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University of Southern Indiana
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Delirium Prevalence in Acute Care Hospitalized Patients

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Background / Significance of Problem:
Delirium is one of the most common complications experienced by older adults in the hospital setting, ranging in prevalence from 20-50% in medical surgical units and as high 80% in ventilated patients in critical care. Despite ongoing research, delirium remains under-recognized by all healthcare providers. Failure to recognize and manage delirium can result in detrimental outcomes for patients, care providers, and hospitals.

Research Question / Hypothesis:
What is the prevalence of delirium in medical surgical, step-down, and critical care patients in six acute care hospitals?

Research Method:
A point prevalence design was used to identify delirium across 37 units in six hospitals. The design was modeled after the National Database of Nursing Quality Indicators point prevalence survey for pressure ulcers. Delirium was assessed using the CAM-ICU in critical care and the bCAM in medical surgical and step-down units. Positive delirium screens for the total population were used to calculate percent prevalence by unit type. Additional data were collected from patient interview and medical record review regarding risk factors for delirium. Regression analysis was used to identify clinical factors that contribute to delirium.

Findings:
Of 782 eligible patients, 630 met inclusion criteria and had complete data collection forms. Positive screens were found in 62 patients for a prevalence of 9.84%.

Discussion of Results:
In the medical surgical units, patients without documentation of ambulation were 7.9 times more likely to have delirium (p 0.000). Age and lack of ambulation are key factors predicting positive delirium screens in medical surgical units. Although not statistically significant, critical care patients were 3 times more likely to experience delirium with presence of urinary catheters and assisted ventilation.

Implications for Healthcare Professionals:
This study found 1 in 10 hospitalized patients experience delirium. Nurses can prevent, identify, and manage delirium through routine screening and nursing interventions. Lack of ambulation had the greatest impact on delirium, supporting mobility programs in hospital settings.
Engaging Students in the Classroom with a Disaster Preparedness Simulation

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Background/Significance of problem:
Faculty assessed a simulation to determine student engagement and learning for disaster preparedness in the NURS 455 Population Focused Nursing Practice course. The disaster preparedness simulation included an online learning module for triage, applying the principles with discussion of case scenarios, planning and discussion of shelter set-up, conducting shelter guest intake and health needs assessments, and demonstrating the use of a medical evacuation sled.

Research Question / Hypothesis:
1. What differences exist in the students’ perception of their ability to apply the principles of SALT (sort, assess, lifesaving interventions, and treatment/transport) triage?
2. What differences exist in the students’ perception of their ability to set up a shelter for a disaster?
3. What differences exist in the students’ perception of their ability to assess the health needs of a disaster victim in a shelter using the shelter guest intake and health needs assessment?
4. What differences exist in the students’ perception of their ability to demonstrate the use of the medical evacuation sled?

Research Method:
The research methodology was quantitative research. The students completed a pre-activity assessment and a post-activity assessment.

Findings:
There was a significant difference, p = .000 for each of the research questions.

Discussion of Results:
The results of the study demonstrate that there was a difference in the students’ perceptions of their ability to apply the principles of SALT triage, plan and set up a shelter, conduct a shelter guest intake and health needs assessments, and use the medical evacuation sled. Students were actively engaged and learning occurred through the simulation.

Implications for Healthcare Professionals:
The researchers would recommend using the disaster preparedness simulation to engage students in the classroom. The research has demonstrated that learning has taken place using the disaster preparedness simulation as a teaching strategy. The teaching strategy can be used to engage and teach students on disaster preparedness.
Implementation of a BSN Nurse Preceptor Program in a Rural Environment

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**Background/Significance of the problem:**

Nurse Preceptors are vital to retaining new graduate nurses due to the challenges associated with retaining and recruiting registered nurses. Nurse Precepting has become the standard as a tool to prepare nursing students in the senior year to enter the nursing work environment. Providing a Nurse Preceptor program creates a cohesive working relationship, and results in a more positive healthy placement for both the nursing student and the preceptor.

**Clinical question:**

How will participation in the preceptorship program enhance the student’s professional socialization into the nursing healthcare profession?

**Search of literature/best-evidence:**

The importance of a nursing student/nurse preceptor relationship is detrimental to a healthy working environment (Ulrich, 2012). Nurse Preceptors support lifelong learning, critical thinking, problem-solving skills, professional development, and promote a multidisciplinary approach to patient care (Carlson & Bengtsson 2015; Duteau, 2012; Rebholz & Baumgartner, 2015). By participating in a healthy work environment, the nursing students improve clinical reasoning, and the assimilation of information in a strong and diverse healthy work setting.

