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Beliefs About Evidence-Based Practice Among New Graduate Nurses

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Abstract

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MSN, Excelsior College, 2012

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Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

It is an expectation that new graduate nurses (NGNs) use evidence-based practices (EBP) in patient care; however, studies indicated that NGNs lack confidence in, belief in, and a full understanding of EBP processes and implementation. The doctoral project practice-focused question addressed whether immersion in EBP education and completion of an EBP project through a quality-improvement pilot program would enhance NGNs' beliefs about the benefits and processes of EBP as well as increase confidence in their ability to implement EBP in the clinical setting. Knowles' adult learning theory and Rogers' diffusion of innovation theory guided the project's motivation and examination of the pilot. A literature search using CINAHL and PubMed databases resulted in 216 articles meeting the initial inclusion criteria; 7 articles fit all inclusion criteria and were used for the literature review. Similar to processes used in the articles, this pilot program immersed NGNs in EBP education and project completion. Deidentified and aggregate data of EBP beliefs and confidence were collected through an electronic survey system. Data collected using the Melnyk and Fineout-Overholt 16-item EBP Beliefs Scale before and after the intervention were analyzed using a paired *t* test to examine overall belief scores and individual items. Data analysis through SAS indicated a significant difference ($p < .05$) for 13 out of 16 items supporting an improvement in NGNs' beliefs about EBP. Based on these findings, it is recommended that EBP education and projects be implemented in NGN onboarding programs to enhance their beliefs in EBP and to develop their confidence in implementing and promoting EBP in the clinical setting to contribute to optimal patient outcomes.

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Section 1: Nature of the Project

The Institute of Medicine (IOM) released its report *The Future of Nursing: Leading Change, Advancing Health* identifying a goal that 90% of nursing decisions would be evidence-based by 2020. As the largest group of direct care providers, nursing practice impacts patients' health outcomes (IOM, 2011). Despite their training in nursing school, research has identified a gap among new graduate nurses (NGNs) in understanding evidence-based practice (EBP) and how to implement it (Cosme, Milner, & Wonder, 2018). To meet the IOM goal, NGNs need further education and hands-on experience with EBP. This DNP project evaluated a quality-improvement pilot program that supplied NGNs with EBP education and the hands-on participation of an EBP project. The project aim was to identify whether EBP education and project completion could enhance NGNs' beliefs about EBP. Developing NGNs' confidence and enhancing their beliefs in EBP would improve social change and patient outcomes. Using EBP at the point of care will allow NGNs to provide high-quality care, resulting in decreased costs of healthcare and the promotion of optimal patient outcomes (Odell & Barta, 2011). This section covers the DNP problem statement, project purpose, nature of the project, and the DNP project's significance on nursing practice.

Problem Statement

Student nurses lack an understanding of the difference between EBP, nursing research, and the process of disseminating EBP results into clinical practice (Al Qadire, 2019). The lack of a clear understanding of EBP processes, change theory, and

implementation often prevents new graduate and experienced nurses from executing evidence-based practices in the clinical setting (Chan, Glass, & Phang, 2020; Fineout-Overholt, Levin, & Melnyk, 2004). Therefore, the known gap is the lack of NGNs' full understanding of EBP, which limits their beliefs and confidence about EBP. The known gap in the doctoral student's organization was demonstrated through the organizational learning needs assessment, where the largest request for education on EBP was from nurses with less than 1 year of experience. Implementing EBP in the clinical setting ensures optimal patient outcomes. To ensure that NGNs have a clear and consistent understanding of EBP, it is essential that nurse resident programs require NGNs to complete an evidence-based project. A significance of this quality-improvement project will be improved patient care, safety, and outcomes (Friesen et al., 2017). Nurse residents completed a survey before and after the pilot program using the EPB Beliefs scale created by Melnyk and colleagues (2008; see Appendix A). The results of this valid and reliable tool determined whether the quality-improvement pilot program enhanced NGNs' beliefs about EPB and their confidence in implementing EBP in the clinical setting.

Purpose Statement

The known gap in practice was the lack of understanding of EBP among NGNs, resulting in diminished beliefs and confidence about EBP. As nurses comprise the largest group of direct care providers, NGNs can affect clinical practice by using EBP to promote optimal patient outcomes. The practice question was: In NGNs, does

completing an evidence-based project enhance NGNs' beliefs about EPB as well as confidence in their ability to implement EBP in the clinical setting?

The doctoral project examined the results of a quality-improvement pilot program aimed at enhancing NGNs' beliefs about EBP and their confidence in implementing EBP into the clinical setting. This project sought to identify processes that could enhance NGNs' understanding of and confidence in the application of EBP, whereby potentially addressing this known gap in nursing practice. Through education on the differences between research and EBP, and completion of an EBP project, nurse residents had the opportunity to participate in didactic and hands-on practice to enhance their understanding of EBP.

Nature of the Doctoral Project

The quality-improvement pilot program immersed NGNs in EBP education, including a literature search using CINAHL and PubMed databases, creating a literature synthesis table, and completing an EBP summary to propose a practice change in their respective clinical areas. The topic of the EBP project was determined in collaboration with the new graduate residents based on a poll that identified topics of interest. Dr. Melnyk provided written permission to use the EBP Beliefs Scale before and after the intervention to measure the NGNs' beliefs of EBP and their confidence to implement practice changes (see Appendix B for permission to use scale). Previous studies indicated that the EBP Beliefs Scale to be psychometrically sound, reliable, and valid with a Cronbach α coefficient of 0.90 (Melnyk, Fineout-Overholt, & Mays, 2008). In

return for use of the EBP Beliefs Scale, Dr. Melnyk will receive deidentified and aggregate data, including the sample description, findings, and Cronbach α data upon completion of this project. Anonymous data were collected before and after the pilot program using the REDCap survey platform. This platform provided aggregate data to ensure anonymity. The project sought to determine whether the quality-improvement pilot program could enhance NGNs' beliefs about EBP and confidence in EBP implementation, thereby closing the gap in understanding EBP.

Significance

The project is expected to impact numerous stakeholders including patients, NGNs, nursing leadership, individual nursing units, similar organizations and residency programs, and the study organization itself. First, patients will benefit from the NGNs' use of EBP in an effort to achieve optimal health outcomes. NGNs will develop enhanced beliefs and confidence in the care they are delivering, knowing that EBPs are being used, or if they are not, confidence in the process of EBP and implementing it in clinical care. Nursing leadership at the organizational and unit levels were included as stakeholders because studies show that NGNs who are engaged in the organization are less likely to leave the organization during the first year of employment; engagement can also increase employee satisfaction scores. This project's published results could impact similar organizations and NGN residency programs by identifying whether the integration of EBP education and projects could enhance NGNs' beliefs about EBP, thus setting standards for best practices and providing transferability of the project to other

organizations. Individual units were identified as stakeholders because NGNs can serve as champions for EBP in the clinical setting and drive a culture of inquiry around clinical practices. The organization will benefit because nurses would be expected to deliver a higher quality of care to patients, reflecting the consistent use of EBP in patient care. A significance of this quality-improvement project will be improved patient care safety and outcomes (Friesen et al., 2017). The residency program provided a safe place for NGNs to learn and practice hands-on EBP processes while the organization's nurse scientist manager and nursing research specialist served as mentors for the quality-improvement pilot.

