

EVIDENCE-BASED PRACTICE SUSTAINABILITY AND NURSING
PROFESSIONAL GOVERNANCE

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EVIDENCE-BASED PRACTICE SUSTAINABILITY AND NURSING
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Patient care that is not based on evidence-based practice (EBP) could be considered malpractice, and it threatens patient safety, quality, and fiscal performance. EBP implementation is complex, and sustainment of these practices is such a persistent challenge that up to 70% of organizational change fails to be sustained. Sustainment of EBP decreases healthcare costs and improves patient outcomes. Professional attributes that influence sustainability are not well understood. Nursing professional governance (PG) is a framework of professional attributes that includes accountability, professional obligation, collateral relationships, and decision-making. This framework includes attributes that are necessary for professionals to effectively govern their profession and influence outcomes. Healthcare professionals are an important component of sustainability frameworks; however, the professional attributes that influence sustainability have not been validated by research.

The purpose of this dissertation was to examine the influence of professional attributes on the sustainability of EBP and patient outcomes. This was accomplished through 1) an ethnographic qualitative study, 2) a cross-sectional study, and 3) a scoping review. The researcher used a qualitative study to describe cultural characteristics, nurse values, and beliefs that influenced the sustainability of an EBP in the acute care setting. This was accomplished through a focused ethnographic approach with semi-structured interviews and observations. The study setting was a community hospital and the sample included registered nurses. In this study, nurses' described experiences, beliefs, and

values of an EBP intervention that influenced sustainability. The purpose of the cross-sectional study was to examine associations between professional governance attributes and unit-level central line-associated bloodstream infection outcomes. Secondary cross-sectional data were analyzed with independent-sample t-test, point-biserial correlation, and univariate logistic regression. The study setting included ninety-one inpatient units within eight acute care hospitals. In this study, results revealed possible connections between professional governance attributes and patient outcomes. Finally, a scoping review included 31 articles to provide an overview of evidence about sustainability and EBP champion responsibilities. The scoping review summarized literature on EBP champion responsibilities that influenced EBP sustainability. The findings of this dissertation can inform research, practice, and policy regarding professional attributes that enhanced or hindered EBP sustainability.

Robin Newhouse, PhD, RN, NEA-BC, FAAN, Chair

TABLE OF CONTENTS

List of Tables	xi
List of Figures	xii
List of Abbreviations	xiii
Chapter 1: Nature of the Study	1
Background and Significance	2
Overview of the Literature	3
Purpose	5
Theoretical and Philosophical Influences	6
Chapter 2: Seeking to Understand: Qualitative Research on Sustainability of EBP	
Interventions in Acute Care	8
Methods	11
Design	11
Participants	11
Data Collection	12
Data Analysis	13
Ethical Considerations	14
Results	14
Intervention: Components	16
Intervention: Practitioners	18
Intervention: Delivery Platform	20
Practice Setting/Context: Information Systems	21
Practice Setting/Context: Organization Culture, Climate, and Structure	21

Practice Setting/Context: Training	22
Practice Setting/Context: Supervision	23
Ecological System: Market Forces	24
Discussion	24
Main Findings	24
Limitations	27
Conclusion	28
Chapter 3: Examining Nursing Professional Governance and Patient Outcomes	30
Methods	33
Design	33
Sample	33
Procedures – Data Collection	34
Measures	34
Respondent Characteristics	34
Nursing Professional Governance Attributes	35
CLABSI Outcomes	36
Data Analysis	36
Results	37
Professional Governance Scale	38
CLABSI Outcomes and Connections between CLABSI Outcomes and Professional Governance Attributes	39
Discussion	40
Main Findings	40

Limitations	43
Conclusion	44
Chapter 4: Sustainability and EBP Champion Responsibilities: Scoping Review	45
Methods.....	46
Study Design.....	46
Identifying the Research Question.....	47
Retrieving Relevant Studies.....	47
Eligibility Criteria	48
Select Studies	48
Charting the Data	49
Results	50
Characteristics of Included Articles.....	50
Study Designs	54
Study Results	55
Value of the EBP Champion Role	66
EBP Champion Responsibilities.....	67
Primary Responsibilities.....	67
Secondary Supportive Responsibilities	68
Facilitators of EBP Sustainment.....	70
Success Strategies.....	70
Communication/Collaboration.....	71
Interpersonal Strategies.....	71
Barriers to EBP Sustainment	72

Operational.....	72
Interpersonal	72
Leadership.....	73
Discussion	73
Limitations	77
Implications for Practice and Research.....	78
Conclusions	78
Chapter 5: Conclusion.....	80
Summary of Key Findings	80
Chapter 2.....	80
Chapter 3.....	81
Chapter 4.....	81
Strengths and Limitations	82
Implications.....	83
Conclusion	84
Appendix A: DSF Framework Permission	85
Appendix B: IRB Qualitative Study Approval	86
Appendix C: Facility CNO Permission.....	91
Appendix D: Participant Email Invitation	92
Appendix E: IRB Quantitative Study Approval	93
References.....	98
Curriculum Vitae	

LIST OF TABLES

Table 1:	DSF Major Elements & Study Themes	16
Table 2:	Professional Governance Scale Instrument for Present Study.....	36
Table 3:	Nurse Respondent Characteristics Data by Unit CLABSI Outcome.....	38
Table 4:	Professional Governance Attributes by CLABSI Outcome	39
Table 5:	Univariate Logistic Regression Results Predicting Likelihood of CLABSI Outcome.....	40
Table 6:	General Characteristics of Included Studies	51
Table 7:	Key Features of Included Studies	56

LIST OF FIGURES

Figure 1:	DSF Components and Relationships	10
Figure 2:	ISF Integration	32
Figure 3:	Flow Diagram of Study Literature Selection	49

LIST OF ABBREVIATIONS

Abbreviation	Term
ARCC	Advancing Research and Clinical Practice Through Close Collaboration
ASN	Associates of Nursing
BSN	Bachelor of Science in Nursing
CDC	Centers for Disease Control
CLABSI	Central Line-Associated Bloodstream Infection
DSF	Dynamic Sustainability Framework
EBP	Evidence-based Practice
MSN	Master of Science in Nursing
NPD	Nursing Professional Development
RN	Registered Nurse
SBIRT	Screening, Brief Intervention, and Referral to Treatment

CHAPTER 1: NATURE OF THE STUDY

Patient care based on outdated evidence could be considered malpractice and threatens patient safety, quality, and fiscal performance (Breimaier et al., 2015).

Sustainability, also known as sustainment, occurs when using an evidence-based practice (EBP) intervention for the continued achievement of desirable population/patient outcomes becomes the norm (Maher et al., 2017; Shelton & Lee, 2019). Evidence suggests that sustainability is a persistent challenge across various practice settings (Shelton & Lee, 2019), and up to 70% of organizational change fails to be sustained (Beer & Nohria, 2000; Daft & Noe, 2001). On the other hand, the sustainment of EBP decreases healthcare costs and improves patient outcomes (Erdei et al., 2015).

Professional attributes and behaviors that influence the decision to continue to use EBP interventions are not well understood or validated by research (Shelton & Lee, 2019).

Nursing professional governance is a structural framework of professional attributes that includes accountability, professional obligation, collateral relationships, and decision-making based on evidence (Porter-O'Grady & Malloch, 2017). This comprehensive framework includes necessary elements for professionals to effectively govern their practice and profession (Porter-O'Grady, 2019) and influence empirical outcomes (Joseph & Bogue, 2016). Healthcare professionals are an essential component of contemporary sustainability frameworks (Chambers et al., 2013; Shelton & Lee, 2019); however, the professional attributes that influence sustainability have not been well studied. Further research is needed to explore the concepts of professional governance and sustainability and how professional attributes and behaviors influence the continued use of EBP interventions.

A fundamental shift in thinking is necessary to sustain any profound change process (Senge, 1999), including an EBP change. Viewing the inputs of a practice change in new and different ways will fundamentally shift thinking to allow new solutions to emerge that may increase the likelihood of sustainment. A deep understanding of the forces and challenges that inspire and impede sustainability is foundational to developing practical strategies for dealing with seemingly unsolvable problems.

Background and Significance

The United States spends a significant amount of money on healthcare, almost twice as much as the average Organization for Economic Cooperation and Development country, and has poorer outcomes including life expectancy, suicide rates, chronic diseases, and obesity (Tikkanen & Abrams, 2020). Simply getting healthcare in the United States puts patients at risk for the 3rd leading cause of death—medical errors (Makary & Daniel, 2016). Providing care with the latest evidence improves outcomes and decreases costs; however, implementing an EBP change requires significant resources, and efforts are meaningless without structures and processes in place to support sustainment (Chambers et al., 2013).

Sustainability is a distinct concept that occurs when the clinician uses or delivers the EBP intervention after a defined duration (Nadalin Penno et al., 2019). This process involves individual behavior change, EBP evolution, adaptation, and complex interactions. One hallmark of successful healthcare organizations is the ability to sustain effective improvement initiatives and EBPs, resulting in increased quality and patient experience at a lower cost (Maher et al., 2017). Therefore, research on sustainability is critical because it is an understudied area and a highly significant translational research

problem in public health and healthcare (Shelton et al., 2018). Sustainability is emerging as a dynamic concept that necessitates flexibility and agility as new evidence arises, policies change, and other factors impact practice (Shelton et al., 2018).

The use of EBP interventions decreases healthcare costs and improves patient outcomes; however, professional attributes that influence the decision to continue to use EBP interventions are not validated by existing research. If differences exist between professional attributes, EBP sustainment, and ultimately patient outcomes, identifying the attributes of those who sustain EBP will advance the sustainability arm of the dissemination and implementation research agenda. This dissertation will add scientific knowledge to implementation science, specifically the dissemination and implementation research agenda that focuses on strategies and methods to facilitate the adoption, use, and sustainability of evidence-based interventions (Shelton & Lee, 2019). Understanding the attributes of healthcare professionals who sustain EBP interventions could help researchers develop recommendations that lead to better patient outcomes and more affordable healthcare.

Overview of the Literature

A systematic literature review focusing on sustainability found that clinicians were both facilitating and hindering factors of sustainment; however, specific attributes were not mentioned (Hailemariam et al., 2019). Similarly, Shelton et al. (2018) identified clinician attributes, their skills, attitudes, and motivations as influencers of sustainability across the community, health care, and social service settings, but again, detailed attributes were not included. Development and use of EBP mentors are a vital component of the advancing research and clinical practice through close collaboration (ARCC)

model; however, clinician attributes of influential EBP mentors have not been explored (Melnyk et al., 2017).

Clinician attributes found in sustainability literature have not been empirically tested; therefore, a considerable knowledge gap exists. The most common clinician attributes that influence EBP sustainability include self-efficacy (Breimaier et al., 2015; Melnyk, 2012; Tucker et al., 2019), attitude (Bearman et al., 2020; Breimaier et al., 2015; Shelton et al., 2018), belief in the EBP (Breimaier et al., 2015; Damschroder et al., 2009; Melnyk, 2012), and confidence (Breimaier et al., 2015; Melnyk, 2012; Tucker et al., 2019). Knowledge and understanding of an EBP (Melnyk, 2012; Tucker et al., 2019), skills, and motivation (Shelton et al., 2018) facilitate and impede sustainability. Stollendorf et al. (2020) reported that nurse autonomy was an essential facilitator of sustainability and future sustainability research should focus on individual factors.

A few attributes of individuals, including knowledge, beliefs, and self-efficacy, are an important component of the consolidated framework for implementation research that influences successful implementation (Damschroder et al., 2009). Individual behavior change is an antecedent to organizational change and superior outcomes. Clinician attributes that may influence implementation and sustainability but have not been studied include tolerance of ambiguity, intellectual ability, motivation, values, competence, capacity, innovativeness, tenure, and learning style (Damschroder et al., 2009).

Clinician factors that may negatively influence EBP sustainability include mistrust in evidence, using personal preference to practice, level of commitment to sustaining EBPs, and EBPs that are contradictory to the clinician's previous training

(Bearman et al., 2020). Clinicians are more likely to sustain an EBP when they experience advantages for their patients compared with other treatment options. The perceived success or failure of an EBP during implementation influence clinician plans to continue using the EBP (Bearman et al., 2020). Clinicians who do not possess attributes to sustain EBP require ongoing training, monitoring, and increased resources to achieve optimal outcomes.

Purpose

The purpose of this dissertation is to examine the influence of healthcare professional attributes and responsibilities on the sustainability of EBPs and patient outcomes. The dissertation addresses this purpose in the following ways:

- Chapter 2 describes a qualitative study to describe cultural attributes, values, and beliefs that influence the sustainability of an EBP intervention in the acute care clinical setting.
- Chapter 3 describes a cross-sectional study to examine nursing professional governance attributes and sustainability of patient-care outcomes for unit-level central line-associated bloodstream infections (CLABSI).
- Chapter 4 describes a scoping review to provide an overview of existing evidence about sustainability and EBP champion responsibilities and actions.
- Chapter 5 provides a synthesis of the studies' findings, addresses the strengths and limitations of the dissertation, and offers recommendations for future research.

Chapters 2, 3, and 4 include three different research studies that were conducted to address the dissertation purpose comprehensively. Chapter 5 reports coalescence of the results from each study, resulting in one complete document, the dissertation.

Theoretical and Philosophical Influences

Theoretical frameworks to navigate research about sustainability is imperative due to multiple complexities in healthcare systems that influence EBP sustainment. The *dynamic sustainability framework* (DSF) provides clarity and structure to the numerous variables that affect the successful sustainment of EBP (Chambers et al., 2013). The conceptual model of this contemporary framework considers that care delivery interventions occur in different practice settings and broader ecological systems; therefore, the optimal context for each must be determined (Chambers et al., 2013). The DSF starts with the intervention element, which includes practitioners or clinicians as one sub-component. A thorough understanding of each sub-component of the intervention is foundational to successful EBP sustainment. The *integrated sustainability framework* (ISF) is like the DSF and includes attributes and skills/expertise of the professional delivering the intervention as a critical component to sustainability (Shelton et al., 2018). The *ARCC model* includes EBP mentors as critical to EBP implementation (Melnik et al., 2017); however, EBP mentor attributes and responsibilities are not included.

Healthcare professionals are a vital part of these contemporary frameworks and models (Chambers et al., 2013; Shelton & Lee, 2019); however, how they influence sustainability has not been well studied. The *Annual Review of Public Health* outlines the EBP sustainability research agenda for public health and health care that includes a call for more research to understand, measure, and communicate the value of sustainability

(Shelton et al., 2018). This dissertation will help build new knowledge examining the influence of healthcare professional attributes and responsibilities on the sustainability of EBP and patient outcomes. This critical foundation is necessary to shift assumptions in this area of much-needed research.

CHAPTER 2: SEEKING TO UNDERSTAND: QUALITATIVE RESEARCH ON SUSTAINABILITY OF EBP INTERVENTIONS IN ACUTE CARE

Providing patient care with outdated evidence could be considered malpractice, and it threatens patient safety, the quality of patient care, and organizational fiscal performance (Breimaier et al., 2015). Implementing (beginning to use) and sustaining (continuing to use) EBP interventions in the clinical setting both are expectations of healthcare professionals and vital for optimizing patient outcomes. Knowledge of EBP interventions does not necessarily translate to evidence-based patient care. The sustainment of EBP interventions is arduous and complex (Breimaier et al., 2015); therefore, factors that influence EBP intervention sustainment must be identified and addressed.

Although multiple studies report on implementing EBP interventions, a knowledge gap exists related to successful sustainment factors. Implementing a practice change requires significant resources, but efforts are meaningless without structures and processes to support sustainment (Chambers et al., 2013). The knowledge gap is even more pronounced in the nursing literature, particularly in the acute care setting literature. Acute care nurses represent the largest healthcare clinician group, and financial expenditures are the greatest in this segment of health care (Fleischer et al., 2015). Identifying factors that influence sustainment with nurses as the primary stakeholders could expedite the sustainability research agenda and promote care affordability.

Most sustainability studies focus on measuring the EBP intervention but not the strategies used for sustainability. What we do know from sustainability literature can be categorized into four themes—leadership, education, availability of resources with a

particular emphasis on practice/process expertise, and the ability to adapt the EBP intervention over time (Aarons et al., 2015; Huang et al., 2017; Lukas et al., 2010; Mayer et al., 2011; Porter et al., 2018; Swain et al., 2010). However, even with these themes, we do not fully understand the nuances in acute care. Acute care clinical practice settings are highly variable and include variations in human capital, social capital, financial resources, and support at both the micro and macro levels (Desai et al., 2018). These differences require individualization of sustainment strategies and additional research to understand how to sustain an EBP intervention. Examining cultural characteristics, beliefs, and values that influence sustainability related to the identified themes is imperative to develop standard structures and processes for customization (Chambers et al., 2013).

