

Effects of Implementing Seizure Education Among Hospital-Based Nursing

Doctor of Nursing Practice Scholarly Project

By

James P Coyne

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University of Tampa

Tampa, FL

Author Note

James Coyne  <https://orcid.org/0000-0001-6459-3982>

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Correspondence concerning this paper should be addressed to James Coyne, 1977

Carolina Court, Clearwater, FL 33760, United States. Email: james.coyne@spartans.ut.edu

Abstract

Seizure is a true neurological emergency. In the in a basic medical surgical floor in a hospital it is a low frequency high risk event. As a low frequency event nurses may not be familiar with how to manage an actively seizing patient. The existing literature shows that there was a gap in knowledge and experience regarding seizure and actively seizing patients. This gap leads to nurses feeling less confidence and being less effective when managing seizure patients. This DNP project developed a evidence-based training for bedside nurses to improve nurses feelings of self-efficacy, self-confidence, and knowledge regarding seizure and actively seizing patients. This training was delivered in a midsized urban hospital to registered nurses currently employed in a basic medical surgical floor setting. Nursing knowledge feelings of self-efficacy and self-confidence were all positively affected after this training. Assessment skills, continuing education practices, staff development, and nursing leadership should be further evaluated for future projects.

Keywords: seizure, seizure management, status epilepticus, evidence-based, training, nursing,

Dedication

This is dedicated to my family. Matt you encouraged my continuation of my education and helped me check that last box. You supported me with many dinners out, labeled envelopes, printed forms, and understood when I needed to do homework. My mother Elvira Kirksey who listened to me over many phone calls, helped keep things in perspective, and was available for any task I may need help with. Tim Coyne my father, for being proud of me. Thank you to my brother Brian, sister, Lauren, stepfather, Kirk, brother-in-law Alex, Alyssa, and all my friends that gave kind words of support and encouragement.

This project is also dedicated to the nurses and nurse managers whose participation in this project helped to make it a success.

Also, this project is also dedicated to the patients and families who deal with epilepsy and seizures. The treatment of this condition is the impetus for this project.

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Contents

Contents	5
Chapter I: Introduction	9
Description of the problem	10
Background and Significance	11
Quality improvement	12
Study Purpose and Aims	12
PICOT Question.....	13
Purpose of the Review	13
Application of The Iowa Model Revised	14
Chapter II: Review of the Literature	16
Search History.....	16
Results.....	17
Analysis.....	18
Nursing and Seizures.	18
Seizure and Seizure Management	20
Nurse Training	21
Measurement and project structure	22
Summary of Literature Review.....	23
Chapter III: Project Design and Description	24
Study Purpose	24
Study design.....	24
Conceptual and Operational Definitions.....	25
Setting	25
Sample Selection.....	26
Inclusion Criteria	26
Exclusion Criteria	26
Research Proposal	27

Data Collection	27
Plan for Data Analysis	29
Data Analysis	30
Protection of Human Subjects	30
Risk level	32
Strength and Limitation of the Study	32
Chapter IV: Outcomes Evaluation	33
PICOT Question and Hypothesis.....	33
H1	34
H2:.....	34
H3:.....	34
H4:.....	34
H5:.....	34
Results.....	34
Descriptive Statistics.....	34
Hypothesis Testing.....	35
H1:.....	35
Normality	36
Homogeneity of Variance	36
Results.....	36
Table 4	37
H2.....	38
Normality.	38
Homogeneity of Variance	38
Results.....	38
Table 5	39
H3.....	40
Normality.	40

Homogeneity of Variance	40
Results.....	40
Table 6	41
Figure 3	41
H4:.....	42
Results.....	42
H5:.....	43
Linearity.....	43
Figure 4	44
Figure 5	44
Figure 6	45
Figure 7	45
Results.....	45
Summary	46
Chapter V: Discussion	47
Strengths	47
Interpretations	49
Implications.....	50
References.....	54
Appendix A.....	60
Training Slides	60
Appendix B	63
Appendix C	66
Appendix D.....	71
Appendix E	76
Appendix F	77
Appendix G.....	78
Appendix H.....	81

Appendix I	83
Appendix J	84
Appendix K	85
The Iowa Model Revised	85
Appendix L	86
Permission To Use Iowa Model.....	86
Appendix M	87
Permission To Use PACS	87
Table 1	88
Table 2	89
Table 3	90
Tables 7-16	92
Table 17	95

Chapter I: Introduction

Seizure is one of the few true neurological emergencies. The International League Against Epilepsy (ILAE) defines seizure as “a transient occurrence of signs and/or symptoms due to abnormal excessive or synchronous neuronal activity in the brain (Fisher, et al., 2014, p. 476).” These unregulated neuronal discharges lead to seizure semiology. Seizures are defined based on the precipitating factor or cause. Seizures may be defined as provoked or unprovoked. Epilepsy is defined as a disorder of the brain characterized diagnosed by having two unprovoked seizures greater than 24 hours apart or one unprovoked seizure and another seizure occurring over the next ten years, or the diagnosis of an epilepsy syndrome (Fisher, et. at., 2014)

Seizures has been found to increase the risk for injuries and accident especially in those with co-morbidities such as stroke, dementia, and diabetes (Mahler et al., 2018). A meta-analysis by Sauro et al. found the estimate of adverse events during admission for epilepsy monitoring to be 7% (2016). Active seizure events increase the chance of adverse events (AEs) such as status epilepticus, seizure clusters, falls, fall related injuries, postictal psychosis, and sudden unexpected death in epilepsy (Saury et al, 2016). Several studies have identified common injuries related to seizures as soft tissue injuries (abrasions and bruises), lacerations, head injuries, mouth and tongue injuries, fractures, and burns (Mahler et al., 2018; Sauro et al., 2017).

Broad and diverse in its presentation, some seizure types have either focal or generalized onset. Seizure can also have overt presentation on one side of the body or involve both sides of the body simultaneously. Other times seizure can have occult onset with an unknown point of origin. Focal seizures are divided into two subcategories and can present with awareness or impaired awareness and have unilateral or bilateral presentations that include motor or nonmotor onset. Generalized onset seizures present with motor, tonic-clonic movement, or nonmotor onset. Unknown onset seizures can have tonic-clonic, other motor, or nonmotor presentation. This

diverse classification system demonstrates how subtle and nuanced seizure presentation can be. With each of these different presentations, neurons in separate parts of the brain are discharging irregularly (Fischer et al., 2014). It is this specificity in clinical presentation accompanied by diagnostic testing with electroencephalography (EEG) that allows a clinician to determine correct treatment modalities and help distinguish between epileptic and non-epileptic events.

A generalized seizure can lead to primary injury such as severe tongue bite, self-harm from flailing arms and legs or from a fall if muscle tone is lost while standing. The activity being performed while seizing increases the risk of physical harm. The loss of awareness, loss of muscle tone, and loss of motor control while driving, bathing, or swimming, climbing to high places, or cooking over open flame can lead to catastrophic injury. An isolated seizure is not life threatening by itself. Continuous seizure or status epilepticus can be life threatening (Sauro et al., 2016).

Description of the problem

On a standard medical surgical unit, seizure is a low-frequency high-risk event. Bedside nurses may never have witnessed or encountered an activity seizing. This leads to few medical surgical nurses with firsthand experience to train new nurses how to manage seizures.

Nurses frequently leave nursing school with no experience in managing actively seizing patients (Lee & Sim, 2020). This leads to a gap in knowledge, experience, and training for medical surgical nurses and the management of actively seizing patients. There are simply too few opportunities to witness an actively seizing patient as it is a low-frequency event.

This leads to nursing faculty who may have limited experience with seizure management. As it is a low frequency event, more time is spent on instruction for other more common components of nursing education. Few nursing faculty members have expertise in neurology.

Also, nursing schools have limited ability to provide simulation training for seizure. Robotics for mimicking an actively seizing patient would be prohibitively expensive. Current technology does not allow for a true representation of the full scope and diverse presentation of complex seizure processes.

Background and Significance

Limited training and exposure to seizing patients is demonstrated when documentation is either incomplete or missing all together. There have also been instances where actively seizing patients are not being recognized. This lack of clinical awareness can lead to treatment delay and inappropriate course of action. A delay in intervention also increases the risk of adverse outcomes. Lee & Sims (2020) found that nurses have limited exposure to learning about the nervous system. They also describe discrepancies between theory and practice applications (Lee & Sims, 2020). Other gaps include difficulty addressing the nursing intervention related to the clinical symptom and the need for teaching method based on actual nursing methods (Lee & Sims, 2020). Anecdotally, the institution in question has no formal policy regarding seizure training and has limited policy regarding the management of actively seizing patients on a standard medical surgical unit.

This limited guidance creates an environment of uncertainty for nurses. Frequently, nurses lack the prerequisite skills to recognize, document, and communicate the essential information as it pertains to actively seizing patients. Nurses lack context and pathophysiological knowledge of precisely what is happening to an actively seizing patient. This leads to delayed intervention and increased risk to the patient. Status epilepticus is a life threatening condition and must be avoided when possible. Mortality from the condition has a poor prognosis when caused by acute cerebral event (Shorvon & Sen, 2019)

Quality improvement

The DNP essential II is focused on organizational and systems leadership for quality improvement and systems thinking (AANC, 2006). The focus of this essential is for DNP graduates to practice and develop, evaluate, ensure accountability, employ principles of business, and improve outcomes (AANC, 2006).? The Institute of Medicine (IOM) defines quality healthcare as care which is “safe, effective, patient-centered, timely, efficient, and equitable (AHRQ, 2013). For decades, healthcare organizations have utilized quality improvement (QI) as a tool to improve patient care. According to the Agency for Healthcare Research and Quality (AHRQ), QI is a methodic plan improve the care delivered to patients (2013). Quality improvement is defined as methods to bring about positive changes in the healthcare delivery.

Sha et al., (2021) tell us that the triple aim is met when quality improvement of population health outcomes, increases the quality of care and increase the value for the system. This model was developed by the Institute for Healthcare Improvement in England. The U.S. Department of Health and Human services Administration (HRSA) developed a handbook in 2011 that helps to outline and enumerate the quality improvement process. It outlines four key principles QI work as a systems and processes, focus on patients, focus on being part of the team, and focus on use of the data (HRSA, 2011). Given the complexity of systems and how no one person knows all the dimension of an issue, building a solid team is vital to achieve creative solution and to get staff buy-in and commitment (HRSA, 2011).

Study Purpose and Aims

Despite the knowledge deficit regarding seizure and seizure management in a hospital setting among medical surgical nurses, there is little investigation into this phenomenon. The purpose of the project is to change the current training model to improve the efficacy,

confidence, and knowledge of medical surgical nurses at the bedside of a moderate to large hospital in Tampa, Florida. The aim is to develop and deliver a module of standardized evidence-based training for seizure management for bedside medical surgical nurses' hospital wide.

The hypothesis is that this training would improve nursing knowledge, feelings of self-efficacy, and self-confidence, the dependent variables. This training will be provided to all acute care nurses at the hospital and reinforced with posters placed in breakrooms hospital wide to cue proper seizure management techniques. The goal is to continually update this training and make it a standard component to new hire training.

PICOT Question

The picot question is established as; How does implementation of an evidence-based guideline on active seizure management with standardized training compare with current training in bedside nurses at a large Tampa Bay hospital regarding efficacy and confidence, measured using the perceived ability to provide care in acute situations instrument (PCAS), in management of actively seizing adults over two months?

Purpose of the Review

The purpose of the review is to find and evaluate strong substantive articles that will provide support for the proposed DNP project. The project requires literature to support its many different facets. Articles are needed to give context to the nature of the clinical problem; the lack of knowledge of nurses as it pertains to seizure management and the lack of self-confidence and self-efficacy of nurses managing actively seizing patients. Information regarding seizures is necessary to inform the training, help define the project, and determine current management guidelines. Examples of how nurses manage acute situations also help support the development of training. Specifics on how the independent variable of training effects the dependent variables

of nursing knowledge, self-confidence, and self-efficacy must be included to thoroughly support the development and implementation of the educational intervention. There must also be a validated tool to measure the effect of training on the dependent variables. By evaluating the literature as outlined, we assemble, appraise, and synthesize the body of evidence according to the Iowa Model Revised: Evidence Based Practice to Promote Excellence in Healthcare (IMEB-PEH), (Buckwalter et al., 2017).

Application of The Iowa Model Revised

The Iowa Model was initially developed at the University of Iowa in the 1990's (Buckwalter et al., 2017). The Iowa Model of Evidence-Based Practice is a revision of the Iowa Model and was recently and updated (Buckwalter et al., 2017).

The IMEB-PEH guides practice and focuses on the implementation of change. The change is supported by evidence with feedback loops that provide for revision, research, and detailed tailoring of the proposed change priorities. Initially cues for change are born from five different opportunities. Clinical or patient-identified issues, organization, state, or national initiative data/new evidence, accrediting agency requirement or regulations, and philosophy of care

Next, the question or purpose is stated. Then, there is a decision regarding priority of the problem. If the answer is no, a feedback loop returns to address the opportunities. If yes, a team is formed and a systematic search to evaluate the available evidence is conducted. Once there is enough evidence collected, a design and pilot for the practice change is developed. If there isn't enough evidence, a feedback loop to the previous step allows for further analysis.

