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Emergency Nurses' Knowledge of Pediatric Complaints

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REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Assistant Dean for MSN and DNP Studies, on behalf of the program; we verify that this is the final, approved version of the student's DNP Project including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Kari J. Blackburn, Student

Dr. Leslie K. Scott, Advisor

Final DNP Project Report

Emergency Nurses Knowledge of Pediatric Complaints

Kari J. Blackburn, DNP, RN, CPEN

University of Kentucky College of Nursing Spring 2014

Leslie K. Scott

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Mollie E. Aleshire

Dedication

I want to personally thank all of my wonderful family members, my husband, my boys, best friends (Shannon, Andrea and Jessie), and mentors who have walked by my side throughout this entire process. Most importantly I am forever grateful for my savior, Jesus Christ, who has carried me through. All of the hard work and tears have finally paid off, and I am so thankful to be at this point, finally!

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Table of Contents

| | |
|---|-----|
| Title Page..... | i |
| Dedication..... | ii |
| Acknowledgements | iii |
| Table of Contents | iv |
| List of Figures..... | v |
| List of Tables | vi |
| Introduction/DNP Capstone Overview..... | 1 |
| Manuscript 1(Integrative Review: Emergency Nursing Knowledge of Pediatric Pain Assessment)..... | 4 |
| Manuscript 2 (Emergency Nurses’ Knowledge of Pediatric Pain Assessment in the Acute Care Setting)..... | 17 |
| Manuscript 3 (Presentation of Nausea and Vomiting to Triage..... | 43 |
| Appendix A (Survey Tool)..... | 47 |
| Capstone Report Conclusion..... | 48 |
| Capstone Report References..... | 5 |

List of Tables

| | |
|--|----|
| Table 1: Sample Demographics | 36 |
| Table 2: Differences in PNKAS scores by education and years of Nursing | 37 |
| Table 3: Incorrect Responses | 38 |

List of Figures

| | |
|---|----|
| Figure 1: PNKAS Tool | 39 |
| Figure 2: Kolcaba's Comfort Theory | 41 |
| Figure 3: Distribution of Nurses scores | 42 |
| Figure 4: PNKAS score by year of experience | 43 |
| Figure 5: PNKAS score by education | 44 |
| Figure 6: Difference in PNKAS proficiency by experience | 45 |
| Figure 7: Difference in PNKAS proficiency by years of education | 46 |

Introduction to the Final DNP Capstone Project

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Capstone Introduction

Each year there are more than 25 million pediatric emergency department (ED) visits, with 37-60% of the complaints being non-urgent (Brosseau, Hoffman, Nattinger, Flores, Zhang and Gorelick, 2007). Injury is the number one reason children present to the ED and is strongly associated with a complaint of pain (AHRQ, 2013). While pain is a high volume reason for visiting the ED, there are other presentation causes that may pose a high risk to pediatric patients. Nausea and vomiting is not typically viewed as a high risk complaint, yet there are some high risk etiologies resulting in nausea and vomiting that require urgent intervention. One high risk diagnosis that frequently presents with nausea and vomiting is the child with Medium-chain acyl-CoA dehydrogenase (MCADD) deficiency. These children need immediate care to avoid further clinical deterioration.

Pediatric emergency nurses in an academic setting need to be knowledgeable about a broad range of clinical issues. As mentioned previously a chief complaint of pain is encountered often in the ED. Despite the commonality of the complaint, evidence suggests that pediatric pain is often under-treated. Assessment of pediatric pain is an inherent aspect of pain management. Recognizing the need to understand how pediatric pain is assessed provides the framework for partial fulfillment of the capstone.

The first capstone manuscript is an integrative review regarding nursing knowledge of pediatric pain assessment in the acute care setting. The review begins with current practice recommendations and provides an overview of research from 2007-2014 regarding pediatric pain assessment, as well as knowledge and attitudes of nursing staff regarding this subject. It also includes current gaps in research and the need for additional study.

The second capstone manuscript highlights a 2013 investigation: "Emergency Nursing Knowledge of Pediatric Pain Assessment in the Acute Care Setting". A survey with established reliability and validity (the PNKAS survey) was sent to all emergency nurses working at an academic medical center over a 3-week period. The results indicated that there is a knowledge deficit regarding pediatric pain assessment among ED nurses,

regardless of increased experience or advanced degree. These findings provide an opportunity to change current emergency nursing practice.

The final capstone manuscript focuses on the high risk issue of nausea and vomiting in the child with MCADD. In the study setting, it was identified that emergency nurses needed education about the importance of this complaint, current guidelines for treatment, and initial management of these children. “Triage of the Pediatric Patient with Nausea and Vomiting” addressed the clinical presentation of MCADD and has been published in the *Journal of Emergency Nursing* (Blackburn, 2013).

Manuscript #1

Acute Pediatric Pain Assessment and Management in the Hospital Setting: An Integrative
Review

Kari Blackburn, RN, BSN, CPEN, DNP-c

Abstract

Purpose: Acute pain control in the pediatric population is a controversial issue that continues to be a problem that is not being properly dealt with. It can contribute to undue stress, anxiety, and prolonged hospital stays in the acute care setting. An integrative review of articles regarding pediatric acute pain assessment and management was conducted to examine how medical staff is dealing with this issue.

Methods: An integrative literature search of studies that were published between 2007-2012 was conducted using PubMed, EBSCO Host, and the Nursing and Allied Health Literature (CINAHL). The key words used were a) pediatric pain, b) acute pain, c) pain management, d) pain guidelines, e) nursing, and f) professional attitudes. Articles were reviewed if a) pediatric acute pain was addressed within the acute care setting b) nursing knowledge regarding pain management was addressed, c) design was qualitative, quantitative, or evidence based reviews, and the d) date of publication was between 2007-2014, with exception to a guideline published in 2001.

Results: 10 articles published between 2007 and 2014 met the search criteria without saturation of evidence. The most frequent type of design was a pre-posttest model. Common themes that emerged were: staff attitudes and knowledge about pediatric pain management, appropriate pain scales according to age and developmental level, and ways to properly manage pain management with pharmacologic and non-pharmacologic methods. The most frequent type of design was a pre-post test model.

Conclusions and Implications: Findings revealed that Nurses are not properly educated within the acute care setting regarding pediatric pain management. Due to inadequate knowledge related to pediatric pain, pediatric acute pain is often under-assessed and under treated. Many different pain scales have been developed based on age; however, certain pain scales for specific ages should be concrete and used only for specific ages or developmental level. Gaps in research that have been identified include: 1) pain management therapies for different ages and developmental levels, and 2) which pain scales have had the greatest benefit for different age groups.

Clinical Relevance: The degree of knowledge medical staff has received regarding pediatric pain management greatly affects the patient. These findings may guide healthcare leaders to provide medical staff with education on assessment and management of pediatric pain. Questions regarding pediatric pain assessment and management by healthcare professionals should be identified in order to appropriately recognize areas of needed education.

Integrative Review: Acute Pediatric Pain Assessment and Management

Background

Managing pediatric pain has been the topic of multiple research studies over the past years. Although there have been advances in medicine, easier access to medications and research publications regarding non-pharmacologic and pharmacologic methods to treat acute pain, pain management in the pediatric population continues to be an issue. One of the most common unfavorable stimuli experienced by infants and children is acute pain. This may occur due to trauma, sickness, or medical procedures such as peripheral intravenous lines and lumbar punctures. Numerous studies have reported that children receive significantly less pain medication than adults in comparable situations and knowledge of current pain management by staff is lacking (Dowden & Chalkiadis, 2008; LeMay et al., 2009; Ellis et al., 2007).

In 1979 the International Association for the Study of Pain (IASP) defined pain as, “an unpleasant sensory and emotional experience associated with actual or potential tissue damage” (Pain, number 6, pg. 250). Within the hospital setting, acute pain (pain lasting <6 months) is often undermanaged and not properly assessed due to staff perceptions regarding pediatric pain management and treatment. Many pediatric pain scales have been developed to help children rate their pain; however, they are often under-utilized in the acute care setting, which will be discussed further in this review.

The focus of this integrative review is to assess the current beliefs and practices of nurses surrounding the management of pediatric pain in the acute care setting. Implementation of pain guidelines in the hospital setting and comfort of nurses assessing pediatric pain will also be of primary importance. Findings of this review could help readers understand why pediatric pain assessment is/ or is not being assessed and managed properly, and may help to increase nurses’ knowledge base of pediatric pain assessment.

