CREATION OF A UNIVERSAL PEDIATRIC PAIN EDUCATION PROGRAM FOR THIRD WORLD HEALTHCARE WORKERS USING THE CIPP MODEL FOR IMPROVEMENT

by

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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by *Erin L. Galligan*, titled *Creation of a Universal Pediatric Pain Education Program for Third World Healthcare Workers Using the CIPP Model for Improvement* and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.

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Final approval and acceptance of this DNP project is contingent upon the candidate's submission of the final copies of the DNP project to the Graduate College.

I hereby certify that I have read this DNP project prepared under my direction and recommend that it be accepted as fulfilling the DNP project requirement.

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STATEMENT BY AUTHOR

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To Health Volunteers Overseas and Friends Without a Boarder, thank you for the work your organizations do all over the world to help the most vulnerable populations have access to healthcare.

DEDICATION

This manuscript is dedicated to my family.

To my brother, Dr. Derek Galligan MD. I'm sorry I ruined your glorious 17-month streak of being an only child. Thank you for using your genius brain to make the world a better place for everyone you meet. I feel very lucky to share the most genetic material with a human so truly exceptional as you. Thank you for always being proud of me.

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ABSTRACT

Background: The World Health Organization, the American Medical Association, and the International Association for the Study of Pain indicate pediatric pain is a significant global health issue, especially in the third world. Pain is the leading cause of patients seeking medical attention in the third world. Undertreated pain can lead to a lifetime of severe disability. Therefore, proper pain management is of great worldwide interest. Many studies have identified a lack of education as a barrier to pain management.

Objective: The purpose of this project is to ameliorate the dearth of pain education amongst third world healthcare workers. With expert input, this project aimed to create a universal and comprehensive pediatric pain teaching program that any Western-trained healthcare worker can utilize in a third world healthcare setting to help the local staff learn about pain. This program was shared for dissemination with Health Volunteers Overseas.

Design: This is a program evaluation employing the Context, Input, Process, Product (CIPP) design used to determine useful updates to a comprehensive educational tool created by the primary investigator.

Participants: Western-trained healthcare professionals with backgrounds in third world healthcare, and educational experts.

Measurements: Educational and third world healthcare setting experts were surveyed. They were asked four open-ended questions, two binary questions and two demographical questions. Common themes from the open-ended answers were identified and illustrated with Mind Maps.

Results: All experts surveyed responded with a combined 79 years of multidisciplinary experience guiding feedback. Common themes on the project's accuracy, successful attributes

and areas for improvement were identified, and the teaching program was updated accordingly. The experts all felt the teaching program contains accurate information and has the potential to improve pediatric pain treatment in the third world.

Conclusion: The purpose of this program evaluation was to create a clinical teaching tool that was refined according to expert commentary. Areas for future research include gathering feedback from a more varied group of experts, and also utilization of the teaching program in the third world and assessing its effectiveness with the tools provided.

INTRODUCTION

Background

Inadequate treatment of pain is a worldwide problem. Resource-poor and third world countries especially struggle with this issue. According to The World Health Organization (WHO) severe under treatment of pain is an acute problem in more than 150 third world countries (World Health Organization, 2007). In these settings, pain is the leading cause of patients seeking medical attention (Size, Soyanno, & Justins, 2007). The typical progression of a disease process in the developing world involves attempted home remedies and herbal preparations, meaning medical attention is only sought once the disease has significantly progressed and the pain is intractable (Kopf & Patel, 2010). According to the World Health Organization, appropriate pediatric pain management is a significant issue in developing countries (Kumar, 2007). In third world and resource-poor countries, the barriers to proper pain management range from inconsistent provider availability, to access to electricity, to lack of running water, paucity of drug supply, lack of staff education, absence of prioritization of the treatment of pain, and many other factors (Goucke, Jackson, Morriss, & Royle, 2015).

Pain management in developing countries is a multi-faceted, endemic and deeply complicated issue with many contributory components.

Significance of Project

Pain is profound, complex and causes intense suffering. Eighty percent of the world's population lacks adequate access to pain treatments (Dohlman, 2012). Under-treated pain can lead to many deleterious effects both during the acute phase and for a lifetime (Pasero &

McCaffery, 2011). Table 1 outlines the harmful effects of pain and why this project about pain education is important.