The design and pilot are evaluated for propriety and adoption into practice. If not appropriate, a feedback loop evaluates the proposed change for alternate considerations,

redesign, reassembly of the team, or to consider another opportunity. Prior to the practice change implementation, the identification and sustainability are addressed. After the change is made, the results are disseminated.

Chapter II: Review of the Literature

Search History

Search terms, inclusion and exclusion criteria were identified through discussion with faculty and colleagues and by scanning Lee et al. (2019). A Literature review was conducted using the Boolean logic methodology. Initially, CINAHL, Pub Med, Cochrane Database of systematic reviews and Scholar. Google were searched for quantitative, qualitative, and mixed methods studies nationally accepted evidence-based guidelines, systemic reviews and case study reviews. Only article in English, and published between January 2016 to July 2021 were included, using preliminary keywords. The keywords in the initial search comprised seizure, seizure management, status epilepticus, nurse and/or nursing & training and/or education.

Another search was then conducted with the same databases, combining the initial keywords with one another. As well as the following additional keywords: Validated tool, validated instruments, validated survey and acute care, rapid response.

Inclusion criteria encompassed all of the following 1) for quantitative, qualitative and mixed methods studies nationally accepted evidence based guidelines, systemic reviews and case study review; 2) Published in English; 3) published between January 2016 and July 2021; 4) Full text available; 5) published in peer review journal or national organizations; 6) investigations on Registered Nurses in inpatient settings; 7) studies investigating knowledge based or training for seizure management. Exclusion criteria was comprised of social media, editorials, opinion-based literature, conference reports and pilot studies.

In CINAHL seizure alone yielded 2,091. CINAHL was searched with seizure and nurse or nurses or nursing and education and yielded 19 results. CINAHL was also searched for rapid response and yielded 155 articles. Search terms validated tool or validated instrument, or validated survey and acute care yielded 2 articles. The google scholar database was searched

with validated tool and acute situation and yielded 175,000 articles. This was refined with seizure and nursing and the most relevant tool was selected for inclusion. Pub Med was searched with seizure and yielded 154, 915. The addition of seizure and nurse resulted in 799 articles. The Cochrane Database of Systematic Reviews was searched using status epilepticus and produced 3 results.

After combining keyword terms data search and removing duplicates, the search generated 979 possible results. Then, each article was appraised based on title. If an article title indicated it would be pertinent to this study, the abstract or algorithms were reviewed. The total number of abstracts appraised were 120.

Seventy-six full text-articles, guidelines, case studies were critically appraised based on abstracts, inclusion, and exclusion criteria. All the included articles were evaluated for relevance. Thirty-one articles were considered as pertinent to this study.

Results

A total of 31 articles were included in this literature review: Quantitative studies (n=10), qualitative studies (n=1), evidence-based guidelines (n=8), systematic review (n=5), case study (n=3), testing development tool (n=1), methodological framework evaluation (n=3).

Only two studies and a case study, investigated knowledge and self-efficacy deficits, five articles investigated seizure and seizure management, and five on the efficacy of nursing education programs. Three systematic review evaluated status epilepticus and another evaluated management of seizures with the final evaluating simulation training.

Analysis

Nursing and Seizures.

There was a paucity of high-quality literature related to nursing and seizure management. However, there were two articles pertaining to lack of knowledge, lack of self-efficacy, and lack of self-confidence. Also included were two articles that gave guidance to how nurse led teams can improve patient outcomes. The American Association of Neuroscience Nurses (AANN) provided guidelines to help bedside nurses provide evidence-based care for seizure patients in an in-patient setting. They delineated the protocols for nursing care and for the documentation of care given (Ozuna et al., 2016). The availability of guidelines and protocols for nursing care of patients with seizures and epilepsy are limited.

Lee & Sim, (2020) found four themes that emerged in their qualitative research. Once saturation was reached the final four themes ineffective learning of nervous system theory, differences between learning theory and practical application, difficulty addressing the nursing intervention related to clinical symptom, and the need for teaching method based on actual nursing methods were established. The interviews were conducted in focus groups lasting 100 minutes per group. The study included 12 female nurses approximately 24.2 years old with less than eight months experience from a neuroscience unit at a university hospital. This may limit the studies generalizability. This study did discuss rigor as related to data collection and used an experienced nursing professor to maintain consistency and significance of and to the discussions. This step, however, could introduce researcher bias.

A case study presentation addressed the need for special nursing skills related to seizure patients (Holland et al, 2017). Specifically reviewed was the large array of seizure symptoms and the nursing interventions that must be implemented once these symptoms are recognized. It was

published in a peer reviewed journal specifically for neuroscience nurses. It included references that were up to 9 years old. However, these references were historical in nature and were used as such. While well researched, this case study does not provide the strongest level of scientific support.

Finally, Pranboon et al., (2020) showed that fast-track nursing care management improved treatment times for actively seizing patients in status epilepticus (SE) improved from 30 minutes to 3.5 minutes, $P < .001$. This was a quasi-experimental pre-post evaluation design based on the Donabedian Quality Assessment Conceptual Framework (Pranboon et al., 2020). This study supports the premise that when fully embraced and well-planned, nurse led initiatives improve patient outcomes and increase patient safety. The study included 36 SE patients and did show improvement of some SE outcomes but did not eliminate other comorbid conditions or complications (Pranboon et al., 2020). This article while low in sample size, shows a strong relationship between the dependent and independent variables and lead to improved outcomes in the nursing management of actively seizing patients.

One article was selected related to stroke. This was a similar study to Pranboon as it demonstrated that nurse lead intervention teams are effective in improving outcomes as related to stroke rather than seizure (Mainali et al., 2017). This was a prospective, non-randomized, feasibility study of quality improvement that was conducted over seven months at a university hospital. Its results showed improved door to needle times for stroke patients improved by 106.1 minutes with $P = .04$ with a nurse driven stroke team. This article is included because while not specific to seizure, it is a rigorous study generalizable to other neurological conditions with the skill set and development process being similar.

Seizure and Seizure Management

The ILAE revised classification system for seizure. Seizure is classified first by their onset; focal, generalized, or unknown (Fisher et al., 2017). Focal onset seizure is further categorized based on awareness or loss of awareness, motor or non-motor, and focal to bilateral tonic clonic. General onset seizures are further categorized by nonmotor or motor with subcategories of tonic-clonic or other motor. When the onset is unknown there is an unclassified, nonmotor, or motor with tonic-clonic movement or other motor. Each of these can be further categorized based on extensive further descriptors so defined by the ILAE system (Fisher et al., 2017). Eight articles related to seizure identification and management were selected to establish current guidelines and to develop the training module. The search for this section obtained the most articles related to the clinical problem. Two systematic reviews established the current epidemiology of SE in the US (Lu et al., 2020; Shorvon, S., & Sen, A. (2020). Three of the articles did use sources greater than five years old none used sources that were greater than 10 years old. The use of the older sources, however, was related to established facts and pathophysiology of seizure and also the discussion of historic methods of seizure management. Foster et al., (2018) was a retrospective cohort study to identify clinical factors that assist with delineation between the new onset of seizures versus recurrent seizure. Chakraborty & Hocker (2019) also showed that the clinical spectrum of SE can lead to misdiagnosis and poor outcomes with older patients. Hantus (2016) used a guideline presentation to establish a definition of epilepsy emergencies and best practices. In 2017 the International League Against Epilepsy published an overview and revised classification of seizure and epilepsy (Pack, 2019). Bergy (2016) also provided a systematic review to provide a current, updated guideline for the assessment and treatment of first seizure. The only primary source was Foster et al., (2018). The

remainder of the articles were secondary sources. Secondary sources do not provide the strongest of scientific support.

Four articles are included with seizure management and SE as their focus. Nelson & Varelas (2018) performed a systematic review that defined the term SE as having three states: SE, refractory SE, and super refractory SE and offered evidence-based treatment methods. This study was a secondary literature source. A retrospective cohort study accessed the nature of complications associated with generalized tonic clonic seizures and the use of laboratory markers to assist with diagnosis and management (Nass et al., 2020). Another retrospective cohort study evaluated 120 patients at a private hospital and showed that a phenobarbital protocol was effective in treating alcohol withdraw and preventing seizures which lead to decreased length of stay and decreased use of ventilators (Tidwell et al., 2018). Jones et al. (2016) performed a retrospective cohort study that examined the activation of the rapid response team and its use of 10 criteria for intensive care unit (ICU) patient admissions. The final three articles in this area are all primary sources and provide strong evidence and knowledge for the treatment and prevention of seizure with modest to moderate population and sample sizes.

Nurse Training

The development of a robust and effective and evidence-based training module on seizure and seizure management required articles that focused on education and training. Five articles met this requirement. Lee et al. (2019) conducted quantitative quasi-experimental research that measured the effect of an algorithm and educational program for hospital-based nurses to care for children with seizure. The authors discussed the need for a random control group for further testing and a focus based on web-based training to improve generalizability. The use of the American Association of Neuroscience Nurses Seizure Algorithm was studied in a quantitative

quasi-experimental research project and suggested that 17 nurses increased self-confidence when assessing seizure in patients with intellectual disability (Cullen & Auberry et al., 2016). The study used a pre-test post-test to generate data. The small size sample size did limit the studies generalizability. Litzinger et al. (2019) led a cohort research project that measured how a data-driven approach to team training with 68 of 88 trauma nurses developed a measurement and assessment tool and provided insight as to what has worked and what has failed as it relates to training.

Two articles Lewis et al. (2019) and Fisher et al. (2019) investigated how high-fidelity simulations support nursing education. Lewis et al. (2019) reviewed 12 articles representing 844 registered nurses were included in the review. Nine studies specifically showed that simulation training for acute care nurse in high-risk infrequent events benefited patient outcomes and clinical quality indicators (Lewis et al., 2019). The review also found that there is a need for standardization of simulation quality and the development of standardized results measurement tool (Lewis et al., 2019). This meta-analysis gives strong support to the development of simulation-based training. Fisher et al., (2018) also suggested that nurse-driven simulations prepared 159 staff members for low-frequency events high-risk events. Their study was limited as it only involved one clinical site.

Measurement and project structure

To facilitate the implementation of this project research was needed to find a model that would give support to the proposed change. The Iowa Model Revised: Evidence Based Practice to Promote Excellence in Healthcare (IMEB-PEH) was used to give structure to the project (Buckwalter et al., 2017). The research by Buckwater et al. (2017), developed the revised Iowa Model using the 41 item REDCap survey distributed to 2,052 individual e-mail address

producing 431 usable surveys. The validation occurred at the 2015 University of Iowa Hospitals and Clinics Evidence-based practice conference with 299 participants. The participants agreed that IMEB-PEH was streamlined and easy to follow (Buckwater et al., 2017).

A validated measurement tool was used to evaluate novice nurses' perceived ability to provide care in acute situations. Sterner et al. (2020) performed 17 interviews with nurses that had less than 1 year of experience to develop a measurement tool that measured perceived performance on tasks aimed at improving health and reduce suffering in acute situations. The final 17 item instrument was validated by 209 novice nurses and achieved a Cronbach's alpha of 0.90 and an ordinal alpha of 0.92 (Sterner et al., 2020).

Summary of Literature Review

The literature review found two articles related to the lack of seizure management education in nursing education. The articles provide moderate support. A strong article in a parallel topic provided additional research for the proposed change. This demonstrates a need for further qualitative research that helps investigate the nature of nurses' feelings of self-confidence, self-efficacy, and knowledge as it relates to seizure and how specifically how new nurses are exposed to seizure during their education. There was plentiful, strong, scientifically sound, quantitative research available for describing seizure and seizure management as well as support for simulation-based nurse training. Future research will address standardization of the qualities of rigorous simulation training and the development of a validated measurement tool for simulation-based training results. The theoretical model and the validated measurement tool also add structure and relevance to the project results with strong literature support.

Chapter III: Project Design and Description

Study Purpose

The purpose of this quality improvement study is to improve nurses' feelings of self-confidence, self-efficacy, and knowledge when treating actively seizing patients.

Study design

This quality improvement study will use evidence-based training to increase nurses' knowledge about seizures, seizure management, and the role of nurses in managing actively seizing patients. Pre and post intervention data collection will occur. The implementation of the training will be made possible by the collaboration of stakeholders. The evidence-based practice council also approved this quality improvement project. Input from stakeholders regarding type of presentation, length, selection of participants, measurement tools and theoretical framework was solicited by the PI. The importance of the plan and its goals were communicated to stakeholders. This multifaceted collaboration facilitates all the aspects of this project. The meetings will be held at the hospital in an area that has presentation equipment and space for sitting and writing. The training itself will be presented via Power Point and will be thirty minutes in length.

The important components of the training itself will start with the basic neuro anatomy and pathophysiology of seizure. A section that includes the etiology of seizure and a brief overview of the various precipitating events that can lead to seizure in the acute care setting. The next section gives instructions for the management of the actively seizing patients and the specific nursing interventions that accompany evidence-based seizure management. These guidelines are based on the current literature and align with existing institutional policy.