Methods/Aim

The question, which guided this review was, “is nursing knowledge of pediatric pain assessment adequate in the acute care setting?” An integrative review was performed to approach to define the area of interest, the aim and the search strategy. The research was identified along

with the inclusion and exclusion criteria, relevant articles were selected from the PubMed, Cumulative Index to Nursing and Allied Health (CINAHL), EBSCO Host and the Cochrane library. The review was performed by searching for studies published about pediatric pain in the hospital setting, pain policies in pediatric hospitals and nurses' knowledge and attitudes about pediatric pain. The literature regarding nurses' comfort with pain assessment and knowledge regarding pain management was used to draw the conclusion of this review.

The search included articles published between 2007 and 2014 with the exception of a guideline published in 2001. The inclusion criteria were articles including interventional, descriptive and cross sectional study designs. Areas of interest were identified by using the Population, Interventions, Comparison, Outcomes and Study Design format (CRD, 2009).

- P= Children experiencing acute pain in the hospital setting
- I= Assessment by nurses, documentation of pain
- C= Assessing versus not assessing pediatric pain
- O= Increasing pain or un-assessment pain
- S= Descriptive, intervention, cross-sectional

All articles relating to nursing assessment and management of pediatric pain in the hospital setting were included.

Guidelines

In 2001, the American Academy of Pediatrics (AAP) and the American Pain Society (APS) developed a policy statement regarding acute pediatric pain. Infants, children and adolescents were the target population for this guideline. The AAP and APS goal was to assist with decreasing pain, anxiety and stress in the pediatric population through better pain assessment and management. Also in 2001, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), a creditor and certifier of health care organizations, recognized pain as the 5th vital sign (TJC, 2012). JCAHO also initiated policy that mandated appropriate pain assessment and management in all accredited healthcare organizations. Treating pain in the pediatric patient can help to decreased family anxiety as well.

The AAP and APS both have published the following: “Suffering occurs when pain leads the person to feel out of control, pain is overwhelming, when the source of pain is unknown, when the pain is perceived to be dire and when pain is chronic” (2001). Guided imagery, relaxation, massage, heat application and self-regulation have been found to be beneficial and identified as cognitive behaviors therapies (Stinson, Kavanagh, Yamada, Gill, & Stevens, 2006). This policy statement initiated by the AAP have identified that there is a need for more research to reveal further strategies for optimal pain management. The AAP and APS has identified that as pain management expands, treatment of children will improve (2001).

Results

After searching the EBSCO Database, I found ten studies with a primary purpose on finding the root of the problem of pediatric pain management and assessment in the hospital, and how to improve knowledge of this. The most frequent design was a pre-post test design to examine nurses’ knowledge of pediatric pain and assessment (5). Other studies included descriptive design (3), mixed-method (1). One article was an evidence based review. The studies reported data using descriptive statistics or quantitative/qualitative analysis.

The papers explored the following themes:

- Relationships, attitudes and knowledge of nurses managing pediatric pain
- Implementing a pain management policy in university hospitals
- Pain management practices in the ED
- Evaluation of pediatric pain management guidelines

Included studies focused on ED visits and hospitalization of children (Stanley & Pollard, 2013, Megens et al., 2008, May et al., 2009, Mocerri & Drevahl, 2014; Ellis et al., 2007; Habich et al., 2012; Dowden et al., 2008; Cohen et al., 2008 and Kavanah et al., 2010. Of those some focused on the assessment of nursing knowledge (Stanley & Pollard, 2013, Lemay et al., 2009, Mocerri et al., 2014, Ellis et al., 2007; Habichi et al., 2012; Dowden et al., 2008). Few articles focused on implementing pediatric pain guidelines within the hospital setting (Megens et al.,

2008, Rieman & Gordman, 2007), and one focused on knowledge translation intervention (Kavanagh et al., 2010).

Nursing Knowledge

Decisions regarding patient care can be affected by the knowledge and attitudes of nursing judgment. Few studies have identified and studied nursing knowledge regarding pediatric pain, as most have focused on physicians. Emergency nurses are the front line of care, patient advocates, first to assess and continue to manage pediatric pain. Le May et al. found in 2009 that “The effectiveness of pain management guidelines is weighed heavily by the nurses’ knowledge, attitudes, and beliefs” (p. 500). According to Benner’s novice to expert model, a competent nurse is one who has been in the same role for at least two years (Benner, 1984). Novice nurses (less than two years’ experience) were found to treat pediatric pain significantly less than often ($p < 0.05$) more experienced nurses, by using the Pediatric Knowledge and Assessment Survey (PNKAS) developed by Renee Manworren in 2001 (Rieman & Gordman, 2007). Rieman and Gordman (2007) suggest that the 0-2 year nursing group could benefit the most from skill assessment and supportive measures during those years as novices.

In studies conducted by Stanley and Pollard (2013) and Mocerri and Drevdahl (2014). Surveys with established reliability and validity regarding knowledge of pediatric pain and assessment were administered to nursing staff. Both articles advise that pain management practices should improve tremendously. They found no significant differences in mean total scores by age, educational level, years of nursing or ED experience. However, Stanley and Pollard (2013) did find a statistical significance based on overall years of nursing experience and years of experience taking care of the pediatric patient together. Nurses with a higher level of education and increased years of experience in the pediatric emergency department had a higher level of knowledge of pediatric pain assessment ($p = .05$).

Several studies with a pre-posttest design reported a statistically significant increase in pain assessment after implementing educational courses for nurses (LeMay et al., 2009; Habich et al., 2012; Ellis et al., 2007; Johnson et al., 2007; Rieman & Gordman, 2007). Two articles assessed knowledge immediately post implementation, at three and six months (Habich et al., 2012; LeMay et al., 2009). Rieman and Gordman, 2007 and Ellis et al., 2007 both conducted an

immediate post intervention test and six months after implementation. Ellis et al. (2007) identified the need to have senior staff leaders to help identify knowledge needs and to assist in holding staff accountable for assessing pediatric pain. One review found that although pain assessment practices increased, patient and family satisfaction did not (Habich et al., 2012). Other studies included in this review did not focus on patient satisfaction scores.

Johnston et al., 2007 performed the only study that provided one on one coaching sessions with nurses. Six pediatric hospitals were included in this study. Nurses who participated in the coaching session improved their pain assessments post implementation ($p < .0001$). LeMay et al. (2009) agreed that tailoring an intervention specific to a nurses needs and schedule has more impact than passing along educational content via classroom or electronically. All studies in this review concluded that nurses need additional education regarding the assessment and management of pediatric pain in the acute care setting.

University Implementation

Two articles sought to achieve organizational change in pediatric pain management practices (Dowden et al., 2008; Megens et al., 2008). Megens et al. (2008), helped to implement a pediatric pain policy at a university pediatric hospital. The primary purpose was to develop hospital-wide practices that would implement an acute pediatric pain protocol to help improve pain. A pediatric pain group was established to develop hospital-wide practice standards for pain management and assessment. Dowden et al. (2008) focused more on assessing current practices within the Hospital setting by implementing a pediatric pain group into the hospital setting.

Only one article was found to have a mixed methods case study design to introduce a knowledge transition (KT) into a pediatric hospital (Kavanagh et al., 2010). Nurses and managers participated in the appreciative inquiry (AI) project. Staff participated in four facilitator-led educational sessions about evidence-based pain management and assessment of the pediatric patient. The sessions took place over a two-week period. Eleven staff members developed an action plan to enhance evidence-based pain assessment documentation. The authors concluded that the AI sessions were found to be helpful through quantitative content analysis because all involved were allowed to participate in the change.

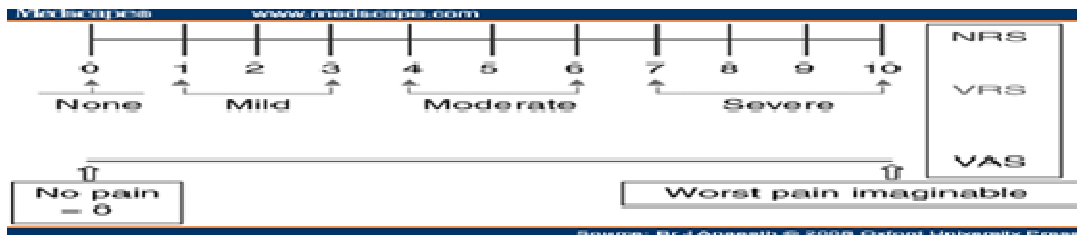
Critical Aspects

Cohen et al., 2008 conducted an evidence-based review of pediatric pain measures. They identified seventeen developed pain measures for pediatric patients spanning pain intensity, self-report, questionnaires and diaries and behavioral observations (Cohen, et al., 2008). Eleven of those measures met criteria for “well established”, the remaining 6 were identified as “approaching well established” and “promising”. All measures were well identified in the evidence-based review, including development and validity of tools. The authors concluded that the best measure will depend on the child’s age, the purpose of use and the environment the child is in. The authors also found that highlighting culture and the impact of pain on functioning is of high importance.

