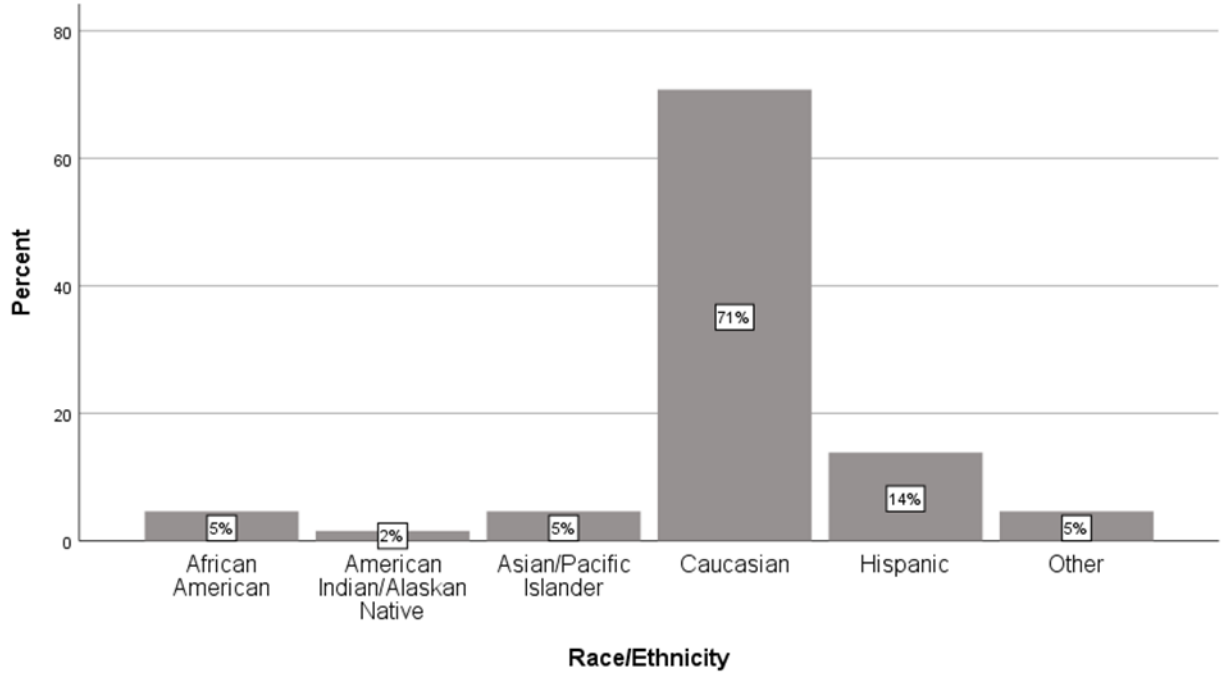
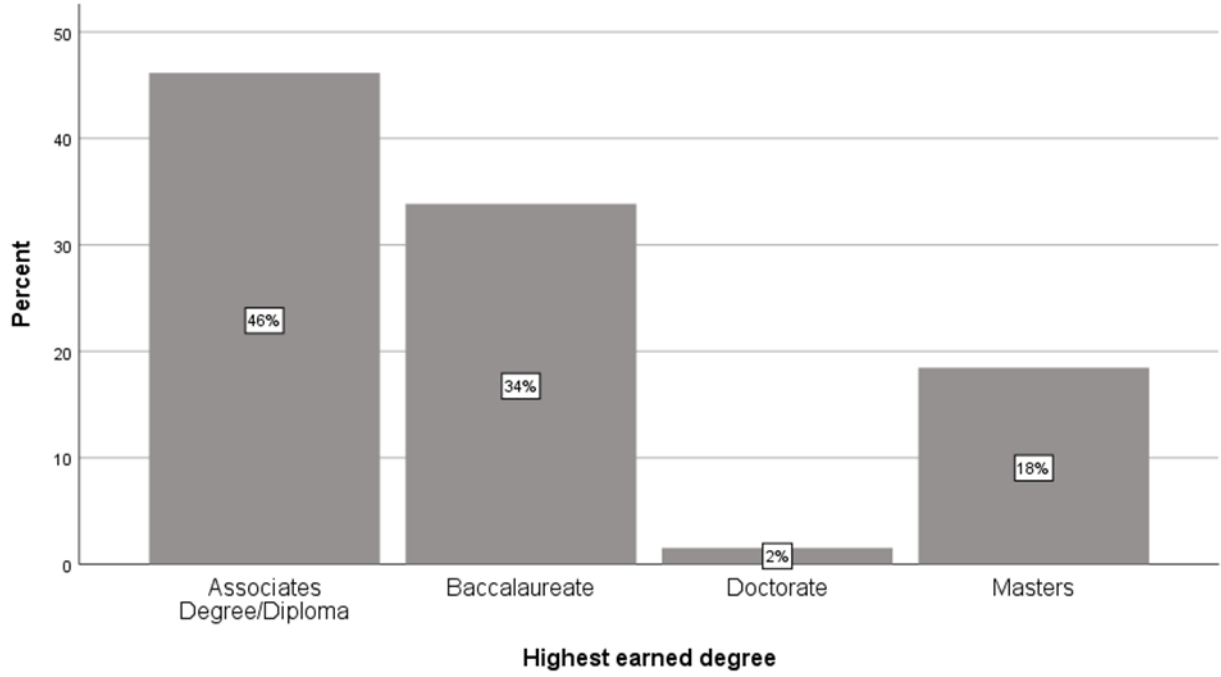Note: This graph shows the distribution of participants by ethnicity.