Conceptual and Operational Definitions

- 1) Nurse Practitioners (NPs) are nurses with prescriptive authority who are certified in an advanced practice role.
- 2) Registered Nurses are nurses that are prepared by either an associate degree or bachelor's degree and have obtained a license to practice nursing by the state.
- 3) Seizure is occurring when brain cells some of them, or all are abnormally overactive that cause consciousness, body movement, sensation, speech, mood, memory, and emotions can be changed during the one or two minutes. (AAN, 2014)
- 4) Status epilepticus is a seizure lasting longer than five minutes (Nelson et al., 2018).
- 5) Principle Investigator (PI) is the doctoral student.

Setting

This study will be conducted in a mid-sized hospital in Tampa Bay, Florida. The mid-size hospital provides medical services to the Tampa Bay region. The hospital has 42 dedicated neurology medical surgical beds. However, seizures can occur on all hospital units. The Tampa Bay Area encompasses four counties located in the west central region of Florida and has a population of 3.2 million residents, making it the second most populated area in Florida and the seventeenth largest populous among American metropolitan areas (U.S. Census Bureau, 2019). The population is evenly distributed among males and females and is 61.3% non-Hispanic white. Twenty-one percent of the population is under the age of 18 years, and twenty-seven percent above 60 years. There are approximately 183,130 registered nurses in Florida. There are 3,3080,100 registered nurses in the United States (U.S Bureau of Labor Statistics, 2020)

Sample Selection

The sample will be a convenience sample of nurses at a midsized urban hospital. Prior to going through the educational program, nurse managers will give their approval to have one of their departmental staff meetings used to give the training. This both will keep the cost of staff payroll low and allowed for a venue that participants would normally receive education. Prior to going through the education, the pre-test will be administered.

Inclusion Criteria

The criteria for inclusion in the study includes being a unit-based nurse registered nurse with either associates, bachelor's, or master's degrees. Part of the requirement to work as a RN in Florida Hospital is to possess an unincumbered Florida RN license, which confirmed the eligibility to participate in the study for all attendees.

Adults aged 18 and up is the population served by the registered nurses enrolled in the study. Nurses can be either male or female and be greater than 18 years of age. The nurse must have be present at one of the trainings. They must also have agree to participate in the evidence-base project and complete both the pre and post education evaluation.

Exclusion Criteria

Patient care technicians, cardiac telemetry technicians, licensed practical nurses and social workers are invited to be present for the training but will excluded from the measurement as the research focus was exclusively on registered nurses. Those nurses whose population focus include pediatrics, dialysis, woman's health, intensive care units, emergency room, procedural areas, and operating rooms were also excluded given their extensive training for emergency situations and or lack of employment by the hospital.

Research Proposal

A research proposal asking permission to conduct this study was submitted to the Institutional Review Board (IRB) at the University of Tampa as well as the hospital's IRB. A presentation to Bay Care's evidence-based practice council was also given and accepted. Approval to conduct this study was subsequently obtained.

After permission to conduct this study from both the IRBs was granted, participants will be recruited via unit-based meetings. This study will recruit RNs working on medical surgical units. When RNs agree to participate in the study, the primary investigator (PI) will review the study's procedures, obtain consent, and collect demographic data during the evidence-based training. The consent is in Appendix E. The demographic data sheet is in Appendix F, power point presentation and intervention in appendix, pre and post questionnaires in appendix....

The pre and posttest survey was developed by Sterner et al. (2020) who performed 17 interviews with nurses that had less than 1 year of experience to develop a measurement tool that measured perceived performance on tasks aimed at improving health and reduce suffering in acute situations. The final 17 item instrument was validated by 209 novice nurses in Sweden and achieved a Cronbach's alpha of 0.90 and an ordinal alpha of 0.92 (Sterner et al.,2020).

Data Collection

The data collection will occur prior to and after training conducted from 06/01/2022 through 07/31/2022 at regularly schedule unit-based staff meetings. The trainings will be a part of this meeting. Prior to the training, the PI will provide information via a participation recruitment announcement email to all potential participants explaining the study and that participation in the study is completely voluntary. Verbal informed consent will be obtained at the beginning of the clinical practicum meetings. Before each training session, attendees will be

informed that by completing the pre-test or the post-test, they acknowledge that they are at least 18 years of age, that they have read and understand this verbal informed consent, and that they have had an opportunity to ask questions about the research project. They voluntarily agree to participate in a study based on the information presented to them. They may choose to withdraw at any time without prejudice or penalty by not completing pretest and/or post-test. All training attendees received a copy of the verbal informed consent, which included the name and phone number of the researcher and the IRB at the University of Tampa, should they have any questions.

Pretest, posttest, and the training content will be reviewed and approved by experts in the field of nursing education, continuing education, neurology, and evidence-based seizure management.

At the beginning of the training, each qualified participant will be given a unique envelope with instruction not to open it until told to do so. Attendees will be reminded that if they complete the tests, they gave consent for their results to be part of the study. Most importantly, they were told if they didn't wish to participate in the study, they should leave the pretest and posttest blank. After a verbal informed consent is obtained, and questions answered if any, the PI will leave the room. Participants will be informed not to start the pretest until the PI exits the room, participants will have 10 minutes to complete the test. After completion or not of the pretest, participants return their test to their individual envelope. After all participants return their pretest into the envelop, the unit educator or designee informs the PI to return to the training room. Then, RNs will participate in the live 30-minute training provided by the PI. After the live training, the PI informs the participants who wished to, to fill out the 10-minute posttest and return it to their individual envelop. The same process applied for the pretest will be followed for

the posttest in addition at the end of the post test, the participants place their sealed individual envelop into a locked box. After the participants are dismissed, the PI returns to the training room to collect the locked box. This collection process ensured the PI had no knowledge of who participated in the study and the PI had no contact with the participants following the completion of the posttest.

Plan for Data Analysis

Data collection itself must be performed in a systematic and secure way, otherwise, the information will have little meaning and participants privacy will be put at risk. A database was constructed prior to collection taking place. The need for data integrity and accuracy is self-evident. Poor quality data produces results that are not generalizable or meaningful. Butler states that when information exchange is not handled well, the truth becomes muddled (2018). Assurance keeps the data valid and meaningful (Butler, 2018).

Making structured data collection a part of the workflow boosts reporting quality and eliminates inefficiencies and gaps (Johnson, 2016). Data accuracy was maintained by minimizing data entry points. A database with radial buttons, drop down menus, and selectable items made collection fast and minimized data collections errors. Another way data integrity was maintained was auditing. Data auditing occurred daily during the collection process to verify information accuracy. Any inaccuracies were corrected during auditing. The principal investigator will be the exclusive data entry technician and that reduces the possibility of recording variation. Minimizing the number of people collecting data to one individual also prevents discrepancies in the data collection process and minimize information inaccuracies.

Data Analysis

Intellectus statistics with the SPSS data package will be used to perform detailed analysis. A dependent t test analysis was used with pair mating to give the project statistical significance.

Protection of Human Subjects

A research proposal asking permission to conduct this study was submitted to the University of Tampa Institutional Review Board (IRB). The PI is a nurse practitioner providing patient care at the hospital. Due to the inherent relationship of the PI as an established healthcare provider and the RNs as participants, the RNs are identified as a vulnerable population. Therefore, the PI has incorporated procedures in this study to minimize the risk for participants as an identified vulnerable population. The PI has recognized the power differential exists and several procedures have been incorporated in the methodology of this study to abate this risk.

For example, to provide student anonymity, the PI will only be present during the training session. The PI will leave the room while students complete their pretest and posttest and place their documents in a sealed envelope deposited in a locked box. The PI will return to the room, after the continuous education meeting has ended and participants are dismissed, to pick-up the locked box. The PI will not have any way to identify which students completed the tests and which students did not participate and deposited an uncompleted or blank test into the envelope and locked box. To further protect student anonymity, no information was collected on the demographic form about race, ethnicity, or gender, since most participants will be Caucasian females. This prevented the remote chance of the PI identifying minorities based on demographic information collected.

The PI will identify a locked box in the training room and instruct the participants to place their pretest and posttest after they are finished with them. The PI will not be present in the room during test taking and collection of the test.

Additionally, on January 17, 2021, the PI completed the CITI PROGRAM Biomedical Research-Basic Course Completion of this program further ensures the PI understands, both the value and the many threats of the power differential, which is the core of ethical awareness. Finally, the PI, as a DNP student and healthcare provider is well versed on the key ethical rights of individuals to include informed consent, beneficence, nonmaleficence, autonomy and justice.

All information collected and recorded anonymously, there was no identifiable information collected on the pre and posttests. The institution requested to help maintain the security of the data. They issued a company secured laptop. All information will be stored on the password protected two-part authentication secured laptop. Only the principal investigator had access to the laptop secured by a password only known to the principal investigator. The laptop was kept on the researcher's person while on campus. While not in use, it will be secured in a BIGHORN 18.46 cubic foot combination safe that only the principal investigator had access to at his private residence. The data was loaded into SPSS software provided by the University of Tampa and will also be reviewed by Intellectus Statistics for data analysis as required for the DNP project. Once the project is completed the data file will be destroyed on SPSS.

Survey forms will be destroyed after they have been entered into the computer. The data file will be destroyed at the conclusion of the DNP project prior to returning the laptop to BayCare once the final project is accepted in part fulfillment of the DNP degree and the project is archived at the University of Tampa.

The results of the study will not be shared outside the context of this project.

Risk level

There are no physical risks known to this study. There is a potential for minimal psychologic and social risk as participant could potentially feel anxious participating in an in-service session, and answering a questionnaire, the seriousness of these risks will likely be minimal. To minimize risks, participants were reminded the information obtained is anonymous, and of their right not to participate or withdraw from the study at any time without fear of retribution.

Strength and Limitation of the Study

The QI format is well suited for this study since the aim of QI is to implement evidence-based practice to improve patient care. The principal investigator is an expert in neurological care as he has over ten years of experience accessing, managing, and treating patients with seizures. He also has a degree and experience in education.

The number of participants is limited to those available at the unit-based meetings. Also, being delivered in a hospital the nurses may be less likely to incorporate the learning into their daily practice. Also, a longitudinal study is more likely to measure the impact of this training as it relates to nurses' feeling of self-confidence and self-efficacy. There are also a few studies that show how nurses are specifically trained to manage acute neurological emergencies as a point of comparison. Simulation training may also provide better outcomes as they tend to give better opportunities for practical skill development and implementation for nurses individually.

Chapter IV: Outcomes Evaluation

The purpose of this quality improvement study was to improve nurses' feelings of self-confidence, self-efficacy, and knowledge when treating actively seizing patients. To accomplish this, nurses' knowledge of and self-efficacy in their ability to treat seizing patients was tested before and after a hospital wide intervention. The development of an evidence-based seizure module see Appendix A, was accomplished with approval of three content area experts see appendix B. The nurses who participated directly in the training provide feedback via the study measurement tools. The PI completed the evidence-based training at unit-based staff meetings that occurred over the course of two months. Through communication with nurse managers, nursing administration, the internal review board at both the university and the hospital as well as the project chair and preceptor facilitated the success in the project.

To prepare for data analysis, any data missing data and outliers were identified and removed from analysis. Six composite scores were calculated from the PCAS survey based on instrument instruction. Those scores were confidence in provision of care, communication, and patient perspectives for both the pre and post surveys. A series of paired sample t-tests and McNemar's chi square tests were run to determine if nurses scores differed between pre and posttests. Additionally, a correlation analysis was run to assess if there was a relationship between nurses age and years of experience and the six composite score variables.

PICOT Question and Hypothesis

The picot question was established as: How does implementation of an evidence-based guideline on active seizure management with standardized training compare with current training in bedside nurses at a large Tampa Bay hospital regarding efficacy and confidence, measured using the perceived ability to provide care in acute situations instrument (PCAS), in management of actively seizing adults over two months?

H1: There is a significant difference between nurses scores for their confidence in provision of care between the pretest and posttest.

H2: There is a significant difference between nurses scores for their communication between the pretest and posttest.

H3: There is a significant difference between nurses scores for the patient perspective between the pretest and posttest.

H4: There is a significant difference in nurses knowledge scores for questions A-J between the pretest and posttest.

H5: There is a significant relationship between the age and years of experiences of nurses and their scores on the pre and posttest.

Results

Descriptive Statistics Prior to running hypothesis testing, descriptive statistics were calculated for the questions from both the pretest and posttest as well as for participants age and years of experience. Means and standard deviations were run for scale variables, while frequencies and percentages were calculated for categorical variables.

Means and standard deviations were calculated for age, years of nursing, confidence in provision of care pre, confidence in provision of care post, communication pre, communication post, patient perspective pre, and patient perspective post. First, the nurses in the sample were on average 33.86 years old ($SD = 11.86$). Additionally, nurses responded they had been working as a nurse for 7.78 years on average ($SD = 10.30$). For confidence in provision of care pre nurses had an average score of 1.21 ($SD = 0.34$), while for confidence in provision of care post nurses

had an average score of 1.23 ($SD = 0.21$). The average score for nurses' communication on the pretest was 0.97 ($SD = 0.13$), while the average score for the communication posttest scores was 0.98 ($SD = 0.13$). Finally, nurses scores on patient perspective pre had an average of 0.93 ($SD = 0.19$), while the scores on patient perspective post had an average of 0.99 ($SD = 0.09$). The summary statistics can be found in Tables 1 and 2.