The purpose of this ethnographic study was to describe cultural characteristics, values, and beliefs that influence the sustainability of an EBP intervention in the acute care clinical setting. This research evaluated the sustainability of a parent implementation study by Newhouse et al. (2018) which noted that an actual practice change might take longer than six months. The following research questions guided this ethnographic study

- What are nurses' experiences, beliefs, and values of EBP interventions such as screening, brief intervention, and referral to treatment (SBIRT)?
- What environmental structures influenced the sustainability of SBIRT?
- Which roles support sustainment of SBIRT?
- How do people in these roles support sustainability?

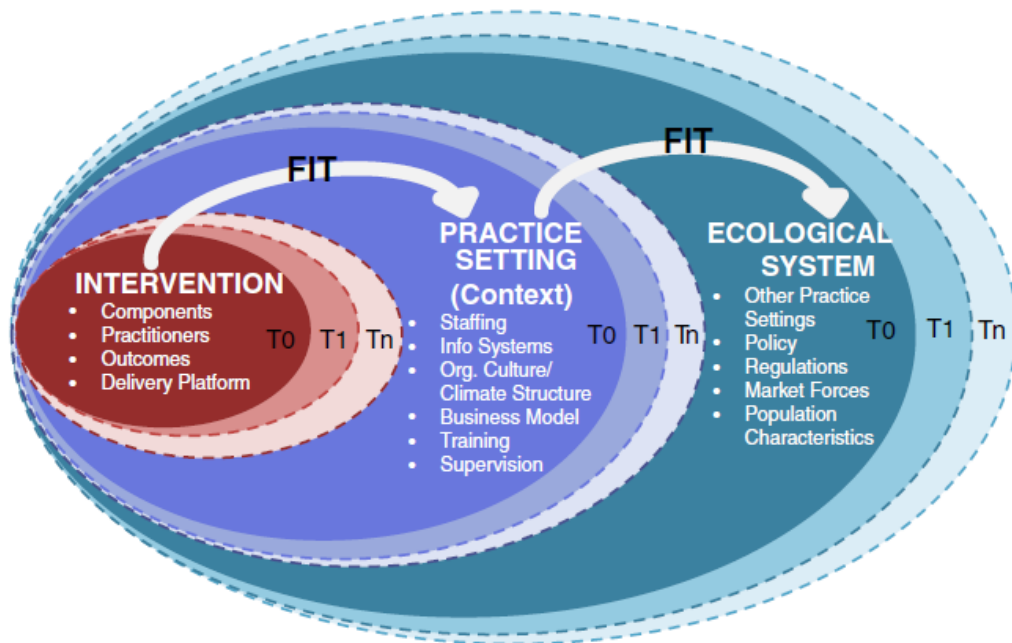
Clinicians use the SBIRT intervention to identify patients at risk for substance use, engage the patient in a conversation about substance use and motivation towards change,

and refer the patient to treatment if indicated (SAMHSA, n.d.). An ethnographic qualitative approach was used due to the complexities of both the healthcare environment and sustainability to advance new knowledge of sustainability that might not be recognized easily.

The DSF, developed by Chambers et al. (2013), provides clarity and structure to the numerous variables that influence the sustainment of practice interventions. Over time, successful practice interventions must evolve, and the framework provides flexibility to accommodate adaptations. The DSF (Figure 1) shows how this contemporary framework considers that care delivery interventions occur in practice settings and broader ecological systems. Optimal context and fit for each component must be determined (Chambers et al., 2013).

Figure 1

DSF Components and Relationships



Note: The DSF demonstrates the practice goal of optimizing the relationships between care interventions and the clinical setting within a larger ecological system. Reprinted from “The Dynamic Sustainability Framework: Addressing the Paradox of Sustainment Amid Ongoing Change,” by D. A. Chambers, R. E. Glasgow, and K. C. Stange, 2013, *Implementation Science*, 8(1), Framework. doi:10.1186/1748-5908-8-117. Copyright 2021 by BioMed Central Ltd. Reprinted with permission (see Appendix A).

Methods

Design

A focused ethnographic design (Munhall, 2007) was used to explore cultural characteristics, values, and beliefs that impact the sustainability of an EBP intervention. Assessing the culture using ethnographic principles provided a comprehensive depiction of the forces that promote or hinder sustainability. Ethnography research is well established as a practical approach for exploring healthcare systems and the nursing profession (Sinead, 2017). A focused approach was necessary due to the short time frame for data collection.

Participants

The study setting was a 35-bed community hospital that is part of a large healthcare system. The researcher recruited nurses from the facility’s medical/surgical unit that implemented the EBP intervention called SBIRT (Broyles et al., 2013) in June 2018. A total of 30 nurses met the inclusion criteria of being a registered nurse (RN) on the designated medical/surgical unit and were invited to participate. The only exclusion criterion was nurses in orientation. Nurses in orientation might not have had the opportunity to engage in the SBIRT process. Convenience sampling was used to recruit

participants that could provide a broad perspective of cultural and environmental factors that influence SBIRT sustainability. The clinical manager asked for volunteer participants on the researcher's observation days.

Data Collection

Data were collected through clinical nurse observations and semi-structured interviews in November 2018 until data saturation, or no new themes (Patton, 2015), was reached. The data collection period was over two weeks, and interviews occurred the same day as the observations. The clinical manager selected typically high admission days/times for the observations. The researcher spent 14 hours on the unit engaged in observations and interviews.

The researcher observed clinical nurses conducting the SBIRT process during the admission history for six patients. The researcher took field notes on the SBIRT process, general impressions, communication patterns, and participant interactions during observations. All notes were kept on a password-protected computer. The researcher, an RN, wore a nursing uniform during observations to assimilate into the unit. When not observing a patient admission, the researcher interacted with multiple team members, asked questions about SBIRT, and observed how the admission process was structured to facilitate compliance with SBIRT.

Interviews took place at a convenient time for the nurse, and the nurse could end the interview at any time. Face-to-face interviews took place in a quiet location on the unit. After the participant receiving permission, the researcher recorded each interview. Interviews were semi-structured and began with the following data generating questions: (a) Your unit implemented the SBIRT process in June; tell me how it's going; (b) Tell me

how you apply the SBIRT process to patient care; and (c) Who supports you in this process, and how have they provided support? The researcher asked additional open-ended questions based on the participant's verbal and non-verbal responses. Each interview lasted between 5½ and 9½ minutes.

The researcher transcribed interviews verbatim to ensure data integrity. Only the researcher and co-principal investigator had access to interview data stored on a password-protected computer. The researcher destroyed recorded interviews after transcription.

In ethnographic research studies, data analysis begins with the first observation and lasts throughout the data collection phase (Munhall, 2007). Collecting and analyzing data in tandem enhanced outcomes of the study and produced results that more closely reflected the actual culture. To ensure consistency of data collection, one researcher conducted all interviews and did the observations.

Data Analysis

The researcher used open coding to analyze the transcribed interviews and observation field notes to identify commonalities, themes, and differences within the data. Data were analyzed, put into pre-defined DSF categories, and labeled as themes and sub-themes. A data table cross-referenced identified themes with study data. An audit trail was kept of the research process and all decision points with the rationale to enhance study dependability (Lincoln & Guba, 1985). Further, the researcher completed a comprehensive analysis of the data to answer the research questions and describe cultural characteristics, values, and beliefs that influence the sustainability of an EBP intervention in the acute care clinical setting.

Ethical Considerations

Indiana University Institutional Review Board (IRB) approval for this qualitative study (see Appendix B) and permission from the facility chief nursing officer (see Appendix C) were obtained before data collection. Interviews and observations were on a volunteer basis, and participants were informed they could withdraw at any point. The researcher is a health system executive, so strategies were used to ensure voluntary and confidential participation. Voluntary participation was clearly articulated in study information and communicated by the clinical manager and Nursing Professional Development (NPD) educator, who also promoted the study's rationale and answered questions about participation. An email (see Appendix D) to eligible participants conveyed that the researcher did not have direct line authority for any team members at the facility. To enhance participant anonymity and confidentiality, the research did not collect demographic information. Informed verbal consent was obtained prior to the observations and interviews. The researcher engaged in reflexivity, intentionally seeking to understand how personal feelings and experiences may influence a study and the participants (Lamb & Huttlinger, 1989), and consulted with qualitative research experts to develop these strategies.

Results

The research sample included six interviews (20% of eligible nurses) and six observations. Six different clinical nurses were observed completing the SBIRT process. The study themes aligned with the DSF's major elements and characteristics of intervention, practice setting, and ecological system (see Table 1). Tailoring the intervention to the unit culture evolved and was vital to sustainability. Primary support

roles included the NPD educator, charge nurse, and peers. When the intervention was introduced, nurses questioned whether they were the best clinicians to complete the process based on the scope of nursing practice. Clinician overlap in responsibilities, the time to deliver the intervention, clinician confidence delivering the intervention, and impact to the workflow at the unit and clinician levels were noted as potential negative influences for sustainment. The nurses' approach to the intervention and perceptions of the patient's response warrants further investigation to best support nurses with the SBIRT process. Two nurses stated they valued the intervention and the impact on patient care. Delivering SBIRT was perceived as *mandatory by an outside market force*. The intervention was primarily viewed as a task to be checked off a list rather than the use of a tool that informs the patient's plan of care. Initial training/education was valued by the nurses as it was customized to the learner, and ongoing booster education enhanced content retention.

Table 1

DSF Major Elements & Study Themes

DSF Major Element	DSF Element Characteristics and Study Themes
Intervention	<p>Components</p> <ul style="list-style-type: none"> • Process specifics: time, overlap, responsibility discrepancy • Lack of confidence with the <i>Brief Intervention</i> component <p>Practitioners</p> <ul style="list-style-type: none"> • Intervention and nursing scope of practice • Valuing the intervention • Nurses approach to the patient when delivering the intervention • Nurse perception of patient response to intervention <p>Delivery platform</p> <ul style="list-style-type: none"> • Application of process, unit flow, and workflow
Practice Setting (Context)	<p>Information systems</p> <ul style="list-style-type: none"> • Electronic health record limitation <p>Organization culture, climate, and structure</p> <ul style="list-style-type: none"> • Intervention as a task • Human capital support • Structural support <p>Training</p> <ul style="list-style-type: none"> • Classroom training format deemed ineffective • Education hybrid development <p>Supervision</p> <ul style="list-style-type: none"> • Accountability and audits
Ecological System	<p>Market forces</p> <ul style="list-style-type: none"> • Intervention adoption as a healthcare system research study

Intervention: Components

Process specifics included time, responsibility overlap, and discrepancy. The additional time SBIRT takes during the admission assessment and how this “can add up

to setting me back somewhat” was voiced as a sustainment barrier. However, a discrepancy was noted when another nurse stated the intervention was “very quick and easy.” This discrepancy warrants further investigation to ensure intervention fidelity and provide support to nurses who take longer than expected to deliver the intervention. Time estimates for screening and brief intervention were included in the training.

Part of SBIRT includes screening, intervention, and referral for patients who use tobacco. Respiratory therapy clinicians provide a similar service to patients, and one nurse pointed out the redundancy and overlap in responsibilities. Overlap in responsibilities is a threat to sustainability because both respiratory therapy clinicians and clinical nurses could stop doing the intervention because of the redundancy, then, the patient would not receive this valuable intervention. Both professions engaging the patient in smoking cessation assessment and interventions could lead to patient frustration. Processes should be put in place to help nurses shift the responsibility for delivery of SBIRT to an interprofessional clinician when indicated.

An SBIRT process discrepancy also was noted during the interviews indicating that different clinicians were responsible for components across settings. One nurse stated that if a patient screens in for a brief intervention, the primary nurse hands this responsibility to the charge nurse. Other nurses stated that the patient’s primary nurse completes the entire SBIRT process, including the brief intervention if indicated. Again, this discrepancy could lead to less-than-optimal patient outcomes and gaps in quality care.

Lack of confidence with the *brief intervention* component was noted. Half of the interview participants stated they did not feel comfortable conducting the brief

intervention component of SBIRT, which is accomplished through a motivational interviewing technique. Clinical nurses complete the screening for substance use, risky alcohol use, and tobacco use for all patients; however, the brief intervention is completed only if the patient scores at a certain level. Nurses stated that patients on the unit do not often need a brief intervention; therefore, sustaining the brief intervention component of SBIRT was voiced as a challenge. During one observation, a patient started to answer questions in a way that would cause them to screen in for a brief intervention related to alcohol use. Mid-way through the screening, the patient asked the nurse to change responses to previous questions because they did not have a problem with alcohol. The final screening score was not in the brief intervention range; therefore, the nurse did not conduct the brief intervention. Nurses stated they did not remember much about this part of the training and did not have the tools they need for the brief intervention; therefore, a lack of confidence is compounded by low volume and the need for additional education.

Intervention: Practitioners

Considering the *intervention and nursing scope of practice*, nurses voiced initial concern that they were not the most appropriate caregiver to engage the patient in the SBIRT process. Feelings of anxiety were present when SBIRT was introduced to clinical nurses and during training. After nurses attended training and applied the SBIRT process to patient care, concerns and anxiety dissipated. One nurse stated, “Nurses realized they were not being asked to do that much.” Another participant commented, “Once [I] did a couple, it was, oh this is not as bad as [I] thought.” Addressing scope of practice concerns early in the implementation process promoted sustainability.

Valuing the intervention was noted as a few nurses saw the value of SBIRT and voiced excitement about nurses leading the intervention and its impact on patient care, which enhanced sustainability.

I really love that we're doing this for our patients and that nurses are liking it, are loving the extra time and effort we are putting into really screening our patients. Yes, most of our population scores a zero, but those that need it do either get the referral or know that okay, I might be backing out but it started that thinking process for our patients. (Study interview)

The interview responses and observations aligned with *how nurses approach patients with the intervention*. Nurses intentionally asked the questions in a very casual way, stating that they ask everyone these questions. Nurses read the questions verbatim, and one nurse showed the SBIRT form with questions to the patient so they could read along. This nurse stated, "I do like to show them because I think it relieves a little bit of their anxiety, and they kind of understand why I'm asking these questions." This comment demonstrated how the intervention was embedded in the nurse's workflow, which promoted sustainability. During an observation, one nurse paraphrased the questions, which is contraindicated due to the evidence of validity and reliability of asking the questions verbatim and raises concern about intervention fidelity.

Nurse perception of patient response to intervention was noted as all interview participants spoke to their perceptions of the patient response to the intervention. Nurses stated that patients could be uncomfortable or sensitive, become upset, appear anxious, and laugh when asked screening questions, which could be a barrier to sustainability. Nurses believe patients are not always truthful when responding to questions, or patients

might not realize they have a problem and be in denial. Several nurses stated that patients say the answers to these questions are personal and think this is “none of our business.” Additional booster education on the disease of addictions and engaging patients in conversation could support ongoing sustainment. Nurses believe some patients change answers during screening, and this was noted during one observation.

If a patient starts answering questions and they find out that their scores might be higher and we’re trying to do the brief intervention, they go, oh no, no, no, I want to change. I’ve heard that maybe five times. (Study interview)

A few nurses mentioned positive patient responses to the intervention, which should be studied further to understand if the way a patient responds is influenced by how the nurse approaches the SBIRT process.

It’s a new thing we’re doing and trying out, and so if you present it that way, a lot of them [patients] are pretty excited about it. I’ve seen people have a good response, and say “oh well, that’s great, you know we need help in these areas” and so a lot of them respond that way. (Study interview)

Intervention: Delivery Platform

The *application of process, unit flow, and workflow* occurs as most nurses complete the intervention during the patient’s admission assessment; however, it is not uncommon to pass this responsibility on to the next shift. Nurses identified a need to review each patient’s SBIRT status during the change of caregivers/shift report, which increased compliance and sustainability. The word SBIRT was added to the shift change summary sheet with a place for nurses to circle y/n to indicate *yes* or *no* for SBIRT status.

Nurses are intentional about asking the patient screening questions when family members are not present in the room. One nurse stated, “I make it a comfortable, safe environment. I shut the door and not shout where other people can hear.”

Practice Setting/Context: Information Systems

The *electronic medical record* is a limitation. Intervention documentation is on paper because the screening questions are not accessible via the electronic medical record. Nurses voiced this as a significant barrier to completing the process, which could threaten sustainability. “It’s an extra paper, and nothing else is paper.”

Practice Setting/Context: Organization Culture, Climate, and Structure

Intervention as a task was noted as overall, nurses perceived the intervention as a required task for a research study instead of part of the nursing process and an opportunity to enhance the nursing plan of care. One nurse leader stated, “Maybe we rolled it out too much as a task versus its overall purpose.” Nurses frequently spoke to *following the steps*, “I just know people just do it, get the questions asked, and just kind of move on.” Viewing the intervention as a task could threaten ongoing sustainability due to a lack of connection to the broader purpose of impacting the patient’s plan of care and optimizing wellness.

