Doctor of Nursing Practice Projects

2013-2015 Cohort

Northern Arizona University School of Nursing
The Doctor of Nursing Practice (DNP) is designed for nurses holding a master’s degree (MS) to obtain a terminal degree in nursing. The DNP builds on master’s education to provide expanded unique knowledge and expertise. These graduates will have a broader capability to provide high quality health care in a complex and increasingly strapped health care system. The DNP is a clinical doctorate with emphasis on enhancing leadership expertise in rural and underserved populations.
A Message from the Dean...

I am honored to congratulate the 2015 graduates of our DNP program. Although you would not have thought this when you started almost 2 years ago, but you think differently now than before you started along this journey and are forever changed. You see healthcare from a more global perspective. To paraphrase Gandhi, be the change you wish to see [in healthcare].

Go forth and change the world!

Debora Thomas,
DNS, RN, ANP/FNP
Dean and Professor
School of Nursing

A Message from the DNP Coordinator...

Congratulations DNP graduates! Through your coursework and DNP projects you have demonstrated attainment of the competencies necessary to ensure the delivery of safe, patient-centered healthcare and respond to the changing health care system. As a Doctor of Nursing Practice you will lead change and shape quality improvement initiatives, clinical practice guidelines and innovations across diverse settings.

Best wishes for your ongoing success!

Debbie J. Nogueras,
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DNP Coordinator
School of Nursing
Identification of Internal Risk Factors and Interventions to Prevent Exertional Heat Illnesses in Hikers: A Systematic Review

Purpose
To identify internal risk factors (e.g., caffeine and alcohol consumption, overweight, obesity, heat acclimatization, medications, and medical conditions) and intervention strategies for prevention of exertional heat-related illnesses in hikers.

Methodology
A systematic review was conducted using a predetermined list of MeSH headings to identify articles on exertional heat-related illnesses. CINHAL, MEDLINE, and PubMed databases were searched for articles published between 2009 and 2014. The studies were ranked using the Oxford Centre for Evidence-Based Medicine classification system. Studies were included if they had a level of evidence of 3 or higher or a grade of C or better.

Results
Medications can impair thermoregulation by decreasing peripheral blood flow, increasing water loss, inhibiting sweating, or raising body temperature. Limiting alcohol consumption to low-alcohol beverages and stopping 48 hours before hiking. Hikers should be cautioned to avoid caffeinated beverages due to associated increased physiological strain, elevation in body temperature, decreased peripheral blood flow, increased water loss, increased urination, and sodium loss. Obesity can increase a person’s risk of heat-related illness, necessitating evaluation by a health care professional before participating in activities such as hiking. People who are overweight produce more internal body heat, increasing their risk of heat-related illness. Regardless of physical condition, hikers can benefit from partaking in heat acclimatization. The affect on the body from the medical condition can cause temperature regulation issues.

Implications for Practice
The proper identification and understanding of predisposing factors for heat-related illnesses are critical to prevention. To mitigate exertional heat-related illnesses related to medications and medical conditions, medical providers can assist patients with proper counseling regarding medications and medical conditions known to disrupt heat responses. Also, education of hikers about the effects of intermixing hiking activities with alcohol or caffeine may prevent or reduce the severity of exertional heat-related illnesses along with proper heat acclimatization. Enhancing awareness of internal risks and interventions has the potential to decrease the number of cases of heat-related illness in hikers.
Purpose
The purpose of this project was to demonstrate improved confidence by non-psychiatric Nurse Practitioners (NPs) in diagnosing adult attention deficit hyperactivity disorder (ADHD). Education interventions were used to increase familiarization by non-psychiatric NPs to the Adult ADHD Self-Report Scale (ASRS).

Methodology
This project included NPs who identified their primary practice was non-psychiatric/mental health from a national organization list. A mailing was sent to the NPs inviting them to participate in the study. Participants (n=19) were randomized into the intervention or non-intervention groups. A web-based intervention included educational material, case studies, and the application of the ASRS assessment tool for the intervention group. The non-intervention group received only the case studies and ASRS. Each group responded to a question regarding the diagnosis of the corresponding case study, as well as questions regarding demographic information and practice characteristics. Findings were analyzed using descriptive statistics.

Results
Respondents for the first case (88%) from the intervention group made an accurate diagnosis of ADHD, versus 70% in the non-intervention group. For the second case, the diagnostic accuracy in ruling out adult ADHD was 100% in the intervention group versus 90% in the non-intervention group. The case study responses were evaluated using Fisher’s exact test results were $p = .6$ for case one and $p = 1$ for case two. Neither group produced statistically significant results at a .05 level. These limited initial results demonstrate that the project failed to provide statistically significant evidence of the effectiveness of providing an educational intervention for improving non-psychiatric NP accuracy in diagnosing adult ADHD using the ASRS tool.