Many studies have identified that different pain scales have been developed to rate pediatric pain based on age and cognitive level. The Visual Analogue Scale (VAS) is the most widely utilized tool in children >8 years of age. It includes a 100mm horizontal line, which includes a “no pain” line at the beginning, and a “worst possible pain” line at the opposite end (Dworin et al., 2005). Pain intensity scores are calculated based on the beginning of the line to the child’s mark. The VAS has been shown to be a valid indicator of pediatric pain (Stinson et al., 2006). See figure 1.

VAS

Figure 1.



In younger children, the Faces pain scale revised (a series of faces ranging from a happy face at 0 to a crying face at 10) and the Face, Legs, Activity, Cry, Consoliability (FLACC) scale for pain in nonverbal and developmental delayed children seemed to show preference (Figure 2, Figure 3).

FLACC

Figure 2.

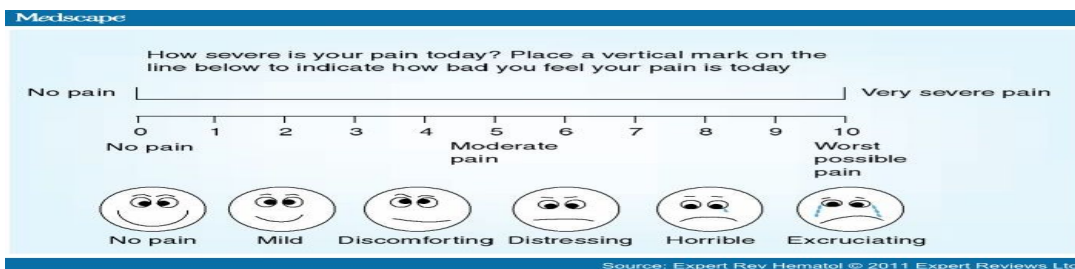
| Categories | Scoring | | |
|---------------|--|--|--|
| | 0 | 1 | 2 |
| Face | No particular expression or smile | Occasional grimace or frown, withdrawn, clenched jaw | Frequent to constant frown, squinting eyes, clenched jaw |
| Legs | Normal position or relaxed | Stiffness, restlessness, tensed | Clenching or legs drawn up |
| Activity | Lying quietly, normal position, moves easily | Squirming, shifting back and forth, tense | Arching, rigid, or jerking |
| Cry | No cry (awake or asleep) | Moans or whimpers; occasional complaint | Crying steadily, screams or sobs, frequent complaints |
| Consolability | Content, relaxed | Reassured by occasional soothing, hugging, or being talked to distractible | Difficult to console or comfort |

Notes: Each of the five categories (Face (F), Legs (L), Activity (A), Cry (C), and Consolability (CO) is scored from 0-2, which results in a total score between 0 and 10.
From Merkel, Vogel-Lewis, Braxatorre, & Malysia (1997). The FLACC: A behavioral scale for scoring postoperative pain in young children. *Pediatric Nursing*, 20(3) 293-297.

Source: Pediatric Nurse © 2011 Elsevier Publications, Inc.

FACES

Figure 3.



Discussion and Implications for Clinical Practice

All articles reviewed agreed that nurses' knowledge regarding acute pediatric pain management should be increased. It is clear that this is an area where knowledge is lacking and increasing awareness could help to significantly decrease pediatric pain within the acute care setting. JCAHO (2001) has a current pain management standard that requires staff to be educated in the assessment and management of pain. Research has shown that common barriers to improving pain management within the acute care setting may include a wide variability in current practice, inadequate knowledge, classic beliefs and culture (Dowden et al., 2008).

The guidelines produced by AAP and APS provide information regarding barriers such as: (1) the thought that children and infants do not experience pain in a way that adults may, (2) a lack of assessment/reassessment in the acute care setting, (3) addressing pain in children can take

too much time, (4) children could experience a higher incidence of adverse effects to opioid administration than adults, and (5) a misunderstanding of subjective information (AAP, 2001). All articles reviewed have identified one or all of these barriers within their studies. It's imperative that staff is made aware of the lack of pain assessment and management in the acute care setting, educated about this issue, and allowed to express whatever feelings they may have regarding the assessment of pediatric pain.

Proper assessment and the management of pediatric pain remain a constant issue. Weight based doses of acetaminophen and ibuprofen, assessing the cognitively impaired child and conversion from one opioid to another continue to be topics where more knowledge is needed (Saroyan, et al., 2008). Rieman and Gordon (2007) found that potential barriers included lack of pain management pharmacology knowledge and the side effect of respiratory depression. They found that nurses ultimately felt that the decision to prescribe pain medication was up to the physician, and that they had no say in the treatment.

Strengths and Limitations

Limitations in this review include the fact that all articles used either focused on a pre-post test design or implementing policies in the hospital setting. Perhaps expanding more with chronic pain (pain lasting > 6 months) and the assessment of that pain type would help lead to a better understanding nurses' attitudes related to pain management. Retrospective chart reviews may be of significance when examining actual assessment of pediatric pain, focusing on correct pain scales used and whether there was an implementation and re-assessment of the patient. Identifying barriers and facilitators in relation to the implementation of pain management policies, even by analyzing the role of the family and staff would be of interest. Other gaps include the fact that most articles did not focus on patient satisfaction and whether patients and felt their pain was adequately managed, or if parents felt the patients' needs were met through pain assessment and management.

There is limited information as to which age group suffers more in regards to their pain assessment and management needs not being addressed appropriately. Also, articles reviewed did not identify which age group nurses to whom nurses felt more comfortable providing assessment and pain relief measures, or whether nurses felt more comfortable with a certain age

group. Many articles reviewed did not identify which pain scales were shown to be of most benefit according to age and developmental level.

Implications for Future Research

Pediatric acute pain has emerged as a significant issue in the clinic setting. The diagnosis and treatment of the cause of acute pain must always have a high priority in nursing assessment. Improving the nurses' understanding of the pharmacology of pain medications and how to improve upon age appropriate assessment skills can aid in the management of the pediatric patient. Ongoing research studies are needed to identify areas where guidelines for pediatric pain assessment and management are not being followed within the acute care setting. Studies performed that identify what pain management techniques are currently being used can help guide implementation of evidence based practice regarding this issue into the hospital setting. Understanding that pain in children does mimic adults, current medical knowledge of how to help the pediatric patient in pain is underdeveloped and can be improved.

Manuscript #2

Emergency Nurses Knowledge of Pediatric Pain Assessment in the Acute Care Setting

Kari J. Blackburn

Abstract

Objective: The purpose of this study was to determine the proficiency in pediatric pain assessment within the acute care setting among all emergency nurses who had an opportunity to participate in the survey working in a level 1 trauma center.

Methods: A 25-question instrument, with established reliability and validity was administered to all Emergency Nurses at the University of Kentucky.

Results: The instrument was completed entirely by 46 emergency nurses, 52 participated.

Conclusions: The education and area of expertise were not significant influences on knowledge scores. Emergency nurses need additional education regarding the assessment of the pediatric parent experiencing pain. ER nurses seemed to answer most questions incorrectly regarding pharmacological treatment and side effects of those medications.

Emergency Nurses Knowledge of Pediatric Pain Assessment

Introduction

Pain is one of the most common presenting complaints to the emergency department (ED, Cordell, 2002). The wide variation of age, size and developmental level has added to the complexity of assessing pediatric pain within the acute care setting. The AHRQ has defined children as those who are between 0-18 years of age (2013). Because of the variation of ages, healthcare providers must have a detailed knowledge of pediatric pain scales and interventions to relieve pain. Because nurses are the largest group of universal health care providers (Dickenson-Hazard, 2004) they have a responsibility toward caring for the patient as a whole, which includes pain management. Many patients come to the ED seeking relief from their pain. Vincent and Denyes (2004) found that nurses are only administering 23-43% of PRN (as needed) analgesics ordered in the acute care setting. Nationwide, nurses have unsuccessfully managed children's pain due to the failure of recognizing pain, not optimizing pain treatments and accepting the fact that pain is a necessary part of illness (Manworren, 2000). Why pain is under-assessed and undertreated is not entirely understood.