The *human capital support* was demonstrated as a wide variety of roles supported the sustainability of the intervention; NPD educator, fellow nurses, charge nurses, shift coordinator, clinical manager, chief nursing officer, social workers, and case managers all were mentioned during interviews. Primary ongoing support was valued by the NPD educator, charge nurses, and peers. The NPD educator was seen as the “go-to” person for questions about the intervention, and peer support also was vital. The discrepancies in the

SBIRT process voiced by clinical nurses, combined with peers as primary support for the intervention, underscores the importance of ensuring intervention fidelity and having peer intervention champions available when the NPD educator is not accessible.

Nursing leaders customized *structural supports* based on feedback and audit data, which was evident during the observations and interviews and promoted sustainability. The SBIRT form was loaded to the charge nurse folder on a shared computer drive. Binders, including education resources and SBIRT forms, had a dedicated place on the unit. A visual reminder was added to the shift-to-shift hand-off sheet. The SBIRT form is now included with the report sheet from the charge nurse to the primary nurse, making the process “automatic, gets into our brains, second nature.” During implementation, the intervention was included in huddles (i.e., team meetings) and “on the board,” located at the primary nurses’ station. A resource kit with equipment was prepared for each admission and now includes the SBIRT form. One unanticipated barrier to the intervention was float nurses who did not receive training/education. Trained nurses from the medical/surgical unit stated they were comfortable providing the education and support float nurses needed; the NPD educator follows up with float nurses as needed.

Practice Setting/Context: Training

The unit’s *classroom training format was deemed ineffective* due to a lack of nurses signing up for training and being “just not feasible.” “The initial training was challenging because I don’t think we realized how mandatory it was.” A small number of nurses attended the classroom training, and then nurse leaders analyzed the barriers and developed an education hybrid approach that was communicated as mandatory.

Nursing leaders *developed a hybrid education approach* with an electronic learning management system module and face-to-face instruction with the NPD educator. Overall, nurses were pleased with this educational approach and provided feedback that it was quick and convenient, covered the purpose of how to explain SBIRT to patients in a non-judgmental or accusatory way, and “everybody got a pretty personalized education.” One nurse preferred education delivered via the classroom format and stated the extended length of time from classroom education until implementation made adoption difficult. Another nurse stated that additional education on “the why” and long-term implications would have been helpful.

Practice Setting/Context: Supervision

To inform *accountability*, nurse leaders complete documentation *audits*, and follow-up is completed on an individual basis. Audits were done several times a week during implementation and are now more sporadic because of increased compliance. Nursing leaders discovered the need to establish accountability structures for completing training and compliance with the intervention and to put structures and processes in place. Observations of the nurses delivering the SBIRT process were not done and could provide valuable feedback to nurses to increase intervention fidelity and sustainability. Based on the findings of this study, nurses indicated that helpful feedback could include asking the screening questions verbatim, providing tips for using motivational interviewing techniques, and identifying best practices for conversations with patients who are at risk for additions.

Ecological System: Market Forces

The *intervention adoption was part of the large healthcare system research implementation study*; however, it was perceived as an outside force, as demonstrated by the following statements. “This is a research study basically saying you don’t have a choice; we need to do it, and here’s why” and “I don’t think we realized how mandatory it was.” This perception potentially influenced sustainability during the study period; however, it could be considered a sustainability risk after the study concluded. Two nurses saw the value of nurse-led research, which could promote sustainability, “just being involved in research that is nurse-driven is amazing.”

Discussion

Main Findings

The main finding of this ethnographic study is that the sustainment of an EBP intervention is multifaceted and complex. The first research question aligned with the intervention element of the DSF and sought to understand the nurses’ experiences, beliefs, and values of the intervention. When the intervention was first introduced, nurses questioned whether they were the best caregivers to complete the SBIRT process. All nurses completed the screening portion of the process, but discrepancies for some responsibilities were noted. The nurses’ approach to the intervention and the perceptions of the patients’ responses warrants further investigation to determine how to best support nurses with the process. Leaders and clinical nurses who exemplify professional governance are accountable and autonomous, fulfill professional obligations, participate in decision-making, engage in collateral relationships, and influence empirical outcomes (Clavelle et al., 2016). Future research could add value to the nursing profession by

comparing sustainability and nurses who demonstrate or lack professional governance behaviors. Two nurses stated they valued the intervention and the impact it will have on patient care. Most viewed the intervention as a task to be checked-off a list. Conflicting values of an intervention may undermine or compromise EBP implementation and sustainability. Mathieson et al. (2019) discussed the complex relationship between the values nurses place on an intervention, their skill set, and preparation to integrate the intervention into practice. Mathieson et al. go on to explain that the practice setting content plays a key role in adoption of an EBP, but nurses make decisions as individuals.

The second research question aligned with the practice setting element of the DSF and asked about environmental structures that influence sustainability. Customizing the intervention to the unit culture evolved and was crucial for sustainment. Visual reminders, standardized flow, and processes all helped embed the intervention, as noted previously in the structural support section of the results. Intervention education/training was a critical theme that all interview participants discussed. Education for those expected to implement the practice intervention is a vital component of comprehensive implementation and sustainment plans (Mathieson et al., 2019; Mayer et al., 2011; Swain et al., 2010) and, based on study results, should address clinician values and beliefs. Swain et al. (2010) and Mayer et al. (2011) reported that ongoing training was essential in sustaining practice interventions due to multiple factors. A multidimensional approach to intervention sustainment includes ongoing education, immediate positive reinforcement, and frequent feedback. Learning organizations have a streamlined culture that enables knowledge sharing, continuous evaluation of actions, including the impact, and constant learning to improve outcomes (Forrest et al., 2017). The ethnographic study

supports the DSF theory and leaders developing a learning organization culture by continually assessing and modifying interventions based on the organization context and outside market forces or the ecological system (Chambers et al., 2013).

The final research question also aligned with the practice setting of the DSF and sought to identify who supported nurses with the intervention and how nurses received support. Primary support roles included the NPD educator, charge nurse, and peers. Results underscore the importance of ensuring all nurses on the unit receive education and the resources to answer questions as they arise in the moment for mutual support. The NPD educator was the “go-to” person for questions about the intervention. The presence of clinical practice and quality improvement experts influenced sustainability for Huang et al. (2017) and Lukas et al. (2010). Experts coaching nurses in clinical reasoning and process improvement may positively influence their ability to adapt an EBP intervention over time effectively. The intervention should be viewed as a shared process among many stakeholders where there is ongoing experimentation and analysis of the intervention in the practice setting and ecological system (Chambers et al., 2013). Engaging quality improvement experts and other disciplines, such as respiratory therapy, could enhance the sustainability of SBIRT and the value of the process.

Exploring nurse leaders’ experiences, beliefs, and values may be crucial for them to communicate expectations and accountability for intervention education and sustainment. The participants discussed leaders communicating education expectations and SBIRT compliance. The influence of leadership on sustainability is a predominant theme found in the literature (Aarons et al., 2015; Lukas et al., 2010; Mayer et al., 2011; Swain et al., 2010); implementation will be challenging if the leader does not value the

intervention (Mathieson et al., 2019). To effectively lead an EBP intervention, leaders must develop competencies in communication, role modeling, coaching, mentoring, accountability, priorities-setting and connecting interventions to strategic goals, maintaining organizational focus, collaboration, teamwork, and valuing continuous improvement (Lukas et al., 2010; Mayer et al., 2011). Swain et al. (2010) add that support and commitment from top-level leaders down to front-line staff influences sustainability.

Limitations

This study had several limitations. The research was conducted in one small, acute care facility; therefore, findings may not be generalizable to other facilities and practice settings. Only one type of practice intervention (SBIRT) was included in the study. Some nurses perceived patients were not open and receptive to screening questions about alcohol use, substance use, and tobacco use that influenced how the intervention was delivered. Another intervention might evoke different beliefs and values that would influence implementation and sustainability. A third limitation is that a nurse executive led the study in the health system. Strategies were employed to decrease this limitation; however, nurses may have responded differently due to the researcher's role. This limitation also could be a strength because the researcher was familiar with the health system culture and larger SBIRT study. A final limitation is that the intervention was a health system priority and part of a system-wide research study. Nurses felt obligated to comply with the intervention because of external pressures to continue using SBIRT. An EBP intervention that does not have external pressures might result in different sustainability outcomes.

Conclusion

The study results add to the sustainability research agenda by underlying the importance of addressing clinician experiences, beliefs, and values of an EBP intervention and strategically planning environmental structures and supports. Implications to healthcare leader practice include addressing each element of the DSF to plan for sustainability during implementation and beyond. Clinician overlap in responsibilities, the time to deliver the intervention, clinician confidence in delivering the intervention, and a thorough assessment of impact to the workflow at the unit and clinician levels must be considered. The purpose of an EBP intervention often is communicated; however, this study brought out the importance of nurses who deliver the clinical intervention also valuing the intervention. Initial training/education should be customized to the learner, and ongoing booster education could enhance content retention. Finally, if delivering an EBP intervention is perceived as mandatory by an outside market force, delivering the intervention may become a task to be checked off a list instead of a tool that informs the patient's plan of care.

Results of this study provide a solid foundation for sustainability to build on for future studies. Additional research opportunities include understanding why practice interventions were sustained or not sustained from a mixed methods perspective. The composite of variables that support sustainability in various practice settings will be different based on the organizational context. Further research will help determine the most influential variables for sustainability. Applying the study design and DSF to different EBP interventions, diverse healthcare systems/facilities, and different practice settings will help refine the variables that genuinely promote sustainability. Studying

EBP intervention sustainment and nursing professional governance attributes will provide insights into the characteristics of professionalism that support sustainability. Future research studies should engage members of the interdisciplinary team that are practice intervention stakeholders. As healthcare stakeholders continue to focus on care across the continuum, opportunities to engage patients and community members in research related to sustainability will emerge.

CHAPTER 3: EXAMINING NURSING PROFESSIONAL GOVERNANCE AND PATIENT OUTCOMES

CLABSI are the costliest hospital-associated infections and linked to increased morbidity and mortality. Estimates of costs are near \$50,000 per infection (Agency for Healthcare Research and Quality [AHRQ], 2017). More important, CLABSI increases intensive care patient mortality by an average of 18%, which means that 28,000 additional deaths occur annually in the United States (AHRQ, 2017; Haddadin, 2020) from this preventable infection. Nurses play a critical role in implementing evidence-based interventions to reduce the risk of CLABSIs; however, the professional practice environment may be an important, yet understudied, contribution to patient outcomes, and specifically CLABSI. Krein et al. (2010) examined implementation strategies in six United States hospitals and found that components of positive organizational context such as active and engaged leadership, a commitment to patients, and a culture that was united in improving patient care, had better CLABSI outcomes.

Hospital CLABSI prevention programs and EBP strategies are published widely; however, data suggest that up to 70% of organizational change, like CLASBI EBP guidelines, fail to be sustained in practice (Beer & Nohria, 2000; Daft & Noe, 2000; Pennsylvania Patient Safety Advisory, 2010; Valencia et al., 2016). An international research study found that physicians and nurses providing direct patient care in intensive care units were aware and interested in CLABSI prevention however lacked adherence to EBP guidelines and only a few knew their unit CLABSI rate (Valencia et al., 2016). Reminding professionals to *try harder* to comply with EBP policies and guidelines (Edwards et al., 2015; Zachariah et al., 2014) does not result in better outcomes.

Contemporary sustainability frameworks include healthcare professionals as important components that influence sustainability and outcomes (Chambers et al., 2013; Shelton & Lee, 2019); however, attributes of these professionals and the influence of practice settings have not been well studied. Understanding to what extent nursing professional governance attributes influence patient outcomes in different practice settings could help researchers develop recommendations that lead to cost-effective patient outcomes.

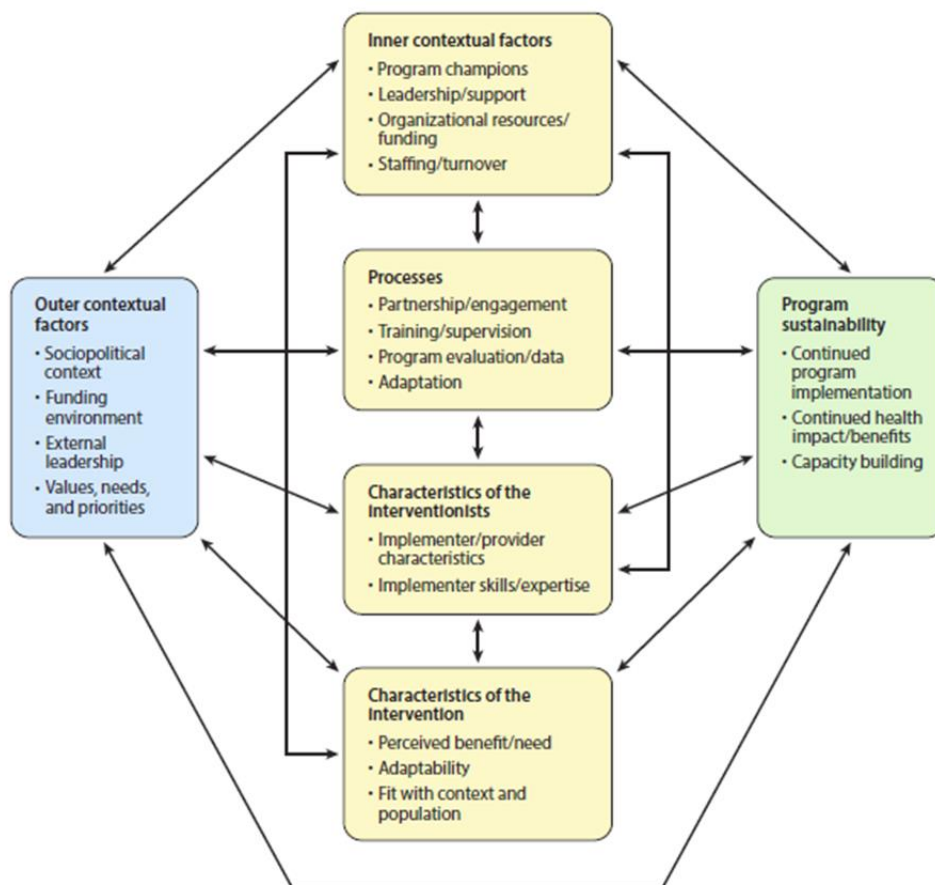
The attributes of professional practice accountability, professional engagement, key stakeholder partnerships, and decision-making based on evidence (Porter-O'Grady & Malloch, 2017) are necessary for professionals to effectively govern their profession (Porter-O'Grady, 2019). These attributes collectively are part of structural empowerment models that have evolved from shared governance into the contemporary concept of nursing professional governance (Clavelle et al., 2016). Nursing professional governance is a framework of professional attributes that emerge when organizations have structures and processes in place to support professional governance behaviors that result in positive outcomes for nursing, patients, and the organization (Clavelle et al., 2016; Porter-O'Grady & Clavelle, 2020); however, patient outcomes and nursing professional governance attributes have not been empirically tested. The purpose of this study, a secondary analysis of cross-sectional data, was to examine associations between nursing professional governance attributes and patient care outcomes for unit-level CLABSI benchmarks.

This study was guided by the DSF and ISF conceptual frameworks (see Figures 1 and 2). The DSF and ISF provide clarity and structure to the numerous variables that influence sustainability and outcomes (Chambers et al., 2013; Shelton et al., 2018). The

DSF considers the fact that care delivery interventions occur in different practice settings and broader ecological systems; therefore, the optimal context for each must be determined (Chambers et al., 2013). This framework starts with the intervention element that includes professionals as one sub-component. The ISF includes characteristics of the professional delivering the intervention and inner contextual factors as a key influence on sustainability and outcomes (Shelton et al., 2018). Nursing professionals are an important part of these frameworks; however, how professional attributes influence outcomes has not been well studied.

Figure 2

ISF Integration



Note. Illustration of the ISF that illustrates the integration of professionals delivering an intervention in an environment where key characteristics have an impact on sustainability and outcomes. Reprinted from “The Sustainability of Evidence-Based Interventions and Practices in Public Health and Health Care,” by R. C. Shelton, B. R. Cooper, and S. W. Stirman, 2018, *Annual Review of Public Health*, 39, 66. <https://doi.org/10.1146/annurev-publhealth-040617-014731>. Copyright 2018 by Rachel C. Shelton. Reprinted under a Creative Commons Attribution 4.0 International License.

Methods

Design

The researcher used a secondary analysis of cross-sectional data merged from two existing data sets (the professional governance scale survey [Porter-O’Grady & Clavell, 2020] and unit CLABSI data). Data from the professional governance scale survey were collected in July 2019. CLABSI data were collected by each hospital unit for July 2019. The study was approved by the Indiana University Institutional Review Board for this quantitative study (see Appendix E).

Sample

The study sample included eight acute care hospitals within a large Midwestern healthcare system that employs approximately 9,000 nurses. The type of acute care hospitals included five community hospitals and three adult and pediatric academic health centers. Acute care hospitals that collect data on CLABSI were chosen for the study due to a wide variety of practice settings and the availability of secondary data. Seven of the hospitals were American Nurses Credentialing Center-Magnet[®]-recognized and one hospital was in the application process for the Pathway to Excellence[®]

recognition. Ninety-two inpatient nursing units were eligible for the study and categorized by the Center for Disease Control's (CDC) National Healthcare Safety Network unit criteria. Exclusion criteria included units with missing CLABSI data for the months of June and July 2019 and units with no survey responses to the professional governance scale survey.