**Clinical appraisal of literature/ best evidence:**

Nurse Preceptors are critical in the growth of clinical expertise of nursing students and the validation of clinical competence. Nurse Preceptors assist nursing students to obtain knowledge, personal attributes, foster professional growth, and socialization into the nursing profession.

**Integration into practice:**

During clinical practice, nursing faculty and nurse preceptors collaborate in facilitating the student's clinical learning experience. The preceptorship enhances the student's ability to ease their transition from senior level nursing student to a nursing professional.

**Evaluation of evidence-based practice:**

When supported in practice, Nurse Preceptors make a valuable contribution to enhance nursing students learning in clinical practice. The preceptor program enhances professional development for nurse preceptors/nursing students with regards to increased confidence and improved socialization skills in the clinical setting. The published research studies report benefits such as personal growth and reflection, critical thinking, and increased accountability/responsibility. Nurse Preceptorship programs are imperative to the success of nursing education.
Inspired to Inquire: Implementation of an Interprofessional Online Journal Club (ONJC) at a Rural Hospital

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Background/Significance of problem:
Healthcare practitioners at a 141 bed rural hospital are determined to provide care that is based on experiential evidence and research while supporting interprofessional collaboration. Traditional journal clubs have been utilized to translate research findings into evidence-based care among healthcare practitioners. Accessibility and knowledge of research have been recognized as barriers of traditional journal clubs. Furthermore, traditional journal clubs have been uniprofessional in nature. One recommendation is the implementation of an interprofessional online journal club (ONJC).

Clinical question:
Will the implementation of an interprofessional ONJC address the barriers of accessibility, research knowledge, and uniprofessional mindset of participants?

Search of literature/best evidence:
Combining the keywords of journal clubs, online journal clubs, and interprofessional collaboration in Proquest Health and Medical Complete, CINAHL, and MEDLINE, 28 articles were identified, 8 that met the inclusion criteria of journal clubs, online journal clubs, and interprofessional collaboration.

Clinical appraisal of literature/best evidence:
Traditional journal clubs have been acknowledged by healthcare practitioners for translating published research into evidence-based patient care. Major barriers of traditional journal clubs include accessibility and the knowledge and skill to critique research articles. Evidence indicates most journal clubs involve a specific discipline. An interprofessional journal club fosters the transfer of knowledge between disciplines. Online technologies provide an innovative method for healthcare practitioners to translate research into clinical practice.

Integration into practice:
In collaboration, the hospital’s Interprofessional Research Council and the information systems department created and implemented an interprofessional ONJC, consistent with organizational strategic plans. The interprofessional ONJC is delivered through the hospital intranet system and available to staff 24 hours a day.

Evaluation of evidenced-based practice:
The initial goal is to obtain a 10% participation rate by December 2017. Additionally, a survey will be sent out to hospital workforce at the end of December, 2017 to evaluate perceived barriers to access, research knowledge, computer skills, and interprofessional participation.
Implementation of a Short Mental Health Curriculum into a Course for College Freshman to Increase Awareness and Early Intervention for Mental Health Problems

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Background/Significance of Problem
There is a great need in society to address mental health concerns, and numerous students on college campuses are affected by these matters, which affect educational outcomes. Student retention through graduation is negatively impacted by poor mental health. According to an annual report by the Center for Collegiate Mental Health (CCMH), more than 150,000 college students sought treatment for mental health concerns in 2016, which was a 50% increase over 2015. National norms show an increase in the number of college students who report feeling frequently depressed. University of Southern Indiana’s Counseling Center has increased the number of those who provide mental health care in recent years due to the increasing student need.

Research Question / Hypothesis
Will student perceptions about mental health change after exposure to a short mental health curriculum?

Research Method
Objectives were to direct students to (a) self-assess mental health status, (b) recognize mental illness and suicide risk behaviors, and (c) identify and discuss access to mental health care. Various methodologies were incorporated into development of the mental health curriculum. These included student discussions and an assignment that required students to work collaboratively within peer groups to generate short videos that demonstrated ways of dealing with hypothetical mental health cases based on real life experiences.

Findings
Pre/post surveys of student perceptions across four different semesters indicated that the mental health curriculum was highly successful in meeting its objectives.

Discussion of Results
Data showed that the curriculum significantly impacted students’ perceptions concerning mental health, the ability to assess health status of self and others, and the willingness to seek assistance.

Implications for Healthcare Professionals
Mental health impairment often interferes with a student’s school performance, and many factors prevent students from seeking help, including stigma that surrounds mental illness, lack of adequate resources and student knowledge about available resources. This project addressed all those issues, which have implications for all healthcare professionals.
Could Ketogenic Diets be used to Reduce the Severity and Reoccurrence of Epileptic Seizures?