Failure to assess pediatric pain in the ED has been a nationally recognized issue, and the topic of multiple research articles (Matov and Khan, 2009; Drendal et al., 2007; Manworren, R., 2000). Drendel, et al. (2007) found that overall, nursing documentation of pain scores in the pediatric patient is low, occurring in less than 50% of visits. A large amount of research has been focused on the pain management practices among ED physician prescribing of pain medication, with not as much focus on nursing knowledge of the assessment of pediatric pain. Pediatric pain scales have been available for many years; however, there have been discrepancies in published reports regarding which scale to use for each age, and if the pain scales are valid measurement tools (Bulloch & Tendebien, 2002). Research shows that nurses are not using pain assessment tools consistently in the role of assessment and management of pediatric pain (Griffin, Polit & Byrne, 2008). Manworren (2000) found that 55-90% of nurses believe pain is over reported. This identified a need for further research to determine why this is the thought process of many nurses. Moreover, identifying the ages of children among whom pain

assessments are most frequently missed is of high importance. The identification of such age ranges may allow the health care provider to improve practice and decrease the amount of pain children may experience.

Differences in how providers assess, manage and perceive pain in patients occur in all clinical settings (IOM, 2011). Common myths that exist are: 1) babies can't feel pain, 2) children do not remember pain and 3) getting used to pain is part of growing up (AAP, 2012). In an attempt to seek answers as to how pediatric pain could be better acknowledged and treated, the question arose: what exactly do registered nurses (RNs) know about the assessment of pediatric pain? A qualitative study of 21 nurses concluded that one barrier to assessing pediatric pain is a lack of knowledge (Gimble & Berglund, 2008). This question led to the development of this study. How a patient's pain is managed ultimately depends on nursing knowledge and attitudes about pain and the management of it. This article reports ED nursing knowledge of the assessment of pediatric pain.

Specific Aims

The specific aims of this study are to: 1.) Study emergency nurses' current knowledge of recognition of pediatric pain, 2.) Identify common barriers among nurses in regards to pediatric pain assessment, and 3.) Determine if educational background and ED experience affects pediatric pain assessment knowledge.

Background/Significance

Registered nurses are to have their patients provide a pain score upon initial presentation to ED triage. Triage in the ED has been established to determine a priority of care for patients upon arrival, so each patient can receive appropriate resources in a timely manner (AHRQ, 2012). Triage has become an initial screening process in the ED nationwide. A prerequisite for triage is being an "expert nurse" (ENA Triage Position Statement, 2012). An expert nurse has gained the knowledge needed to assign appropriate acuties to each patient; pain assessment is included during the triage process. With the

current ED nursing shortage, novice nurses (defined as nurses with less than 2 years of experience, Benner, 1978) may help triage patients as well. This could possibly cause an increase in the amount of inappropriate pain assessments in the pediatric patient.

Algorithms have been put into place for triage nurses to follow; however novice nurses may not perform the same assessment as an expert nurse. Rieman and Gordman (2007) found that novice nurses were found to treat pediatric pain significantly less often than more experienced nurses.

Unrelieved acute pain can lead to chronic pain syndromes, along with acute cardiovascular, gastrointestinal, respiratory, genitourinary, musculoskeletal and immune system effects (Middleton, 2003). Few studies have been performed in regards to the result of unmanaged acute pain. Stressful pain experiences can also lead to posttraumatic stress syndrome in children (AAP, 2012). Not managing pediatric pain within the acute care setting can also contribute to an increase in hospital stay and prolonged healing times (Schechter, Berde & Yaster, 2003).

The purpose of this study is to identify the current knowledge base and beliefs regarding pediatric pain assessment among nurses in the ED at a university hospital. A survey with established reliability and validity, the Pediatric Nurses Knowledge and Attitudes Survey (PNKAS), was administered to emergency nurses in one university hospital to assess their current level of knowledge and comfort in assessing pediatric pain. The authors' approval of use was obtained prior to administration of the survey (Renee ManWorren, 2013). The educational level and years of nursing experience were also assessed to determine if there is a correlation between these factors and the nursing knowledge of assessing a pediatric patient experiencing pain. The American Academy of Pediatrics (AAP, 2010) states there is a positive correlation between lack of knowledge among caregivers regarding pain assessment and lack of effective management.

Study Design

After Institute Review Board approval, a univariate descriptive study was employed for this report. Written consent was obtained from the director of the ED prior to the launch of this survey. A survey was administered to all nurses working in a level 1

university ED, as every nurse has the opportunity to either triage or treat a pediatric patient. The actual PNKAS survey consists of forty questions; the first twenty-five questions are true/false dealing more with pediatric assessment and knowledge of medication administration and side effects (Figure 1). The remaining 15 questions are multiple choice type questions with a focus on administering pain medication; therefore they were omitted due to the nature of this survey. Questions were analyzed based on correct and incorrect responses and a total survey score was calculated for each participant.

The first twenty-five questions of the questionnaire were administered, and an additional two questions regarding demographics. REDCap is a secure web based application for building and managing online surveys and databases. An email containing information about the study and a link to access the survey was sent out on October 1, 2013. A follow up email was sent out one week after the initial email as a reminder to complete the survey. The survey was open to ED nurses for three weeks. Each nurse had an equal chance to access the PNKAS survey via REDCap, as computers were easily accessible to all RNs in the work setting.

Theoretical Framework

The theory of comfort was used to help guide the study. In 1994 Kolcaba introduced the theory of comfort to the public (Kolcaba and Dimarco, 2005). Kolcaba described comfort as existing in 3 forms: relief, ease, and transcendence (Nursing Theories, 2011). Nurses assess the holistic (physical, psychosocial, sociocultural and environmental) comfort needs of patients. Nurses implement a variety of interventions to assist in meeting those needs, and assess patient comfort levels. For example, if the pediatric patient is feeling pain due to a laceration and the nurse properly assesses and acknowledges it, the patient begins experiencing the *relief* sense. When the patient feels a relief from pain, and their thoughts can be diverted from pain through guided imagery by the nurse, the patient is then in the *ease* sense. They begin to experience ease from whatever circumstance they are currently in. The *transcendence* phase is experienced when the healthcare provider and patient can talk about the pain they are currently experiencing and determine a comfortable pain level for the patient. Following this

framework will help the nurse better manage the patient's pain; the patient will feel relief and comfort while being assessed/managed. In order to apply the theory to practice, three steps are required: (1) understanding the patients definition of comfort, (2) understanding the relationships between the general concepts entailed in this theory, and (3) relating the general concepts to specific pediatric problems/settings in order to improve practice (Kolcaba and Dimarco, 2005).

Comfort was defined by Merriam Webster Dictionary in 2014 as (a) the physical feeling caused by disease, injury or something that hurts the body, (b) mental or emotional suffering: sadness caused by some emotional or mental problem, or (c) someone or something that causes trouble. Kolcaba stated that comfort occurs in four contexts of experience: physical, psycho-spiritual, sociocultural and environmental (Figure 2). When nurses apply the comfort theory they consider and minister in a caring way to the child and family as a whole, while improving the patient experience in the healthcare setting.

Study Plan

The study took place in a level 1 university hospital including Registered Nurses (associates, bachelors, masters, post-masters prepared) working in the ED. This did include a diverse population, not gender or ethnicity specific. Nurses were made aware that the survey would not take longer than ten minutes to complete. They were also informed they could stop at any time during the survey if they felt uncomfortable or did not wish to finish. There are approximately 80 nurses employed in the ED. This cross sectional study was based on a convenient, non-probability sampling design. Participants provided informed consent electronically prior to participating in the survey.

Data were collected via REDCap. REDCap was used to build a survey tool and collect data, and provided an analysis after each user completed the identified survey. This tool provided a summary of the number of people who answered each question, and their responses. Resources included access to the internet and a laptop. The survey data and laptop were password protected, only accessible by the primary investigator.

Inclusion criteria include being an RN (ADN, BSN, MSN or higher) working in the ED at the University of Kentucky and either part time (>12 hours/week) or full time

employment in the ED. Exclusion criteria include RN's (pool staff) not employed by the ED, and nurses work <12 hours per week.