Procedures – Data Collection

Survey data were collected from clinical nurses in July 2019 as part of national research on the professional governance scale (Porter-O'Grady & Clavelle, 2020). All clinical nurses received a link to the survey and were given the opportunity to participate. Clinical nurses from eight inpatient acute care hospitals were included in the study.

The National Healthcare Safety Network unit definitions were used to identify each unit type then similar units were grouped into three categories: (a) adult wards and mixed acuity units ($n = 48$), which included 327 nurse responses to the professional governance scale survey; (b) adult critical care units, step-down units, and specialty care areas ($n = 22$), which included 202 nurse responses; and (c) pediatric units ($n = 21$), which included 221 nurse responses.

Measures

Respondent Characteristics

Information available to describe the sample included years since nurse licensure, years on unit, years at the hospital, and education level. These variables were aggregated at the unit level by CLABSI outcome. The three variables measuring years of experience since licensure, on the unit, and in the hospital were all treated as continuous variables. Education level also was treated as a continuous variable and included the number of

nurses who indicated their education level. Both nurses with a diploma or ASN degree were grouped into the ASN level; only BSN nurses were included in the BSN level; and the MSN level included nurses with an MSN, DNP, or PhD.

Nursing Professional Governance Attributes

The attributes of accountability, professional obligation, decision-making, and collateral relationships were measured using the four subscales of the professional governance scale (Clavelle et al., 2016; Weston et al., 2018). Each item is rated on a seven-point Likert agreement scale from 1 (*disagreement*) to 7 (*agreement*) and scores summed for each scale. Higher scores on the accountability attribute reflect nurses actively engaged in process improvement using standards of the profession.

Accountability includes engaging in dialogue and advocating for the nursing profession and patients/families (Clavelle et al., 2016). Nurses with higher scores for the professional obligation attribute seek knowledge and growth opportunities, are mindful of legal and ethical principles that influence practice, and are engaged in their profession, organization, and community (Clavelle et al., 2016). The decision-making attribute involves nurses using their best clinical judgment based on EBP knowledge to make informed choices (Clavelle et al., 2016). Higher scores for this attribute reflect nurses' ownership of practice decisions, problem identification, decision implementation, and outcome evaluation. The collateral relationships attribute includes having shared knowledge, goals, and trust with interdisciplinary team members as well as shared accountability and active participation in joint meetings (Clavelle et al., 2016). These subscales have evidence of reliability and validity and the Cronbach alpha estimates for the present study, as reflected in Table 2, were all greater than 0.9.

Table 2

Professional Governance Scale Instrument for Present Study

Attribute	Number of Items	Cronbach's alpha
Accountability	10	0.956
Professional obligation	12	0.970
Decision making	14	0.968
Collateral relationships	7	0.935

CLABSI Outcomes

The CLABSI benchmark was derived from the unit/location cumulative attributable difference metric and standardized infection ratios (CDC, n.d.) and treated as a dichotomous variable. This information is provided for each location in the CDC's targeted assessment EBP-based practice CLABSI prevention bundle in third quarter of 2017. This bundle includes EBP interventions that prevent CLABSI infections; therefore, units that sustained the bundle should have no, or very low, CLABSI infections. If the unit CLABSI numbers were performing at benchmark, the researcher coded the unit as 1, which may indicate sustainment of the bundle. The researcher coded nursing units underperforming the CLABSI benchmark as 0, which may indicate unsuccessful sustainment. Sustainment is recognized as continued use of the practice two or more years after implementation (Shelton et al., 2018).

Data Analysis

Continuous measures were summarized by mean and standard deviation; while education level was summarized by counts and percentages. Independent-samples *t*-test was used to make comparisons between nurse characteristics data by CLABSI benchmark. As a preliminary step, multi-level logistic regression models were fitted since units were nested within hospitals. The multi-level modeling analysis revealed that

infection counts were too sparse, and the data had insufficient variation in unit level CLABSI counts to allow for estimation of random hospital intercepts; therefore, data were analyzed using correlations at the unit level. The data analysis plan entailed using univariate logistic regression to describe how the independent variables were related to unit CLABSI benchmarks. IBM SPSS Statistics for Windows (version 25) was used to complete the statistical analysis. Statistical significance was determined using a *p*-value equal to or less than 0.05.

Results

The final sample included 91 units reporting data for both the professional governance scale survey and CLABSI data. Table 3 identifies nurse respondent characteristics data for units that were below and above the CLABSI benchmark. The mean years of experience ranged from 4.86 for nurses on their current unit in the above CLABSI benchmark grouping to 7.75 years since RN licensure in the below benchmark grouping. There were 123 nurse respondents for ASN level of education, 546 for BSN level, and 40 in the MSN education level. There were no statistically significant differences between unit groupings as determined by independent-samples *t*-tests. However, for units that were at or above the CLABSI benchmark, the mean years of experience was lower and there were more BSN-prepared nurses.

Table 3

Nurse Respondent Characteristics Data by Unit CLABSI Outcome

Nurse Level Variables	CLABSI Below Benchmark	CLABSI at or Above Benchmark	<i>p</i> Value
Education	<i>N</i> = Nurse Respondents	<i>N</i> = Nurse Respondents	
ASN	11 (23%)	112 (17%)	0.68
BSN	34 (71%)	512 (77%)	0.54
MSN	3 (6%)	37 (6%)	0.96
Unit Level Variables	<i>N</i> = 7 Units	<i>N</i> = 84 Units	0.76
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Years since RN licensure	7.75(6.5)	7.24(3.97)	0.76
Unit employment, years	5.66(4.10)	4.86(2.72)	0.47
Hospital employment, years	6.55(5.06)	5.62(3.50)	0.52

Professional Governance Scale

The mean scores for each of the professional governance attributes were relatively high across unit groupings ranging from 4.45 to 4.93 (see Table 4). Although not significantly different, units that were at or above the CLABSI benchmark had the highest mean scores across all four attributes (see Table 4).

Table 4

Professional Governance Attributes by CLABSI Outcome

Professional Governance Attribute Variables	CLABSI Below Benchmark	CLABSI at or Above Benchmark	<i>p</i> Value
	<i>N</i> = 7 Units	<i>N</i> = 84 Units	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
Accountability	4.65(0.20)	4.93(0.65)	0.28
Professional Obligation	4.45(0.47)	4.73(0.65)	0.26
Relationships	4.72(0.46)	4.83(0.62)	0.64
Decision-making	4.69 (0.51)	4.90 (0.63)	0.38

CLABSI Outcomes and Connections between CLABSI Outcomes and Professional Governance Attributes

For the time frame under study, 84 units met the CLABSI benchmark or had lower occurrences of CLABSI, and seven units fell below the CLABSI benchmark.

Due to the descriptive nature of the study, all independent variables were evaluated using univariate logistic regression analysis. Table 5 identifies the univariate logistic regression output for each independent variable alone. Regression coefficients were included as loose indicators for changing probability and to confirm finding from the correlation analysis. Univariate logistic regression was performed to ascertain the effects of professional governance domain scores; years of experience since licensure, on the unit, and at the hospital; and education level, on the unit's likelihood to be below or at/above the CLABSI benchmark. None of the predictor variables were statistically significant.

Table 5

Univariate Logistic Regression Results Predicting Likelihood of CLABSI Outcome

Independent Variables	Log Odds	<i>p</i> Value	OR ^a	95% CI ^b for OR ^a
Accountability	0.68	0.28	1.97	0.58, 6.64
Professional obligation	0.68	0.26	1.98	0.61, 6.43
Collateral relationships	0.31	0.63	1.37	0.38, 4.85
Decision-making	0.55	0.38	1.74	0.51, 5.95
Experience since licensure	-0.03	0.75	0.97	0.81, 1.16
Experience on unit	-0.09	0.47	0.91	0.71, 1.17
Experience in hospital	-0.06	0.52	0.94	0.78, 1.13
ASN	-0.11	0.68	0.90	0.55, 1.47
BSN	0.06	0.54	1.06	0.88, 1.29
MSN	0.03	0.97	1.03	0.33, 3.22

Note. ^aOdds Ratio. ^bConfidence Interval.

Discussion

Main Findings

This secondary analysis is novel because it is the first study to examine associations between attributes of professional governance and CLABSI outcomes. Examining nursing professional governance attribute survey results provides insight into how nurse accountability, professional obligation, collateral relationships, and decision-making may vary by patient outcomes. This study also was a way to examine the influence of characteristics of the interventionists and inner contextual factors from the ISF on the sustainability of CLABSI prevention interventions.

Directionally, increasing professional governance attribute scores may be related with an increased likelihood of the unit being at or above the CLABSI benchmark. Years of experience may be linked with an increased likelihood of the unit being below the CLABSI benchmark. Units with more ASN-prepared nurses may be related with an

increased likelihood of the unit being below the CLABSI benchmark and more BSN and MSN nurses could be associated with an increased likelihood of the unit being at or above the CLABSI benchmark. However, all regression p -values are above 0.05; therefore, study results must be interpreted with caution as no significant associations were identified. Statistical power was a concern because only seven units were below the CLABSI benchmark, and 84 units were at or above the CLABSI benchmark.

The main finding in this study was that there were non-significant trends for all four professional governance attribute sub-scales, and these scores were higher among units also achieving the CLABSI benchmark. This was a surprising finding considering literature that supports aspects of professional governance, performance, and patient outcomes. For example, Alavi et al. (2015) reported that effective relationships with interdisciplinary team members was critical for professional nursing performance. In addition, Savage et al. (2018) conducted a retrospective interrupted time series research study and reported that nurse engagement in multidisciplinary focus groups and collaboration with diverse stakeholders resulted in sustainability of low CLABSI rates in pediatric units. Engagement and collaboration with interprofessional colleagues are characteristics of the collateral relationships attribute. However, associations between the professional governance attributes and patient outcomes have not been studied; therefore, this type of literature is minimal. The findings in this current study could be due to several factors including unequal groupings, data homogeneity, and low statistical power.

Units that were below the CLABSI benchmark had lower professional governance attribute scores and nurses with the most years of experience, with an average of 5.7

years on the unit. These nurses were employed well before the CLABSI prevention bundle intervention change was implemented in 2017. Skills in change management are characteristics of the accountability attribute and inherent to the DSF that views sustainability as an ongoing dynamic process (Chambers et al., 2013). Organizational structures and processes that support nursing professional governance attributes positively influence nursing, patient, and organizational outcomes (Clavelle et al., 2016; Porter-O'Grady & Clavelle, 2020), which is more likely to be true for units at or above the CLABSI benchmark; however, more research is needed. The units below the CLABSI benchmark may benefit from establishing structures that enable nurse accountability and give nurses the autonomy to design and modify practices which result in quality patient outcomes (Clavelle et al., 2016; Leclerc et al., 2020).

Results from the current study suggest that as nurses gain more years of experience, there may be a connection with the unit being below the CLABSI benchmark, which was an unexpected non-significant finding and could be the result of unequal groupings. However, research demonstrates that most nurses do not consistently use EBP (Eaton et al., 2015; Saunders & Vehviläinen-Julkunen, 2017). Having more years of clinical experience is not a predictor of high-quality decision-making (Craske et al., 2017) and decision-making is strongly influenced by beliefs and not necessarily supported by evidence (Tume et al., 2017). As the number of years of experience increases, understanding the attributes of nurses who use EBP interventions could help researchers to develop recommendations that lead to better patient outcomes and more affordable healthcare. Larger studies are needed to validate connections and determine if there are relationships between years of experience and patient outcomes.

Based on the attribute definitions described previously and the literature, one could deduce that there could be a connection between units that are above CLABSI benchmarks and higher professional governance attribute scores. However, the results of the current study must be interpreted with great caution due to the correlational approach (Hung et al., 2017) and lack of significant findings. This correlational study provides a foundation for further research on nursing professional governance attributes, nurse tenure, and patient outcomes. Empirical evidence that supports the relationship between professional governance attributes and patient outcomes is lacking. Future research also could include weighing the professional governance attributes differently based on the outcome of interest.

Limitations

The data within the current study were collected from nine different acute care hospitals, 91 different units or practice settings, and 750 nurses, which could have resulted in variability in the data. However, all hospitals were in the same Midwestern healthcare system and all except one were American Nurses Credentialing Center Magnet®-designated, which may have resulted in data homogeneity. Ideally, multi-level modeling would be used for this type of research, but there was not enough variability in this data set to conduct this type of analysis. Future research would add value to this research agenda by examining nursing professional governance survey results and patient outcomes from hospitals and practice settings with varied organizational contexts. Statistical power was low as a result of only seven units being below the CLABSI benchmark. These limitations could have contributed to the low number of units being below the CLABSI benchmark. Another limitation of this study was that meeting or not

meeting the CLABSI benchmark was used as a proxy for the sustainment of a CLABSI-prevention EBP bundle. Other factors can contribute to a central line bloodstream infection even when bundle components are followed. Response bias and social desirability bias could have influenced responses to the professional governance scale survey. Nurses who responded to the survey could be different from nurses who did not respond, resulting in nonresponse bias. Despite these limitations, this is the first study to examine nursing professional governance survey results and patient outcomes and provides considerations for future study designs and methods of measurement to examine professional attributes influence on empirical outcomes.

Conclusion

Being the recipient of healthcare in the United States puts patients at risk for the 3rd leading cause of death—medical errors (Makary & Daniel, 2016), which includes CLABSI. Understanding clinician attributes that promote the sustainability of EBP and result in quality patient outcomes could save lives. Preliminary data from this study found potential connections between nursing professional governance attributes and patient outcomes; however, interpretation of findings must be quite cautious until further research is completed (Hung et al., 2017). Nurse tenure and patient outcomes is an area for exploration as well as examining nursing professional governance attributes by clinical specialty. Providing health care with the latest evidence improves outcomes and decreases costs; however, implementing an EBP change requires significant resources (Savage et al., 2018), and efforts could be meaningless without structures in place to support accountability, professional engagement, key stakeholder partnerships, and decision-making based on evidence.

CHAPTER 4: SUSTAINABILITY AND EBP CHAMPION RESPONSIBILITIES: SCOPING REVIEW

The United States spends a significant amount of fiscal resources on health care—roughly twice as much as other comparable Organization for Economic Cooperation and Development countries (Kamal et al., 2020) yet has poorer health outcomes including life expectancy, suicide rates, chronic diseases, and obesity (Tikkanen & Abrams, 2020). Healthcare delivery based on the latest evidence improves outcomes and decreases cost; however, implementing a change based on EBP requires substantial resources, including adequate structures and processes to support sustainment (Chambers et al., 2013).

The sustainment of EBP is arduous and complex (Breimaier et al., 2015); consequently, evidence suggests that sustainability is a persistent challenge across various practice settings (Shelton et al., 2018). Up to 70% of organizational change fails to be sustained (Beer & Nohria, 2000; Daft & Noe, 2001). Sustainability is realized when the continued use of an intervention to achieve desirable outcomes becomes the norm (Maher et al., 2017; Shelton et al., 2018). One hallmark of successful healthcare organizations is the ability to sustain effective improvement initiatives, or EBPs, resulting in increased quality and patient experience at a lower cost (Maher et al., 2017).

The EBP champion role is an effective strategy in enhancing sustainability. In a systematic review of EBP sustainability strategies, champions were identified as a facilitating factor in sustainment (Hailemariam et al., 2019). EBP champions are among the emerging factors associated with sustainability across multiple settings and contexts (Shelton et al., 2018). Champion support is very influential on sustainability (Shelton

et al., 2018); however, neither a standard role nor articulated responsibilities of an EBP champion exist. In the current study, an EBP champion is a healthcare professional who promotes EBP interventions at the point of care delivery. Gaps in the literature about the EBP champion role and a lack of clarity can cause frustration and less than optimal outcomes. Establishing clarity for EBP champion responsibilities may result in more engaged and effective champions, leading to EBP sustainment and improved outcomes.

Articles that included EBP champions as a strategy for sustainability were considered for this scoping review. Two important concepts, *champion* and *sustainability*, were combined to focus on champion responsibilities and professional accountability. A scoping review approach was selected to review EBP champion responsibilities to map the existing body of literature. There is a dearth of literature on EBP champion responsibilities and sustainability. The EBP champion role in clinical practice is heterogeneous and complex; therefore, a scoping review allowed a summary, as well as identified knowledge gaps in the literature.

Methods

Study Design

The Arksey and O'Malley (2005) framework recommends four reasons to undertake a scoping review: (a) to examine the extent, range, and nature of research; (b) to determine the value of undertaking a full systematic review; (c) to summarize and disseminate the research findings; and (d) to identify research gaps in the existing literature. For the current study, the aim was to examine the current literature, summarize and disseminate findings, and identify gaps in the literature.