This project could also improve nursing practice and education. Organizational culture could shift to unit-based EBP projects as a result of NGNs championing EBP and leading change. As leaders, NGNs could join unit-based councils and develop a spirit of inquiry among their peers. Championing EBP and integrating it into practice could ultimately result in better patient outcomes, safer patient care, and decreased healthcare costs (Odell & Barta, 2011).

Execution of this doctoral project occurred at the organizational level and focused on NGNs participating in the 1-year NGN residency program. The interventions may transfer to any setting with newly hired NGNs or experienced nurses. In collaboration with the nursing research department, there is the possibility of duplicating this project at the unit-level. The project may be transferrable to outpatient settings if research and EBP mentors are available.

Social change results from events that dictate how the world moves forward (McLeod & Thomson, 2009). As DNP students continue to explore best practices, change is inevitable. NGNs need a stable knowledge base to implement best practices in the clinical setting (Breimaier, Halfens, & Lohrmann, 2011). This project is expected to impact social change by identifying whether completing an EBP project can enhance NGNs' beliefs about EBP and confidence to apply EBP in the clinical setting. Supporting the mission of Walden University to promote positive social change, this project applied strategies to develop NGNs into skilled clinicians with the confidence to understand and implement EBP to promote optimal patient outcomes (Walden University, 2020, Social Change section). Developing NGNs' competence in EBP will positively impact social change and patient outcomes as NGNs provide high-quality care, resulting in decreased healthcare costs, and promotion of optimal patient outcomes (Odell & Barta, 2011).

Summary

Research shows a lack of confidence among NGNs concerning EBP processes and implementation. The DNP project examined the effectiveness of a quality improvement program aiming to enhance EBP beliefs in NGNs using the EBP Beliefs Scale, which is a reliable and valid tool. NGNs were immersed in EBP education and projects. Data analysis identified statistically significant differences in before and after intervention scores suggesting that EBP education and projects could enhance NGNs beliefs in EBP and their confidence to implement practices in the clinical setting. A

significance of this quality-improvement project will be improved patient care, safety, and outcomes (Friesen et al., 2017).

Section 2: Background and Context

Studies show that NGNs lack both a full understanding of EBP and the confidence to implement it in the clinical setting (Al Qadire, 2019). The practice-focused question for the DNP project was: In NGNs, does completing an evidence-based project enhance NGNs' beliefs about EPB as well as confidence in their ability to implement EBP in the clinical setting? NGNs need both further education on EBP and hands-on practice with EBP projects to develop competency in EBP as outlined by the Quality and Safety Education for Nurses (QSEN). The purpose of this doctoral project was to determine whether completing an evidence-based project would enhance beliefs about EBP and the confidence to implement it in the clinical setting. This section explores nursing theories that influenced this project. A literature review describes the relevance of this project to nursing practice and the local background of the problem statement. The role of the DNP student concludes this section.

Concepts, Models, and Theories

The theories of Malcolm Knowles and E. M. Rogers frame approaches to address the NRNs' gap in knowledge and skill regarding EBP. When teaching EBP, Knowles' adult learning theory is one to consider. Knowles identified that adult learners learn based on six characteristics: their "(a) need to know; (b) self-concept; (c) experiences; (d) readiness to learn; (e) orientation to learning; and (f) motivation" (Franco, 2019, p. 180). Focusing on the importance of EBP and relating it to the clinical setting can motivate nurses to champion EBP and lead the implementation of best practices. Driving the need

to educate NGNs on EBP is Rogers' diffusion of innovation theory. Rogers identified four attributes to include innovation, communication channels, time, and social systems to diffuse innovation (Tanye, 2016). NGNs can influence peers with their (a) understanding of EBP and why it is important, (b) ability to implement EBP in the clinical setting, and (c) motivation to provide high-quality care to patients.

For purposes of this project, NGNs are those who have graduated within the past 12 months with an associate or bachelor's degree from an accredited school of nursing and licensed by the state board of nursing. The NGN residency program is a 1-year transition-to-practice program encompassing the NGN's first year of practice. NGN "residents" are those NGNs who are participating in the NGN residency program.

Relevance to Nursing Practice

EBPs are rooted in research. When used in clinical practice, EBP ensures optimal patient outcomes. The QSEN identified that EBP should be a nursing competency to bridge the gap between academia and practice. QSEN encourages this education and states that the knowledge, skills, and attitudes of these competencies should be completed during pre-licensure education (Malik, McKenna, & Griffiths, 2016). However, research shows that many NGNs do not possess adequate knowledge to use EBP in practice (Cosme, Milner, & Wonder, 2018). Studies within the past 5 years indicated that NGNs are not confident in using or implementing EBP in the clinical setting (Toole, Stichler, & Ecoff, 2013; Melnyk, Fineout-Overholt, & Mays, 2008).

There is limited research on the impact of EBP education introduced in the NGN residency program. The American Nurses Credentialing Center (ANCC) is an accrediting body for NGN residency programs and sets best practice standards. One standard of best practice is integrating EBP into the NGN residency program (ANCC, 2020); however, the process and extent of EBP integration are not specified. Breimaier, Halfens, and Lohrmann (2011) identified that, in the clinical setting, organizations can facilitate EBP education and practice to bridge the gap and enhance NGNs' knowledge, skills, and attitudes about EBP. NGN residency programs have shown to be beneficial in offering this type of education and hands-on practice for new graduates (Jackson, 2016).

Current practices reflect that organizations encourage EBP and provide education when identified as a need. Didactic in-person classes, computer-based learning, group projects, and unit-based EBP projects and mentoring are methods of increasing knowledge and beliefs of EBP (Hines, Ramsbotham, & Coyer, 2016). The doctoral project has advanced nursing practice by identifying successful measures to educate NGNs about EBP, increase their beliefs in the use of EBP, and improve their confidence in implementing best practices in the clinical setting. By providing a foundation for EBP at the beginning of a nurses' career, they are more likely to continue the practices throughout their careers (Rudman et al., 2012).

Local Background and Context

Evidence-based practices improve patient outcomes. As the largest group of caregivers, nurses have the power to influence patient care. NGNs are not confident in

understanding EBP processes and the implementation of best practices (Jackson, 2013). Efforts to provide education and knowledge to empower NGNs can create a culture of inquiry in their practice (Chan, Glass, & Phang, 2020). The doctoral project has identified if EBP education and projects could increase the NGNs' beliefs of using EBP and confidence implementing practices in clinical settings.