Additionally, frequencies and percentages were calculated for the pre and post scores for each of the ten knowledge questions. At pretest, the majority of participants responded incorrectly to questions A ($n = 39, 52.70\%$), B ($n = 49, 66.22\%$), C ($n = 68, 91.89\%$), D ($n = 46, 62.16\%$), E ($n = 58, 78.38\%$), F ($n = 54, 72.97\%$), and G ($n = 60, 81.08\%$). Additionally, the majority of participants responded correctly to questions H ($n = 44, 59.46\%$), I ($n = 64, 86.49\%$), and J ($n = 44, 59.46\%$) at pretest. At posttest, the majority of participants responded correctly to questions A ($n = 57, 77.03\%$), B ($n = 39, 52.70\%$), F ($n = 50, 67.57\%$), H ($n = 48, 64.86\%$), and I ($n = 70, 94.59\%$). Finally, the majority of participants responded incorrectly to questions C ($n = 43, 58.11\%$), D ($n = 44, 59.46\%$), E ($n = 40, 54.05\%$), and J ($n = 44, 59.46\%$) at posttest. Frequencies and percentages are presented in Table 3.

Hypothesis Testing

H1: There is a significant difference between nurses scores for their confidence in provision of care between the pretest and posttest.

To address the first hypothesis, a two-tailed paired samples *t*-test was conducted to examine if there were differences in nurses scores between the pre and posttest for the variable's confidence in provision of care. Prior to data analysis, the assumptions normality and homogeneity of variance were assessed.

Normality. A Shapiro-Wilk test was conducted to determine whether the differences in Confidence in provision of care pre and Confidence in provision of care post could have been produced by a normal distribution (Razali & Wah, 2011). The results of the Shapiro-Wilk test were significant based on an alpha value of .05, $W = 0.76, p < .001$. This result suggests the differences in confidence in provision of care pre and post are unlikely to have been produced by a normal distribution, indicating the normality assumption is violated.

Homogeneity of Variance. Levene's test was conducted to assess whether the variances of Confidence in provision of care pre and post were significantly different. The result of Levene's test was not significant based on an alpha value of .05, $F(1, 142) = 3.56, p = .061$. This result suggests it is possible that confidence in provision of care pre and confidence in provision of care post were produced by distributions with equal variances, indicating the assumption of homogeneity of variance was met.

Results. The result of the first two-tailed paired samples t -test was not significant based on an alpha value of .05, $t(71) = -0.42, p = .674$, indicating the null hypothesis cannot be rejected. This finding suggests the difference in the mean of confidence in provision of care pre and the mean of confidence in provision of care post was not significantly different from zero. The results are presented in Table 4. A bar plot of the means is presented in Figure 1.

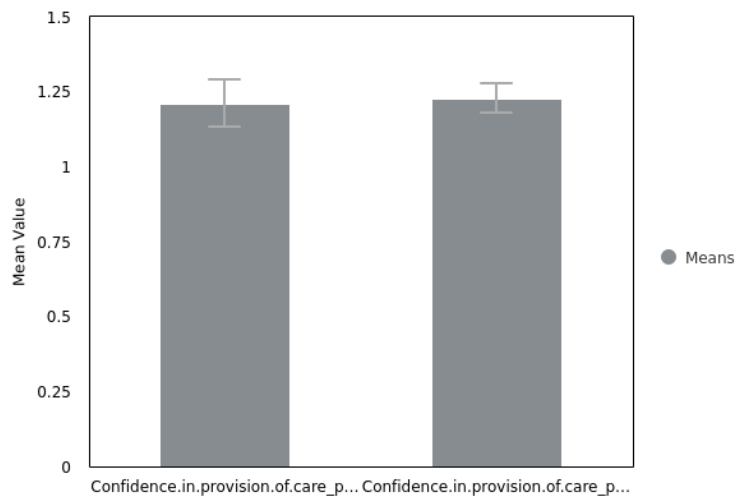
Table 4

Two-Tailed Paired Samples t -Test for the Difference Between Confidence in provision of care pre. and Confidence in provision of care post

Confidence in provision of care pre		Confidence in provision of care post		t	p	d
M	SD	M	SD			
1.21	0.34	1.23	0.21	0.42	.674	0.05

Figure 1

The means of Confidence in provision of care pre and Confidence in provision of care post with 95.00% CI Error Bars



Due to the violation of normality, an additional two-tailed Wilcoxon signed rank test was conducted to examine whether there was a significant difference between confidence in provision of care pre and confidence in provision of care post. The two-tailed Wilcoxon signed rank test is a non-parametric alternative to the paired samples t -test and does not share its

distributional assumptions (Conover & Iman, 1981). The results of the two-tailed Wilcoxon signed rank test were not significant based on an alpha value of .05, $V = 397.50$, $z = -1.57$, $p = .117$. This supports the results of the paired sample t -test.

H2: There is a significant difference between nurses scores for their communication between the pretest and posttest.

To address the second research hypothesis, another two-tailed paired samples t -test was conducted to examine whether the mean difference of communication pre and communication post was significantly different from zero. Prior to data analysis, the assumptions normality and homogeneity of variance were assessed.

Normality. The results of the Shapiro-Wilk test were significant based on an alpha value of .05, $W = 0.37$, $p < .001$. This result suggests the differences in communication pre, and communication post are unlikely to have been produced by a normal distribution, indicating the normality assumption is violated.

Homogeneity of Variance. The result of Levene's test was not significant based on an alpha value of .05, $F(1, 146) = 0.10$, $p = .755$. This result suggests it is possible that communication pre and communication post were produced by distributions with equal variances, indicating the assumption of homogeneity of variance was met.

Results. The result of the two-tailed paired samples t -test was not significant based on an alpha value of .05, $t(73) = -0.81$, $p = .418$, indicating the null hypothesis cannot be rejected. This finding suggests the difference in the mean of communication pre, and the mean of

communication post was not significantly different from zero. The results are presented in Table 5. A bar plot of the means is presented in Figure 2.

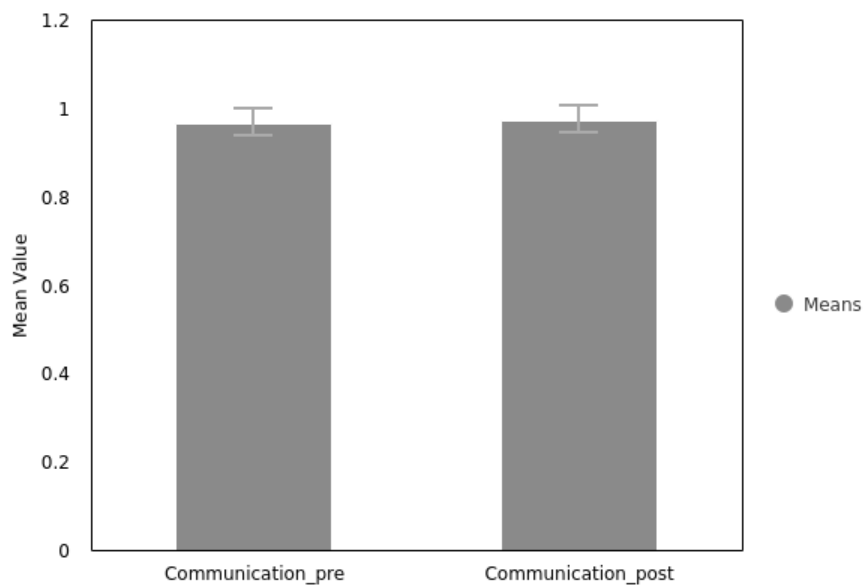
Table 5

Two-Tailed Paired Samples t-Test for the Difference Between communication pre and communication post

Communication pre		Communication post				
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
0.97	0.13	0.98	0.13	- 0.81	.418	0.09

Figure 2

The means of Communication pre and Communication post with 95.00% CI Error Bars



Due to the violation of normality, an additional two-tailed Wilcoxon signed rank test was conducted to examine whether there was a significant difference between communication pre and communication post. The results of the two-tailed Wilcoxon signed rank test were not significant based on an alpha value of .05, $V = 7.00$, $z = -0.82$, $p = .414$. This supports the results of the paired sample t -test.

H3: There is a significant difference between nurses scores for the patient perspective between the pretest and posttest.

To address hypothesis three, a final two-tailed paired samples t -test was conducted to examine whether the mean difference of patient perspective pre and patient perspective post was significantly different from zero. Prior to data analysis, the assumptions normality and homogeneity of variance were assessed.

Normality. The results of the Shapiro-Wilk test were significant based on an alpha value of .05, $W = 0.52$, $p < .001$. This result suggests the differences in patient perspective pre and patient perspective post are unlikely to have been produced by a normal distribution, indicating the normality assumption is violated.

Homogeneity of Variance. The result of Levene's test was significant based on an alpha value of .05, $F(1, 146) = 4.93$, $p = .028$. This result suggests it is unlikely that patient perspective pre and patient perspective post were produced by distributions with equal variances, indicating the assumption of homogeneity of variance was also violated.

Results. The result of the two-tailed paired samples t -test was significant based on an alpha value of .05, $t(73) = -2.17$, $p = .033$, indicating the null hypothesis can be rejected. This

finding suggests the difference in the mean of patient perspective pre and the mean of patient perspective post was significantly different from zero. The mean of patient perspective pre was significantly lower than the mean of patient perspective post. The results are presented in Table 6. A bar plot of the means is presented in Figure 3.

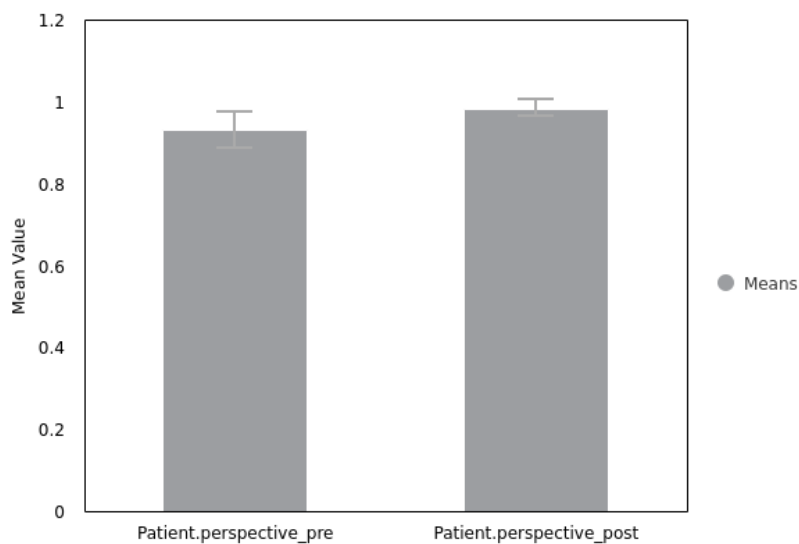
Table 6

Two-Tailed Paired Samples t-Test for the Difference Between Patient perspective pre and Patient perspective post

Patient perspective pre		Patient perspective post		<i>t</i>	<i>p</i>	<i>d</i>
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
0.93	0.19	0.99	0.09	2.17	.033	0.25

Figure 3

The means of Patient Perspective pre and Patient Perspective post with 95.00% CI Error Bars



Due to the violations of both normality and homogeneity of variance, a supplemental two-tailed Wilcoxon signed rank test was conducted to examine whether there was a significant difference between patient perspective pre and patient perspective post. The results of the two-tailed Wilcoxon signed rank test were significant based on an alpha value of .05, $V = 13.50$, $z = -2.05$, $p = .040$. This indicates that the differences between patient perspective pre and patient perspective post are not likely due to random variation. This supports the results of the paired sample t-test.

H4: There is a significant difference in nurses knowledge scores for questions A-J between the pretest and posttest.

To address hypothesis four, ten McNemar's Chi-square test for 2 x 2 contingency tables were conducted to test if the outcome proportions (correct or incorrect) were equal for each of the knowledge questions between the pretest and posttest. The McNemar's test is an appropriate statistical analysis when the purpose of research is to assess if proportions of the outcome differ for paired samples (pre and posttest) of two dichotomous variables (incorrect and correct).

Results. A series of ten McNemar tests were conducted for questions A-J between the pretest and posttest scores. The results of each test indicated that there was a significant difference between proportions of correct and incorrect answers between the pretest and posttest for questions A, B, C, E, F, I, and J. For each of the questions, the results suggested that the proportion of correct responses improved at the posttest.

Additionally, the results of the ten tests also indicated that there was not a significant difference in the proportion of correct and incorrect answers between the pretest and the posttest for questions D, G, and H. See Tables 7-16 for the results of each test.