Pham et al. (2014) highlighted the five key scoping review phases that are used to report the review process and findings. These phases include: (a) identifying the research question, (b) identifying relevant studies, (c) selecting studies, and (d) charting the data that will be covered in this section. The Results section presents the fifth phase that collates, summarizes, and reports the results.

Identifying the Research Question

The following research question guided the review, “What is known from the literature regarding EBP champion responsibilities, what they do, and what actions they take to enhance and sustain EBP?”

Retrieving Relevant Studies

The researcher conducted a literature review to identify EBP champion responsibilities that influence sustainability of EBPs. The search strategy protocol was developed by the investigator in consultation with an academic librarian.

The electronic databases CINAHL, MEDLINE/PubMed, Embase, and PsycInfo were searched to locate literature specific to EBP sustainability that included EBP champion responsibilities. The search strategy used keywords and Medical Subject Headings (MESH), including: “nursing practice, evidence-based,” and “sustain*” for the CINAHL, MEDLINE, and PsycInfo databases. These databases were selected to ensure a comprehensive search of nursing literature that included the EBP champion role. In addition, publication years from 2000 to November 2020 were included to find contemporary studies. First introduced in the nursing profession in 1992 (Chrisman et al., 2014), EBP’s champion role did not gain momentum until the early 2000s. The search included published literature and excluded gray or unpublished literature.

Eligibility Criteria

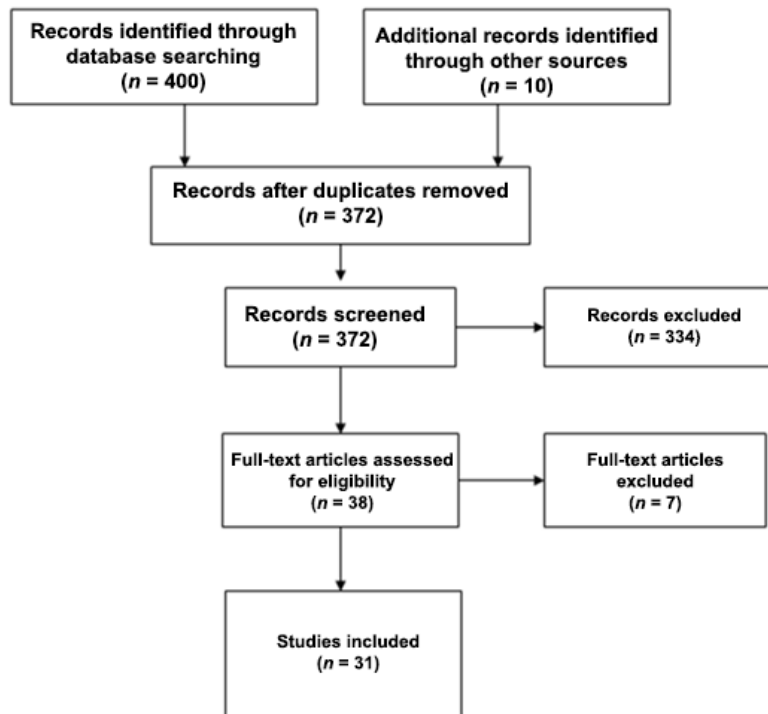
The article review process involved two stages in assessing relevance. First, the inclusion criteria included various study designs and quality improvement reports. Non-standard sources of information such as editorials, research briefs, and commentaries also were considered. EBP champion responsibilities have not been widely studied as primary research; therefore, a wide variety of literature was needed. As a strategy for EBP sustainment, the champion role was an inclusion criterion, and only articles published in English were considered. Previously published literature reviews were excluded to focus the results on primary studies and quality improvement projects. Articles that did not include specific EBP intervention(s) were excluded to enhance the review's pragmatic results. This criterion excluded articles of EBP champion program development and general implementation of the EBP champion role.

Select Studies

The search identified 400 articles; duplicate studies were omitted. In the second stage, article titles and abstracts were reviewed against the eligibility criteria established in the first stage of the review process. This second review narrowed the number of articles to 28 for this stage. After a full-text review, seven articles were further excluded. Reference lists of the remaining 21 articles were screened, and 10 additional articles met inclusion criteria. Thus, a total of 31 articles were included for review. Figure 3 outlines the flow diagram of study literature selection.

Figure 3

Flow Diagram of Study Literature Selection



Note. The flow diagram illustrates the flow review by the researcher to result in the 31 articles retained by the researcher for the scoping review.

Charting the Data

The 31 articles were reviewed, and data were extracted with an investigator-developed tool. The tool includes categories to classify articles by author, year of publication, research design, aims/objectives, setting, and sample. The kind of EBP intervention(s) and the length of sustainment were extracted. The type of EBP champion, current role, and responsibilities also were extracted. Finally, results, findings, lessons learned, and keywords were categorized. Theoretical models or frameworks included in each article also were included in the tool.

The data were collated, and themes were identified to extract relevant data that addressed the study question. The content of each article was analyzed and summarized through the data extraction tool by investigator. The extracted data were reviewed by the investigator and a colleague independently and collectively to ensure the accuracy and consistency of findings. Discrepancy in the data was discussed until consensus was reached. In keeping with the scoping review approach, the quality of evidence sources was not appraised.

Results

The results section presents the final phase of the scoping review approach.

Characteristics of Included Articles

Table 6 presents the general characteristics of the included articles. Included articles were published from 2004 to 2020. Just over one-third ($n = 11$) were published in the latter five years (Allen et al., 2018; Barnes et al., 2018; Becker et al., 2020; Borczynski & Worobel-Luk, 2019; Hooker & Taft, 2016; Levin et al., 2016; Lin et al., 2020; McGahee, 2016; Robinson et al., 2018; Savage et al., 2018; Wainwright & Wright, 2016). Just over one-half ($n = 16$) of the articles were published in journals from the United States (Barnes et al., 2018; Becker et al., 2000; Beinlich & Meehan, 2014; Borczynski & Worobel-Luk, 2019; Butler et al., 2012; Campbell, 2008; Cosper et al., 2015; Garza et al., 2006; Griffin et al., 2007; Holley et al., 2005; Kirk et al., 2015; Levin et al., 2016; McGahee, 2016; Paice et al., 2006; Robinson et al., 2018; Savage et al., 2018). A significant majority of the articles ($n = 22$, 71%) were from the acute care practice setting (Allen et al., 2018; Barnes et al., 2018; Beinlich & Meehan, 2014; Borczynski & Worobel-Luk, 2019; Campbell, 2008; Cosper et al., 2015; Garza et al.,

2006; Griffin et al., 2007; Holley et al., 2005; Kirk et al., 2015; Levin et al., 2016; Lin et al., 2020; Matthew et al., 2013; McCleary et al., 2004; Paice et al., 2006; Paul et al., 2014; Rashotte et al., 2008; Robinson et al., 2018; Savage et al., 2018; Shepherd et al., 2005; Wainwright & Wright, 2016; Williams et al., 2012) and involved RNs ($n = 25$, 81%) as EBP champions (Allen et al., 2018; Becker et al., 2020; Beinlich & Meehan, 2014; Borczynski & Worobel-Luk, 2019; Butler et al., 2012; Campbell, 2008; Clarke et al., 2005; Cospers et al., 2015; Garza et al., 2006; Griffin et al., 2007; Holley et al., 2005; Kirk et al., 2015; Levin et al., 2016; Lin et al., 2020; Matthew et al., 2013; McCleary et al., 2004; McGahee, 2016; Paice et al., 2006; Paul et al., 2014; Perry-Woodford & Whayman, 2005; Rashotte et al., 2008; Robinson et al., 2018; Shepherd et al., 2005; Wainwright & Wright, 2016; Williams et al., 2012). Just over one-half ($n = 15$) of the studies were categorized as quality improvement projects (Barnes et al., 2018; Becker et al., 2020; Beinlich & Meehan, 2014; Borczynski & Worobel-Luk, 2019; Butler et al., 2012; Cospers et al., 2015; Garza et al., 2006; Griffin et al., 2007; Kirk et al., 2015; Levin et al., 2016; McGahee, 2016; Paice et al., 2006; Paul et al., 2014; Robinson et al., 2018; Wainwright & Wright, 2016).

Table 6

General Characteristics of Included Studies

General Characteristics	<i>n</i>	%
Publication year		
2016–2020	11	35
2011–2015	8	26

Table continues

2006–2010	6	19
2000–2005	6	19
Research Design		
Pre-post, no control group	9	29
Multiple-baseline time-series, no control group	14	45
Multiple-baseline time-series, with a control group	1	0.3
Qualitative case study	9	29
Ethnographic	1	0.3
Constructivist grounded theory	1	0.3
Case study & methods report	3	10
Country		
USA	16	52
Australia	6	19
Canada	4	13
England/UK	4	13
India	1	0.3
Hospital type/Practice setting		
Acute care	22	71
Multiple practice settings	5	16
Ambulatory primary care	3	10
Home care (telecare)	1	0.3
EBP Intervention		
Hospital-Acquired pressure injury prevention	6	19
Pain management	5	16
Bedside shift report	2	0.3
Restraints	2	0.3
Ventilator management	2	0.3
Other	14	45
Champion Role		
RN	25	81
Interprofessional	2	0.3
Not stated	4	13

Table continues

Study/Project Length		
Less than one year	10	32
1 year	6	19
2 years	5	16
3–5 years	6	19
6+ years	4	13

A majority of the articles ($n = 21$, 68%) reported a study timeframe of 2 years or less following EBP implementation (Barnes et al., 2018; Becker et al., 2020; Borczynski & Worobel-Luk, 2019; Campbell, 2008; Clarke et al., 2005; Cooper, 2004; Cospers et al., 2015; Garza et al., 2006; Holley et al., 2005; Hooker & Taft, 2016; Kimber & Grimmer-Somers, 2011; Lin et al., 2020; Matthew et al., 2013; McCleary et al., 2004; McGahee, 2016; Paice et al., 2006; Perry-Woodford & Whayman, 2005; Rashotte et al., 2008; Shepherd et al., 2005; Wainwright & Wright, 2016; Williams et al., 2012). The remaining articles ($n = 10$, 32%) reported a timeframe between 2–8 years from the time of EBP implementation (Allen et al., 2018; Beinlich & Meehan, 2014; Butler et al., 2012; Griffin et al., 2007; Hendy & Barlow, 2012; Kirk et al., 2015; Levin et al., 2016; Paul et al., 2014; Robinson et al., 2018; Savage et al., 2018).

The types of EBP included in the articles varied. Just over one-third ($n = 6$, 35%) of the articles focused on hospital-acquired pressure injury ($n = 6$, 19%) and pain management ($n = 5$, 16%) as an EBP. Bedside shift report/hand-off, restraint management, and ventilator management EBPs were included in six articles (19%), two for each practice. The remaining 14 articles (45%) focused on a unique EBP initiative.

The way sustainability was measured also varied. Sixteen articles (52%) evaluated either improved EBP intervention compliance (Borczynski & Worobel-Luk, 2019; Campbell, 2008; Hooker & Taft, 2016; Rashotte et al., 2008; Shepherd et al., 2005;

Wainwright & Wright, 2016; Williams et al., 2012) or improved patient outcomes (Butler et al., 2012; Cosper et al., 2015; Garza et al., 2006; Griffin et al., 2007; Paice et al., 2006; Paul et al., 2014; Robinson et al., 2018; Savage et al., 2018) to determine sustainability. Three articles (1%) included financial savings resulting from using the EBP (Beinlich & Meehan, 2014; Butler et al., 2012; Garza et al., 2006).

Study Designs

The dissemination and implementation research and evaluation design taxonomy put forth by Brown et al. (2017) was used to appraise each article. Nine articles (29%) employed a pre- post-design with no control group (Allen et al., 2018; Barnes et al., 2018; Becker et al., 2020; Campbell, 2008; Clarke et al., 2005; Cooper, 2004; Lin et al., 2020; Wainwright & Wright, 2016; Williams et al., 2012). Fourteen articles (45%) included a multiple-baseline time-series design with no control group (Beinlich & Meehan, 2014; Borczynski & Worobel-Luk, 2019; Butler et al., 2012; Cosper et al., 2015; Garza et al., 2006; Griffin et al., 2007; Kimber & Grimmer-Somers, 2011; Kirk et al., 2015; Levin et al., 2016; Paice et al., 2006; Paul et al., 2014; Rashotte et al., 2008; Robinson et al., 2018; Savage et al., 2018). One article included a multiple-baseline time-series with a control group (Shepherd et al., 2005). A total of nine articles (29%) used a qualitative case study approach (Allen et al., 2018; Becker et al., 2020; Butler et al., 2012; Clarke et al., 2005; Holley et al., 2005; Kimber & Grimmer-Somers, 2011; Lin et al., 2020; McCleary et al., 2004; Williams et al., 2012). Seven articles (23%) used a combination of designs or mixed methods (Allen et al., 2018; Becker et al., 2020; Butler et al., 2012; Clarke et al., 2005; Kimber & Grimmer-Somers, 2011; Lin et al., 2020; Williams et al., 2012).

One article used an ethnographic research design (Hendy & Barlow, 2012), and one article used a constructivist grounded theory approach (Matthew et al., 2013). Perry-Woodford and Whayman (2005) described the planning, implementation, and evaluation of an EBP champion program. McGahee (2016) explained sustainability factors in developing and implementing an EBP project through a case study approach. Finally, one article described how normalization process theory was used to design, implement, and evaluate an EBP that used nurse mentors as champions (Hooker & Taft, 2016).

Study Results

Study results are shown in Table 7 and reported in sections to address the research question fully. The EBP champion role was first examined to lay the foundation for champion responsibilities. Next, the facilitators and barriers of EBP sustainability were extracted as a sub-gestalt of findings to identify patterns in sustainability literature that include the champion role.

Table 7

Key Features of Included Studies

Author(s) and Year	EBP Champion Primary Role	EBP Champion Responsibilities	Facilitators and Barriers of EBP Sustainability
Allen et al., 2018	RN	<ul style="list-style-type: none"> • Educate • Communicate • Translate evidence into practice • Influence the uptake of EBP 	<ul style="list-style-type: none"> • A key resource for staff by facilitating EBP • Can provide a pivotal role for translating evidence into care • Lack of staff awareness about the EBP champions • Lack of time for the champion to complete responsibilities
Barnes et al., 2018	Not stated	<ul style="list-style-type: none"> • Educate • Mentor • Influence the uptake of EBP 	<ul style="list-style-type: none"> • Recommend having a champion for each discipline • Staff feedback helped to identify potential champions
Becker et al., 2020	RN	<ul style="list-style-type: none"> • Communicate • Provide staff feedback • Address unit-specific barriers • Support change at the bedside • Recruit staff to help with audits 	<ul style="list-style-type: none"> • An essential facilitator of change: involvement of all nurses • Barrier: leadership uncertainty • Some staff resistance to change

Table continues

Beinlich & Meehan, 2014	RN	<ul style="list-style-type: none"> • Educate • Facilitate journal club • Round • Provide staff feedback • Collect data 	<ul style="list-style-type: none"> • Quantified cost savings as a facilitator of sustainment
Borczyński & Worobel-Luk, 2019	RN	<ul style="list-style-type: none"> • Educate • Support change at the bedside 	<ul style="list-style-type: none"> • Lack of champions to cover the multiple shifts • Lack of time for nurses to engage with one-to-one education from champions
Butler et al., 2012	RN	<ul style="list-style-type: none"> • Educate • Communicate • Mentor • Support change at the bedside • Advocate 	<ul style="list-style-type: none"> • Facilitators: conduct detailed root cause analysis, involve diverse stakeholders, consider all systems involved within the hospital, plan for sustainability, address the culture of safety
Campbell, 2008	RN	<ul style="list-style-type: none"> • Advocate 	<ul style="list-style-type: none"> • Dramatic improvements in compliance only after introducing nurse champions.
Clarke et al., 2005	RN	<ul style="list-style-type: none"> • Educate • Communicate • Mentor • Support change at the bedside • Problem-solve unit-based issues 	<ul style="list-style-type: none"> • Ongoing and consistent leadership support proved critical for success • Lack of time to learn and use the computer and decision support system • Avoidance of computer decision support system • Technological deficiencies

Table continues

Cooper, 2004	Inter-professional	<ul style="list-style-type: none"> • Audit • Implement interventions • Remove environmental barriers 	<ul style="list-style-type: none"> • Some practice improvements could be attributed to the champion's influence • Lack of time for researcher and champion connections • Lack of time for the champion to influence practice change and perform audits
Cosper et al., 2015	RN	<ul style="list-style-type: none"> • Educate • Communicate – including interprofessional • Mentor • Data collection • Round 	<ul style="list-style-type: none"> • Most significant influence on practice change: multidisciplinary rounds and champion engagement • Competing priorities a barrier: several systemwide initiatives
Garza et al., 2006	RN	<ul style="list-style-type: none"> • Audit • Data collection 	<ul style="list-style-type: none"> • Prioritizing and concentration most critical factors for success • A strong nurse network: a facilitator with increased communication & collaboration • Lack of time for nurses to leave the bedside to attend meetings