TABLE 1. *The harmful effects of unrelieved pain*

Domains Affected	Specific Responses to Pain
Cardiovascular	↑ Heart rate, ↑ cardiac workload, ↑ peripheral vascular resistance, ↑ systemic vascular resistance, hypertension, ↑ coronary vascular resistance, ↑ myocardial oxygen consumption, hypercoaulation, DVT
Respiratory	Flows and volumes, atelectasis, shunting, hypoxemia, ↓ cough, sputum retention, infection
Genitourinary	Urinary output, urinary retention, fluid overload, hypokalemia
Gastrointestinal	Gastric bowel motility
Musculoskeletal	Muscle spasm, impaired muscle function, fatigue, immobility
Metabolic	Gluconeogenesis, hepatic glycogenolysis, hyperglycemia, glucose intolerance, insulin resistance, muscular protein catabolism, ↑ lipolysis
Endocrine	↑ ACTH, ↑ cortisol, ↑ ADH, ↑ epinephrine, ↑norepinephrine, ↑ GH, ↑ catecholamines, ↑ renin, ↑ angiotensin II, ↑ aldosterone, ↑ glucagon, ↑ IL-1, ↓ insulin, ↓ testosterone
Cognitive	Reduction in cognitive function, mental confusion
Immune	Depression of immune response
Developmental	↑ Behavioral and physiologic responses to pain, altered temperaments, higher somatization, infant distress behavior, possible altered development of the pain system, ↑ vulnerability to stress disorders, addictive behavior, anxiety states
Future pain	Debilitating chronic pain syndromes: post-mastectomy pain, postthoracotomy pain, phantom pain, postherpetic neuralgia
Quality of life	Sleeplessness, anxiety, fear, hopelessness, ↑ thoughts of suicide

Note: Table created with information from Pasero, C., and McCaffery, M. *Pain assessment and Pharmacologic Management*. St. Louis: Mosby; 2011

Undertreated pain has profound effects on patients long-term, including increased morbidity, mortality, and length of hospital stay, and these patients are at increased risk for development of chronic and debilitating pain disorders, posttraumatic stress disorder, depression and suicidal ideation (Yuxiang, Lingjun, & Mengije, 2012; Summer, Puntillo, Miaskowski, Green, & Levine, 2007).

With a proper understanding of pain, the outcomes for patients drastically improve. Ratcliff, Brown, Rosenberg, Rosenberg, Robert, and Cuervo (2006) found that staff education with regards to the care of pediatric patients with pain fosters uniformity in pain assessment and

treatment, leading to better pain control. Yang et al. (2012) implemented a pain assessment tool and educational program and discovered that doing so resulted in significantly better pain control, less anxiety, less depression. Future advanced practice nurses (APRNs) may practice in resource-poor settings and will be faced with a similar situation – a dire lack of pain education and pain management.

Purpose

The purpose of this DNP project is to train and equip Western APRN volunteers traveling to third world countries with a complete educational program about pediatric pain management. These Western-trained providers will eventually provide evidence-based education on pediatric pain for third world healthcare providers by properly following the training offered in this DNP project.

The legal framework governing medical professionals, medications, and healthcare is as variable as it is vast. To be far-reaching and internationally neutral with regards to regulatory constraints, this project focuses exclusively on education. This DNP project is culturally sensitive in its specific focus on factual pain education, with the intent of creating a foundation on which specific institutions can build proper pain management protocols appropriate for their setting. Before any advancement in access to medications and procedures takes place, local staff must be properly educated on the importance of pain management.

Stakeholders

The stakeholders in this project are an organization which manages third world hospitals and volunteers, and their APRNs choosing to use this material. Other stakeholders include the staff members and administrators attached to this organization opting to implement pain

educational programs in third world countries, and eventually, the patients experiencing pain and their family members.

Formative Evaluation

This project sought to explore and investigate the following questions while developing a new program on pediatric pain education to be implemented by Western-trained APRN's traveling to third world countries. Questions are geared to assessing the content, instructional methods and attitudes of Western-trained healthcare worker program participants.

Content

1) Is the information presented in this program on pediatric pain management accurate?
2) Is this PowerPoint missing any crucial information?
3) Does this program enable Western healthcare volunteers traveling to developing countries to implement an educational program on pain education in pediatric patients to third world healthcare providers? Why? Why not?

Instructional Methods

4) Will this educational program as outlined with the utilization of PowerPoint and pre/post assessments regarding basic, introductory pain management in pediatric patients improve third world healthcare workers understanding of pain? Why or why not?

Attitudes

5) Do you think that a Western-trained healthcare provider will feel more confident in their knowledge of pain after taking part in this program?