Figure 5

Gender

Note: This graph shows the greater proportion of women to men participants.
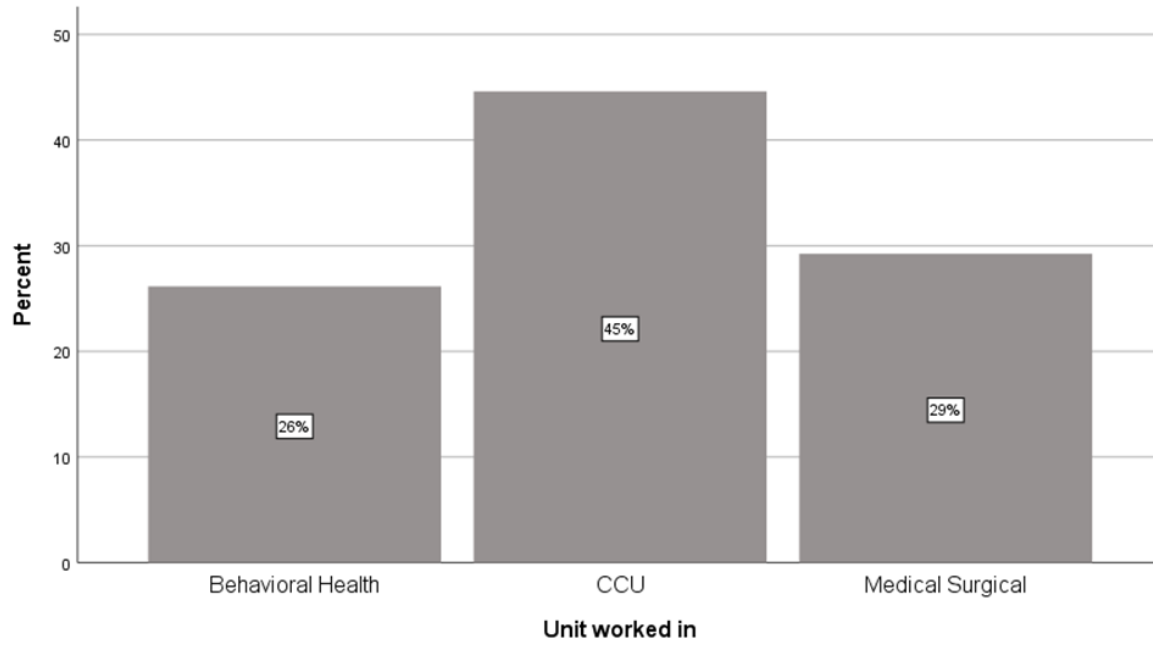
Figure 6