The quality-improvement pilot occurred in a 336 bed, not-for-profit children's hospital. The community hospital is a Level 1 trauma center which holds the ANCC magnet hospital certification. Within the organization, the NGN residency program holds accreditation with distinction by the ANCC as a Practice Transition Accreditation Program. The NGN residency program hires three times annually with a total of 100 residents per year. The summer cohort consists of 60% of the hires due to the large number of spring graduates. The other 40% of hires are split between the fall and spring cohorts. The doctoral project aligned with the organization's core values of practice excellence and high-quality, safe patient care. In addition, the quality-improvement pilot addressed the request of EBP education for NGNs as noted in the organizational learning needs assessment.

NGN residents are those who recently graduated from an accredited school of nursing with an associate or bachelor's degree and have been licensed by the state board of nursing within the past 12 months. The NGN residency program is a 1-year program to the takes place in the first year of nursing practice for NGNs. It consists of an initial

preceptorship phase and transitions into mentoring and debriefing to support NGNs through their first year.

Organizations use indicators to evaluate the quality of patient care being delivered. In 2005, the Deficit Reduction Act allowed the Centers for Medicare and Medicaid Services to develop a plan to reject payment of adverse events (Armstrong et al., 2008). This plan identified healthcare-acquired conditions are preventable; therefore, hospitals do not receive reimbursement to treat the hospital-acquired condition. Evidence-based practices have shown to improve quality of care, patient safety, and cost effectiveness of healthcare, as well as increasing optimal patient outcomes (Odell & Barta, 2011).

Role of the DNP Student

The DNP project occurred at the DNP student's place of employment. Serving as the transition-to-practice coordinator for 6 years, my most recent goal was to implement EBP education and projects into the residency program. As the program coordinator, I am responsible for consistently evaluating every part of the program through metrics that evaluate didactic classes and clinical preceptorship, competency completion rates, focus groups, and NGN attrition over 5 years. My role in the project was the coordination of the quality-improvement pilot program into the new graduate residency program. The DNP student collected deidentified and aggregate data, before and after intervention, provided through a survey tool to determine the program's effectiveness in enhancing NGNs' beliefs about EBP.

Motivations for the DNP project were both personal and professional. As a seasoned nurse, I have seen evidence-based practices implemented in the clinical setting, resulting in better patient outcomes than with previous practices. Having had a child in the neonatal intensive care for 6 weeks drove my personal motivation for this project because I believe all patients deserve to achieve optimal outcomes due to high quality, evidence-based care. Professionally as the transition-to-practice coordinator over the NGN residency program, it is my goal to integrate EBP education and projects into the program. Successfully providing EBP education and hands-on experience for NGNs will allow NGNs to champion EBP in the clinical setting and set EBP as a priority for care at the bedside. As a member of the Nursing Professional Development department and coordinator of the nurse residency program, I have a bias related to the pilot intervention. My personal bias toward the value of this program did not affect data collection or reporting. The DNP student received aggregate and deidentified data from the organization's research coordinator as a password protected excel file from the REDCap survey platform. The DNP project results will guide education in the future to ensure the nurse residency program is delivering NGNs who are competent and confident in EBP.

Role of the Project Team

The DNP project was an individual project rather than part of a team project. However, the organizational policy requires all EBP or quality-improvement projects to utilize the nurse scientist manager and nursing research specialist as mentors. The mentors received updates from the DNP student when key steps were approved such as

proposal approval and IRB determination, as well as project completion. Per policy, upon completion of the project, project results must be shared with mentors along with any dissemination plans.

Summary

To help NGNs become competent in the QSEN competency of EBP, organizations can offer EBP education and hands-on practice to close the known gap in NGNs' understanding of EBP. The DNP project evaluated if EBP education and hands-on projects would enhance NGNs' beliefs about EBP and confidence in the implementation process. The quality-improvement pilot program was integrated into the 1-year nurse residency program at a not-for-profit children's hospital to engage NGNs in education sessions and a project. A valid and reliable tool was used to collect data to determine the results of the program.

Section 3: Collection and Analysis of Evidence

Optimal patient outcomes are a result of using EBP at the bedside. Unfortunately, NGNs diminished beliefs and confidence regarding EBP result in a lack of full understanding of EBP processes and concepts. It is an expectation that nurses, including new graduates, practice EBP at the bedside; therefore, education and hands-on practice are essential during the 1-year residency program. The purpose of this DNP project was to enhance NGNs' beliefs of EBP by providing education about it and requiring the completion of an EBP project.

This project evaluated a quality-improvement pilot program at a not-for-profit children's hospital as part of a year-long NGN residency program. NGNs participated in education sessions on processes such as searching the literature, how to read a research article, and synthesizing evidence. Completion of an EBP project was the last phase of the pilot. This section covers the practice-focused question, a description of the sources of evidence for the DNP project, and a description of the pilot program and projects, along with an examination of the processes used to analyze and synthesize the literature.

Practice-Focused Question(s)

As the largest group of caregivers, nurses have the direct ability to influence patient outcomes. The IOM goal—that 90% of nursing decisions will be evidence-based by 2020—will not be accomplished with the known gap in NGNs' understanding of EBP. The organization that sponsored this doctoral project identified the request for EBP education from new nurses on their organizational learning needs assessment. The

project's practice-focused question was: In NGNs, does completing an evidence-based project enhance beliefs about EBP and the confidence of implementing EBP in the clinical setting? The quality-improvement pilot program provided education and was followed by hands-on practice via an EBP project. The aim of the project was to determine whether the pilot program can enhance NGNs' beliefs in EBP, and thereby close the gap in NGNs' understanding of EBP processes and implementation. NGNs who participated in the NGN residency program were immersed in EBP education and a hands-on project through the quality-improvement pilot program. The doctoral project collected data before and after the pilot to determine whether the pilot program could improve NGNs' beliefs in EBP.

Sources of Evidence

A literature search was conducted using the CINAHL and PubMed databases. As a result, 216 articles met the initial inclusion criteria (written in English and published within the past 10 years). The following terms were used: *NGN, new nurse, novice nurse, nurse resident, evidence-based practice, EBP education, EBP beliefs,* and *EBP project.* These articles were then reviewed for relevance and rated by level of evidence. Only seven articles fit all inclusion criteria and were used for the literature review.

It is well documented that nurses in general are not confident or comfortable with the knowledge and skills related to EBP. Toole et al. (2013) and Hines, Ramsbotham, and Coyer (2016) noted that EBP education delivered in-person or computer-based showed a statistically significant increase in experienced nurses' knowledge and attitude of EBP.

As experienced nurses tend to create an organization's culture, if experienced nurses are not confident in EBP processes, the culture will not lend itself to an environment of inquiry. Chan, Glass, and Phang (2020), along with Friesen et al. (2017), elaborated that EBP education, paired with an experienced mentor, significantly increased knowledge, attitude, and skills of EBP in experienced and NGNs.

Furthermore, Breimaier, Halfens, and Lohrmann (2011) conducted a study which indicated uncertainty among NGNs in the basic principles of reading research reports, using research databases, and implementing results in the clinical setting despite EBP education during nursing school. Data showed that only 32.8% of the nurses received basic knowledge related to research. Approximately 81% stated they received little to no instruction on how to read research articles, and 73.5% received little to no education on implementing results into practice.