6) Will Western nurses feel that providing an educational program on pediatric pain will lead to changes in attitude and improve pain practices of third world healthcare providers?

Experience

7) Please indicate your highest degree in your field:
8) How many years of experience do you have in this field?

FRAMEWORK AND SYNTHESIS OF EVIDENCE

Theoretical Framework

Utilization of a theoretical framework is essential to successful completion of the DNP project and for guiding nursing practice in general because it, "provides an orderly way to view phenomena" (Moran & Burson, 2014). First described by Dr. Madeleine Leininger in the 1940s, the Transcultural Nursing Theory (TCN) has evolved and has been the basis of more than 400 scientific studies demonstrating its application. The TCN was the first theory to focus on the implications of cultural beliefs, values, and health-illness caring practices to create meaningful and efficacious care (Purnell, 2004). In 2002, the TCN theory was further adapted into the Purnell Model for Cultural Competence (PMCC). This model has been lauded and praised by the American Journal of Nursing (Purnell, 2008), and has been adopted by the Commission on Internationalization and Cultural Competence for the European Union, and by the World Health Organization, for whom Dr. Purnell remains a consultant (Purnell, 2004).

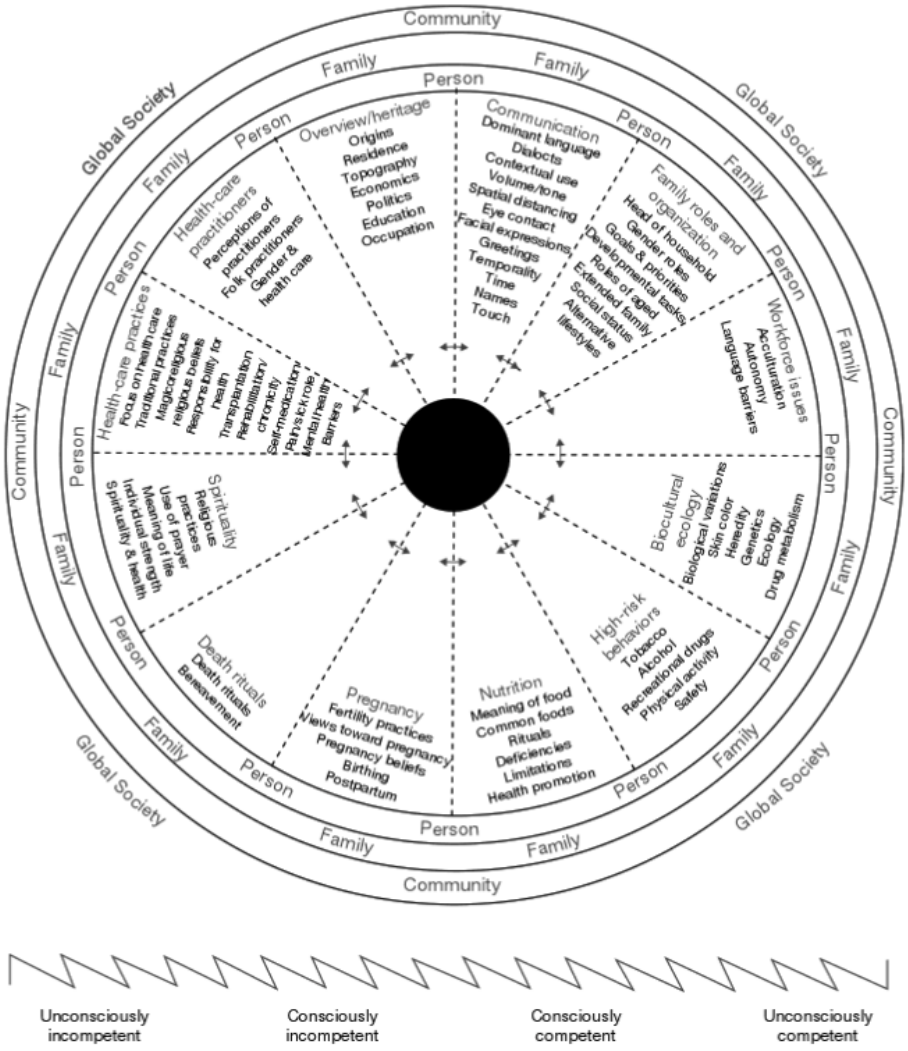


FIGURE 1. Purnell Model for Cultural Competence (PMCC). (Note*:* From *Transcultural Nursing Theory and Models. Application in Nursing Education, Practice and Administration*. By P. Sagar, 2012, New York: Springer. Reprinted with permission.)