Measures

The primary outcome measure was to score 80% or higher on the PNKAS. 80% was identified as a proficient score and referred to as a "nursing expert" in regards to the assessment of pediatric pain. "The Pediatric Nurses' Knowledge and Attitudes Survey Regarding Pain (PNKAS) is a modification of Ferrell and McCaffery's Nurses' Knowledge and Attitudes Survey Regarding Pain (NKAS) first developed in 1997" (ManWorren, 2001, p. 151). This tool was modified specifically for pediatric nurses versus those caring for adults only. Due to the specific modification of the survey, five national content experts in pain management rated the relevance of the survey questions to establish content validity (ManWorren, 2001, p. 151). Test-retest reliability of the tool was found to be $r=0.67$, indicating an acceptable level of stability (ManWorren, 2001, p. 151). Descriptive and demographic variables included education levels and years of experience as a nurse (Table 1).

Data Analysis

Fifty-two individuals completed the survey. Means, standard deviations and frequencies were used to describe the sample, and frequencies were also used to determine the proportion of the total participants who scored 80% or higher on the PNKAS. Chi-square analyses were used to examine the difference in proportions of those scoring 80% or higher on the PNKAS by educational level (ADN, BSN, MSN, PhD/DNP) and work tenure in the ED (less than 1 year, 1-5 years, or greater than 5 years). Independent sample t-tests were used to determine the differences in mean scores by educational level (which was categorized as ADN vs. BSN or greater) and years of experience working in the ER (categorized as 1 year or less vs. 2 years or more) between participants scoring 80% or higher on the PNKAS. All statistical data were analyzed using SPSS. The level of significance set for the study was a p-value of less than or equal to 0.05.

Potential risks and safety precautions

Participants could be uncomfortable with some of the questions that the survey asks which is a potential risk. Informing the participants that they did not have to answer any question with which they are uncomfortable helped to minimize these risks. Participants were made aware that they could cease to answer the survey at any time they wished. They were also informed that their participation in the survey was completely voluntary and all of their responses would be kept confidential with all analyses performed on group data such that no individual person's responses will be presented in the analysis.

Safety precautions included sending a follow up email in addition to the original email reminding all nurses that the survey was anonymous. Nurses were also given my phone number and email and informed they could contact the primary investigator with further questions or concerns regarding this study. There will be no cost to perform this project, as REDCap is a free Internet tool for university students.

Results

Sample Characteristics

Of those completing the survey (n =52), 51.9% (n=27) had greater than or equal to two years of ER experience, 42.3% (n =22) had one to two years of ER experience, and 5.8% (n = 3) had one year or less. Moreover, 5.9% (n = 3) were Masters prepared nurses, 72.5% (n =37) were BSN prepared nurses, and 21.6% (n =11) were had associate degrees in nursing (Table 1). There were differences in years of working at the ER among the proportions of those who correctly answered, although the differences were not statistically significant ($p <.06$; Figure 4) the questions regarding 1) "Anxiolytics, barbiturates and sedatives are OK for pain relief" (1 or fewer years = 66.7% vs. 2 years or more = 88.5%), 2) "A child's religious beliefs may think pain is necessary" (1 or fewer years = 88% vs. 2 years or more = 100%), and 3) "Children less than 6 months can not

tolerate opioids for pain relief” (1 or fewer years = 67.7% vs. 2 years or more = 88.5%). However, there were significant differences between education levels in those nurses answering correctly to the following questions: 1) The duration of morphine is 4-5 hours (ADN = 63.6% vs BSN or higher =90%, $p= 0.033$) and 2) “The child/adolescent with pain should be encouraged to endure as much pain as possible before resorting to a pain relief mixture” (ADN = 81% answered correctly vs BSN or higher =100%, $p= .006$; Figure 5).

Difference in PNKAS scores by education and years in nursing

The percentage of questions that were scored as correct by RNs is displayed in table 3. Seven questions were answered incorrectly by more than 50% of participants; all seven questions were dealing with medications, side effects and dependency. Of those who completed all the PNKAS questions ($n = 46$), 30.4% (13/46) scored an 80% or higher. The mean number of correct responses was 18.46 (74%), standard deviation 2.35 with a median of 19.00 and range of 9.00. There was no significant difference in PKNAS proficiency by years in the ER (1 year or less = 24.0% vs 2 years or more = 29.6, chi-square = .21, [df =1], $p = .647$) or by education (ADN = 18.2% vs BSN or higher = 30.0, chi-square = .61, [df =1], $p = .437$; Figures 6 & 7). Neither were any significant differences found in PKNAS total scores by years in the ER or education (see Table 2). Although not statistically significant, perhaps due to the small sample size, all nurses with an MSN or higher level of education ($n=3$) scored 80% or greater.

Discussion

This study suggested that nurses in this ED with advanced degrees and increased years of experience in nursing did not have more knowledge about pediatric pain, but the findings also demonstrate that over 50% of these nurses were unfamiliar with medications, side effects and opioid dependency. This study’s findings are comparable to the study conducted by Manworren (2000) who found no significant correlations between PNKAS scores and years of nursing experience. Margolis, Hudson and Michel (1995) also found that there was no statistical significance between years of nursing experience and beliefs about pain. Therefore, education for ED nurses needs to include the

assessment of pediatric pain and management and interventions for pain based on an age appropriate pain scores.

Findings from this study suggest that overall knowledge regarding pediatric pain assessment among nurses in the ED remains low; and an educational intervention should be implemented to improve knowledge on this issue. The findings suggest that additional research should be performed focusing on knowledge levels of ED nurses regarding pain assessment. This study correlates with other studies that have been performed regarding nursing knowledge of pediatric pain assessment (Rieman & Gordman, 2007; Coehen et al. 2008).

Questions regarding the administration of pain medication and side effects of pain medication in children had the most incorrect responses. For example, the questions “Respiratory distress is rare with opioids over a period of months” and “Acetaminophen 650mg PO is equal to Codeine 32mg PO” was answered wrong by 75% of survey respondents. Educational sessions centered on not only pain assessment techniques and guidelines, but including information on pediatric pain medication administration and side-effects would be of great benefit as well. According to the literature, nurses who take a pain management course score 7% higher on the PNKAS than those who do not (LeMay et al., 2009).

Limitations

This study has several limitations. The study results are unable to be generalized to all emergency nurses, as this was a convenience sample at one southern university level 1 ED. It is also possible that results were skewed if nurses took the survey at the same time and conversed about their responses. The PNKAS does not ask specific questions related to comfort with assessing certain age groups. Having this information could help identify what age groups are most at risk for untreated pain. Drendel et al., (2007) found that infants and preschool age children were identified as ages less likely to receive pain score documentation. There is little research available regarding this topic. There has been a lack of research that identifies if certain age groups, and chronically ill

children with developmental delays, are not assessed for pain as adequately as other children. Unfortunately, this research study did not help to determine that.

The PNKAS tool's reliability may have been compromised as the validity/reliability was reported based on 40 questions, and this project utilized 25 of those. The 25 questions used were true/false questions and were used because they related to this study's focus: the knowledge of assessment of pediatric pain.

In this study, nursing knowledge of pediatric pain was examined at 1 university hospital. This information was not compared to the subjects' actual practice of pain management practices. Only 57.5% of the sample completed the survey. Nurses interested in pain may have been more willing to complete the survey. Non-responders may have had a greater knowledge deficit regarding pediatric pain assessment.

Although there are several limitations, this study still proved to be clinically significant. The results of this study can be used to guide educational sessions to nurses in the ED. It would also be beneficial to see what pain assessment and management content is offered in the area and surrounding nursing programs. Education of the novice nurse should resume after graduation of a nursing program, and nurses should continue to be informed of the latest information in pain management. Since it can be more difficult to change attitudes than knowledge, education programs should be constantly updated and improved upon (Edwards et al., 2001). Future studies should include all pediatric acute care nurses to get a better picture of pain management across the continuum of care.

In this study, pain assessment knowledge deficits were quickly identified, although it was a small convenience sample. These results can assist in the future developmental of educational programs focused on pediatric pain assessment and management.