Research explicitly related to NGNs' knowledge and beliefs about EBP is limited. Rudman et al. (2012) followed two graduate classes of new nurses for 5 years' post-graduation. The study revealed that new nurses' knowledge, skills, and attitudes had very little change over time from one to 5 years of practice without interventions. Engagement in EBP activities for these cohorts was minimal in the clinical setting. Jackson's (2016) study confirmed that incorporating EBP education for NGNs in a nurse residency program yielded statistically significant changes in the NGNs' knowledge of EBP and confidence in translating evidence into practice.

Nurses must fully practice to the extent of their licensure and adhere to the American Nurses Association (ANA) scope and standards of practice. Standard 13, identified by the ANA (2015), states that nurses will integrate evidence findings into research. The effects of EBP education on experienced nurses are well studied. The doctoral project followed processes identified by Toole et al. (2013) and Hines, Ramsbotham, and Coyer (2016) to determine if the same effects can be found with the NGN population.

Evidence Generated for the Doctoral Project

Participants

NGN residents who have recently graduated from an accredited school of nursing and licensed by the state board of nursing within the past 12 months participated in a pilot program to determine the program's effectiveness on enhancing NGNs' beliefs about EBP. NGNs participated in the quality-improvement pilot program as part of their organizational onboarding.

Procedures

During the four-week quality-improvement pilot program, NGNs were immersed in an EBP project. NGNs received a list of five pre-determined and current organizational evidence-based practice changes. The NGNs received instruction to rank each of the pre-determined projects on a scale of one (most interested) to five (least interested) indicating their level of interest in each topic from the pre-determined list. Offering a narrow list of current organizational practice changes ensured the project

topic would be relatable and applicable to the NGNs' current experiences. There were three small groups within the cohort. Each small group and the cohort ranked "bedside report" as their highest level of interest. The project included conducting a literature search, creating a literature synthesis table, and completing an EBP summary to propose a practice change in their respective clinical areas. Each small group surfaced different literature on this topic during their literature search and subsequent review. Therefore, the literature synthesis tables differed between each group. However, the evaluation of the literature, summary, and subsequent recommendations for implementation of the EBP intervention were nearly identical.

Dedicated class time was included as part of the residency program to allow for participation in all aspects of the quality-improvement pilot program. The EBP Beliefs Scale, developed and published by Dr. Melnyk, was used to evaluate the pilot program. Permission was obtained from Dr. Melnyk to use the EBP Beliefs Scale before and after the intervention to measure the NGNs' beliefs of EBP and their confidence to implement practice changes. Previous studies indicate the EBP Beliefs Scale to be psychometrically sound, reliable, and valid with Cronbach's α of 0.90 (Melnyk, Fineout-Overholt, & Mays, 2008). In return for use of the EBP Beliefs Scale, Dr. Melnyk will receive deidentified and aggregate information, which includes the sample description, findings, and Cronbach α data upon completion of this project.

Protections

The quality-improvement pilot program was submitted to the Walden University Institutional Review Board for review and received approval. The DNP student does not anticipate any ethical issues as a result of completing this project. The quality-improvement pilot program included newly graduated nurses who were enrolled in the NGN residency program. Working relationships with participants already existed as the DNP student coordinates the NGN residency program. Pre- and postdata collection was anonymous through an electronic survey using the REDCap platform. The electronic survey system allowed data to be presented to the DNP student as deidentified and aggregate data. The survey did not collect any personal identifiers from participants but will focus on aggregate pre- and postdata measures of EBP beliefs and confidence. The choice to complete pre- and postsurveys will not affect the nurse resident's employment status or professional reputation. Anonymous pre- and postdata was collected, aggregated, and summarized for project results.

Analysis and Synthesis

Software was utilized from The Ohio State University's College of Nursing. The EBP toolkit, found within the Helene Fuld Health Trust National Institute for Evidence-Based Practice in Nursing and Healthcare, assists with recording, tracking, and organizing the evidence. Evidence was analyzed based on levels of evidence and relationship to inclusion criteria. A synthesis table resulted from using The Ohio State University's College of Nursing EBP toolkit, allowing for ease of evidence analysis.

Integrity of the pilot program was assured with the initial step of obtaining IRB approval (Walden IRB approval number 01-06-21-1027920) for the DNP project to protect participants. Quality-improvement program evaluation does not require participant consent to collect and analyze program data. Outcomes from this project will be leveraged to publish the doctoral project. Project publication will use deidentified data, ensuring program participants are protected. Integrity of evidence was achieved through anonymous data collected electronically using a psychometrically sound, reliable, and valid tool. Along with data collection, aggregate data was provided to the DNP student by the organization's research coordinator as a password protected excel file from the REDCap platform. If outliers or missing information exists, the data point will be omitted from the data set and statistical analysis.

In statistics, *t* tests are used to compare the means of two sets of data (Gray, Grove, & Sutherland, 2017). In the DNP project, the paired *t* test was used to compare the mean of two data sets, before and after the intervention, within the same group of participants. The results of the paired *t* test will indicate if there is a difference in the NGNs' beliefs about EBP before and after intervention. With a small sample size, it is recognized that there may not be enough power to detect statistical significance in this project. This was a limitation of the study as the typical number of NGN resident hires has decreased with the pandemic, limiting the number of NGN residents available to participate in the DNP project. The fall residency cohort used for the quality-improvement pilot program hired 19 NGNs. As part of the residency program, the pilot

program only reached one cohort of NGNs due to protected classroom time constraints for the current cohort. A recommendation for future studies is to include multiple cohorts of NGNs for a larger sample size over an extended period of time to determine statistical significance.

Summary

The DNP project analyzed pre- and postdata of a quality-improvement pilot program aimed at enhancing NGNs' understanding and beliefs of EBP. Limited literature exists outlining best practices of NGNs' engagement with EBP during their participation within the NGN residency program. Guided by recommendations from the ANCC for NGN residency programs and limited research, the DNP project may impact the nursing profession by identifying if processes used in the quality-improvement program are successful in enhancing NGNs' beliefs of EBP, thereby, influencing optimal patient outcomes.

Section 4: Findings and Recommendations

NGNs indicated a desire for more education about EBP on the organizational learning needs assessment. Al Qadire (2019) recognized that NGNs lack an understanding of the difference between EBP and research and the process of disseminating results into clinical practice. This project's known gap was the lack of NGNs' full understanding of EBP, which limited their beliefs and confidence about EBP. The practice question was: In NGNs, does completing an evidence-based project enhance NGNs' beliefs about EPB as well as confidence in their ability to implement EBP in the clinical setting? The purpose of the project was to examine the results of a quality-improvement pilot program aimed at identifying processes that could enhance NGNs' understanding of and confidence in the application of EBP, whereby potentially addressing this known gap in nursing practice and enhancing NGNs' beliefs about EBP and their confidence in implementing EBP into the clinical setting

A literature search was conducted using CINAHL and PubMed databases; 216 articles met the initial inclusion criteria. These articles were then reviewed for relevance and rated by level of evidence. Seven articles fit both sets of inclusion criteria and thus were used for the literature review. There is limited research on the impact of EBP education introduced in the nurse residency program for NGNs. However, studies within the past 5 years indicated that NGNs are not confident in using or implementing EBP in the clinical setting (Toole, Stichler, & Ecoff, 2013; Melnyk, Fineout-Overholt, & Mays, 2008).