The PMCC is depicted as a circle with four distinct levels. The very center is intentionally left dark and blank to represent the unknown (Purnell, 2008). Moving outwards from the center, the first layer represents the individual, the second layer represents family, the third layer represents the community at large, and the outer most layer represents global society (Purnell, 2004). Underneath the circle is a jagged line to represent the "nonlinear concept of

cultural competence" (Purnell, 2008). Within the non-linear spectrum of cultural competence are four factions describing the outsider's relationship towards other cultures: unconsciously incompetent, consciously incompetent, consciously competent and unconsciously competent. The third classification is where this project aims to exist (Figure 1).

Because this program is an evidence-based, educational presentation, the aim is helping providers become more consciously competent of the culture in which they are educating staff. This allows the members of the local healthcare communities being taught by the APRNs about pain to then translate their knowledge into unconsciously competent healthcare practice.

Purnell's Model for Cultural Competence makes twenty assumptions, and the most important for this project are:

1) Culture has a powerful influence on one's interpretation of and responses to health care;
2) Caregivers need both culture-general and culture-specific information in order to provide culturally competent care;
3) Caregivers who can assess, plan, intervene and evaluate in a culturally competent manner will improve the care of the patients who they serve (Purnell, 2008).

Consideration of the context is essential, as the context is the mediator between the evidence and practice. Successful implementation of change depends on the presence of many factors, but the one deemed most important is the culture of the healthcare organization (Rycroft-Malone et al., 2002). The three aforementioned assumptions made within the PMCC provide the cornerstone on which this project rests.

Key Concepts

The major concept of this project is to inform third world healthcare workers about undertreated pain and its deleterious effects on pediatric patients through the development of an educational tool designed with expert input. One potential source of undertreated pain could be caused by a lack of knowledge on pain itself, therefore, the focus of this project is to create a program aimed at preventing the devastating sequelae through the creation of a comprehensive teaching program.

For this project, "pain," is defined as physical suffering or discomfort caused by illness or injury. The consequences are discussed in the Problem Identification section of this paper. The terms, "third world," and "developing country," are used interchangeably, and are defined by the World Bank as countries, "in which most people have a lower standard of living with access to fewer goods and services than do most high-income countries," (Finley, 2006, p. 177).

"Pediatric patient," is defined as a patient 12-years-old or less. "Health care worker," is defined as any local clinical employee in a third world country whose responsibilities include direct patient care. The "staff education," consists of a lecture, a homework assignment, as well as pre and post-tests of self-reported competency of staff members.

Synthesis of Evidence

A search of studies pertaining to pediatric pain education in the third world, and undertreated pain in pediatric patients, PubMed/MEDLINE electronic data base was searched with the following key words: "pediatric," "pain," "cultural implications," "staff education," and "third world countries." Only articles from peer-reviewed journals published from 2007-2017

were accepted. The references sections of each selected article were searched for additional publications and primary resources. Sixteen articles were evaluated for this project (Tables 1-16).

Undertreated Pain in Pediatric Patients

With proper assessment and treatment of pain, the outcomes for patients drastically improve. Proper pain treatment has been demonstrated to directly correlate to a reduction in PTSD symptoms in children after painful diagnoses (Saxe et al., 2006).

Procedural pain is the most intense and most likely to be undertreated (Summer, Puntillo, Miaskowski, Green, & Levine, 2007). Additionally, procedural pain has also been identified as the most profound and anxiety-inducing, and anxiety has been shown to lower the pain threshold indicating a need for proper assessment and multi-modal pain management (Edwards, Smith, & Klick, 2007; McGarry et al., 2014). Ratcliff et al. (2006) found that utilization of a standardized pediatric pain protocol fosters uniformity in pain assessment and treatment, leading to better pain control. Yang et al. (2012) implemented a pain management educational program and discovered that doing so resulted in significantly better pain control, less anxiety, and less depression in patients.

Cultural Implications of Pain

Though pain is a physiological occurrence, the way patients report, express and understand pain is greatly impacted by culture. Before a meaningful pain management protocol can be developed, all barriers must be recognized. Identified by Dowden, McCarthy and Chalkiadis (2008) in a survey of all hospital staff, barriers to proper pain management in pediatric patients include outmoded beliefs and misconceptions about pain and analgesia, inadequate education, and insufficient staffing. In a survey of nurses caring of pediatric pain

patients in Iran, the barriers present against pain management ranged from lack of organizational support, to lack of staff education, to different disease processes and presentations (Namnabati, Abazari, & Talakoub, 2012).