Table 1

Sample demographics

| | N | % |
|----------------------------|----|------|
| Education | | |
| ADN | 11 | 21.6 |
| BSN | 37 | 72.6 |
| MSN | 2 | 3.9 |
| Post-Masters | 1 | 1.9 |
| Missing | 1 | 1.9 |
| Years in Emergency Nursing | | |
| | N | % |
| Less than 1 year | 3 | 5.8 |
| 1-5 years | 22 | 42.3 |
| More than 5 years | 27 | 51.9 |
| | | |

*T-test to test difference in mean raw test scores

Table 2

Differences in PKNAS scores by education and years in nursing (n =46)

| | N | Mean (SD) | T (df) | p-value |
|-------------------------------------|----|------------|-----------|---------|
| Education grouped* | | | | |
| ADN | 8 | 17.9 (2.5) | -.77 (44) | .448 |
| BSN or higher | 38 | 18.6 (2.3) | | |
| | | | | |
| Years in Emergency Nursing grouped* | | | | |
| | | | .06 (44) | .951 |
| 0-5 years | 23 | 18.5 (2.2) | | |
| More than 5 years | 23 | 18.4 (2.6) | | |

Table 3

Nurses' Incorrect Responses >25

| PNKAS Survey Question | Correct Response | Incorrect Responses (n=) |
|---|------------------|--------------------------|
| Respiratory depression rarely occurs in children/ adolescents who have been receiving opioids over a period of months. | True | 39 |
| Acetaminophen 650 mg PO is approximately equal in analgesic effect to codeine 32 mg PO. | True | 39 |
| Research shows that promethazine (Phenergan) is a reliable potentiator of opioid analgesics. | False | 37 |
| Anxiolytics, sedatives, and barbiturates are appropriate medications for the relief of pain during painful procedures. | False | 36 |
| Ibuprofen and other non-steroidal anti-inflammatory agents are NOT effective analgesics for bone pain caused by metastases. | False | 26 |
| Non-drug interventions (e.g. heat, music, imagery, etc.) are very effective for mild-moderate pain control but are rarely helpful for more severe pain. | False | 26 |
| Beyond a certain dosage of morphine increases in dosage will NOT provide increased pain relief. | False | 26 |

Figure 1

Pediatric Knowledge and Attitudes Survey Regarding Pain (PNKAS)

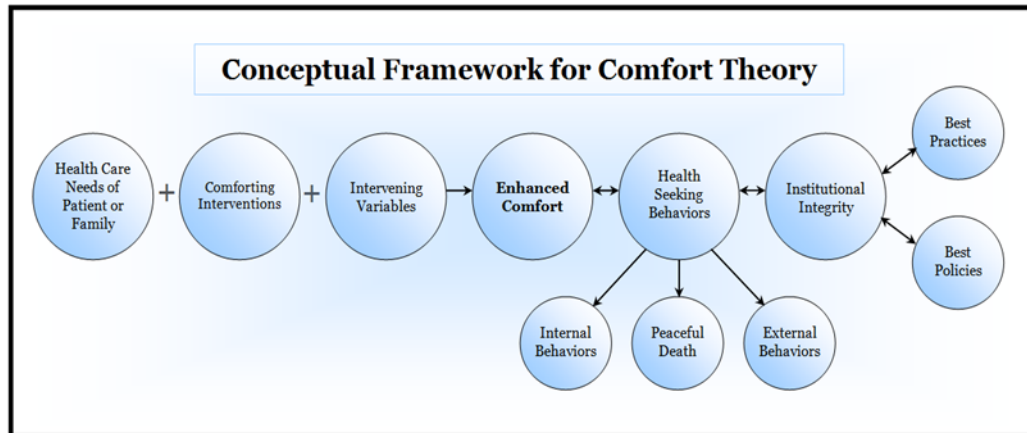
| Question | True or False |
|---|---------------|
| Observable changes in vital signs must be relied upon to verify a child's/adolescent's statement that he has severe pain | F |
| Because of an underdeveloped neurological system, children under 2 years of age have decreased pain sensitivity and limited memory of painful experiences | F |
| If the infant/child/adolescent can be distracted from his pain this usually means that he is not experiencing a high level of pain | F |
| Infants/children/adolescents may sleep in spite of severe pain | T |
| Comparable stimuli in different people produce the same intensity of pain | F |
| Ibuprofen and other non-steroidal anti-inflammatory agents are NOT effective analgesics for bone pain caused by metastases | F |
| Non-drug interventions (e.g., heat, music, imagery, etc.) are very effective for mild-moderate pain control, but are rarely helpful for more severe pain | F |
| Children who will require repeated painful procedures (e.g., daily blood draws), should receive maximum treatment for the pain and anxiety of the | T |

| | |
|---|---|
| first procedure to minimize the development of anticipatory anxiety before subsequent procedures | |
| Respiratory depression rarely occurs in children/adolescents who have been receiving opioids over a period of months | T |
| Acetaminophen 650 mg PO is approximately equal in analgesic effect to codeine 32 mg PO | T |
| The World Health Organization (WHO) pain ladder suggests using single analgesic agents rather than combining classes of drugs (i.e., combining an opioid with a non-steroidal agent). | F |
| The usual duration of analgesia of morphine IV is 4-5 hours | F |
| Research shows that promethazine (Phenergan) is a reliable potentiator of opioid analgesics. Parents should not be present during painful procedures. | F |
| Adolescents with a history of substance abuse should not be given opioids for pain because they are at high risk for repeated addiction. | F |
| Beyond a certain dosage of morphine increases in dosage will NOT provide increased pain relief. Young infants, less than 6 months of age, cannot tolerate opioids for pain relief. | F |
| Children, less than 8 years, cannot reliably report pain intensity and, therefore, the nurse should rely on the parents' assessment of the child's pain intensity. | F |
| Based on one's religious beliefs a child/adolescent may think that pain and suffering is necessary. | T |

| | |
|--|--|
| Anxiolytics, sedatives, and barbiturates are appropriate medications for the relief of pain during painful procedures | F |
| After the initial recommended dose of opioid analgesic, subsequent doses should be adjusted in accordance with the individual patient's response | T |
| The child/adolescent should be advised to use non-drug techniques alone rather than concurrently with pain medications | F |
| Giving children/adolescents sterile water by injection (placebo) is often a useful test to determine if the pain is real | F |
| In order to be effective, heat and cold should be applied directly to the painful area | F |
| The child/adolescent with pain should be encouraged to endure as much pain as possible before resorting to a pain relief mixture | F |
| Please indicate the highest level of nursing education you have completed | ADN, BSN, MSN, Post-masters |
| How many years of experience in Emergency Nursing do you have? | Less than 1 year 1-5 Years More than 5 years |

Figure 2

Kolcaba's Comfort Theory



(<http://comfortcareinnursing.blogspot.com/p/comfort-theory-major-concepts.html>)