Implications for Practice
This project utilized the ASRS tool which has been established as moderately sensitive and highly specific in predicting adult ADHD. Additional studies with a larger sample could provide data that better reflects the efficacy of the educational intervention and improvements in ADHD diagnosis. Professional networking may facilitate the recruitment of a larger sample in settings which are primary care in nature. Currently, there are plans to encourage use of the ASRS tool in U.S. Air Force (USAF) family health clinics, since the tool has already been introduced to one such USAF clinic and has had a promising reception by the providers who work there.
**Improving Intimate Partner Violence Screening in the Emergency Department Setting**

**Purpose**
The purpose of this project was to improve RNs’ ability to screen for Intimate Partner Violence (IPV) and increase identification of individuals and families exposed to IPV in the emergency department (ED) setting. The project sought to ensure appropriate resources and to advance knowledge of continued nursing barriers to screening.

**Methodology**
This cohort study utilized an embedded research design. IPV educational training was provided to nurses. The education consisted of a four minute, IPV screening video and an IPV screening poster-board. The video was shown to 13 nurses per day for seven days. Data from patient visits, IPV screening, positive screens, and IPV referrals/resources were collected. Nine weeks of data (including four weeks prior, one week during, and four weeks post the educational training) were analyzed. Continued nursing barriers to routine IPV screenings in the ED setting were gathered via computer survey.

**Results**
Educational training resulted in an increase in the number of IPV positive screens obtained. While IPV screening rates varied considerably, ranging from 21.5% to 38.8%, the highest rate of IPV screening was 38.8% during the week of the educational training. Sample data were analyzed using a two-tailed t-test. Results demonstrated a significant rate change when comparing the four weeks before and the four weeks after the IPV educational training (P-value = 0.016, confidence interval (CI) = 95%). Resources or referrals provided to patients doubled in the four weeks after the educational training. The primary barrier noted by participants was privacy, followed by time, comfort, and knowledge.

**Implications for Practice**
IPV education and training on screening methods supports the assessment skills of nurses in this setting. IPV education for nurses has the ability to positively impact the results of screenings. Patients and families benefit from the delivery of IPV education through early identification and intervention. An increase in the number of resources provided to patients and families is clinically relevant. To address screening barriers, alternate settings, such as the ED triage area may allow for more privacy, and utilizing a self-administered IPV screening tool, which has been demonstrated in the literature as being effective, may increase IPV screening without adding additional nurse time to administer.
Qualitative Assessment of an Electronic Diabetes Education Tool for Burmese Immigrants

**Purpose**
Providing health education to refugee groups in the clinic setting presents challenges due to language barriers, limited literacy, limited educational resources, and time constraints. The purpose of this project was to develop and pilot an electronic audio-visual format diabetes educational tool designed for low literacy Burmese speaking patients.

**Methodology**
Based on the common sense model of self-health regulation and the American Diabetes Association guidelines for diet and exercise, a voice-over digital slide diabetes education tool (DET) was developed. A translator and community member were consulted to provide culturally specific content and translate the tool into the Burmese language. A purposeful sample of 11 Burmese speaking patients, demonstrating a body mass index of $\geq 23$, were recruited from a family practice clinic to view the DET. Participants were surveyed directly after watching DET using a semi-structured 10-item survey administered verbally to obtain perceptions and opinions of the intervention.

**Results**
Survey analyses indicate that the DET provided new diabetes information to 91% of the participants. All participants reported that the information was easy to understand and in a friendly format. Additionally, participants reported that they perceived diabetes to be a severe disease. Sixty-three percent perceived the need to change their diet, 27% perceived the need to exercise, and 55% perceived a personal risk for developing diabetes. Of those that perceived a personal risk of diabetes, the majority had a relative or friend suffering from diabetes. One individual suggested adding a personal testimony of a Burmese patient with diabetes to increase the perception of personal risk. Participants requested additional educational tools for managing hypertension and asthma.