Highest Earned Degree

Note: This graph shows the distribution of the participants' level of education.
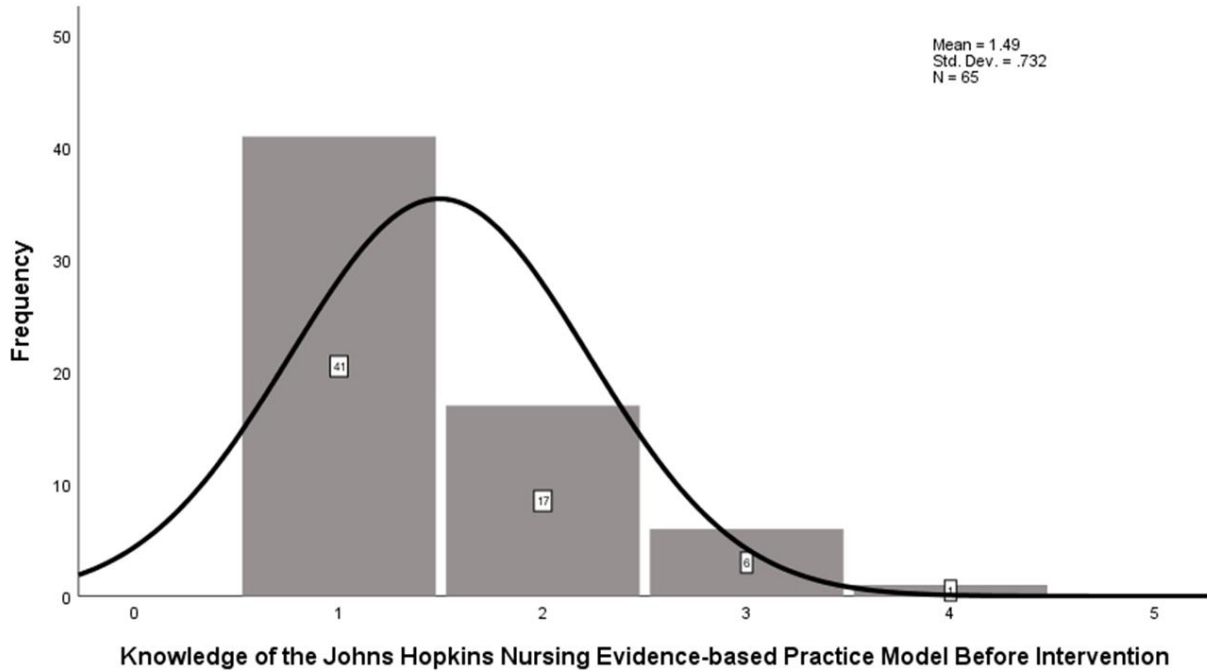
Figure 7

Unit Worked In

Note: This graph shows the participants by unit.

Figure 8

Knowledge of Johns Hopkins Nursing Evidence-Based Practice Model Before Intervention

Note: This graph shows the level of JHNEBPM knowledge reported by participants before the

intervention.

Figure 9

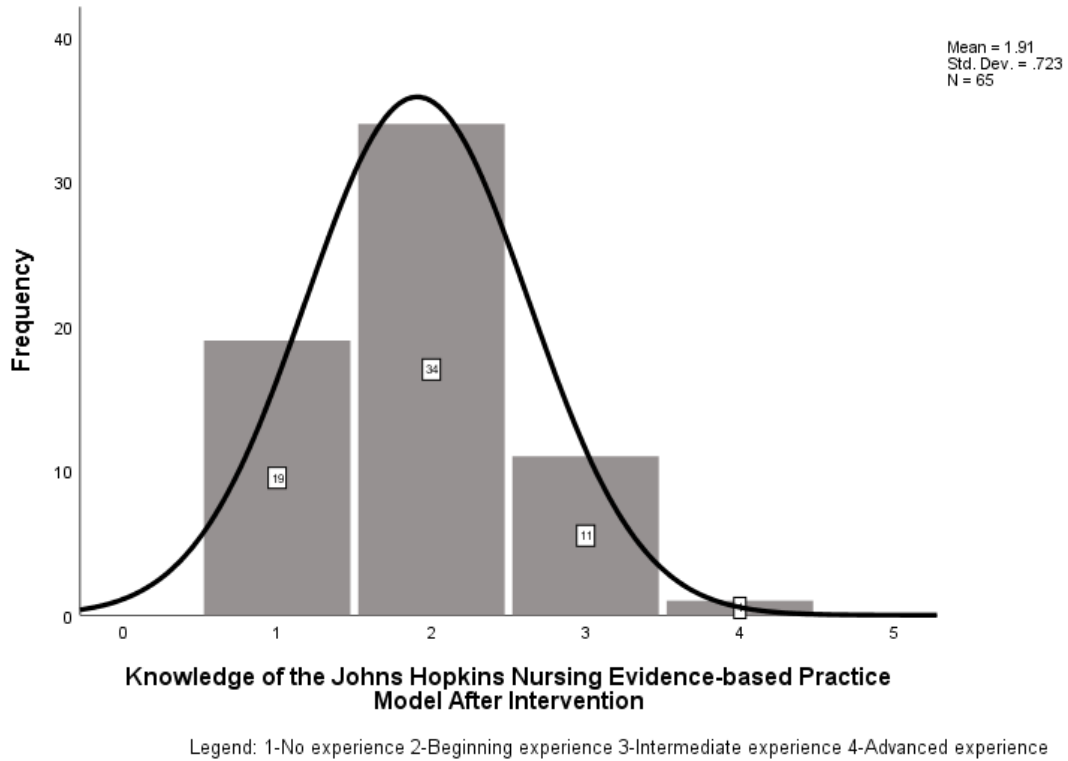*Knowledge of Johns Hopkins Nursing Evidence-Based Practice Model After Intervention*

Legend: 1-No experience 2-Beginning experience 3-Intermediate experience 4-Advanced experience

Note: This graph shows the level of JHNEBPM knowledge reported by participants after the intervention.