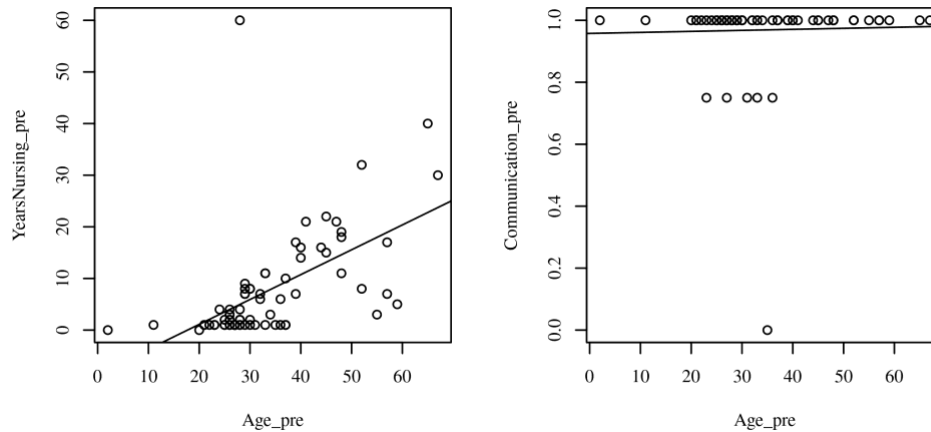
H5: There is a significant relationship between the age and years of experiences of nurses and their scores for each question on the pretest and posttest.

To address hypothesis five, A Pearson correlation analysis was conducted to determine if there was a relationship among nurses age, years of nursing, communication pre, communication post, patient perspective pre, patient perspective post, confidence in provision of care pre, and confidence in provision of care post. Cohen's standard was used to evaluate the strength of the relationships, where coefficients between .10 and .29 represent a small effect size, coefficients between .30 and .49 represent a moderate effect size, and coefficients above .50 indicate a large effect size (Cohen, 1988). Prior to data analysis, the assumption of linearity was assessed

Linearity. A Pearson correlation requires that the relationship between each pair of variables is linear (Conover & Iman, 1981). This assumption is violated if there is curvature among the points on the scatterplot between any pair of variables. Figure 4-Figure 7 presents the scatterplots of the correlations. A regression line has been added to assist the interpretation.

Figure 4

Scatterplots with the regression line added for Age and Years of Nursing (left), Age and Communication pre (right)

**Figure 5**

Scatterplots with the regression line added for Age and Patient Perspective pre (left), Age and Confidence in provision of care pre. (right)

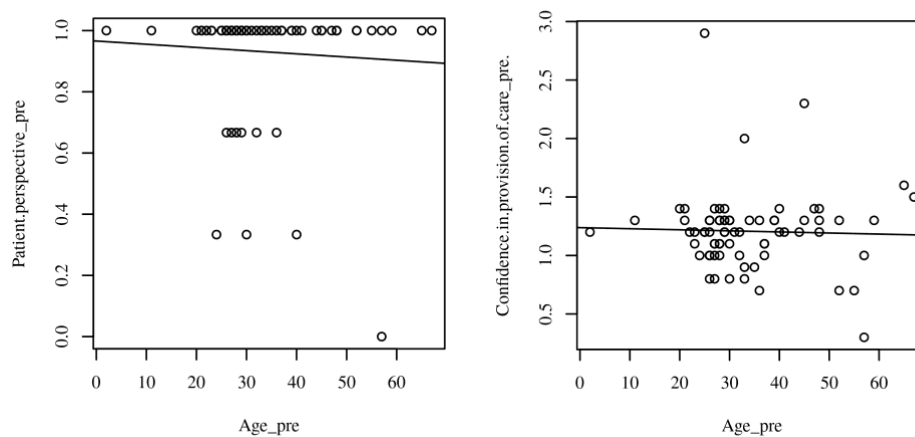
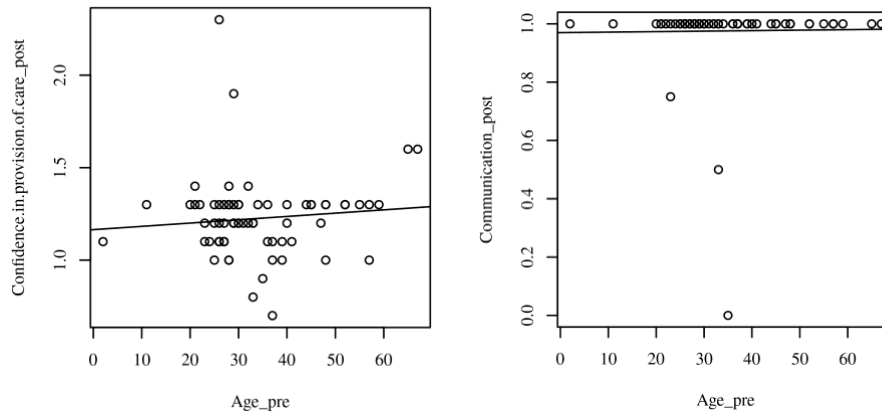
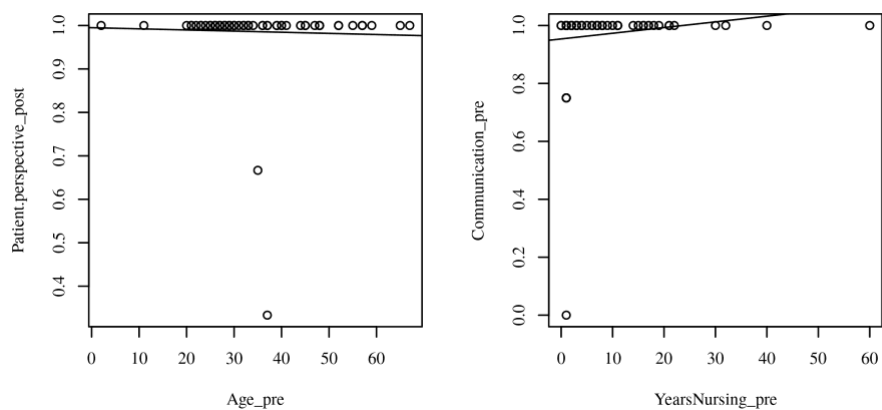


Figure 6

Scatterplots with the regression line added for Age and Confidence in provision of care post (left), Age and Communication post (right)

**Figure 7**

Scatterplots with the regression line added for Age and Patient Perspective post (left), Years of Nursing and Communication pre (right)



Results

A significant positive correlation was observed between age and years of nursing, with a correlation of .55, indicating a large effect size ($p < .001$, 95.00% CI = [.37, .69]). This suggests

that as age increases, years of nursing tends to increase. No other significant correlations were found. Table 17 presents the results of the correlations.

Summary

Overall, the purpose of this study was to determine if nurses score on a self-efficacy and knowledge for dealing with actively seizing patients questionnaire differed following an instructional intervention. To assess the five hypotheses, three t-tests and ten McNamar's tests were conducted on the self-efficacy variables of confidence in provision of care, communication, and patient perspective pre and post scores and for the knowledge questions A-J pre and post scores respectively. Additionally, a Pearson correlation was run between the self-efficacy variables and age and years of experience. Prior to running the analyses, the appropriate assumptions were conducted for each test. The three t-tests all violated at least one assumption, so supplemental nonparametric tests were also run to support the results of the t-test.

The results indicated that there was a significant difference between nurses understanding for patients' perspectives before and after the intervention. Specifically, there was an increase in nurses scores for patient perspective from the pretest to the posttest. Additionally, there was a significant difference between the nurses' responses on knowledge questions A, B, C, E, F, I, and J from the pretest to posttest. Specifically, the proportion of correct responses for each of the significant questions improved at the posttest. This indicates that for questions A, B, C, E, F, I, and J the number of nurses who scored correctly to those questions increased following the seizure intervention. Finally, there was a significant positive correlation between age and years of nursing. This suggests that as nurses age increases, so does their years of experience. The next chapter will discuss the implications of these results in relation to previous literature and results.

Chapter V: Discussion

This scholarly project was a quality improvement study conducted in a medium sized, urban hospital. The study addressed the minimal exposure to seizure training and seizing patients for medical surgical nurses. Supported by the literature, a thirty-minute evidence-based, seizure training was developed and implemented hospital wide. The strengths and limitations of this QI project are presented, followed by an interpretation of the results as compared to the existing literature. Finally, the implications of the study will be addressed.

Strengths

When evaluating the impact of a project there are both intended and unintended effects. With 94% of the nursing units participating in the training at the study site, most of the nurses in the hospital have received seizure training. Effects of implementing hospital wide seizure management education amongst hospital-based nursing staff was meant to increase nursing confidence, self-efficacy, and knowledge amongst hospital-based, nursing staff. This training was provided during regularly scheduled unit-based meetings as a matter of convenience. This is the main reason so many nurses were reached by this quality improvement study.

Another reason this training was successful was that the content area and delivery experts were known to the nurses. The training was developed in coordination with content area experts along detailed literature review, that informed this project. The nurses received a large quantity of information regarding seizure, its etiology, and how to manage actively seizing patients. As physicians and educators were already present in the hospital setting, they were trusted sources of expertise.

The Iowa Model Revised: Evidence Based Practice to Promote Excellence in Healthcare (IMEB-PEH) was used to give structure to the project (Buckwalter et al., 2017). This well-established practice model provided a solid foundation that gave the project's foundation a solid

grounding in practice. The model's ability to accommodate change and challenge gave a flexibility that ensured the project's completion, and never led a logic pathway to a dead-end.

There was a significant coloration with improvement of feelings of self-efficacy and self-confidence with nurse post training, as well as a significant improvement in knowledge.

An unintended impact was how many of the nurses now know the researcher personally. There are a lot of providers in a hospital setting and it can be difficult for nurses and providers to develop a professional relationship. Nurses have a lot of contact with the hospitalists, but interaction with the numerous specialty providers can be limited. Another unintended impact was how the process created a new dynamic between the PI and nurse managers. As there was more personal interaction, each individual manager's personalities, strengths, leadership styles, and unit challenges became more evident and were demonstrated. Most of the meetings were well attended.

Limitations

The training was given at 94% of the unit-based meetings. Covid 19 was a complicating factor as it relates to attendance at unit meetings. Evaluating the actual number of nurses that attended the live presentation, the covid staffing crisis must be addressed. Since starting the DNP project there has been a large staff turnover of both registered nurses, and managers. Five of the eleven nursing units have had new nurse managers since the start of the DNP project. The number of travel nurses and float nurses fluctuates weekly. Many of the new nurse managers lament at the high turnover rates and frequently utilize float nurses from the pool, and agency nurses to meet staffing requirements. This fluctuation also plays a part of how the nurses who do attend the training perform and can do so without impeding patient care. Over the past several months, many of the staffing levels have led to high nurse-patient ratios with 6 -7 patients per

nurse being an unfortunate, but common occurrence. This affects how willing they are to attend meetings and how much information they retain once there. While improving all nursing quality for patients everywhere is important, longitudinally, it will be difficult to quantify the impact of the project on the nursing staff at this institution. This high turnover may also have affected some of the lesser attended unit meeting.

Interpretations

Overall, the purpose of this study was to determine if nurses' scores on a self-efficacy and knowledge questionnaire for dealing with actively seizing patients differed following an instructional intervention. The results indicated that there was a significant difference between nurses understanding for patients' perspectives before and after the intervention. There were appreciable increases in nurses scores for patient perspective from the pretest to the posttest as well as responses on knowledge questions.

When compared with the literature nurses may have had more confidence that was warranted based on the results of the knowledge portion of the survey. Many more experienced nurses thought they knew more than was supported by their own performance on the pre and post evaluation surveys. This confirmed that while those who completed self-assessments may have been poorly informed, they were consistent with the literature regarding actual knowledge possessed by nurses about seizure. The literature shows that nurses typically feel poorly, informed regarding neurological emergencies, and had little formal training regarding seizure management (Lee & Sim, 2020). Also similar, was the nursing knowledge of their familiarity with a variety of seizures. Nurses were poorly informed of the causes of seizure expression and how the evidence of seizure can only be truly assessed with an electroencephalogram (EEG) (Holland et al., 2020). Praboon et al.'s study (2020) described how teams led by nurses, resulted

in improvement in stroke outcomes. The Mainali et al (2017) study found correlational support. The specific topics addressed by the training led to improvement in knowledge on the post test, this substantiated that nurse can have a positive impact on the training process.

Implications

Based on this study's findings and the pertinent literature, there are several implications related to practice, education, and research. For practice, the American Nurses Association strongly encourages continuous education (ANA, 2022). To provide the best, evidence-based, and patient focused care, nurses need to continually focus on sharpening their skills, updating their practice, and seeking the current state of the science and art of nursing (ANA, 2022). This training address all of these core competencies for evidence-based nursing. The American Academy of Neuroscience Nursing includes continuing education and certificate programs that encourage seizure and epilepsy healthcare professional development (AANN, 2022). The research priorities of this project align with the current AANN and ANA priorities and emphasize the need for continuing education and nursing engagement.

Practice implications are at the root of the QI triple AIM goals. There are a few recommendations to improve the effects on practice. This training was only 30 minutes long. The reason for keeping to this time constraint was to accommodate a unit meeting and not lose tired nurses' attention. That being stated, there is a lot more information related to seizure that may improve the seizure management process. A component with live action and simulation would be useful to enhance feeling of self-efficacy and to reinforce learning. This would allow for nurses to experience an actively seizing patient simulation, while improving hands-on and assessment skills.

The measurement tool used to judge self-efficacy and self-confidence was meant for new nurses. Statistics showed it was effective in measuring that for nurses who had less than one year's experience. More experienced nurses didn't gain as much with the measurement tool. In the future, possibly two different measurement tools would be beneficial, dependent on experience to acknowledge that while not specifically experienced in seizure, overall nursing experience seems to lead to higher feelings of self-efficacy and self-confidence. The duration of the training led to a lot of information being placed in a short period of time. A longer training would allow for better reinforcement of the information.