NGNs were immersed in EBP education and projects as part of a quality-improvement pilot for NGN onboarding through the nurse residency program. The EBP Beliefs scale, a valid and reliable tool (Melnyk, Fineout-Overholt, & Mays, 2008), was used to evaluate the EBP beliefs of NGNs before and after the pilot program. The survey was built in the REDCap platform and the survey links were emailed to NGN residents on the first and last days of the pilot program. To analyze the data and provide recommendations, *t* tests, as well as mean and standard deviations, were used.

Findings and Implications

Nineteen NGNs were included in the pilot as part of the new graduate residency program. Nineteen presurveys were collected; however, only 17 postsurvey were completed. Given that each NGN created their own unique identifier, presurveys that did not have a matching postsurvey were identified and excluded them from the data analysis. Seventeen individuals provided pre- and postsurvey data. Table 1 describes the demographics of the NGNs with less than 12 months nursing experience who participated in the survey.

Table 1

Resident Demographics

Resident characteristics	Presurvey participants only (*n* = 19)	Pre- and postsurvey participants (*n* = 17)
Gender		
Male	3 (16%)	3 (18%)
Female	16 (84%)	14 (82%)
Degree Type		
Associate	7 (37%)	6 (35%)
Bachelor	12 (63%)	11 (65%)
Unit Type		
Intensive Care	7 (37%)	5 (29.5%)
Medical-Surgical	5 (26%)	5 (29.5%)
Emergency Room	5 (26%)	5 (29.5%)
Operating Room	2 (11%)	2 (11.5%)

The EBP Beliefs Scale is "designed to measure a clinicians' beliefs about the value of EBP and their beliefs/confidence in implementing it in practice" according to Melnyk, Fineout-Overholt, and Mays (2008, p. 209). A *t* test was conducted to compare pre- and postdata. Overall, mean presurvey scores (M = 68.3, SD = 4.1) were significantly lower compared to postsurvey scores (M = 76.3, SD = 8.1); t (16) = 5.88, $p < .001$. According to Melnyk, Fineout-Overholt, and Mays (2008), scores range from 16 to 80, with 80 representing the highest beliefs. On average, postsurvey scores (M = 76.3) were eight points greater than the presurvey scores (M = 68.3). Table 2 displays 16 individual items analyzed with 13 indicating significant improvement ($p < .05$) in beliefs following the intervention (see Appendix D for further statistics).

Table 2

Presurvey – Postsurvey Results

Survey item	Presurvey Mean (*SD*)	Postsurvey Mean (*SD*)	Pr > t
I believe that EBP results in the best clinical care for patients.	4.41 (1.064)	4.71 (0.985)	0.4516
I am clear about the steps of EBP.	3.94 (1.088)	4.59 (0.507)	0.0226
I am sure that I can implement EBP.	4.17 (1.014)	4.71 (0.470)	0.0343
I believe that critically appraising evidence is an important step in the EBP process.	4.23 (1.032)	4.71 (0.470)	0.0413
I am sure that evidence-based guidelines can improve clinical care.	4.29 (0.985)	4.82 (0.393)	0.0239
I believe that I can search for the best evidence to answer clinical questions in a time efficient way.	4 (0.935)	4.59 (0.507)	0.0280
I believe that I can overcome barriers in implementing EBP.	4.11 (0.927)	4.71 (0.470)	0.0201
I am sure that I can implement EBP in a time efficient way.	4.05 (1.028)	4.65 (0.493)	0.0367
I am sure that implementing EBP will improve the care that I deliver to my patients.	4.29 (0.985)	4.76 (0.437)	0.0413
I am sure about how to measure the outcomes of clinical care.	3.94 (0.966)	4.59 (0.618)	0.0037
I believe that EBP takes too much time.	3.64 (1.057)	3.35 (1.320)	0.4145
I am sure that I can access the best resources in order to implement EBP.	3.82 (1.014)	4.65 (0.493)	0.0061
I believe EBP is difficult.	3.52 (1.067)	3.24 (1.200)	0.4401
I know how to implement EBP sufficiently enough to make practice changes.	3.76 (0.97)	4.47 (0.514)	0.0093
I am confident about my ability to implement EBP where I work.	3.94 (0.899)	4.53 (0.514)	0.0076
I believe the care that I deliver is evidence-based.	4.05 (0.966)	4.71 (0.470)	0.0112

Note. (*SD*) = Standard deviation

Three items did not produce statistically significant improvements in EBP beliefs. The first, *EBP results in the best clinical care for patients* (p = 0.4516), was not surprising as the concept of EBP is emphasized in nursing schools. The last two items not producing significant improvements were the beliefs that *EBP takes too much time* and that *EBP is difficult*. These two items were scored in reverse order on the Likert scale. It should be questioned if participants did not read carefully enough to score these two items in reverse. With 81% (13 of 16) of items producing significant improvements after intervention, these results suggest that EBP education and projects may enhance the NGNs' beliefs about EBP and confidence in implementing it into clinical practice. Specifically, results indicate a statistically significant increase in NGNs' beliefs about EBP after the quality-improvement pilot program. In comparing associate (n=6) and bachelor (n=11) pre- and postdata, it was interesting to note that bachelor's prepared nurses had a significant (p = 0087) enhancement in EBP beliefs after intervention, yet associate degree nurses did not (p = .4653).

There are limitations with this quality-improvement pilot program. One limitation of the was the small number of participants. As a pilot program, the nurse residency leadership council decided to use only the current cohort of NGNs, which included 19 participants. The small sample size limits the generalizability of the findings. Another limitation identified was timing. Delivering the pilot program in 4 weeks limited the study from identifying if the change in NGN beliefs could be sustained over time.

Implications from the findings identified that NGNs' beliefs about EBP developed throughout the program. Enhanced beliefs lead to increased use of EBP at the bedside, yielding optimal patient outcomes (Melnyk, Fineout-Overholt, Mays, 2008). NGNs with the confidence and beliefs of using EBP can promote transformational change in an organization (Hosking et al., 2016). Increased use of EBP can positively influence organizational quality measures. Consistency in achieving optimal patient outcomes can lead to a healthier community and identify the organization as one delivering high-quality, safe patient care.

Social change results from events that dictate how the world moves forward (McLeod & Thomson, 2009). NGNs need a stable knowledge base to implement best practices in the clinical setting (Breimaier, Halfens, & Lohrmann, 2011). This project impacts social change by identifying that completion of an EBP project can enhance NGNs' beliefs of EBP and confidence to apply EBP in the clinical setting. Using EBP at the point of care will allow NGNs to provide high-quality care, resulting in decreased healthcare costs and the promotion of optimal patient outcomes (Odell & Barta, 2011).