Figure 3
Distribution of Nurses Scores

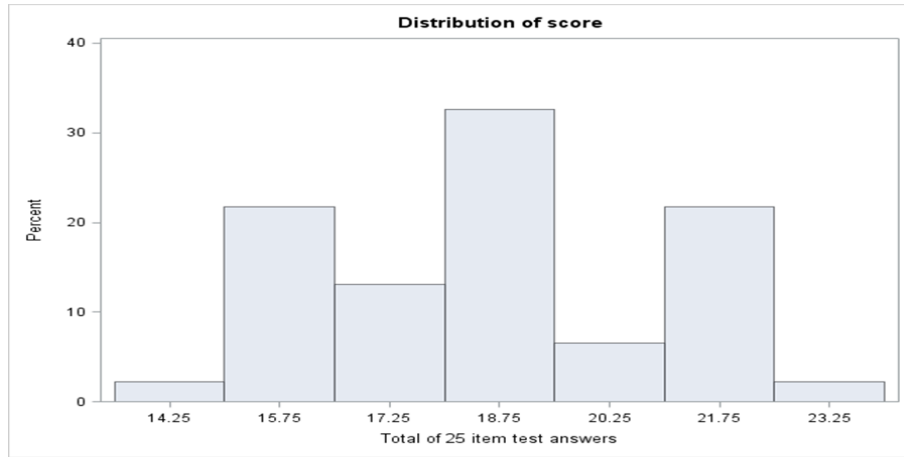
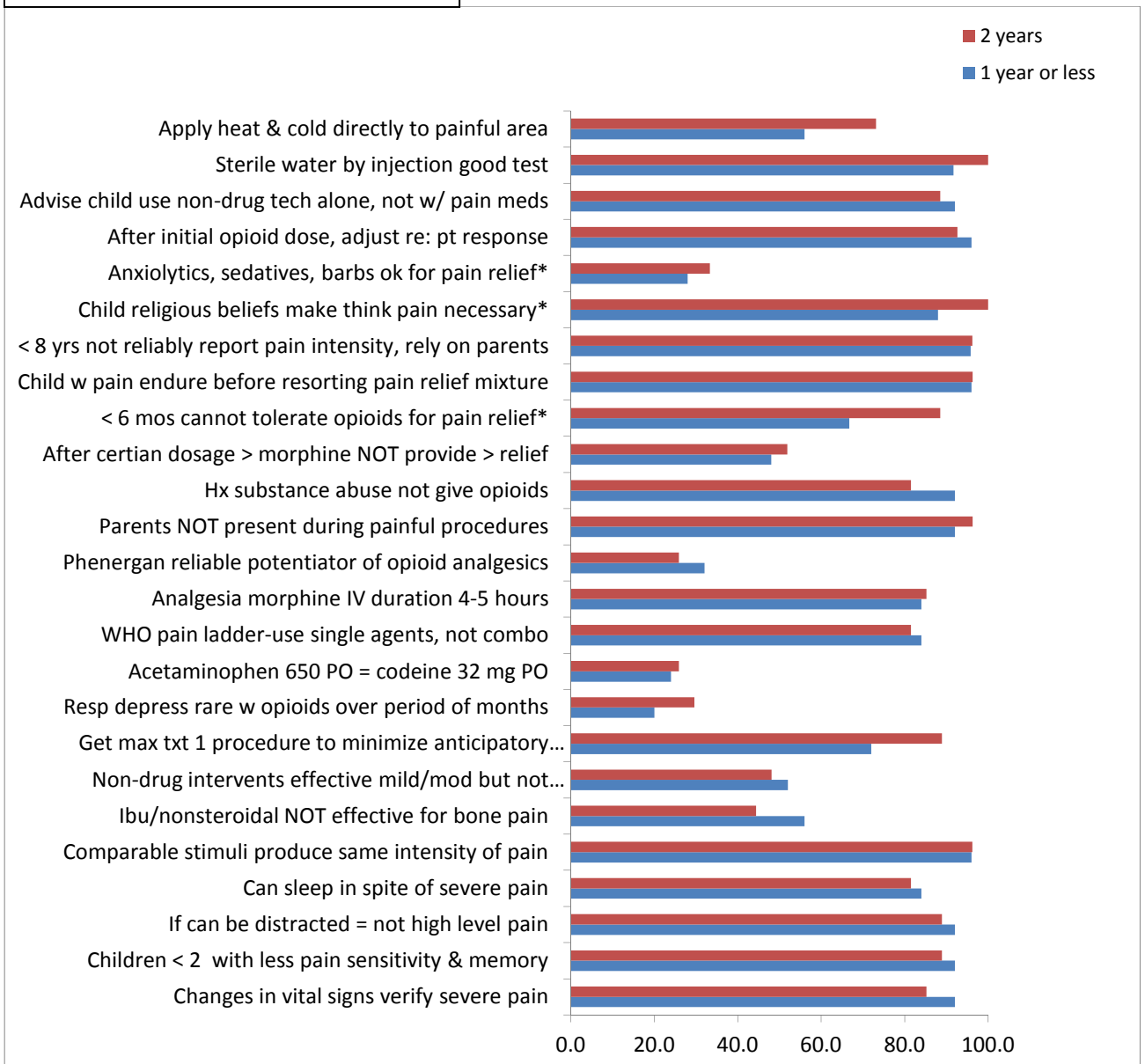


Figure 4

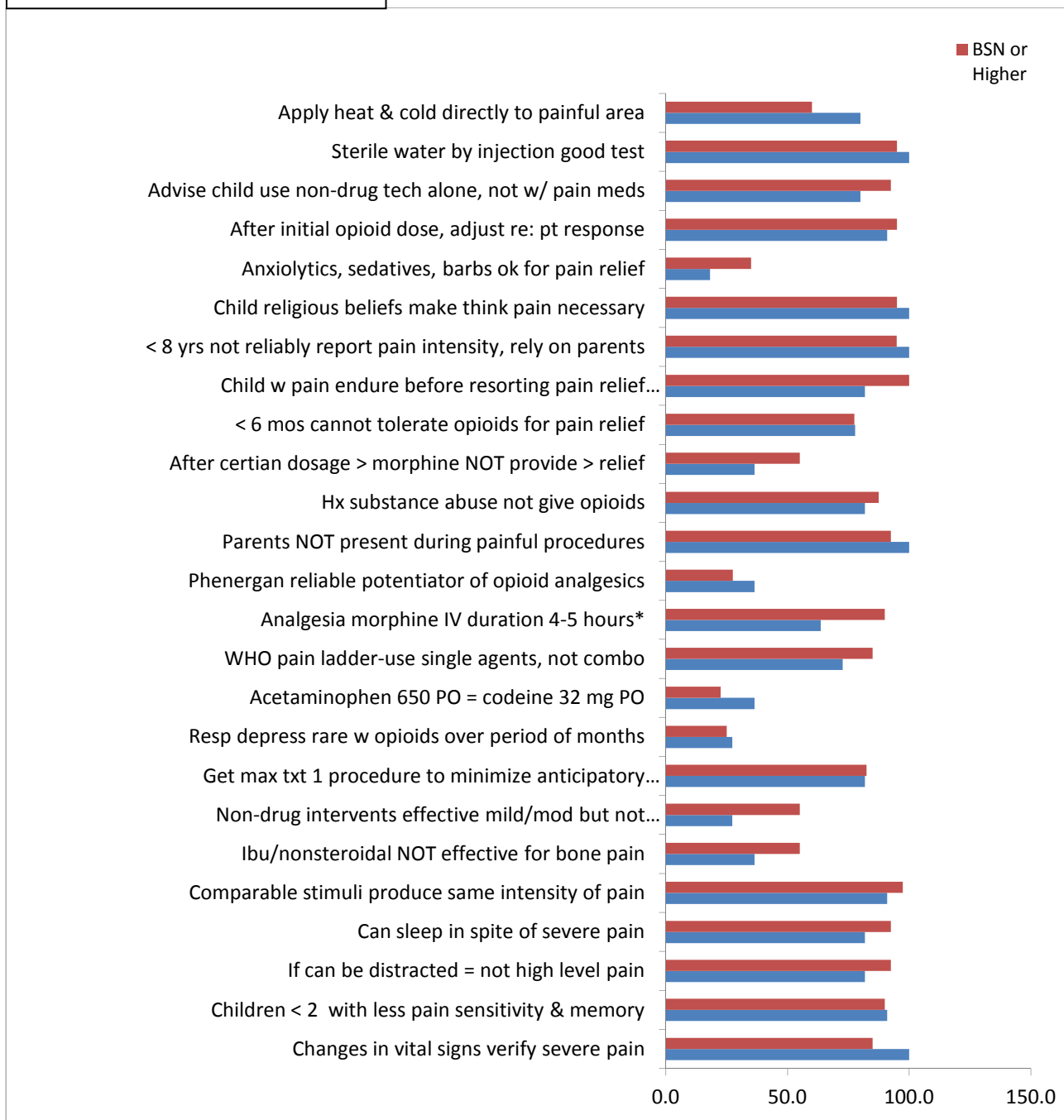
PKNAS scores by year of experience



Note. * indicates questions which were different based on years of experience at $p = .06$

Figure 5

PKNAS scores by education



Note. * indicates questions which were different based on years of experience at $p < .05$

Figure 6

Differences in PKNAS proficiency (i.e., scoring 80% of questions) by years of experience in the ER