Table continues

Griffin et al., 2007	RN	<ul style="list-style-type: none"> • Educate • Communicate • Provide support and encourage • Audit • Assist with action plans for continued improvement 	<ul style="list-style-type: none"> • Make EBP change easy to follow • Make initiative public and visible with transparency: publish data/results for all with the accountability of an action plan for improvements • Select champions for each unit • Tell the story of success and mentor others
Hendy & Barlow, 2012	Inter-professional	<ul style="list-style-type: none"> • Communicate • Influence uptake of EBP 	<ul style="list-style-type: none"> • Champions: highly effective in the 1st phase of adoption • Possibility of serious derailment organizational change efforts by individual champions • Perception of some champions: the involvement of other stakeholders is a threat to their status.
Holley et al., 2005	RN	<ul style="list-style-type: none"> • Educate • Role model • Advocate • Evaluate outcomes 	<ul style="list-style-type: none"> • Champions' modeling behaviors: internalized and implemented EBP into unit practices • Barriers to enacting the champion role: self-doubt, negative judgmental attitudes of peers, resistance to the champion's expertise, uncaring attitudes from peers
Hooker & Taft, 2016	Not stated	<ul style="list-style-type: none"> • Educate • Communicate • Support change at the bedside • Audit 	<ul style="list-style-type: none"> • Use implementation theory: enhance uptake of complex EBP interventions, facilitate sustainable nursing practice change

Table continues

	Kimber & Grimmer-Somers, 2011	Not stated	<ul style="list-style-type: none"> • Educate • Communicate • Support change at the bedside • Conduct staff interviews and focus groups 	<ul style="list-style-type: none"> • Champions: essential to drive new practices and change culture • Required to improve practice: multifaceted, iterative, ongoing strategies • Support change: ongoing EBP strategies • Champions: labor-intensive, effective, and efficient method to directly influence implementation of EBP • No single implementation strategy results in consistent EBP use • Addressing organizational hierarchy: essential to success
9	Kirk et al., 2015	RN	<ul style="list-style-type: none"> • Educate • Support change at the bedside • Role model • Round • Data collection 	<ul style="list-style-type: none"> • Facilitators: unit enculturation and nurse champions • Larger initiatives: begin as smaller pilot projects, then identify effective methods and techniques adaptable to other areas • Valuing interprofessional communication & collaboration: facilitated rapid sharing of ideas, materials, practical approaches to education • Education: done by peers when information was immediately useful to the learner (Adult Learning Theory)

Table continues

Levin et al., 2016	RN	<ul style="list-style-type: none"> • Support change at the bedside • Mentor • Commit to EBP success 	<ul style="list-style-type: none"> • Involve frontline nurses in the original change • Build checkpoints to evaluate change • Reinforce the EBP in routine education • Barriers included peers' perceptions of what constituted EBP
Lin et al., 2020	RN	<ul style="list-style-type: none"> • Educate • Communicate • Role model • Audit • Provide staff feedback of audit results • Influence the uptake of EBP • Mentor 	<ul style="list-style-type: none"> • Champion: essential role in leading EPB, sustaining improvements • Ensure appropriate and meaningful intervention to clinicians integrated knowledge translation approach • Ongoing education, audits, and feedback: integrate into routine practice to ensure sustainability
Matthew et al., 2013	RN	<ul style="list-style-type: none"> • Educate • Influence uptake of EBP • Translate evidence to practice • Role model • Mentor • Coach • Audit • Support change at the point of care • Facilitate critical reflection • Provide nurse feedback about outcomes 	<ul style="list-style-type: none"> • Champions: vital to promoting EBP uptake • Champions: encouraged nurses to try the EBP, used multifaceted tailored strategies; results in a cascade of change • Nurse use of EBP with patients (critical reflection may help); influenced by personal EBP experiences • Three types of nurse adopter groups: needed customized strategies related to attitudes and beliefs about the specific EBP

Table continues

McCleary, et al., 2004	RN	<ul style="list-style-type: none"> • Educate • Communicate • Support change at the bedside • Role model • Mentor and coach • Provide staff feedback • Advocate • Collaborate with team 	<ul style="list-style-type: none"> • Champion role: key element in a comprehensive EBP program • Organizational commitment required • Barriers: overcoming peer resistance through coaching staff to adopt EBP • Lack of time to complete champion responsibilities: easier for clinical nurses to coach peers, for management roles to schedule time for activities, generate resources, and update communication
McGahee, 2016	RN	<ul style="list-style-type: none"> • Educate • Communicate, including interprofessional • Develop a formal plan to spread EBP 	<ul style="list-style-type: none"> • Expand leadership qualities of nurses toward collaborative efforts throughout the macro-system to advance champions as innovators and leaders in EBP
Paice et al., 2006	RN	<ul style="list-style-type: none"> • Educate • Role model • Influence uptake of EBP • Support change at the bedside 	<ul style="list-style-type: none"> • Lack of managers time to support and coach the champions • Lack of champions time to provide education • Involve other professions/stakeholders at the beginning
Paul et al., 2014	RN	<ul style="list-style-type: none"> • Support change at the bedside • Role model • Influence uptake of EBP • Implement interventions 	<ul style="list-style-type: none"> • Six critical elements for sustainability: leadership, physician involvement, personal responsibility, documentation & communication, training & support, simplicity

Table continues

Perry- Woodford & Whayman, 2005	RN	<ul style="list-style-type: none"> • Communicate • Support change at the bedside • Advocate 	<ul style="list-style-type: none"> • Improved stakeholder communication over one year • Lack of time to complete champion responsibilities • Lack of support from managers (seen as a low priority) • Champion commitment level to the role varied, influenced the success
Rashotte et al., 2008	RN	<ul style="list-style-type: none"> • Communicate • Coach • Support change at the bedside • Provide staff feedback • Audit • Implement interventions 	<ul style="list-style-type: none"> • Change facilitated by champion role and context-specific tools and resources • Nurse perceptions: EBP not a healthcare team priority • Sustainability achievement more likely when interdisciplinary partners engage, when EBP is integrated with other quality-improvement initiatives • Consideration: use patient outcome audit feedback; both timely & repetitive as additional incentive

Table continues

Robinson et al., RN 2018	<ul style="list-style-type: none"> • Educate – including interprofessional • Coach • Audit • Evaluate outcome data • Perform analysis of data 	<ul style="list-style-type: none"> • Develop a distinct champion job description with role title • 1st year champion model success: role advanced to include four other healthcare-associated infections • Challenge: identify cost efficiencies associated with EBP (included champion cost/benefit analysis)
Savage et al., Not stated 2018	<ul style="list-style-type: none"> • Audit 	<ul style="list-style-type: none"> • Interprofessional engagement directly responsible for results • Increase in healthcare-associated infections addressed: staff retraining, increased emphasis on hand hygiene to family & staff, institutional controls to increase coordination of procedures
Shepherd et al., RN 2005	<ul style="list-style-type: none"> • Educate – including interprofessional • Communicate • Implement interventions 	<ul style="list-style-type: none"> • Champion’s knowledge & confidence in role-related tasks increased by training • Ongoing training further increased champions’ knowledge
Wainwright & Wright, RN 2016	<ul style="list-style-type: none"> • Educate • Communicate • Support change at the bedside • Role model • Translate evidence to practice 	<ul style="list-style-type: none"> • Most significant increase in compliance over baseline: face-to-face communication, improved changes up to 63% • Barrier: staff education across multiple areas in a systematic & coordinated manner, champion focus on after-hours and weekend staff with formal and informal opportunities helped address barrier

Table continues

Williams et al., RN
2012

- Educate
 - Communicate – including interprofessional
 - Role model
 - Support change at the bedside
 - Provide staff feedback
 - Audit
 - Statistically significant improvement: champion knowledge and attitudes
 - Champion role immensely satisfying to those in the role & valued by peers
 - Champion role: an acceptable & effective method of introducing and sustaining change
 - Time: a factor that strongly affected champions' ability to fulfill role
-

Value of the EBP Champion Role

Five articles (16%) included a formal champion definition (Hendy & Barlow, 2012; Kimber & Grimmer-Somers, 2011; Perry-Woodford & Whayman, 2005; Robinson et al., 2018; Shepherd et al., 2005); therefore, most of the articles ($n = 26$, 84%) did not define the EBP champion role. Champion selection varied from volunteers to an application process requiring a curriculum vitae with a short statement about interest in the role, group interviews, and written support from the manager (Cooper, 2004). Robinson et al. (2018) included considerable detail about the champion role with a description that included a definition, minimum requirements, core attributes, training, and champion deliverables. The champions in a majority of articles ($n = 25$, 81%) were RNs (Allen et al., 2018; Becker et al., 2020; Beinlich & Meehan, 2014; Borczynski & Worobel-Luk, 2019; Butler et al., 2012; Campbell, 2008; Clarke et al., 2005; Garza et al., 2006; Griffin et al., 2007; Holley et al., 2005; Kirk et al., 2015; Levin et al., 2016; Lin et al., 2020; Matthew et al., 2013; McCleary et al., 2004; McGahee, 2016; Paice et al., 2006; Paul et al., 2014; Perry-Woodford & Whayman, 2005; Rashotte et al., 2008; Robinson et al., 2018; Shepherd et al., 2005; Wainwright & Wright, 2016; Williams et al., 2012). Two articles (6%) included different interprofessional roles as champions (Cooper, 2004; Hendy & Barlow, 2012), and four articles (13%) did not clearly state the profession of the champion (Barnes et al., 2018; Hooker & Taft, 2016; Kimber & Grimmer-Somers, 2011; Savage et al., 2018). Although variability in the EBP champion definition exists, many find the role extremely valuable.

The role of champion was viewed as essential to driving implementation and culture change (Kimber & Grimmer-Somers, 2011) and the most beneficial contributor to

success (Campbell, 2008; Cosper et al., 2015). Hendy and Barlow (2012) reported that the champion was highly influential in the initial adoption of the EBP. Campbell (2008) noted that improvements in EBP compliance were seen only after adding the champion. The EBP champion is an effective and efficient way to influence EBP implementation (Kimber & Grimmer-Somers, 2011; Paul et al., 2014) and sustain a change (Williams et al., 2012). McCleary et al. (2004) reported that the EBP champion is a critical element of a comprehensive program to manage an EBP change. Champions were referred to as opinion leaders in three articles (Barnes et al., 2018; Cooper, 2004; Kimber & Grimmer-Somers, 2011) and frontline leaders (Matthew et al., 2013). Kirk et al. (2015) wrote that champions provide leadership at the bedside. McGahee (2016) called on nursing to develop clinical nurse leadership qualities and cultivate collaborative efforts to advance EBP nurse champions as innovators and leaders.

The champion is an essential resource for staff by facilitating and leading EBP, translating evidence into practice, and sustaining improvements (Allen et al., 2018; Lin et al., 2020). Supporting change at the bedside (Becker et al., 2020) by providing feedback to nurses was noted to substantively facilitate EBP uptake (Matthew et al., 2013) and sustainability (Kirk et al., 2015). Staff valued the role, and the EBP champion found satisfaction in the role (Williams et al., 2012). Robinson et al. (2018) reported how to develop a distinct job description for the EBP champion role.

EBP Champion Responsibilities

Primary Responsibilities. Education ($n = 21$, 68%) and communication ($n = 16$, 52%) were the most frequent EBP champion responsibilities noted in the reviewed articles. Champions provided education in group (unit-based) settings and to

interprofessional teams, one-on-one, and just-in-time. Learning was facilitated by customizing content to the learner or experiential practices such as active role play. An emphasis was noted in availability, including champion coverage on weekend and night shifts. Strategies entailed didactic instruction, information discussions, and facilitating journal club meetings (Allen et al., 2018; Barnes et al., 2018; Beinlich & Meehan, 2014; Borczynski & Worobel-Luk, 2019; Butler et al., 2012; Clarke et al., 2005; Cosper et al., 2015; Griffin et al., 2007; Holley et al., 2005; Hooker & Taft, 2016; Kimber & Grimmer-Somers, 2011; Kirk et al., 2015; Lin et al., 2020; Matthew et al., 2013; McCleary et al., 2004; McGahee, 2016; Paice et al., 2006; Robinson et al., 2018; Shepherd et al., 2005; Wainwright & Wright, 2016; Williams et al., 2012).

The second most common responsibility identified across studies was communicating effectively. EBP champions provided communication about the EBP initiative, escalated questions, issues, successes, and barriers, and identified possible solutions. In addition, champions communicate the importance of the EBP to peers and interprofessional team members through mechanisms like rounding (Allen et al., 2018; Becker et al., 2020; Butler et al., 2012; Clarke et al., 2005; Cosper et al., 2015; Griffin et al., 2007; Hendy & Barlow, 2012; Hooker & Taft, 2016; Kimber & Grimmer-Somers, 2011; Lin et al., 2020; McCleary et al., 2004; McGahee, 2016; Perry-Woodford & Whayman, 2005; Shepherd et al., 2005; Wainwright & Wright, 2016; Williams et al., 2012).

Secondary Supportive Responsibilities. The researcher grouped *supportive responsibilities* that broadly entail frontline clinical nurse support into a secondary category. EBP champions provided ongoing support during work shifts to nurses, which

included in-the-moment assistance and problem-solving. Some EBP committees were resources for EBP champions in providing ongoing support (Borczyński & Worobel-Luk, 2019; Clarke et al., 2005; Griffin et al., 2007; Hooker & Taft, 2016; Kimber & Grimmer-Somers, 2011; Matthew et al., 2013; McCleary et al., 2004; Paul et al., 2014; Perry-Woodford & Whayman, 2005; Wainwright & Wright, 2016). Nine articles (29%) mentioned the champion as a role model for implementing EBP strategies and using EBP (Holley et al., 2005; Kirk et al., 2015; Lin et al., 2020; Matthew et al., 2013; McCleary et al., 2004; Paice et al., 2006; Paul et al., 2014; Wainwright & Wright, 2016; Williams et al., 2012). The EBP champion functioned as a mentor for peers—frequently at the bedside (Barnes et al., 2018; Butler et al., 2012; Clarke et al., 2005; Cosper et al., 2015; Levin et al., 2016; Lin et al., 2020; Matthew et al., 2013; McCleary et al., 2004) and coach at the bedside providing hands-on, just-in-time, individualized attention related to the EBP (Matthew et al., 2013; McCleary et al., 2004; Rashotte et al., 2008; Robinson et al., 2018). Nine articles (29%) mentioned champion responsibilities that facilitated staff knowledge, skills, and practice, including rounding, channeling the EBP, influencing and fostering the uptake of the EBP, and explaining the EBP purpose and benefits (Allen et al., 2018; Barnes et al., 2018; Becker et al., 2020; Butler et al., 2012; Griffin et al., 2007; Levin et al., 2016; Lin et al., 2020; Matthew et al., 2013; Rashotte et al., 2008). The final supportive responsibility that was identified was individualized feedback. Champions provided feedback to staff about audit results and client/patient outcomes (Becker et al., 2020; Lin et al., 2020; Matthew et al., 2013; McCleary et al., 2004; Rashotte et al., 2008; Williams et al., 2012). EBP champions advocated for new

ideas, nurses, and patients (Butler et al., 2012; Campbell, 2008; Holley et al., 2005; McCleary et al., 2004; Perry-Woodford & Whayman, 2005).

Conducting audits was an EBP champion responsibility noted in ten articles (32%). Champions recruited staff to help with audits (Becker et al., 2020) and performed unit performance audits themselves (Cooper, 2004; Garza et al., 2006; Griffin et al., 2007; Hooker & Taft, 2016; Lin et al., 2020; Rashotte et al., 2008; Robinson et al., 2018; Savage et al., 2018; Williams et al., 2012). Five articles (16%) mentioned EBP champions who collected data but did not specifically say this was an audit. Instead, EBP champions collected data to evaluate outcomes and perform analysis (Beinlich & Meehan, 2014; Cosper et al., 2015; Garza et al., 2006; Kirk et al., 2015; Robinson et al., 2018).

Facilitators of EBP Sustainment

Success Strategies. Process improvement strategies, a focus of several articles, begin with considering all systems involved within the hospital or facility (Butler et al., 2012) and includes the functional task of auditing previously described. Butler et al. (2012) reported that a detailed root cause analysis should be done to plan the EBP change. Kimber and Grimmer-Somers (2011) reported that multifaceted, iterative, and ongoing strategies are required to improve practice. For example, champions must deliver ongoing education, perform audits, and provide feedback routinely to ensure sustainability (Lin et al., 2020). Levin et al. (2016) recommended that checkpoints should be built into the EBP change process for evaluation. Patient outcome audit feedback (e.g., the incidence of pressure ulcers) that is both timely and repetitive (Rashotte et al., 2008) ensures that stakeholders have the information needed to make calculated changes. More

significant initiatives should begin as smaller pilot projects, identify effective methods and techniques, and select components of the EBP change to adapt to other areas (Kirk et al., 2015). Finally, the EBP change should be easy to follow (Griffin et al., 2007) and sustainability planned for (Butler et al., 2012). Rashotte et al. (2008) reported that sustainability is more likely to be achieved when an EBP change is integrated with other quality improvement initiatives. For example, discussing a pressure injury risk assessment and prevention interventions can be incorporated when implementing interprofessional patient rounds.