Recommendations

Findings indicate that EBP education and project completion may enhance the NGNs' beliefs about EBP and confidence in implementing EBP in the clinical setting, thereby closing the known practice gap. Based on these significant findings, the recommendation is to integrate EBP education and projects into NGN residency programs or NGN orientation. The DNP project findings and recommendations are

congruent with Jackson (2016), Toole et al. (2013), and Hines, Ramsbotham, and Coyer (2016).

The quality-improvement pilot was delivered as part of the residency program, ensuring NGNs had protected time to participate (see Appendix C for the quality-improvement pilot agenda). The pilot program included online EBP modules to improve the knowledge of NGNs so that they can critically assess and summarize evidence. NGNs were broken down into small groups based on care delivery types (intensive care units, medical-surgical, emergency department, operating room) and assigned an EBP mentor. Each small group identified literature based on the chosen topic, in this case, bedside handoff, and worked in pairs to analyze the evidence. Each pair then presented their critiques to the small group. With guidance from mentors, each small group produced an EBP summary, presented it to the larger cohort, and recommended application and evaluation metrics as the final part of the project. Practice recommendations from the EBP summary were shared with unit-based leaders who encouraged clinical practice shared-decision making councils to implement these recommendations.

Contribution of the Doctoral Project Team

The nursing research scientist and nursing research specialist served as mentors throughout this project as required by study organizations policy. Frequent communications kept them abreast of project progress and milestones. The mentors asked questions to ensure that the project was moving in the appropriate direction and was on-task to completion within the desired timeframe. Results from the pilot program were

reviewed with the research mentors, and they agreed with the recommendations I suggested. Based on the initial and favorable results, the pilot program has officially become a permanent part of the new graduate residency program at the study organization. With more time to plan, the program will be delivered over 4 months with future cohorts; this will allow the organization to evaluate it for sustainability with NGNs' beliefs in EBP.

Strengths and Limitations of the Project

A strength of the doctoral project was the use of a valid and reliable tool to evaluate NGNs' beliefs of EBP before and after the pilot program. Despite the small sample size, results indicated statistically significant improvements in nurses' beliefs after the quality-improvement pilot program. The doctoral project was an examination of a quality-improvement pilot. IRB processes moved quickly allowing the pilot program to begin within a short timeframe. Another strength was the use of a quality-improvement evaluation for the project. This project did not require the recruitment of study participants, instead, the participants included NGNs already enrolled in the existing nurse residency program. At the conclusion of the study, 100% of the NGNs were still enrolled in the residency program and employed.

Although statistical measurement was obtained for the overall cohort and individual items were analyzed, a limitation was the lack of 100% participation in postsurvey s leading to two presurveys being excluded for a smaller number of final data points. Time constraints were a concern with the implementation of the pilot program as

the cohort was nearing completion. As part of the NGN residency program, the quality-improvement pilot program was implemented quickly and delivered in four weeks, a shorter than desirable timeframe.

With the small number of participants, it would be beneficial in the future to repeat the quality-improvement program with a larger number of participants. Future plans around EBP education and projects for NGNs are to expand the implementation of the identified EBP recommendations into the clinical setting. It would also be interesting to note if a significant difference was found between associate and bachelor prepared NGNs with a larger sample size. In addition, delivering the program over an extended amount of time would also allow for measurement in sustainability of new graduate beliefs.

Section 5: Dissemination Plan

Within the organization, the pilot program results will be disseminated in two ways. First, results will be outlined and shared with the residency program leadership group at the quarterly meeting in May 2021 via a PowerPoint presentation, including background, methods, and results. Second, the DNP student will present a podium presentation at Research Nursing Grand Rounds in April 2021 to disseminate the project results to the organization.

It would be appropriate to disseminate this project to all hospitals that hire NGNs through publication or conference presentations. The DNP student is planning to submit an abstract to the state's nursing research conference with hopes to be accepted for poster presentation summer 2021. Publication in a nursing journal or presentation at a national nursing conference would broadly disseminate the project to others who may benefit from the results or wish to replicate the study to see if similar results are achieved.

Analysis of Self

In relation to DNP *Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice*, the DNP student exhibited competence of the included components. This essential describes the DNP student's ability to translate research into practice and integrate and disseminate new knowledge to benefit nursing practice (ANCC, 2006). The DNP student acted as a scholar and project manager while implementing the quality-improvement pilot program into the NGN residency program. As a result of the pilot program, EBP education and projects have officially become a

permanent part of the new graduate residency program. As EBP education expands in the future, a long-term goal is to help NGNs carry out EBP implementation in their clinical areas and create poster presentations to share with senior leaders.

Completing the DNP project yielded results consistent with current research showing that EBP education and projects can enhance the NGNs' beliefs about EBP. It was rewarding to see the before (M = 68.3) and after (M = 76.3) scores analyzed in favor of the quality-improvement pilot program with a score of 80 indicating the highest EBP beliefs. The DNP project evaluated a quality-improvement program in which the organization collected the data. Challenges were minimal as the DNP student had direct access to the nurse residents and could encourage them to complete the pre- and postsurveys. It would be beneficial if residency program cohorts were larger, yet new graduate resident nurses are hired based on vacancies which have been limited throughout the pandemic. The organization does a great job of evaluating programs based on participant satisfaction. An insight learned from this project is the importance of using validated tools to measure pre- and postdata to determine if objectives were met to enhance nurses' knowledge. This type of data is more meaningful and powerful to leverage support from senior leaders.

Summary

The gap in NGNs' lack of understanding and beliefs about EBP is widespread. The doctoral project evaluated a quality-improvement pilot program to answer the practice question: In NGNs, does completing an evidence-based project enhance NGNs'

beliefs about EPB as well as confidence in their ability to implement EBP in the clinical setting? Pre- and postdata were collected and analyzed. Results indicated a significant difference between before and after intervention scores related to NGNs' beliefs about EBP. Based on findings, it is recommended to implement EBP education and projects into NGN onboarding programs to enhance beliefs and develop NGNs' confidence to implement and promote EBP in the clinical setting.

References

Al Qadire, M. (2019). Undergraduate student nurses' knowledge of evidence-based practice: A short online survey. *Nurse Education Today, 72*, 1–5. https://doi-org.ezp.waldenulibrary.org/10.1016/j.nedt.2018.10.004

American Association of Colleges of Nursing (AACN). (2006). *The essentials of doctoral education for advanced nursing practice*. Retrieved from http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf

American Nurses Association (2015). *Nursing: Scope and standards of practice* (3rd ed.). American Nurses Association.

American Nurses Credentialing Center (2020). *2020 application manual: Practice transition accreditation program.* American Nurses Credentialing Center.