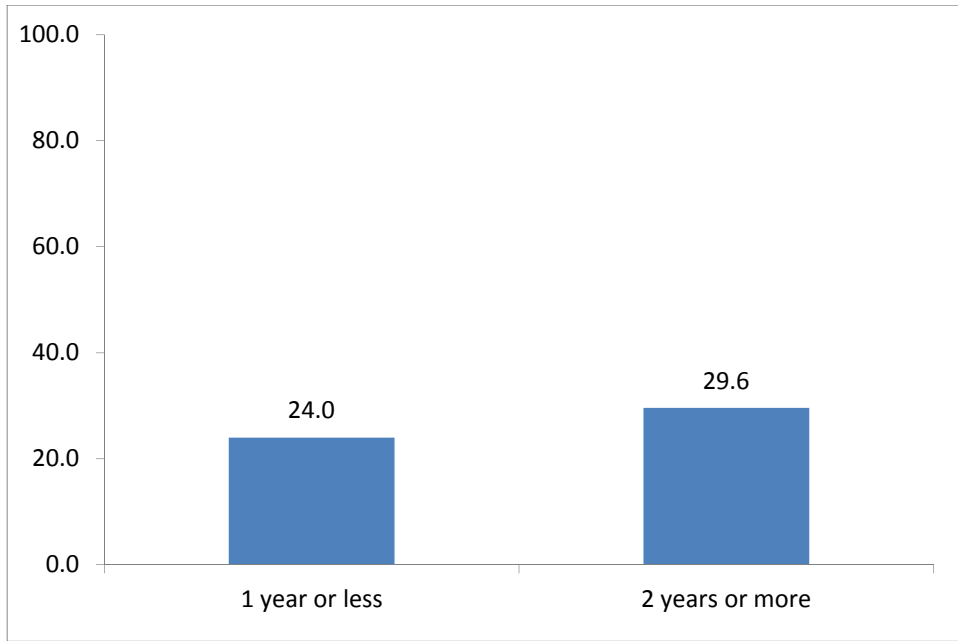
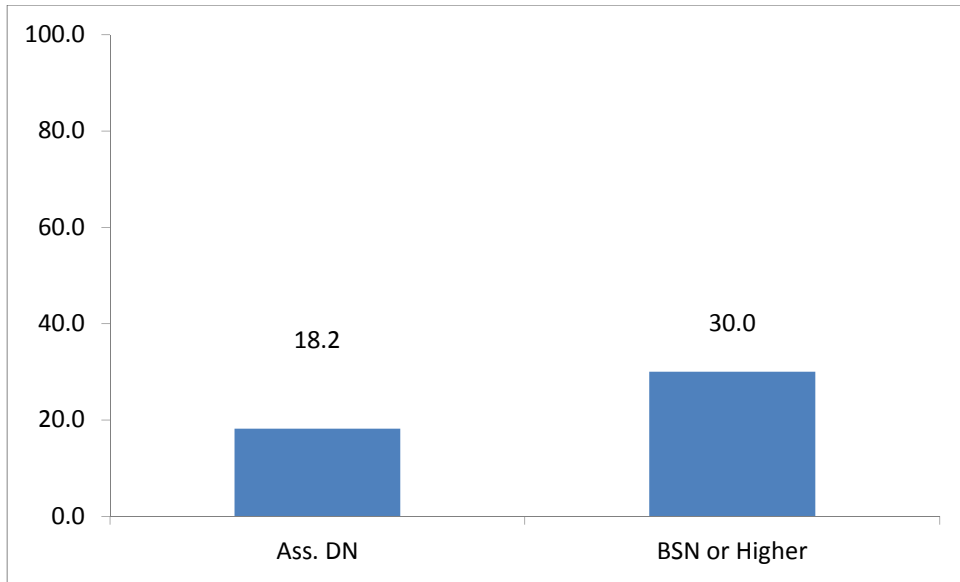


Figure 7

Differences in PKNAS proficiency (i.e., scoring 80% of questions) by years of education



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3

Manuscript Number: Title: Triage of the Pediatric Patient with Nausea and Vomiting
Article Type: Column □ Section/Category: Triage Decisions □ Corresponding Author:
Mrs. Kari June Blackburn, BSN Corresponding Author's Institution: University of
Kentucky First Author: Kari J Blackburn, BSN, RN, CPEN

Triage of the Pediatric Patient with Nausea and Vomiting

Morgan, a two year old female, presents with her mother to the triage nurse with reports of nausea and vomiting for 4 hours. Her mother states she has had one wet diaper since the onset of vomiting. What acuity would you assign Morgan? Is this a concerning complaint?

Pediatric patients often present to the emergency department (ED) with complaints of nausea and vomiting (N/V). The triage nurse may not recognize the severity of this common complaint in the child diagnosed with certain inborn errors of metabolism (IEM).

Symptoms such as N/V can quickly lead to hypoglycemia and lethargy in children with Medium-chain acyl-CoA dehydrogenase deficiency (MCADD), an inborn error of metabolism. MCADD is a condition that stops the body from converting some fats to energy, specifically during intervals without food.¹

The incidence of MCADD affects 1 in every 17,000 births.¹ Five level triage algorithms, such as the Emergency Severity Index (ESI), provides a method for delineating how to prioritize patients presenting to the emergency department based on severity and resources.²

The triage nurse is accountable for recognition of the patient in need of emergent treatment versus those who could wait if there are no treatment areas available. Assigning patients the appropriate acuity allows the emergency nurse to quickly prioritize and initiate life-saving interventions.

Patients with MCADD presenting with nausea and vomiting should be assigned an acuity rating of ESI level 2 due to their potential to rapidly decline. These children require multiple resources to prevent further clinical compromise.

Other metabolic disorders such as long (LCADD) and very long-chain acyl-CoA dehydrogenase (VLCADD) deficiency are less prevalent but should also be recognized by the emergency nurse as having a high triage priority when a child presents with nausea and vomiting. Genetic mutations of the ACADM gene result in MCADD. This gene supports the

production of an enzyme called medium-chain acyl-Coa dehydrogenase, which is required to break down a group of fats known as medium-chain fatty acids.¹ The cause of one to three out of 100 cases of sudden infant death syndrome was identified to be a case of undiagnosed MCADD.³ Although the emergency department is not the place to initially diagnose MCADD, emergency nurses must quickly recognize the need for prompt initiation of treatment.

Frequently, parents or caregivers of these children will have an emergency information sheet that has been provided by their metabolic specialist to guide staff upon arrival to the ED. This “emergency” sheet includes the child’s diagnosis, specific recommendations for emergent treatment and stabilization of the patient, along with contact information of the metabolic specialists.

Although it’s important for the parent or caregiver to inform ED staff of the child’s existing condition, it is the responsibility of the nurse to recognize the need for prompt intervention and the potential for deterioration. Patients with an acyl-CoA dehydrogenase deficiency presenting with vomiting and lethargy could quickly proceed to hypoglycemic seizures or coma within 1-2 hours of ONSET of symptoms.

Parents and caregivers are taught the early signs of MCADD decompensation; therefore it is important for the emergency nurse listen to them and trusts their judgment as they know their child best. MCADD sequelae may also result in liver dysfunction with hepatomegaly, metabolic acidosis, hyperammonemia, and sudden death.¹ Failure to recognize the significance of nausea and vomiting in a child with MCADD can create delays in patient care and allow the patient to further decompensate. It is imperative for the emergency nurse to recognize the importance of this triage complaint and move them quickly through the triage process, alert the primary nurse and resident or attending physician.

Rapid identification of the child with MCADD will facilitate initiation of emergent treatment. Most treatment protocols include rapid intravenous access, baseline bedside glucose determination, and initiation of 10% dextrose infusion. These measures can be life saving, and help to prevent the child from developing any further acute MCADD symptoms. Awareness of metabolic disorders will facilitate appropriate triage and optimize clinical outcomes.

Appendix A

Survey Report Tool to ED nurses

To University of Kentucky Emergency Nurses:

I am trying to better understand emergency nurses' knowledge of pediatric pain assessment in the acute care setting. With being the pediatric pain champion in the Emergency Department, I have identified pediatric pain assessment as an issue.

Although you will not get personal benefit from taking part in this research study, your responses may help us understand more about nurse's knowledge of pediatric pain assessment in the emergency room.

We hope to receive completed questionnaires from about 50-70 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey/questionnaire, but if you do participate, you are free to skip any questions or discontinue at any time.

The survey/questionnaire will take about 10 minutes to complete.

There are no known risks to participating in this study.

Your response to the survey is anonymous which means no names will appear or be used on research documents, or be used in presentations or publications. The research team will not know that any information you provided came from you, nor even whether you participated in the study.

Please be aware, while we make every effort to safeguard your data once received on our servers via REDCap, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still en route to us.

If you have questions about the study, please feel free to ask; my contact information is given below. If you have complaints, suggestions, or questions about your rights as a

research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428.

Thank you in advance for your assistance with this important project. The survey will begin October 1st, and end October 31st, 2013.

Sincerely,

Kari J. Blackburn, BSN, RN, CPEN

University of Kentucky, Doctorate of Nursing Program

Conclusion to Capstone
Kari Blackburn, DNP, RN, CPEN

Conclusion

To meet nurses' educational needs, it is imperative that evidence based practice (EBP) recommendations are provided to nurses constantly, and time is allotted for educational updates regarding pressing issues such as evaluating pediatric pain and assessing simple complaints at triage. Medicine changes daily, therefore, educating nurses continuously will help to provide the best patient care, and increase staff awareness helping them to become an advanced nurse. Research studies and guidelines provides healthcare professional with the most up to date information applicable to current practice. Evaluating current research and incorporating it into practice provides patients with optimal outcomes. Topics as simple as nausea and vomiting and/or pain presenting to triage, can progress rapidly into a much worse scenario if not managed properly. Helping nurses realize the importance of EBP and incorporating it into practice is of prime importance, and will help them become a better provider.

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