Communication/Collaboration. Both Kirk et al. (2015) and Savage et al. (2015) reported that effective interprofessional communication, collaboration, and engagement were directly responsible for positive outcomes. Communication and collaboration facilitated the rapid sharing of ideas, materials, and effective approaches to education. Sustainability is more likely to be achieved when interprofessional team members are engaged and encouraged to be involved (Kirk et al., 2015; Rashotte et al., 2008).

Multiple stakeholders throughout clinical departments (Butler et al., 2012) and frontline nurses should be involved in the initial EBP change (Levin et al., 2016). Information and data should be transparent and public (Griffin et al., 2007). Improving communication (Perry-Woodford & Whayman, 2005) and sharing success stories (Griffin et al., 2007) facilitated EBP change success. Garza et al. (2006) stated that the EBP change led to a strong network among nurses who communicated and collaborated much more effectively, ultimately translating to better patient care.

Interpersonal Strategies. Kirk et al. (2015) reported the most successful strategies for sustainability were unit enculturation and the nurse champion role. EBP champions

provided education to peers at the time the information was immediately valuable to the learner (Kirk et al., 2015). The champion also role-modeled critical thinking to guide practice by example and provide leadership at the bedside (Kirk et al., 2015). The EBP champion role can expand nurses' leadership qualities toward collaborative efforts throughout the macro-system to develop them into innovators and leaders in the implementation of EBP (McGahee, 2016).

Barriers to EBP Sustainment

Operational. Several operational issues were noted in the articles' conclusions. The most frequent challenge reported was a lack of EBP champion time or staff time to engage with the champion (Allen et al., 2018; Borczynski & Worobel-Luk, 2019; Clarke et al., 2005; Cooper, 2004; Garza et al., 2006; McCleary et al., 2004; Paice et al., 2006; Perry-Woodford & Whayman, 2005; Williams et al., 2012). Borczynski and Worobel-Luk (2019) wrote that they did not have enough champions to cover all shifts. Champions helped to address the challenge of educating many staff across multiple areas (Wainwright & Wright, 2016). Reliable technology and getting staff to use a computerized decision-support system to select and record EBP care strategies were noted as barriers by Clarke et al. (2005). Robinson et al. (2018) identified challenges quantifying cost avoidance for the champion role and ventilator-associated pneumonia due to accessibility of organizational data related to ICU cost per day.

Interpersonal. Some staff resisted the EBP change or the EBP champion's expertise (Becker et al., 2020; Holley et al., 2005; McCleary et al., 2004) or had different perceptions of what constituted the best evidence (Levin et al., 2016). Nurses with personal experience related to a breastfeeding EBP change allowed their personal

experiences to influence enacting the EBP (Matthew et al., 2013). The champion's level of commitment to the role and EBP change varied, which added stress to those who desire the EBP to be successful (Perry-Woodford & Whayman, 2005). Hendy and Barlow (2012) reported that champions can seriously hinder organizational change efforts when they perceive stakeholder involvement as a threat to their champion status. Holley et al. (2005) explored the EBP champion's experiences. Holley et al. wrote that barriers to enacting the champion role were self-doubt, colleagues' negative judgmental attitudes about patients in pain, and uncaring attitudes from colleagues (Holley et al., 2005).

Leadership. Consistent leadership can facilitate EBP changes; therefore, a lack of leadership consistency or uncertainty can hinder EBP uptake (Becker et al., 2020; Clarke et al., 2005). A lack of manager support for the EBP change and champion role also was a barrier (Paice et al., 2006; Perry-Woodford & Whayman, 2005). Allen et al. (2018) reported that the champion role was not communicated effectively, leading to a lack of staff awareness. The EBP change was seen as one of several quality/safety initiatives competing for staff's attention (Cospers et al., 2015) and not a priority for all professionals on the patient's healthcare team (Rashotte et al., 2008). Ensuring the organizational hierarchy is aware and supportive of EBP implementation is essential for success (Kimber & Grimmer-Somers, 2011).

Discussion

The current scoping review identified the existing literature for EBP champion responsibilities that enhance and sustain EBP as a routine practice. While patterns emerged out of the literature for champion responsibilities, no standard role and

responsibilities exist. The findings of EBP champion responsibilities are reflective of those found in the broader literature.

The researcher found that educating peers was the most common EBP champion responsibility, which is prominent in literature (Beck & Staffileno, 2012; Bergquist-Beringer et al., 2009; Miech et al., 2018; Onslow Memorial Hospital, 2014; Ploeg et al., 2010; Soo et al., 2009); however, it is not clear if this responsibility led to sustainment. Providing education is a critical component of the EBP champion role to promote the adoption of the EBP (Chambers, 2015; Soo et al., 2009) and often occurs one-on-one at the bedside (Miech et al., 2018). Specific education strategies include rounding on inpatient units with carts of educational materials and providing EBP articles in monthly newsletters (Beck & Staffileno, 2012). Soo et al. (2009) further described educational responsibilities as giving detailed presentations, customizing the education message to the audience, and developing educational adjuncts like pamphlets, stickers, and posters.

Effective communication was the second most common EBP champion responsibility noted in the current review. Strong communication, interpersonal skills, and influencing others to adopt an EBP are essential champion responsibilities (Bergquist-Beringer et al., 2009). Ploeg et al. (2010) and Hendy and Barlow (2012) described EBP champion responsibilities related to communication that influence EBP adoption: champions are persuasive practice leaders, work through committees, and participate in or lead interdisciplinary teams. Practical communication skills also are necessary to build relationships and navigate boundaries between professions, units, service lines, and departments within an organization (Chambers, 2015; Miech et al., 2018; Soo et al., 2009).

The researcher grouped the following EBP champion essential responsibilities into a category called *supportive responsibilities*: ongoing support; assisting in the moment; problem-solving; role modeling; mentoring; coaching; facilitating staff knowledge, skills, and practice; providing feedback; and advocating. An integrative review by Miech et al. (2018) on the champion's role in healthcare-related implementation included several activities discussed in this review. First, EBP champions spent one-on-one time with staff, motivated and encouraged staff, persuaded staff that the EBP was essential and valuable, engaged in problem-solving, and provided feedback. Building positive and meaningful relationships with frontline staff to promote EBP adoption is integral in shifting organizational culture to sustain an EBP (Chambers, 2015). Second, coaching staff and increasing their knowledge about the EBP promotes self-sustaining change (Bergquist-Beringer et al., 2009). Third, Ploeg et al. (2010) stated that EBP champions influence EBP adoption by supporting and mentoring nurses and customizing strategies to the organizational context. Finally, EBP champions tenaciously advocate for EBP adoption in the work environment by convincing others to accept the EBP change (Chambers, 2015; Miech et al., 2018; Soo et al., 2009). This type of advocacy differed from the actions of advocating for nurses and patients found in this review.

Conducting audits and collecting data are EBP champion responsibilities in the broader literature. Courtney et al. (2006) identify these responsibilities as ongoing data management, including patient chart review, audits, and providing quarterly reports to leaders. Auditing is one way that champions influence the diffusion of EBP guidelines (Ploeg et al., 2010). Onslow Memorial Hospital (2014) included data collection as a

component of the champion role. As a result, EBP champions can become a consistent, well-trained pool of data collectors that results in more reliable patient outcome results (Bergquist-Beringer et al., 2009).

Measuring EBP intervention compliance and patient outcome measures were noted in several articles. Intervention compliance as a process measure also is reported in the literature about the EBP champion role (Bergquist-Beringer et al., 2009; Onslow Memorial Hospital, 2014). Significant improvements in patient outcome measures related to the use of EBP champions and preventing hospital-acquired pressure injuries have been achieved (Bergquist-Beringer et al., 2009; Courtney et al., 2006; Onslow Memorial Hospital, 2014). For example, nursing units with skincare (EBP) champions typically reported a 40% to 50% decrease in hospital-acquired pressure injury rates, and some units saw a reduction of 70% to 80% (Bergquist-Beringer et al., 2009). Only three articles in this review reported financial savings due to using EBP, which is a significant opportunity for future research.

An integrative review by Miech et al. (2018) reported that in more than 80% of the 199 articles reviewed, champions were identified as one of several key factors associated with successful healthcare-related implementation. However, the relationship between the EBP outcomes and the EBP champion's role and responsibilities was not empirically tested in the articles; therefore, a relationship cannot be inferred.

The champion responsibilities collated in this review align with the attributes of professional governance. Professional governance is an evolution of shared governance and involves accountability, professional obligation, collateral relationships, and decision-making based on evidence that results in superior empirical outcomes (Clavelle

et al., 2016). EBP champions that demonstrate professional governance attributes would ensure that decisions and actions represent standards of the profession, and responsibilities would positively influence patient and organizational outcomes.

Decision-making would be grounded in the synthesis of EBP, and participants would be equal partners on interprofessional teams influencing EBP sustainability. Combining the results from this review and professional governance attributes could produce a formal definition and role description to promote clarity and consistency for the EBP champion as an informal leader.

Limitations

The current scoping review has several limitations. First, the types of designs used in the articles limit the weight of the evidence in this body of literature. The articles that used a pre- post-design or multiple-baseline time-series design did not include a control group, except for Shepherd et al. (2005). Second, none of the articles reviewed included randomization. Brown et al. (2017) offer dissemination and implementation research designs that include randomization and a control group to compare new implementation strategies with usual-practice implementation. Third, the timing of EBP measurement and follow-up varied significantly, as did the types of EBPs. Fourth, articles for the review were limited to those published in English. Articles about the champion role and sustainability published in other languages were not included. Fifth, the results were limited to published articles; therefore, represents only what is known in published literature. Finally, there is variability in the terms used for sustainability and EBP champions. The search strategy likely missed articles that could have met inclusion criteria because there is no standard for the champion role and responsibilities.

Implications for Practice and Research

Multiple EBP champion responsibilities are noted in the sustainability literature; however, one cannot conclude if champion responsibilities influence sustainability. It cannot be determined if one type of EBP champion responsibility is more effective than another for sustaining an EBP. The EBP champion role was seen as essential to driving implementation and sustainability in some studies; so, there is value in considering this strategy. The EBP champion role and responsibilities should be customized to the practice setting and organizational context.

This review sparks future research opportunities. Research is needed to establish the EBP champion role as an effective strategy in EBP sustainability and to identify EBP champion responsibilities that lead to intervention compliance and improved patient outcomes. Once champion responsibilities are identified, additional research can be done to determine that champion responsibilities lead to EBP sustainability.

Conclusions

Being the recipient of healthcare in the United States puts patients at risk for medical errors—the 3rd leading cause of death (Makary & Daniel, 2016). Patients who are given care based on EBP have better outcomes at a decreased cost. EBP champions are an effective strategy for embedding EBP into routine practice. This scoping review found that the EBP champion role and responsibilities vary, with education and communication as the most common variation. EBP intervention compliance and patient outcomes measures often are reported; however, relationship and causality cannot be concluded due to research designs used. A standard role description and competencies for the EBP champion and clarity of responsibilities that promote EBP sustainability and

quality patient outcomes could save lives. Implementing an EBP change requires significant resources (Savage et al., 2018). Sustainment might not be realized if the EBP champion role is vague and responsibilities are not based on evidence and clearly defined.

CHAPTER 5: CONCLUSION

The purpose of this dissertation was to contribute to the literature by examining the influence of clinician attributes on the sustainability of EBPs and patient outcomes. Chapter 2 described cultural characteristics, nurse values, and beliefs that influenced EBP intervention sustainability in the acute care clinical setting. Chapter 3 examined how nursing professional governance attributes vary by practice setting and differences between nursing professional governance attributes and sustainability of patient care outcomes for unit-level central line-associated bloodstream infection (CLABSI) benchmarks. Chapter 4 described a scoping review of 31 articles on sustainability and EBP champion role, responsibilities, and actions. This chapter summarizes the dissertation findings, addresses the strengths and limitations of the studies and reviews, and makes recommendations for future research.

Summary of Key Findings

Chapter 2

The purpose of Chapter 2 was to describe cultural characteristics, nurse values, and beliefs that influence the sustainability of an EBP intervention in the acute care clinical setting. This purpose was addressed with a focused ethnographic qualitative approach that included clinical nurse observations and semi-structured nurse interviews. Key findings that support sustainability include customizing the intervention to the unit culture and allowing the practice to evolve over time. Clinician overlap in responsibilities, the time to deliver the innovation, clinician confidence delivering the innovation, and impact to the workflow at the unit and clinician levels were noted as potential negative influences for sustainment. The nurses' approach to the intervention

and perceptions of the patient's response is an area for future research to determine how to best support nurses with the SBIRT process. Some nurses stated they valued the intervention and the impact that it can have on patient care.

Chapter 3

The purpose of Chapter 3 was to describe how nursing professional governance attributes vary based on patient care outcomes and to identify connections between professional governance attributes and unit-level CLABSI benchmarks. A secondary analysis of cross-sectional data was conducted. Key findings indicate there may be associations between professional governance attribute scores and unit CLABSI outcomes; although, the findings were not statistically significant. The researcher expected to find a significant relationship between nurse experience and decreased unit-level CLABSI infections. Therefore, an unexpected, yet non-significant, finding from the analysis was that units which were below the CLABSI benchmark, or had increased infections, also had nurses with more years of experience. The results must be interpreted with caution due to a lack of statistically significant findings; however, this work informs a foundation for future novel research on nursing professional governance attributes, nurse tenure, and patient outcomes.

Chapter 4

The scoping review discussed in Chapter 4 identified gaps in the literature regarding the EBP champion role and responsibilities as an EBP sustainment strategy. The purpose of Chapter 4 was to describe evidence about the EBP champion role and responsibilities in sustaining EBP. Key findings were described using four themes: EBP champion role, EBP champion responsibilities, facilitators, and barriers to EBP

sustainment. The champion role is valued in influencing EBP implementation and sustainment, but a standard definition does not exist. Education and communication were the primary responsibilities, and multiple secondary responsibilities were noted, including providing support at the point of care and influencing practice. Effective communication, collaboration, interpersonal skills, and multifaceted, iterative, and ongoing strategies resulted in EBP sustainment. Barriers to sustainment included operational, interpersonal, and a lack of leadership consistency and support.

Strengths and Limitations

There are several strengths of the research reported in this dissertation. The scholarly approach to Chapters 2, 3, and 4 are very different, yet all examine aspects of EBP sustainability and nursing professional governance. The ethnographic approach in Chapter 2 includes data from observations and semi-structured interviews. Data were collected and analyzed in tandem, which enriched the study outcomes and produced results that reflect the authentic culture more closely. Chapter 3 included data from eight different acute care hospitals, 91 unique units or practice settings, and 750 nurses. This broad sample could enhance generalizability to acute care practice settings. This is the first reported study that examined potential connections between professional governance attributes and patient outcomes. The scoping review in Chapter 4 included articles with various practice settings, EBPs, and differences in how the EBP champion role was used in practice. This variation adds to the breadth of the results.

There are also several limitations to the research reported in this dissertation. The research in Chapter 2 was done in one small acute care hospital, so findings may not be generalizable to other hospitals and practice settings. Only one type of EBP was

examined, and this specific EBP may have evoked clinician unconscious bias and stigma associated with addiction. The data used in Chapter 3 were from one healthcare system, and all hospitals were American Nurses Credentialing Center Magnet®-designated or Pathway to Excellence® recognition except for one. This may have resulted in homogeneity of data. Statistical power was low due to only seven of 91 units being below the CLABSI benchmark. In Chapter 4, the types of study designs described in the articles limit the weight of this evidence or scientific support of the conclusions. The timing, as well as the type, of EBP measurement varied considerably among the studies.

Implications

This research advances knowledge regarding factors that influence EBP sustainability. Theoretical frameworks like the DSF and ISF should be used and tested to build empirical evidence related to sustainability. There may be potential connections between nursing professional governance attributes and patient outcomes; however, more research is needed. Leaders can easily assess relationships between nurse tenure/experience and patient outcomes with data readily accessible to them in the acute care settings. Nurse leaders also can assess current EBP champion responsibilities and customize the role for the desired outcomes. Professional development for EBP champions should focus on education delivery, effective communication, and interpersonal skills.

Further research should explore factors that enhance or hinder EBP sustainability from a mixed methods perspective. Studying nurse tenure and patient outcomes is an exciting area for further exploration discovered in this research. Examining clinician attributes and sustainability by practice setting and clinical specialty is another promising

research focus. As health services researchers continue to focus on care across the continuum, opportunities will arise to engage patients and community members in research about sustainability. Future research must engage interprofessional team members as EBP sustainability stakeholders.