Another method to ensure a more realistic evaluation for the nurses to address their feelings of self-efficacy and self-confidence, may be to change the order of the evaluation. The current layout of the survey addresses their feelings and perceptions first. This may have led to over confidence in their skill set. If the knowledge portion was evaluated first and separately reviewed perhaps nurses would gain a truer sense of their ability. Having a score which they can measure their knowledge would quantify their current level of knowledge as it relates to seizures and allow them to better quantify their feelings of self-confidence. Also, a simulation evaluating their ability to witness and document their observations would be useful. One idea may be to have them watch a video of a patient scenario, and then, document what they saw on the EMR. Then their evaluation would be graded on how accurate their observations were. This would give them a realistic expectation of what the standard was regarding seizure documentation. Nurses were still confused after the training on what needed to be documented. They didn't understand how to label the physical behaviors they witness during a seizure. The inclusion of videos of actual patient seizing with training will also make the seizure management more realistic. It will allow the instructor time to explain what the nurses are seeing in the actively seizing patients.

When dealing with actively seizing patients a training that includes realistic simulations may also improve outcomes. A simulation can be designed that allows nurses to follow the stay safe side protocol outlined in the training. By exercising the actual motor functions of managing seizure can improve performance and make nurses more confident in their seizure management skills. Increasing the time for the training will allow for more training activity and a comfortable period for Q&A. Considering the number and quality of the current trainings nursing staff take online, what sets this training apart is the live component. When receiving training in an interactive environment the trainer was able to tailor the content to the current group's needs. Some nurses felt that there is little adaptability in web-based or virtual training activities. A lack of true engagement of the learner via non-interactive modalities was communicated anecdotally to the trainer during the dissemination process. Many of the managers voiced enjoyment of the process and their nurses also communicated how much they felt engaged in the learning process.

As part of the agreement with the institution, the evidence-based practice council (EBPC) accepted the project and training will occur for nurses new to the hospital and possibly the system. This training will become a part of the continuing education of nurses and will also be a part of Epilepsy Awareness month activities. The training will be updated and improved as per institutional requirements.

This quality improvement provides the foundation for further investigations designed to better understand the need for seizure education among hospital-based nursing staff. Another important area for research is how in-person vs online nursing education effects patient outcomes and if there is an actual way to draw a direct line between patient outcomes and nursing education. There was a positive correlation was the age of the nurse with years of experience. As the age of the nurse increased, the more experienced the nurses tended to be. This statistic shows

that even the most experienced nurses had a significant gap in knowledge and supports that training needs to be a continuous part of all nurse's professional development at all stages of their careers.

The end goal of nurses is to provide a safe therapeutic environment that enables healing for the people in our communities. When nursing quality improves our ability to achieve these goals are made more complete and easier to obtain. Providing seizing patients with efficient, competent, nursing care, aims to minimize injury, and decrease stress on both the patients, and their families and the nurses giving that care. Nursing is currently facing a crisis of attrition. If we are to maintain safe environments, we must continue to improve the confidence of the nurses we have and provide nurturing educational nursing units that foster a sense of constant growth and improvement. Nurse development needs to be a part of the nursing professional environment.

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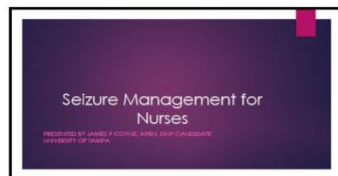
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Appendix A

Training Slides



1



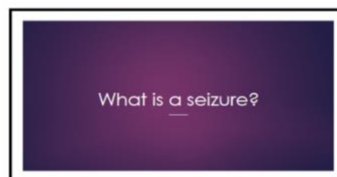
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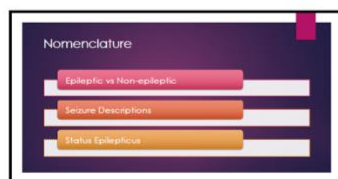
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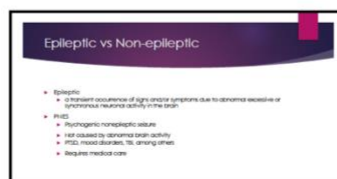
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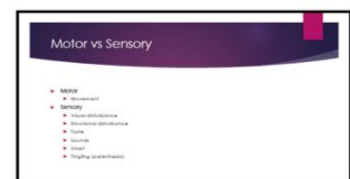
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7



8



9

Seizure Descriptions for Motor Seizure

- Tonic
 - Stiffening
- Atonic
 - Loss of tone, can lead to falls
- Myoclonic
 - Short jerking
- Clonic
 - Sustained rhythmic jerking

10

Seizure Descriptions

- Simple partial
 - One part of the brain
 - No loss of awareness
- Complex partial
 - Start in one part travel to another part
 - Can have loss of awareness
- International League of epilepsy

11

Status Epilepticus

- Defined
 - Status epilepticus is a seizure lasting longer than five minutes.

12

SSS

13

Seizure Causes

- History of high fever as a child
- Drug use or withdrawal (barbiturates) or EtOH withdrawal
- Lack of oxygen to the brain
- Metabolic disturbances (elevated glucose, or ion disturbances)
- Brain tumors, CNS infections, prior strokes, TB, concussion
- Pregnancy (complicated)
- Dementia
- Idiopathic Epilepsy
- Structural disturbances/stress (for H-E only)
- Anticoags, benzodiy

14

Seizure Medications

- Depakote (valproic acid)
- Risacata (Risperidone)
- Gabapin (gabapentin)
- Seppro (levetiracetam)
- Lamictal (lamotrigine)
- Dilantin (phenytoin)
- Imenodarbitho
- Leutantin (gabapentin)
- Tegritol (carbamazepine)
- Imegral (carbamazepine)
- Topomax (topiramate)
- Zonegran (zonisamide)
- Uffio (pregabalin)
- Sereno (gabapentin)

15

Seizure Management

16

SSS

17

S.S.S.

**STAY
SAFE
SIDE**

1. Stay with person until awake and after seizure
2. Time the onset
3. Remain Calm

18

S.S.S.

STAY
SAFE
SIDE

1. Move or guide away from harm.
Side walk up 3 ft. back

19



S.S.S.

STAY
SAFE

SIDE

1. Keep identity clear.
2. Lockdown signs (avoided) Tubercy sales
3. Self object? Under threat.

20

Abortive Medication

- Administering in RMI 24 hours for Suture.
- Common RMI reasons for abortive medications
 - Sutures lasting more than 15 minutes.
 - 2 or more verses less than 15 minutes.
- Avoids notify physician if you have given RMI medications.

21

Documentation

- Presence of A&E on morning sign
- (part of doctor's duties, but A&E's responsibility)
- Street and direction of traffic (left-hand)
- Detailed overview of medical measures or complete loss of consciousness
- Body part involved, movement, left/right, progression,
- Use of confidence (present or absent)
- Use cases on clock (look down)
- How long was the officer alone (left-hand)
- What kind of negative change (e.g. aggression, non-compliance, confusion)
- Evidence for injury
- No/Not/Not

22

Notification

- physician
- Charge nurse
- Patient's family if patient is unable to
- least shift nurse
- Patient case tech
- STAT team isn't necessary if localized event or isn't in status

23

Seizure Precautions

24

Seizure Precautions

- Pad upper side rails
- Suction with Yankner
- Assist Gavage or nasobreather with oxygen
- IV access
- Safe environment (sharp, hot drinks, breakable items).

25

[illegible]

26

[illegible]

27

Appendix B

Reviewer Letters

BayCare Health Systems
2727 W. Dr. Martin Luther King Jr. BLVD
Ste 700
Tampa, FL 33607

23 May 2022

James P Coyne, APRN
1977 Carolina Court
Clearwater, FL 33760

James:

I have reviewed the education module you have created for seizure. I endorse this training module as an evidence-based module. It meets with current practice guidelines and is consistent with safe management of actively seizing patients.

Sincerely,


Sanjiv Sahoo, MD
Neurology
Bay Care Medical Group
(813) 321-1429
sanjiv.sahoo@baycare.org

BayCare Health Systems
St. Joseph's Hospital Main
3001 W. Dr. Martin Luther King Jr. BLVD
Tampa, FL 33607

23 May 2022

James P Coyne, APRN
1977 Carolina Court
Clearwater, FL 33760

James:

I have reviewed the education module you have created for seizure. I endorse this training module as an evidence-based module. It meets with current practice guidelines and is consistent with safe management of actively seizing patients.

Sincerely,

A handwritten signature in blue ink, appearing to read "A. Belt", is positioned above the printed name and title.

Amanda Belt, BSN, CRN
Nurse Manager
Stroke and STEMI

BayCare Health Systems

Sally L Bailey Education Center, MS430
818 Milwaukee Avenue
Dunedin, FL 34698

23 May 2022

James P Coyne, APRN
1977 Carolina Court
Clearwater, FL 33760

James:

I have reviewed the education module you have created for seizure. I endorse this training module as an evidence-based module. It meets with current practice guidelines and is consistent with safe management of actively seizing patients.

Sincerely,



Rocky Hauch, DNP, RN, PCCN
Advanced Nursing Prof. Development
EBP Council CO-Chair
Team Nursing Lead

Appendix C

Pre-education survey

Age (whole number in years no dashes)

Years of experience nursing (whole numbers in years no dashes).

Please choose the best answer

1. I worry about providing care in acute situations.

strongly disagree

somewhat disagree

agree

strongly agree

☐

☐

☐

☐

2. I trust my ability to provide care in acute situations.

strongly disagree

somewhat disagree

agree

strongly agree

☐

☐

☐

☐

3. I have sufficient knowledge to provide care in acute situations.

strongly disagree

somewhat

disagree

agree

strongly agree

☐

☐

☐

☐

4. I estimate my general ability to provide care in acute situations.

Poor

Good

☐

☐

5. I estimate my ability to manage the demands that I place upon myself in acute situations.

Poor

Good

☐ ☐

6. I estimate my ability to manage demands from my colleagues in acute situations.

Poor Good

☐ ☐

7. I estimate my ability to independently determine necessary actions in acute situations.

Poor Good

☐ ☐

8. I estimate my ability to independently prioritize actions in acute situations.

Poor Good

☐ ☐

9. I estimate my ability to take instructions over the telephone in acute situations.

Poor Good

☐ ☐

10. I estimate my ability to carry out instructions that I have received over the phone in acute situations.

Poor Good

☐ ☐

11. I estimate my ability to receive instructions from an attending doctor in acute situations.

Poor Good

☐ ☐

12. I estimate my ability to independently lead bedside care in acute situations.

Poor Good

☐ ☐

13. I estimate my ability to report a patient's condition to a nurse in an acute situation.

Poor Good

☐ ☐

14. I estimate my ability to make patients participate in acute situations.

Poor Good

☐ ☐

15. I estimate my ability to understand the individual patient's care needs in acute situations.

Poor Good

☐ ☐

16. I estimate my ability to understand the individual patient's medical needs in acute situations.

Poor Good

☐ ☐

17. I estimate my ability to provide information adapted to the needs of the individual in acute situations.

Poor Good

☐ ☐

Please choose the best answer.

A) A patient is having is unconscious and rhythmic movements of the arm. The patient's head is turning to left. For proper implementation of seizure precautions, which of the following must occur? Select all that apply.

- 1) Padded Upper Side rails
- 2) Oropharyngeal suction
- 3) Oxygen tubing with non-rebreather
- 4) Tongue depressor taped to the head of the bed
- 5) IV access

B) A patient has just had a witnessed convulsing event of the arm with confusion and lost continence of bowel and bladder. Which of the following pieces of information do you document in the EMR? Select all that apply.

- 1) Duration of event
- 2) Focal Body part(s) involved
- 3) Presence of aura
- 4) Epileptic vs Psychogenic event
- 5) Loss of continence

C) Mr. Smith is a former rodeo clown with a known history of EtOH abuse. He also has a history of diabetes, cerebrovascular accident, and has been placed on amoxicillin for an upper respiratory infection. Which of the following does not contribute to epileptic seizure?

- 1) Stroke
- 2) Concussion
- 3) Antihistamines
- 4) Stress
- 5) Antibiotics

D) A 62-year-old woman is post op day 2 for a right total knee arthroplasty. The woman has a known history of seizure. Which of the following can be anticipated condition(s) for the administration of seizure abortive medication? Select all that apply.

- 1) Seizure lasting longer than two minutes.
- 2) 2 or more seizures less than 10 minutes apart.
- 3) Shaking.
- 4) As directed on PRN order
- 5) When a patient states they are going to have a seizure.

E) Which of the following is not a term used to describe seizure?

- 1) Complex partial
- 2) Simple Complex
- 3) Motor
- 4) Tonic-Clonic

F) A patient has a witnessed generalized tonic-clonic event. Whom would you notify that your patient has had a seizure? Select all that apply.

- 1) Charge Nurse
- 2) Nurse coming on shift for the patient
- 3) Patient's hospitalist
- 4) Patient care tech
- 5) Stat Team

G) You are talking calmly to a client about their home medications. The patient is carefully answering but you notice that their left hand is clenched and posturing uncontrollably. The patient is having a seizure. You should do which of the following? Select all that apply.