Armstrong, D. G., Ayello, E. A., Capitulo, K. L., Fowler, E., Krasner, D. L., Levine, J. M., Sibbald, R. G., & Smith, A. P. S. (2008). New opportunities to improve pressure ulcer prevention and treatment: Implications of the CMS inpatient hospital care present on admission (POA) indicators/hospital-acquired conditions (HAC) policy. A consensus paper from the International Expert Wound Care Advisory Panel. *Journal of Wound, Ostomy and Continence Nursing, 35*(5), 485-492. https://doi.org/10.1097/01.WON.0000335960.68113.82

Breimaier, H. E., Halfens, R. J., & Lohrmann, C. (2011). Nurses' wishes, knowledge, attitudes and perceived barriers on implementing research findings into practice among graduate nurses in Austria. *Journal of Clinical Nursing, 20*, 1744-1756.

Chan, E. Y., Glass, G. F., & Phang, K. N. (2020). Evaluation of a hospital-based nursing research and evidence-based practice mentorship program on improving nurses' knowledge, attitudes, and evidence-based practice. *Journal of Continuing Education in Nursing, 51*(1), 46-52.

Cosme, S., Milner, K., & Wonder, A. (2018). Benchmarking of prelicensure nursing students' evidence-based practice knowledge. *Nurse Educator, 43*(1), 50-53.

Fineout-Overholt E., Levin, R. F., & Melnyk, B. M. (2004). Strategies for advancing evidence-based practice in clinical settings. *Journal of the New York State Nurses Association, 35*(2), 28.

Franco, M. S. (2019). Instructional strategies and adult learning theories: An autoethnographic study about teaching research methods in a doctoral program. *Education, 139*(3), 178–185.

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.

Gray, J. R., Grove, S. K., & Sutherland, S. (2017). *The practice of nursing research: appraisal, synthesis, and generation of evidence* (8th ed.). Elsevier.

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

Hosking, J., Knox, K., Forman, J., Montgomery, L. A., Valde, J. G., & Cullen, L. (2016).

Evidence into practice: Leading new graduate nurses to evidence-based practice through a nurse residency program. *Journal of PeriAnesthesia Nursing*, *31*(3), 260–265.

Institute of Medicine (2011). *The future of nursing: leading change, advancing health.* The National Academies Press. https://doi.org/10.17226.12956.

Jackson, N. (2016). Incorporating evidence based practice learning into a nurse residency program. *The Journal of Nursing Administration*, *46*(5), 278-283.

Malik, G., McKenna, L., & Griffiths, D. (2016). How do nurse academics value and engage with evidence-based practice across Australia: Findings from a grounded theory study. *Nurse Education Today*, *41*, 54-59.

McLeod, J., & Thomson, R. (2009). *Researching social change: Qualitative approaches.* Retrieved from https://ebookcentral.proquest.com

Melnyk, B. M., Fineout-Overholt, E., & Mays, M. Z. (2008). The evidence-based practice beliefs and implementation scales: psychometric properties of two new instruments [corrected] [published erratum appears in *Worldviews on Evidence-Based Nursing* 2009 1st Quarter; *6*(1): 49]. *Worldviews on Evidence-Based Nursing*, *5*(4), 208–216.

Odell, E., & Barta, K. (2011). Teaching evidence-based practice: the bachelor of science in nursing essentials at work at the bedside. *Journal of Professional Nursing*, *27*(6), 370–377. https://doi-org.ezp.waldenulibrary.org/10.1016/j.profnurs.2011.04.007

Rudman, A., Gustavsson, P., Ehrenberg, A., Bostrom, A. M., & Wallin, L. (2012). Registered nurses' evidence-based practice: A longitudinal study of the first five years after graduation. *International Journal of Nursing Studies, 49*, 1491-1504. http://dx.doi.org/10.1016/j.ijnurstu.2012.07.007

Toole, B. M., Stichler, J. F., Ecoff, L., & Kath, L. (2013). Promoting nurses knowledge in evidence-based practice: do educational methods matter? *Journal for Nurses in Professional Development, 29*(4), 173-181.

Walden University. (2020). Vision, mission, and goals. In 2019-2020 Walden University catalog. https://catalog.waldenu.edu/content.php?catoid=172&navoid=59420&hl=mission&returnto=search

Appendix A: EBP Beliefs Scale

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

Appendix B: Permission to Use EBP Beliefs Scale

Attached EBP Beliefs Scale - 2018.pdf 84 KB

From: Thomas, Bindu <thomas.3279@osu.edu>
Sent: Thursday, May 28, 2020 11:24 AM
To: Julie Bane <julie.bane@waldenu.edu>
Subject: RE: Requesting permission to use EBP Beliefs Scale

Julie,
Thank you for the completed signed form. Attached is a copy of the scale(s) requested. Please treat this email as permission to use the scale as requested in the application.
Look forward to hearing from you post the end date for your project about your sample description, findings and the Cronbach alpha information for our scale.
Thank you.
Bindu

Bindu Thomas, M.Ed., MS
Technology & Research Coordinator
Helene Fuld Health Trust National Institute for
Evidence-based Practice in Nursing and Healthcare
The Ohio State University College of Nursing
Cell: 480-241-7709 | Direct: 614.688.1166
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Appendix C: Quality-improvement Pilot Agenda

Quality Improvement Pilot Program

Week 1		
Deliverables prior to class	**Agenda**	**Homework**
Residents > Complete Module 3 "IOWA Model" > Complete Module 4 "Finding Evidence" **Mentors** > Email Johns Hopkins critique tool, IOWA Model, PICO handouts to residents before class > Assign articles to group pairs	**Cohort Group** > Welcome, explanation of pilot program and how it will benefit the new graduate nurse residency program in the future > Introductions of Mentors > Review schedule and objectives, deliverables, and complete pre-survey (EBP Beliefs Scale) > Review difference between research, EBP, QI > Review IOWA Model and components of PICO question > PICO question for this pilot, demonstrate search strategies **BREAKOUT ROOMS with Mentors** > Introductions and one thing residents hope to learn > Mentor to assign articles to partners > Mentor to review how to use critique tool > Identify homework and deliverable for Week 2	**Residents** > Work with partner to critique assigned article > Email article critique to Mentor before next class > Complete Module 5 "Evaluating and Synthesis" before class week 2

Week 2		
Deliverables prior to class	**Agenda**	**Homework**
Residents > Complete Module 5 "Evaluating and synthesis" > Send article critique to Mentor before class > Read additional group articles	**Cohort Group** > Touch base - any questions, issues, terminology on critique tool **BREAKOUT ROOMS with Mentors** > Article critique > Begin creating synthesis table	

Week 3		
Deliverables prior to class	**Agenda**	**Homework**
Mentors > Email summary template to cohort before class	**BREAKOUT ROOMS with Mentors** > Continue article critique and synthesis table > Review how to write a summary > Write summary as a group > Identify volunteer to present summary for Week 4	

Week 4		
Deliverables prior to class	**Agenda**	**Homework**
	Cohort Group > Each small group to present EBP summary with recommendations and evaluation metrics > Wrap-up and questions > Post-survey (EBP Beliefs Scale)	