Conclusion

Healthcare delivery based on the latest evidence improves outcomes and decreases costs; however, implementing an EBP change does not always result in sustainment. Resources, time, and energy that goes into implementation efforts could be meaningless if clinicians are not motivated to continue using the EBP. Therefore, examining clinician attributes and the organizational context that promote EBP sustainability and result in quality patient outcomes could improve care and save lives. This dissertation research identified gaps in the literature related to a prevalent sustainability strategy and adds new knowledge to the sustainability aspect of the dissemination and implementation research agenda.

APPENDIX A: DSF FRAMEWORK PERMISSION

Re: The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change



Chambers, David (NIH/NCI) [E] <dchamber@mail.nih.gov>
To: Ferren, Melora D



Sun 7/21/2019 6:48 PM

We removed extra line breaks from this message.

**** EXTERNAL Message From dchamber@mail.nih.gov. DO NOT open attachments or click links from unknown senders or unexpected emails. ****

Sure. Feel free. Can you send me your manuscript when its finished, just so I can see how you used it?

Glad it was useful and best of luck,
David

--

David A. Chambers, D.Phil.
Deputy Director for Implementation Science Division of Cancer Control and Population Sciences National Cancer Institute
Email: dchamber@mail.nih.gov
Phone: 240-276-5090
Twitter: <https://twitter.com/NCIDACHambers> For assistance with scheduling, please cc Arline Sanchez at Arlines@mail.nih.gov

<<http://cancercontrol.cancer.gov/isy/>>
Follow us on Twitter <https://twitter.com/NCI_impSci>

On 7/21/19, 6:19 PM, "Melora Ferren" <mferren@iuhealth.org> wrote:

Dear Dr. Chambers,

I am a PhD student at Indiana University School of Nursing in Indianapolis. My area of research is sustainability of an evidence-based practice intervention in the acute care hospital setting. I conducted a qualitative ethnographic study on the sustainability of SBIRT (screening, brief intervention, and referral to treatment) in late 2018. I used the Dynamic Sustainability Framework as the theoretical underpinning for the study and I am currently developing a study manuscript. I am seeking permission to use Figure 2 of the DSF from the article "The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change" in my manuscript. Please let me know if you have questions.

Thank you for your consideration,
Melora Ferren, MSN, RN

APPENDIX B: IRB QUALITATIVE STUDY APPROVAL

KC IRB
Protocol #: 181009251
Investigator: Newhouse, Robin P
Summary Printed 10/10/2020

KC IRB **Protocol Summary**

Protocol Number: 181009251
Title: An Ethnographic Study on Sustainment of an Evidence-based Practice Innovation
Status: Administratively Closed
Expiration Date:
Last Approval Date:
Investigator: Newhouse, Robin P

Protocol Details

Type: Exempt
Application Date: 11/01/2018
IU or Investigator held IND/IDE?
FDA Application No:

Organizations

Type	Organization
Performing Organization	IU Health Services Hospital

Funding Source

Funding Type	Code/Number	Sponsor Name	Sponsor Type	Prime Sponsor Name	Prime Sponsor Type
Unfunded					

Subjects

Subject	Count
Total	5

KCIRB
 Protocol #: 181009251
 Investigator: Newhouse, Robin P
 Summary Printed 10/10/2020

Areas of Research

Code	Description
000001	All Research Areas

Personnel

Person Name	Units	Role	Affiliate	Training Flag
Newhouse, Robin P	IN-NURS NURSING	PI	IU	Y
Feron, Melissa Darlene	IU-UNIV UNIVERSITY LEVEL	CO-PI	IU	Y

Roles

Protocol

Approver

User Name
Feron, Melissa Darlene

Actions

Description	Comments	Action Date
Administratively Closed		12/22/2019
Annual Reminder Generated - Exempt	Annual Reminder	11/01/2019
Exemption Granted		11/01/2018
Submitted to IRB	Submitted to IRB	11/01/2019
Returned To PI		11/01/2018
Submitted to IRB	Submitted to IRB	10/28/2018
Protocol Created	Protocol created	10/28/2018

Questionnaires

Label
Exempt Research 2018
Conflicts of Interest

KC IRB
Protocol #: 181009251
Investigator: Newhouse, Robin P
Summary Printed 10/10/2020

Attachments

Description	Attachment Type	Last Updated	Updated By
Study email to potential participants	Recruitment Materials	10/28/2018 18:07:09	mlecren
SIB - 11.1.18	Study Information Sheet	11/01/2018 15:35:48	almoulin
Study Protocol	Protocol	10/28/2018 18:04:53	mlecren

KC IRB
Protocol #: 181009251
Investigator: Newhouse, Robin P
Summary Printed 10/10/2020

IRB APPROVAL

This research project, including all noted attachments, has been reviewed and approved by the Indiana University IRB.

Exempt Category(ies), if applicable: (2)

Expedited Category(ies), if applicable:

Reviewing IRB Committee: IRB-01
Level of Review: Exempt

Authorized IRB Signature: _____ IRB Approval Date: _____

Printed Name of IRB Member: _____

KC IRB
Protocol #: 181009251
Investigator: Newhouse, Robin P
Summary Printed 10/10/2020

Review Comments

Protocol Number: 181009251
Principal Investigator: Newhouse, Robin P
Title: An Ethnographic Study on Burdenment of an Evidence-based Practice Innovation
Committee ID: IRB00000220 **Committee Name:** IRB-01
Schedule ID: **Schedule Date:**
Review Comments:

APPENDIX C: FACILITY CNO PERMISSION

From: Hesson, Diane L
Sent: Wednesday, September 26, 2018 9:47 AM
To: Ferren, Melora D <mferren@IUHealth.org>
Subject: RE: Research Study Approval Request- Saxony

Absolutely! I will let Melissa Hicks be aware as well.

Diane L. Hesson
Interim Chief Nursing Officer/Interim Vice President of Patient Care Services
Indiana University Health Suburban Region, North Suburban Area

dhesson2@iuhealth.org
Compassionate. Highly Skilled. Personalized. Visit iuhealth.org

From: Ferren, Melora D
Sent: Tuesday, September 25, 2018 7:34 PM
To: Hesson, Diane L <DHesson2@IUHealth.org>
Subject: Research Study Approval Request- Saxony

Hi Diane,

I am reaching out to seek approval for a qualitative research study on the med/surg unit at Saxony. For my PhD work, I am very interested in cultural factors that support or hinder sustainment of an evidence-based practice in the acute care setting. Monika is the SBIRT Site Coordinator at Saxony and she did a fantastic job of customizing education for the direct care nurses which is one reason I am interested in doing the study at Saxony. They implemented SBIRT in June, so I am hoping to get IRB approval to ask 3-5 direct care clinical nurses questions about SBIRT in October (4 months post implementation). I would also like to ask Monika and Tai the same questions. The study also involves observing the nurses completing the SBIRT process so I will wear my IU Health scrubs to try to blend in ☺

I have the full research proposal attached as a reference.

Please let me know if you have questions.

Thank you!

Melora

Melora Ferren, MSN, RN-BC
Executive Director – Discovery and Contemporary Nursing Practice
Indiana University Health, Fairbanks Hall
340 W. 10th Street
Indianapolis, IN 46202
mferren@iuhealth.org

APPENDIX D: PARTICIPANT EMAIL INVITATION

Study: An Ethnographic Study on Sustainment of an Evidence-based Practice Innovation

Researcher: Melora Ferren

Email to Potential Participants

Dear IU Health Nurse Colleague,

You are invited to participate in a research study to learn about sustainment of Screening, Brief Intervention and Referral to Treatment (SBIRT) by nurses at IU Health Saxony Hospital. Please see below for information about the study. After reviewing this information, if you decide to participate please contact Melora Ferren at mferren@iu.edu



Appendix%20D%20A
ttachment.docx

Thank you,

Melora Ferren
PhD Student
Indiana University School of Nursing

APPENDIX E: IRB QUANTITATIVE STUDY APPROVAL

KC IRB
Protocol #: 2002217481
Investigator: Ellis, Rebecca J.
Summary Printed 10/10/2020

KC IRB
Protocol Summary

Protocol Number: 2002217481
Title: Quantitative Study on Nursing Professional Governance and Patient Outcomes
Status: Administratively Reviewed
Expiration Date:
Last Approval Date:
Investigator: Ellis, Rebecca J.

Protocol Details
Type: Not Human Subject Research
Application Date: 02/11/2020
IU or Investigator held IND/IDE?
FDA Application No:

Organizations

Type	Organization
Performing Organization	IU HEALTH

Funding Source

Funding Type	Code/Number	Sponsor Name	Sponsor Type	Prime Sponsor Name	Prime Sponsor Type
Unfunded					

Subjects

Subject	Count
Total	1407

KC IRB
 Protocol #: 2002317441
 Investigator: Ellis, Rebecca J.
 Summary Printed 10/10/2020

Areas of Research

Code	Description
000001	All Research Areas

Personnel

Person Name	Unit	Role	Affiliate	Training Flag
Ellis, Rebecca J.	IN-NURS NURSING	PI	IU	Y
Ferren, Melissa Darlene	IU-UNIV UNIVERSITY LEVEL	CO-PI	IU	Y

Roles

Protocol

Aggregator

User Name
Ferren, Melissa Darlene

Actions

Description	Comments	Action Date
IRB review not required		02/11/2020
Submitted to IRB	Submitted to IRB	02/11/2020
Returned To PI		02/11/2020
Submitted to IRB	Submitted to IRB	02/10/2020
Protocol Created	Protocol created	02/10/2020

Questionnaires

Label
Research Not Subject to Human Subjects Regulations

Attachments

Description	Attachment Type	Last Updated	Updated By
Study methods section-protocol	Protocol	02/10/2020 09:08:39	mferren

KC IRB
Protocol #: 2002317441
Investigator: Ellis, Rebecca J.
Summary Printed 10/10/2020

Determinations

Determination	Date Assigned	Date Inactive	Status	Comments
Project does not involve human subjects as defined in 45 CFR 46.102(f)	02/11/2020		A	

KC IRB
Protocol #: 2002317441
Investigator: Ellis, Rebecca J.
Summary Printed 10/10/2020

IRB APPROVAL

This research project, including all noted attachments, has been reviewed and approved by the Indiana University IRB.

Reviewing IRB Committee: Exempt
Level of Review: IRB Review not required

Authorized IRB Signature: _____ IRB Approval Date: _____

Printed Name of IRB Member: _____

KC IRB
Protocol #: 2002217481
Investigator: Ellis, Rebecca J.
Summary Printed 10/10/2020

Review Comments

Protocol Number: 2002217481
Principal Investigator: Ellis, Rebecca J.
Title: Quantitative Study on Nursing Professional Governance and Patient Outcomes
Committee ID: EXIR000001 Committee Number Exempt
Schedule ID: Schedule Date:

Review Comments:

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CURRICULUM VITAE

Melora Darlene Ferren

Education

PhD	Indiana University, Indianapolis, IN	2021
MSN	Indiana Wesleyan University, Indianapolis, IN	2009
BSN	Indiana Wesleyan University, Indianapolis, IN	1994

Certification, Awards & Professional Organizations

Professional Organization Member

- American Organization of Nurse Leaders (AONE)
- Sigma Theta Tau Honor Society
- Association of Nursing Professional Development (ANPD)

Social Media Coordinator

- *Journal of Nursing Administration* (JONA)

Certification

- Nursing Professional Development Board Certified

Awards

- 2018 Academy Health Annual Research Meeting Scholarship recipient
- 2018 Indiana Organization of Nurse Executives (IONE) Ph.D. Scholarship recipient

Select Presentations & National Committee Work

Ferren, M. D. (2021, May 6). *Nursing COVID-19 spirit of inquiry and innovation survey* [Poster presentation]. IU Health Nursing Research Conference.

AONE committee member. (2017–2018). American Organization of Nurse Executives Annual Meeting (collaborated with colleagues across the nation to plan the 2018 Annual Convention).

NLN task force member & chapter author. (2015–2018). Developed clinical nurse educator competencies.

Ferren, M. D. (2017, November). *IU Health Leader2Leader: A strategic approach to change* [Webinar presentation]. IU Health.

Ferren, M. D. (2017, April). *Expert to novice: Journey of a nurse executive* [Podium presentation]. AONE Annual Convention.

Ferren, M. D. (2016, August). *Competency assessment the Wright way* [Presentation for nursing leaders at Moi Teaching and Referral Hospital, Eldoret, Kenya].

Ferren, M. D. (2016, August). *Development of an innovative orientation model* [Keynote Address]. Midwives Association of Kenya Inaugural Annual Scientific Conference.

- Facilitator. (2016, August). *Getting started in staff development* course for Clinical Nurse Educators at Moi Teaching and Referral Hospital, Eldoret, Kenya.
- Ferren, M. D. (2016, July). *Collaboration with diverse nursing professional development specialists: Development of an innovative orientation model* [Podium presentation]. ANPD Annual Convention.
- Ferren, M. D. (2016, April). *Transitioning care delivery models: Leadership structure supports change and positive outcomes* [Podium presentation]. AONE Annual Convention.
- Ferren, M. D. (2016, March). *Competency assessment the Wright way* [Podium presentation]. Indiana Association for Nursing Professional Development Chapter.
- NLN consultant. (2014–2016). For *Accelerating to Practice* program development on new graduate nurse competencies and transitioning to the practice environment.
- Ferren, M. D. (2015, October). *Competency assessment the Wright way* [Podium presentation]. IU Health.

Publications

- Carpenter, J., Draucker, C., Ellis, R., **Ferren, M.**, Gilbert, J., Newhouse, R., & Von Ah, D. (in press). Indiana University Health Nursing COVID-19 spirit of inquiry and innovation descriptive qualitative study [Journal pre-proof]. *Nursing Outlook* <https://www.sciencedirect.com/science/article/pii/S0029655421001846>
- Glossenger, A., Bennett, D., **Ferren, M.**, Dickerson, & Sageser, P. E. (2016). Breaking down the silos: An interprofessional approach to education. *The Journal of Continuing Education in Nursing*, 47(1), 5–7.
- Ferren, M. D.** (2018). Apply clinical expertise in the health care environment. In T. Shellenbarger (Ed.), *Clinical nurse educator competencies: Creating an evidence-based practice for academic clinical nurse educators* (pp. 53–62). Wolters Kluwer.
- Ferren, M.**, & Sparks, L. (2020). Blue hair and tattoos: Younger generations in the workplace. *Voice of Nursing Leadership*, January 4–5.
- Newhouse, R. P., Janney, M., Gilbert, A., Agle, J., Bakoyannis, G., **Ferren, M.**, Mullins, Daniel, C., Johantgen, M., Schwindt, R., & Thoele, K. (2018). Study protocol testing toolkit versus usual care for implementation of screening, brief intervention, referral to treatment in hospitals: A phased cluster randomized approach. *Addiction Science & Clinical Practice*, 13,28.
- Roush, K., Opsahl, A., & **Ferren, M.** (2021). Developing an internship program to support nursing student transition to clinical setting. *Journal of Professional Nursing*, 37, 696–701.

Schwindt, R., Agle, J., Newhouse, R., & **Ferren, M.** (2019). Screening, brief intervention and referral to treatment (SBIRT) training for nurses in acute care settings: Lessons learned. *Applied Nursing Research*, 48, 19–21.

Thoele, K., **Ferren, M.**, Moffat, L., Keen, A., & Newhouse, R. (2020). Development and use of a toolkit to facilitate implementation of an evidence-based intervention: A descriptive case study. *Implementation Science Communications*, 6(1), 86.

Research

- Scoping review on EBP champion responsibilities and EBP sustainability, 2021
- Cross-sectional, correlational, descriptive study on professional governance and patient outcomes, 2020
- Ethnographic qualitative study on EBP sustainability in acute care, 2018
- Phased multisite cluster randomized trial testing screening, brief intervention, and referral to treatment (SBIRT) for people that use tobacco, alcohol, and non-prescription drugs, 2017–2019
- Qualitative research on RN and non-licensed roles and relationship after a care delivery model change, 2014
- Qualitative research in preceptor education, development, and support, 2009

Professional Experience

IU Health, Indianapolis, IN, June 2019–present

- Vice President/Associate Chief Nurse Executive
- Executive Director, Discovery & Contemporary Nursing Practice
- Manager, Nursing Education
- Interim Director of Nursing Education
- Adjunct Faculty Critical Care, IU Health and IU School of Nursing
- Critical Care Transport Nurse, LifeLine Critical Care Transport

Union Hospital, Terre Haute, IN

- Associate Administrator
- Charge Nurse Outpatient Telemetry Unit
- Charge Nurse Emergency Department
- Assistant Nursing Care Manager, Emergency Department

Terre Haute Regional Hospital, Terre Haute, IN

- Regulatory Survey Coordinator

Marion General Hospital, Marion, IN

- Charge Nurse Emergency Department

VA Medical Center, Marion, IN

- Charge/Staff Nurse Geriatric/Psychiatric Unit