- 1) Suction the patient
- 2) Place the patient on seizure precautions
- 3) Notify the physician
- 4) Give the patient the PRN Ativan
- 5) Maintain a safe environment

H) You can visually discern epileptic vs non-epileptic events.

- 1) True
- 2) False

I) Non-epileptic events do not require medical treatment.

- 1) True
- 2) False

J) Patients can have either epileptic or non-epileptic events not both.

- 1) True
- 2) False

Appendix D**Post-education Survey**

1. I worry about providing care in acute situations.

strongly disagree	some what disagree	agree	strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. I trust my ability to provide care in acute situations.

strongly disagree	some what disagree	agree	strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. I have sufficient knowledge to provide care in acute situations.

strongly disagree	some what disagree	agree	strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. I estimate my general ability to provide care in acute situations.

Poor	Good
<input type="radio"/>	<input type="radio"/>

5. I estimate my ability to manage the demands that I place upon myself in acute situations.

Poor	Good
<input type="radio"/>	<input type="radio"/>

6. I estimate my ability to manage demands from my colleagues in acute situations.

Poor	Good
<input type="radio"/>	<input type="radio"/>

7. I estimate my ability to independently determine necessary actions in acute situations.

Poor Good

☐

☐

8. I estimate my ability to independently prioritize actions in acute situations.

Poor Good

☐

☐

9. I estimate my ability to take instructions over the telephone in acute situations.

Poor Good

☐

☐

10. I estimate my ability to carry out instructions that I have received over the phone in acute situations.

Poor Good

☐

☐

11. I estimate my ability to receive instructions from an attending doctor in acute situations.

Poor Good

☐

☐

12. I estimate my ability to independently lead bedside care in acute situations.

Poor Good

☐

☐

13. I estimate my ability to report a patient's condition to a nurse in an acute situation.

Poor Good

☐

☐

14. I estimate my ability to make patients participate in acute situations.

Poor

Good

☐

☐

15. I estimate my ability to understand the individual patient's care needs in acute situations.

Poor

Good

☐

☐

16. I estimate my ability to understand the individual patient's medical needs in acute situations.

Poor

Good

☐

☐

17. I estimate my ability to provide information adapted to the needs of the individual in acute situations.

Poor

Good

☐

☐

Please choose the best answer.

A) A patient is having is unconscious and rhythmic movements of the arm. The patient's head is turning to left. For proper implementation of seizure precautions, which of the following must occur? Select all that apply.

- 1) Padded Upper Side rails
- 2) Oropharyngeal suction
- 3) Oxygen tubing with non-rebreather
- 4) Tongue depressor taped to the head of the bed
- 5) IV access

B) A patient has just had a witnessed convulsing event of the arm with confusion and lost continence of bowel and bladder. Which of the following pieces of information do you document in the EMR? Select all that apply.

- 1) Duration of event
- 2) Focal Body part(s) involved
- 3) Presence of aura
- 4) Epileptic vs Psychogenic event
- 5) Loss of continence

C) Mr. Smith is a former rodeo clown with a known history of EtOH abuse. He also has a history of diabetes, cerebrovascular accident, and has been placed on amoxicillin for an upper respiratory infection. Which of the following does not contribute to epileptic seizure?

- 1) Stroke
- 2) Concussion
- 3) Antihistamines
- 4) Stress
- 5) Antibiotics

D) A 62-year-old woman is post op day 2 for a right total knee arthroplasty. The woman has a known history of seizure. Which of the following can be anticipated condition(s) for the administration of seizure abortive medication? Select all that apply.

- 1) Seizure lasting longer than two minutes.
- 2) 2 or more seizures less than 10 minutes apart.
- 3) Shaking.
- 4) As directed on PRN order
- 5) When a patient states they are going to have a seizure.

E) Which of the following is not a term used to describe seizure?

- 1) Complex partial
- 2) Simple Complex
- 3) Motor
- 4) Tonic-Clonic

F) A patient has a witnessed generalized tonic-clonic event. Whom would you notify that your patient has had a seizure? Select all that apply.

- 1) Charge Nurse
- 2) Nurse coming on shift for the patient
- 3) Patient's hospitalist
- 4) Patient care tech
- 5) Stat Team

G) You are talking calmly to a client about their home medications. The patient is carefully answering but you notice that their left hand is clenched and posturing uncontrollably. The patient is having a seizure. You should do which of the following? Select all that apply.

- 1) Suction the patient
- 2) Place the patient on seizure precautions
- 3) Notify the physician
- 4) Give the patient the PRN Ativan
- 5) Maintain a safe environment

H) You can visually discern epileptic vs non-epileptic events.

- 1) True
- 2) False

I) Non-epileptic events do not require medical treatment.

- 1) True
- 2) False

J) Patients can have either epileptic or non-epileptic events not both.

- 1) True
- 2) False

Appendix E

Letter of Inclusion and Informed Consent

Hello,

During this unit-based meeting you will be participating in a scholarly project called “The Effects of Implementing Seizure Education Among Hospital Based Nursing Staff.” You are being asked to participate in a quality improvement project conducted through The University of Tampa by James P. Coyne, MSN, APRN, AGNPPC-BC, a doctoral student in the Doctoral of Nursing Practice program under the supervision of Romuald Delacoix, DNP, FNP-C Assistant Professor of Nursing. This research project is being conducted as a component of a Doctoral of Nursing Practice (DNP) program.

The purpose of this project is to develop a hospital wide training program for medical surgical nurses on how to manage actively seizing patients. The goal is to improve self-efficacy and self-confidence when managing actively seizing patients.

Your participation will involve a 30-minute training that will part of this meeting. You will be given a unique envelope with instruction not to open it until told to do so. Attendees are reminded that if you complete the surveys, you have given consent for their results to be part of the study. Most importantly, if you do not wish to participate in the study, you should leave the pretest and posttest blank.

To minimized risks, the principal investigator (PI) will leave the room, do not to start the pretest until the PI exits the room. You have 10 minutes to complete the test. After completion or not of the pretest, return your survey to your individual envelope. After all participants have return their pretest into the envelop, the unit educator will then inform the PI he can return to the training room. Next a live 30-minute training provided by the PI will be given. After the live training, the PI will inform the participants who wish to, to fill out the 10-minute posttest and return it to their individual envelop. The same process applied for the pretest will be followed for the posttest in addition at the end of the post test, the participants will place their sealed individual envelop into a locked box. After the participants are dismissed, the PI will return to the training room to collect the locked box. This collection process ensures the PI has no knowledge of who participated in the study and the PI will have no contact with the participants following the completion of the posttest. After data entry by the PI into a portable password protected hard drive, all pretests and posttests will be shredded.

Participating in this project is voluntary, and refusal to participate or withdrawing from participation at any time during the project will involve no penalty or loss of benefits to which the subject is otherwise entitled. The principal investigator may terminate participation of a subject or the project entirely without regard to the subject’s consent. In the event of questions or difficulties of any kind during or following participation, the subject may contact the Principal Investigator.

THIS RESEARCH PROJECT HAS BEEN APPROVED BY THE INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS OF THE UNIVERSITY OF TAMPA (Phone: 813-253-3333)

Appendix F

Participation letter



Dear BayCare Registered Nurses at St. Joseph's Hospital main,

My name is James Coyne, MSN, AGACNP-BC, and I am Doctor of Nurse Practice Student at the University of Tampa. I am implementing my DNP Project "Effects of Implementing Seizure Education Among Hospital Based Nursing Staff"

The purpose of my project is to both improve nurses feeling of self-efficacy and self-confidence when dealing with actively seizing patients and to improve nursing knowledge of seizures.

To participate in the study, you must speak English and you must be an RN currently working at St. Joseph's Hospital Main. You must also attend one of your unit meetings during June or July. During this meeting a 30-minute training will be given. There will be a pre and post training evaluation of your feelings of self-efficacy and self-confidence when dealing with actively seizing patients as well as basic knowledge questions on seizure. Your attendance at the meeting will be mandatory as it is your unit meeting. Filling out the survey will be voluntary. Your completion of the survey will also be you giving consent to have your responses included in the study. Your responses will be completely anonymous. No personally identifiable information will be collected.

Thank you very much for your time and consideration.

James P Coyne, MSN, AGACNP-BC, DNP-Candidate
University of Tampa
James.coyne@spartans.ut.edu

Symbol of Educational Excellence
The University of Tampa – 401 W. Kennedy Blvd. – Tampa, FL 3360-1490 – (813) 253-6223 – www.ut.edu

Appendix G

Budget

ITEM	ESTIMATE	ACTUAL	COMMENTS	VARIANCE
MATERIALS				
Pre / Post-tests for Staff (400 each)	Printer copy paper 8 1/2 x 11" 500/Ream at Staples - \$6.79 -need 868 pieces of paper – 4 reams = \$27.16	73.56	Project manager will ask agency is there are funds available to cover costs associated with DNP project implementation. If unable to obtain funding, then project manager will pay for all costs associated to carry out project.	+46.40
Ink cartridge: for printer for copies	HP 61 Black ink cartridge for printer for copies \$16.99	0.00	Not needed outsourced copy job	-16.99
Folders: Surveys	\$26	26.24		+0.24
Copy of survey	0.00	96.00	Added expense	+96.00

Labels	0.00	35.18	Added expense	+35.18
Survey Box	0.00	20.79	Added expense	20.79
Pens	0.00	13.60	Added expense	13.60
Food: for Agency Clinicians and Staff for educational in-service	20 Meetings with 20 nurses at \$200.00 per meeting \$4,000.00	3033.16	Breakfast will be provided by project manager at the mandatory provider meeting in-service Lunch will be provided by project manager at the weekly staff meeting during educational in-service	-966.40
Projected Total: \$ 4,062.00/ Actual Total:\$3,298.53				

PERSONNEL

UT Doctoral Faculty	9-12-month faculty salary position	In kind	Costs would be deferred as additional time outside of regularly scheduled work hours would not be expected	No change
DNP Project Preceptor	salary position	In kind	Costs would be deferred as additional time outside of regularly scheduled work hours would not be expected	No change

Clinicians	Salary position	In kind		No change
Others	Various wages	In kind	Costs would be deferred as the educational in-service would be during regularly scheduled weekly staff meeting and lunch would be provided by project manager	No change
Total: \$0.00				

SUPPORT

Submission of results and research to journal	No costs associated	N/A	N/A	No change
Total: \$0.00				
GRAND TOTAL: \$3,298.53				

Appendix H
GANTT Chart

TASK RESPONSIBLE DUE DATE COMMENTS				
PERSON				
Develop an Evidence-Based Training for Seizure Management for bedside nurses				
	Finalize Project Topic	DNP student, NUR 700 faculty, UT chair	3/2021	Topic finalized so that all DNP courses can build on the topic
	Literature Review	DNP student	11/2021	Begins at RESIDENCY I
	Determine major concepts of project through	DNP student, UT chair, preceptor	10/2021	Begins at RESIDENCY I. Meeting with project chair. Meeting with clinic preceptor.
	Develop training	DNP student, UT chair, preceptor	3/2022	
	Edit training	DNP student, UT chair, preceptor, agency	4/2022	Training revisions based on suggestions from project chair, preceptor and agency.
	Expert review of screening and training	DNP student, UT chair, preceptor, topic experts	3/2022	Edit screening and protocol based on suggestions from topic experts.
	Finalize protocol	DNP student, UT chair	4/2022	Edit screening and training as necessary before implementation.
	Submit for UT IRB approval	DNP student, UT chair	3/2022	
	Submit for Agency IRB approval	DNP student, UT chair	3/2022	
	Obtain UT IRB approval	DNP student, UT chair	3/2022	UT IRB Approval obtained
	Obtain Agency IRB approval	DNP student, UT chair	3/2022	Agency IRB Approval obtained
	Pre-Test Questionnaire	DNP student, UT chair	2/2022	To be given prior to the educational session by project manager to determine provider and staff knowledge of appropriate use and implementation of training.
	Protocol Training Session with target audience (Ex clinic staff)	DNP student, UT chair, preceptor, agency clinicians and staff	6/2022	Training session with nurses.

	Post-Test Questionnaire	DNP student, UT chair	2/2022	To determine nursing staff knowledge of appropriate use and implementation of seizure training after educational session by project manager.
	Post-Implementation Discussion	DNP Student, UT chair, preceptor, agency clinicians and staff	9/2022	Meeting with nurses to breakdown pros and cons of project.
	Evaluate pre-implementation data	DNP student, UT chair	8/2022	Done with the help of the Intellectus statistics
	Evaluate post-implementation data	DNP student, UT chair	8/2022	Done with the help of the Intellectus statistics
	DNP PROJECT PAPER	DNP student, UT chair	12/2022	Write DNP PROJECT PAPER and submit to UT repository.
	Project Presentation	DNP student, UT chair	12/2022	Present findings to DNP students at Residency III

Appendix I**University of Tampa IRB Approval Letter**

Submittable

James Coyne:

The IRB has granted your proposal, Effects of Implementing Seizure Education Among Hospital Based Nursing Staff, exempt status as described in 45 CFR 46.104 of the Department of Health and Human Services Policy for the Protection of Human Subjects. This indicates that no further involvement by the IRB is necessary.