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Background and Significance of Problem:
Ketogenic Diets have been suggested as a possible means to decrease severity and recurrence of seizures and medicine use in patients with epilepsy. Preliminary data suggest a classic ketogenic diet, the Modified Atkins diet, MCT oil diet, and low glycemic index diet may assist patients with epilepsy. Uncontrolled seizures can lead to poor quality of life and early death.

Clinical Question
In epilepsy, does the use of a ketogenic diet reduce the number of seizures in adults and adolescents over age 16 compared to not consuming a ketogenic diet?

Search of Literature / Best Evidence
A literature review was completed using Medline, Eric, Proquest, and Pubmed databases using several search terms such as Seizures, epilepsy, drug resistant epilepsy, ketogenic diet, adolescent and adult epilepsy for years 2008 to 2016. Six primary articles were collected, four met inclusion criteria, and analyzed using Academy of Nutrition and Dietetics guidelines.

Clinical Appraisal of Literature / Best Evidence
Currently, not enough research of sufficient design has been conducted to conclude that ketogenic diets can decrease the severity and recurrence of seizures and medicine use in people with drug-resistant epilepsy.

Integration into Practice
More evidence is needed to conclude a positive relationship between classic ketogenic diet, MCT oil diet, modified Atkins diet, and low-glycemic index diet and a reduction in the severity of seizures, recurrence, and medicine use in adolescents and adults with epilepsy. Future research should include a control group as well as regulate changes in medication.

Evaluation of Evidenced-Based Practice
Based on the criteria of the American Academy of Nutrition and Dietetics a Grade III: Limited is given: the evidence consists of results from a limited number of studies of weak design. Evidence from studies of strong design is either unavailable because no studies of strong design have been done or because the studies that have been done are inconclusive due to lack of generalizability, bias, design flaws, or inadequate sample size.
Blood Pressure Reading Sites

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**Background/significance of problem**

The improper placement or size of a noninvasive blood pressure cuff on the upper arm or radial arm may lead to inaccurate medical treatment.

**Research Question / Hypothesis**

What is the accuracy of noninvasive blood pressure readings comparing radial measurements with upper arm measurements?

**Research Method**

Proper blood pressure readings are pertinent in treating patients to achieve best possible outcomes. The literature emphasized that upper arm readings are the best practice, but with proper radial cuff size and position, radial readings are acceptable.

**Findings**

Data collected will provide information regarding the importance of the proper size and location of blood pressure cuff placement on patients. Especially on patients that are being treated with cardiac/blood pressure infusions.

Typically, the radial artery pressure is higher (average 37 mm Hg) due to the smaller vessel, which creates greater resistance to flow. Treatment should not be made based on a single blood pressure measurement without a comparison of a brachial readings. It is important to have consistent blood pressure readings on patients that are receiving current or new medications that affect blood pressure measurements.

**Discussion of Results**

Data was collected in January 2017-September 2017 to compare noninvasive upper arm blood pressure to noninvasive radial blood pressure readings on patients.

93% percent of all radial cuff readings were higher than brachial site readings.

Blood Pressure results revealed significant differences between measurements of SBP and DBP when obtained at the brachial site versus radial site. Radial readings were greater than those obtained at brachial site.

**Implications for Healthcare Professionals**

Education to be provided to MHHCC staff regarding patients that require a cardiac/blood pressure medication infusion or if medication is being titrated/treated according to blood pressure readings, the importance of the accurate blood pressure cuff placement and size be used.
Needleless Connector Design and Influence on CVL Occlusions

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Background / Significance of Problem:
Thrombotic catheter occlusion is a common complication associated with central venous catheters (CVCs). Needleless connectors differ greatly in design and function, however, there are limited studies comparing catheter occlusion rates associated with differently designed needleless connectors.

Research Question / Hypothesis
Does the design of a needleless connector influence CVC occlusion rates and thrombolytic use?

Research Method
This retrospective observational study compared occlusion rates associated with a split-septum neutral-displacement needleless connector versus those of a solid-surface neutral-reflux needleless connector.

There were 720 infusion patients with data collected from May 2014 to June 2016. All catheters were 5Fr double lumen PICCs. The occlusion rates were obtained from a report of Alteplase charges each month and then divided by the number of line days for the month and multiplied by 100 (“x” incidents per 100 line days).

Findings
A 55.1% reduction in nurse visits and 56.4% reduction of Alteplase use were observed after transition to the neutral-reflux connector. Annualized savings of approximately $21,000 was estimated.

Discussion of Results
The neutral-reflux connector was associated with a significant reduction in occlusions and thrombolytic use versus the neutral-displacement connector.

Implications for Healthcare Professionals
These findings show the importance of being aware of differences in needleless connectors in any setting in order to reduce complications. This study demonstrated that neutral reflux connectors had better outcomes than neutral displacement connectors.