**Implications for Practice**
DET raises awareness of diabetes, the first step in diabetes prevention and management, and may contribute to improved patient outcomes and reduced health disparities in the Burmese refugee population. The tool is efficient, convenient and an easily accessible method of diabetes education in a clinic setting when a language barrier exists. This method of patient education may be adapted for other populations and disease processes using similar resources.
Implementing Recommended Perioperative Pain Practice Guidelines By Incorporating Intravenous Acetaminophen

**Purpose**
The focus of this project was to change healthcare provider’s perioperative pain management, by translating knowledge into practice, at an acute care facility in Northern Arizona. The goal was to implement recommended clinical practice guidelines by incorporating intravenous acetaminophen (IVA) for optimization of perioperative pain for all surgical patients.

**Methodology**
Lewin’s Change Theory provided the framework for motivating providers to incorporate IVA for perioperative pain. A retrospective chart review retrieved data from 74 adult surgical inpatients from January 1 to July 31, 2014 to determine if IVA is effective for postoperative pain. The paired t-test was used to calculate mean pain scores at three end-points, total opioid dosages in the first 24 hours and length of hospital stay (LOS). Chi-square analysis compared demographic and clinical data between groups who received IVA and those who did not. The p-value was set at <0.05 to determine statistically significant differences.

**Results**
The data analysis concluded there are statistically significant differences (p < 0.05) in pain scores at 12 and 24 hours, total opioid dosages and LOS for patients who received IVA. The mean pain scores at 12 hours (1.89) and 24 hours (3.19) were statistically significant with p=0.0001, p=0.0066. Total opioid dosages were 48% less in the IVA group (16.57mg) compared to the group who did not receive IVA (32.14 mg) and LOS in the IVA group (1.81 days) was lower compared to the group who did not receive IVA (2.08 days). There was no significant differences in post anesthesia care unit (PACU) pain scores (p=0.07) and no significant differences in age, gender, American Society of Anesthesiologists (ASA) physical status, and type of surgery.

**Implications for Practice**
It is the duty and responsibility of all health care professionals to provide effective pain management to patients. The findings from this retrospective chart review supports current literature that IVA is an effective non-opioid analgesic for acute perioperative pain when used in multimodal analgesia regimens. It also supports Lewin’s “change phase” by facilitating knowledge and promoting acceptance into changing practice. Collaboration between healthcare providers is essential when improving or updating policy or practice guidelines. Advanced practice nurses can lead change by translating knowledge into practice resulting in improved healthcare and patient outcomes.
Faculty Development to Support Interprofessional Education in Healthcare Professions: A Realist Synthesis

**Purpose**
Interprofessional collaboration among professionals is understood to be an answer for some of the toughest problems in healthcare, but it is challenging to achieve. The purpose of this project is to present an evidence synthesis of the interactions between contexts, mechanisms, and outcomes of faculty development for interprofessional education (IPE).

**Methodology**
A comprehensive and systematic search of the evidence related to faculty development for IPE was conducted using the realist synthesis methodology. An alternative to a traditional review of the literature, it seeks to explain complex interventions where varying inputs and contexts affect outcomes. The process occurs in two phases: the first phase identifies the mechanisms underpinning the intervention and the second phase focuses on finding evidence relevant to the identified mechanisms. From over 700 citations reviewed, 14 articles and books were synthesized for this project. The findings are presented in the form of context, mechanism, outcome (CMO) configurations.

**Results**
The findings from the realist synthesis demonstrates that through the mechanisms – *roles and role modeling, valuing diversity, reflection, group process, and knowledge, skills, and attitudes for IPE* – positive outcomes can be achieved. Outcomes of increasing capacity and sustainability of IPE programs; forming networks of individuals concerned with IPE; and evaluating and assessing of outcomes of IPE, may all be achieved through these mechanisms. The contextual factors include attitudes and expectations, program logistics, leadership, and commitment, which interact with the mechanisms to impact the outcomes. Multiple CMO configurations were revealed and analyzed which helped to explain how faculty development for IPE works in varying settings. The findings may help support the creation and implementation of institution-specific faculty development programs for IPE.

**Implications for Practice**
Experts have shown that collaboration among healthcare professionals can improve the patient experience, the health of the nation, and reduce costs. To achieve success, graduates of health professions educational programs must ‘collaboration-ready’. While evidence shows that IPE is becoming ‘common’ in healthcare professions education, the challenges and complexity of implementation might inhibit some institutions from starting. To support widespread integration of IPE, effective faculty development programs are needed. The information from the realist synthesis will help inform the dialogue about faculty development for IPE across academic settings. The better faculty and administration understand the key processes of faculty development for IPE, the more effective those programs will become. The aim of the synthesis was to explain the interactions between the processes, context, and outcomes of faculty development programs for IPE.
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http://nau.edu/CHHS/Nursing/Welcome/