You will need to procure the appropriate approval from St. Joseph's hospital before collecting data.

If the protocol is modified from this submission, please notify the IRB as soon as possible. We have a form available with which to update your proposal.

Sincerely,

Dr. Stephen Blessing

IRB Committee Chair

[REPLY](#) [VIEW APPLICATION](#)

Sent by [Submittable](#).

111 Higgins Ave #300, Missoula, MT 59802

[Help Center](#) | [Terms and Conditions](#) | [Contact Us](#)

Appendix J

BayCare IRB Approval Letter



BayCare Health System IRB
FWA 00006065 IRB 00003355

BayCare System Office
2985 Drew St. MS 1027
Clearwater, FL
O: 727-467-4577
F: 727-333-6319
E: IRB.BCHS@baycare.org

Date: 03/23/2022
To: James Coyne, APRN.

From: Jeremy Ringewald, MD
Lance Wyble, MD
IRB Co-Chairpersons

IRB#: 2022.026-BSJH

Title: "Effects of Implementing Seizure Education Among Hospital Based Nursing Staff" Exempt Category 1

Initial Review - Exempt Accepted

The submitted documents for the above titled research have been reviewed and were determined to be Exempt from Oversight by the BayCare Health System Institutional Review Board.

IRB Exemption granted, study #2022.026-BSJH may commence.

Any change that may reasonably alter the conditions in which any waiver(s) and/or exemptions have been granted requires a BayCare Health System IRB review; Implementation of such change(s) cannot occur prior to the date indicated in an IRB approval letter. Progress reports need not be submitted to this IRB regarding this project.

FDA regulated research cannot be exempted from oversight by an IRB.

Federally funded research must meet the determination of non-human subjects exempt research as per 45 CFR 46.101 to obtain an exemption from oversight by an IRB.

The investigator is responsible for contribution to study oversight requirements. It is the investigator's responsibility to ensure reporting is compliant to the sponsor, protocol, institutional and Regulatory requirements including HIPAA, FDA or OHRP notifications, as appropriate. Research submitted to any BayCare Institution may be subjected to further review and approval or disapproval by the BCHS IRB, Institutions and other relevant regulatory bodies.

Respectfully,

BayCare Health System IRB

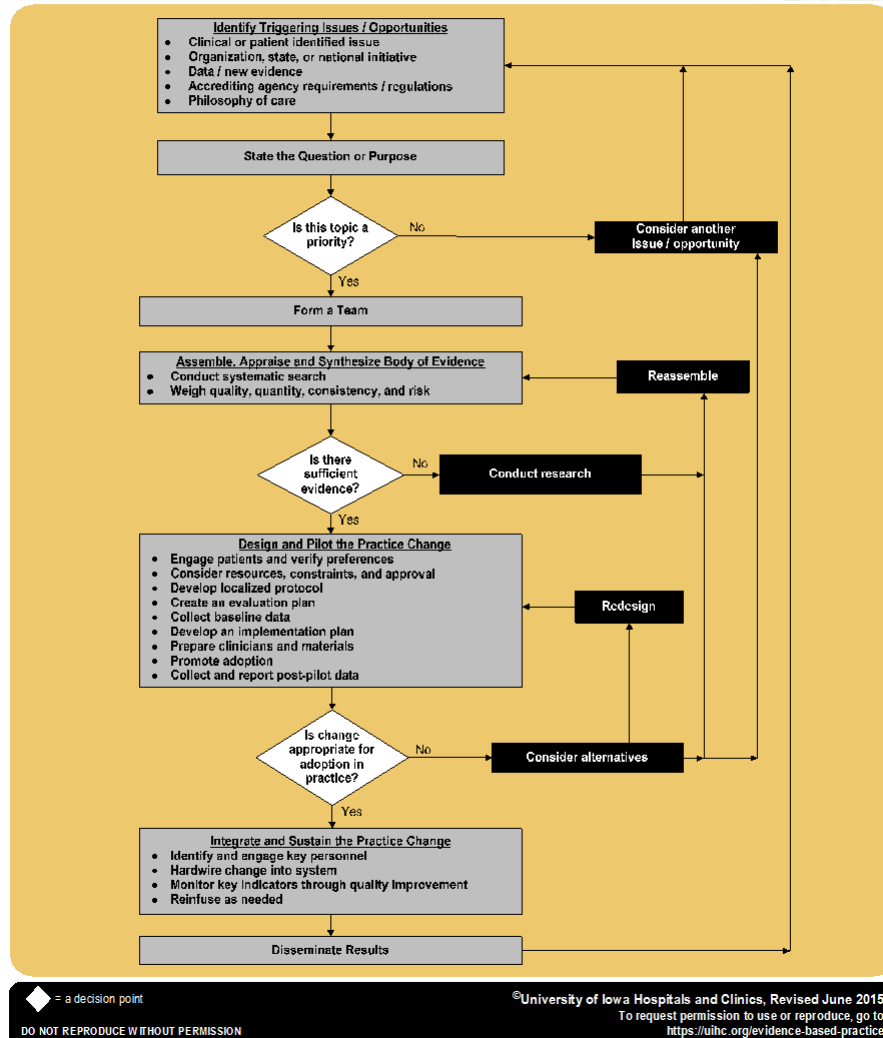
Jeremy Ringewald, MD
Lance Wyble, MD
IRB Co-Chairpersons

BayCare Health System Institutional Review Board is governed by the regulations of the Food and Drug Administration as set forth in Title 21 of the Code of Federal Regulations Parts 30 and 36

Appendix K

The Iowa Model Revised

The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care



Appendix L

Permission To Use Iowa Model

From: Kimberly Jordan - University of Iowa Hospitals and Clinics survey-bounce@survey.uiowa.edu
Subject: Permission to Use The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care **Date:** November 13, 2022 at 11:30 AM
To: james.coyne@spartans.ut.edu

You have permission, as requested today, to review and/or reproduce *The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care*. Click the link below to open.

[Iowa Model - 2015.pdf](#)

Copyright is retained by University of Iowa Hospitals and Clinics. **Permission is not granted for placing on the internet.**

Reference: Iowa Model Collaborative. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing*, 14(3), 175-182. doi:10.1111/wvn.12223

In written material, please add the following statement:

Used/reprinted with permission from the University of Iowa Hospitals and Clinics, copyright 2015. For permission to use or reproduce, please contact the University of Iowa Hospitals and Clinics at 319-384-9098.

Please contact UIHCNursingResearchandEBP@uiowa.edu or 319-384-9098 with questions.

Appendix M

Permission To Use PACS

From: Anders Sterner <Anders.Sterner@hb.se>
Subject: Re: The PCAS
Date: November 14, 2021 at 4:54:07 PM EST
To: "James P. Coyne" <james.coyne@spartans.ut.edu>

Hi James

I can and hereby gives you the permission to use the PCAS scale. Please make sure to refere to the article in BMC-nursing if/when publishing your results and/or communicating issues regarding the PCAS scale.

Good luck with your study.

Anders Sterner PhD

14 nov. 2021 kl. 20:01 skrev James P. Coyne <james.coyne@spartans.ut.edu>:

Hello,

My name is James Coyne and I am a Doctoral of Nursing Practice student at the University of Tampa. I have developed at training for new nurses to help improve novice nurses feeling of self-efficacy and self-confidence in the management of actively seizing patients. I would like to use the PCAS as a validated measurement tool as a pre-intervention post-intervention evaluation.

Any help you can provide so that I can secure permission to use this tool would be most appreciated.

Thank You

James P Coyne, MSN, APRN, AGPCNP-BC
Doctor of Nursing Practice Student
University of Tampa, FL

Table 1**Table 1***Summary Statistics for Demographic Variables*

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
Age	33.86	11.86	74
Years of Nursing	7.78	10.30	74

Table 2*Summary Statistics Table for Composite Scores*

Variable	<i>M</i>	<i>SD</i>	<i>n</i>
Confidence in provision of care pre	1.21	0.34	73
Confidence in provision of care post	1.23	0.21	73
Communication pre	0.97	0.13	74
Communication post	0.98	0.13	74
Patient perspective pre	0.93	0.19	74
Patient perspective post	0.99	0.09	74

Table 3*Frequency Table for Nominal Variables*

Variable	<i>n</i>	%
A pre		
Incorrect (0)	39	52.70
Correct (1)	35	47.30
A post		
Incorrect (0)	17	22.97
Correct (1)	57	77.03
B pre		
Incorrect (0)	49	66.22
Correct (1)	24	32.43
B post		
Incorrect (0)	35	47.30
Correct (1)	39	52.70
C pre		
Incorrect (0)	68	91.89
Correct (1)	6	8.11
C post		
Incorrect (0)	43	58.11
Correct (1)	31	41.89
D pre		
Incorrect (0)	46	62.16
Correct (1)	28	37.84
D post		
Incorrect (0)	44	59.46
Correct (1)	30	40.54
E pre		
Incorrect (0)	58	78.38
Correct (1)	16	21.62
E post		
Incorrect (0)	40	54.05
Correct (1)	34	45.95
F pre		
Incorrect (0)	54	72.97
Correct (1)	20	27.03

Table 3*Frequency Table for Nominal Variables*

Variable	<i>n</i>	%
F post		
Incorrect (0)	24	32.43
Correct (1)	50	67.57
G pre		
Incorrect (0)	60	81.08
Correct (1)	14	18.92
G post		
Incorrect (0)	56	75.68
Correct (1)	18	24.32
H pre		
Incorrect (0)	30	40.54
Correct (1)	44	59.46
H post		
Incorrect (0)	26	35.14
Correct (1)	48	64.86
I pre		
Incorrect (0)	10	13.51
Correct (1)	64	86.49
I post		
Incorrect (0)	4	5.41
Correct (1)	70	94.59
J pre		
Incorrect (0)	30	40.54
Correct (1)	44	59.46
J post		
Incorrect (0)	44	59.46
Correct (1)	30	40.54

Tables 7-16**Table 7***Observed Frequencies by A pre and A post*

<u>A pretest</u>	A posttest		χ^2	d f	p
	In correct	C orrect			
Incorrect	11	28	14.24		< .001
Correct	6	29			

Table 8*Observed Frequencies by B pre and B post*

<u>B pre</u>	B post		χ^2	d f	p
	Incorrec t	Correct			
Incorrect	29	20	7. 54	1	.0 06
Correct	6	18			

Table 9*Observed Frequencies by C pre and C post*

C pre	C post		χ^2	d f	p
	Incorr ect	Corr ect			
Incorrect	42	26	23.15	1	< .001
Correct	1	5			

Table 10*Observed Frequencies by D pre and D post*

D pre	D post		χ^2	d f	p
	Incorrec t	Correc t			
Incorrect	28	18	0.1 2	1	.73 2

Table 10
Observed Frequencies by D pre and D post

D pre	D post		χ^2	d f	p
	Incorrec t	Correc t			
Correct	16	12			

Table 11
Observed Frequencies by E pre and E post

E pre	E post		χ^2	d f	p
	Incorrec t	Corre ct			
Incorrect	37	21	13.5 0	1	< .001
Correct	3	13			

Table 12
Observed Frequencies by F pre and F post

F pre	F post		χ^2	d f	p
	Incorrec t	Corre ct			
Incorrect	22	32	26. 47	1	< .001
Correct	2	18			

Table 13
Observed Frequencies by G pre and G post

G pre	G post		χ^2	d f	p
	Incorrec t	Corre ct			
Incorrect	51	9	1.1 4	1	.28 5
Correct	5	9			

Table 14*Observed Frequencies by H pre and H post*

<u>H pre</u>	H post		χ^2	d f	p
	Incorre ct	Corre ct			
Incorrect	18	12	0. 80	1	.3 71
Correct	8	36			

Table 15*Observed Frequencies by I pre and I post*

I pre	I post		χ^2	d f	p
	Incorre ct	Corre ct			
Incorrect	3	7	4.5 0	1	.03 4
Correct	1	63			

Table 16*Observed Frequencies by J pre and J post*

<u>J pre</u>	J post		χ^2	d f	p
	Incorre ct	Corre ct			
Incorrect	25	5	8.1 7	1	.00 4
Correct	19	25			

Table 17

Pearson Correlation Results Among Age, Years of Nursing, Communication pre, Patient Perspective pre, Confidence in provision of care pre., Confidence in provision of care post, Communication post, and Patient Perspective post

Combination	<i>r</i>	<i>n</i>	<i>p</i>
			<
Age -Years of Nursing	.55	72	.001
Age -Communication pre	.03	72	.805
Age -Patient Perspective pre	- .06	72	.591
Age -Confidence in provision of care pre	- .03	72	.790
Age -Confidence in provision of care post	.10	72	.408
Age -Communication post	.02	72	.899
Age -Patient Perspective post	- .04	72	.766
Years of Nursing -Communication pre	.15	72	.195
Years of Nursing -Patient Perspective pre	.01	72	.913
Years of Nursing -Confidence in provision of care pre.	.09	72	.472
Years of Nursing -Confidence in provision of care post	.20	72	.094

Years of Nursing -Communication post	.12	72	.320
Years of Nursing -Patient Perspective post	.10	72	.385