Appendix D: EBP Beliefs Scale Individual Item Analysis

The SAS System

The TTEST Procedure

Difference: pre_best_care - post_best_care

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.2941	1.5718	0.3812	-4.0000	4.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.2941	-1.1023	0.5140	1.5718	1.1706	2.3922

DF	t Value	Pr > |t|
16	-0.77	0.4516

The SAS System

The TTEST Procedure

Difference: pre_steps - post_steps

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.6471	1.0572	0.2564	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.6471	-1.1906	-0.1035	1.0572	0.7874	1.6090

DF	t Value	Pr > |t|
16	-2.52	0.0226

The SAS System

The TTEST Procedure

Difference: pre_implement - post_implement

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.5294	0.9432	0.2288	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.5294	-1.0144	-0.0444	0.9432	0.7025	1.4355

DF	t Value	Pr > |t|
16	-2.31	0.0343

The SAS System

The TTEST Procedure

Difference: pre_appraising - post_appraising

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.4706	0.8745	0.2121	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.4706	-0.9202	-0.0210	0.8745	0.6513	1.3309

DF	t Value	Pr > |t|
16	-2.22	0.0413

The SAS System

The TTEST Procedure

Difference: pre_improve - post_improve

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.5294	0.8745	0.2121	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.5294	-0.9790	-0.0798	0.8745	0.6513	1.3309

DF	t Value	Pr > |t|
16	-2.50	0.0239

The SAS System

The TTEST Procedure

Difference: pre_search - post_search

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.5882	1.0037	0.2434	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.5882	-1.1043	-0.0722	1.0037	0.7475	1.5275

DF	t Value	Pr > |t|
16	-2.42	0.0280

The SAS System

The TTEST Procedure

Difference: pre_barriers - post_barriers

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.5882	0.9393	0.2278	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.5882	-1.0712	-0.1053	0.9393	0.6996	1.4296

DF	t Value	Pr > |t|
16	-2.58	0.0201

The TTEST Procedure

Difference: pre_implement_eff - post_implement_eff

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.5882	1.0641	0.2581	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.5882	-1.1354	-0.0411	1.0641	0.7925	1.6195

DF	t Value	Pr > |t|
16	-2.28	0.0367

The SAS System

The TTEST Procedure

Difference: pre_improve_care - post_improve_care

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.4706	0.8745	0.2121	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.4706	-0.9202	-0.0210	0.8745	0.6513	1.3309

DF	t Value	Pr > |t|
16	-2.22	0.0413

The SAS System

The TTEST Procedure

Difference: pre_measure - post_measure

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.6471	0.7859	0.1906	-2.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.6471	-1.0511	-0.2430	0.7859	0.5853	1.1961

DF	t Value	Pr > |t|
16	-3.39	0.0037

The SAS System

The TTEST Procedure

Difference: pre_time - post_time

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	0.2941	1.4476	0.3511	-2.0000	4.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0.2941	-0.4502	1.0384	1.4476	1.0781	2.2032

DF	t Value	Pr > |t|
16	0.84	0.4145

The SAS System

The TTEST Procedure

Difference: pre_best_resources - post_best_resources

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.8235	1.0744	0.2606	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.8235	-1.3760	-0.2711	1.0744	0.8002	1.6352

DF	t Value	Pr > |t|
16	-3.16	0.0061

The SAS System

The TTEST Procedure

Difference: pre_difficult - post_difficult

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	0.2941	1.5315	0.3715	-3.0000	3.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0.2941	-0.4933	1.0816	1.5315	1.1406	2.3309

DF	t Value	Pr > |t|
16	0.79	0.4401

The SAS System

The TTEST Procedure

Difference: pre_sufficiently - post_sufficiently

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.7059	0.9852	0.2389	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.7059	-1.2124	-0.1993	0.9852	0.7337	1.4994

DF	t Value	Pr > |t|
16	-2.95	0.0093

The SAS System

The TTEST Procedure

Difference: pre_ability - post_ability

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.5882	0.7952	0.1929	-3.0000	0

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.5882	-0.9971	-0.1794	0.7952	0.5922	1.2102

DF	t Value	Pr > |t|
16	-3.05	0.0076

The SAS System

The TTEST Procedure

Difference: pre_care - post_care

N	Mean	Std Dev	Std Err	Minimum	Maximum
17	-0.6471	0.9315	0.2259	-3.0000	1.0000

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
-0.6471	-1.1260	-0.1681	0.9315	0.6937	1.4176

DF	t Value	Pr > |t|
16	-2.86	0.0112

Table 1

Resident Demographics

Resident characteristics	Presurvey participants only (n=19)	Pre- and postsurvey participants (n=17)
Gender		
Male	3 (16%)	3 (18%)
Female	16 (84%)	14 (82%)
Degree Type		
Associate	7 (37%)	6 (35%)
Bachelor	12 (63%)	11 (65%)
Unit Type		
Intensive Care	7 (37%)	5 (29.5%)
Medical-Surgical	5 (26%)	5 (29.5%)
Emergency Room	5 (26%)	5 (29.5%)
Operating Room	2 (11%)	2 (11.5%)

Table 2

Presurvey – Postsurvey Results

Survey item	Presurvey Mean (SD)	Postsurvey Mean (SD)	Pr > t
I believe that EBP results in the best clinical care for patients.	4.41 (1.064)	4.71 (0.985)	0.4516
I am clear about the steps of EBP.	3.94 (1.088)	4.59 (0.507)	0.0226
I am sure that I can implement EBP.	4.17 (1.014)	4.71 (0.470)	0.0343
I believe that critically appraising evidence is an important step in the EBP process.	4.23 (1.032)	4.71 (0.470)	0.0413
I am sure that evidence-based guidelines can improve clinical care.	4.29 (0.985)	4.82 (0.393)	0.0239
I believe that I can search for the best evidence to answer clinical questions in a time efficient way.	4 (0.935)	4.59 (0.507)	0.0280
I believe that I can overcome barriers in implementing EBP.	4.11 (0.927)	4.71 (0.470)	0.0201
I am sure that I can implement EBP in a time efficient way.	4.05 (1.028)	4.65 (0.493)	0.0367
I am sure that implementing EBP will improve the care that I deliver to my patients.	4.29 (0.985)	4.76 (0.437)	0.0413
I am sure about how to measure the outcomes of clinical care.	3.94 (0.966)	4.59 (0.618)	0.0037
I believe that EBP takes too much time.	3.64 (1.057)	3.35 (1.320)	0.4145
I am sure that I can access the best resources in order to implement EBP.	3.82 (1.014)	4.65 (0.493)	0.0061
I believe EBP is difficult.	3.52 (1.067)	3.24 (1.200)	0.4401
I know how to implement EBP sufficiently enough to make practice changes.	3.76 (0.97)	4.47 (0.514)	0.0093
I am confident about my ability to implement EBP where I work.	3.94 (0.899)	4.53 (0.514)	0.0076
I believe the care that I deliver is evidence-based.	4.05 (0.966)	4.71 (0.470)	0.0112