With the increasing awareness of the importance of pain management, many barriers and attitude assessments have been conducted in the developing world, all of which identified a lack of proper pain education as a significant barrier (Bond, 2011; Size et al., 2007).

Pediatric Pain in Third World Countries

According to the World Health Organization severe under-treatment of pain is an acute problem in more than 150 third world countries (World Health Organization, 2007). Both the World Health Organization and the International Association for the Study of Pain cite pediatric pain as a significant health issue (Bond, 2011; Size et al. 2007). Through multiple barriers assessments in resource-poor countries, a common theme emerges: lack of proper education for nurses and doctors trained in these nations.

When the International Association for the Study of Pain (IASP) created a task force to address the lack of pain management in the third world, they surveyed healthcare workers in 49 resource-scarce countries. Ninety percent of those who responded indicated that education and training in pain management are inadequate, and 80% indicated they received no pain education at all (Bond, 2011). Nearly all the respondents indicated a desire for better training in understanding and managing pain.

Additionally, the American Medical Association (AMA) has also published studies on the dearth of pain amelioration in the third world. The AMA has found low-income countries to have the most patients suffering (Taylor, Gostin, & Pagonis, 2008).

Pain Education Implementation

Researchers have demonstrated positive results when implementing pain educational programs in third world countries.

Johnston et al. (2007) implemented a pain education program for Canadian pediatric nurses across an entire hospital system. Repeated coaching sessions were offered to randomly selected pediatric nurses focusing on the physiology of pain and the importance of assessing and treating it. Chart audits of all pediatric nurses were completed, and there was a significant improvement in the nurses' knowledge and documented pain assessments after completion of the pain educational program.

Goucke, Jackson, Morriss, and Royle (2015) conducted a wide-ranging needs and barriers assessment for pain management across many rural and underserved nations, then developed a multi-step teaching program to overcome said barriers. The educational program was highly effective and has had widespread success in more than 30 countries.

Puchalski Ritchie, Howie, and Njai (2010) implemented a pain education program for pediatric doctors and nurses in Gambia. Their results indicated a significant improvement in understanding pain, pediatric pain assessment and management.

Additionally, Huth, Gregg, and Linn (2010) assessed the knowledge and attitudes of Mexican nurses within a hospital system. The researchers then used the results to create an educational program specifically designed for the staff and its implementation resulted in significantly improved pain knowledge scores.

Strengths, Weaknesses and Gaps

The overall levels of evidence on undertreated pain, and the resulting harmful physical and psychological effects are robust and congruent. Many rigorous study designs in peer-reviewed publications yielded both quantitative and qualitative results indicating the profound disabilities those with under-treated pain face. Additionally, various studies agree that educational programs can be effective in addressing the lack of proper pediatric pain management.

The evidence supporting the presence of many barriers to proper pain management is also strong and well documented. The most common emerging theme of the barriers assessments frequently relates to the lack of proper pain education for staff members.

TABLE 2. *Appraisal of evidence.*

Reference	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) & Setting	Data Collection (Instruments/tools)	Findings
Dowden, S., McCarthy, M., & Chalkiadis, G. (2008). Achieving organizational change in pediatric pain management. *Pain Research and Management*, *13*(4), 321-326.	Identification of barriers and deficiencies present in pediatric patient pain management.	Not specified	Prospective consultation; Qualitative research design using semi-structured individual and group interviews.	Setting: 310 bed pediatric hospital in Australia. Sample: 454 clinical staff members (nurses, doctors, pharmacists, etc.) from every unit interviewed to attempt to identify barriers to improving pain management.	Review of existing hospital-wide pain services. Semi-structured interviews, solo or groups, aimed at identifying the barriers present within the facility against proper pain management.	Staff members identified a lack of adequate pain control related to procedural and chronic pain. The barriers identified were outdated or habitual practices, variability in practice, inadequate knowledge, a culture allowing for slow pain treatment.
Edwards, R., Smith, M., & Klick, B. (2007). Symptoms of depression and anxiety as unique predictors of pain-related outcomes following burn injury. *Annals of Behavioral Medicine*, *34*(5), 313-322.	Differentiation of anxiety versus depression as sequlae from profound injury. Postoperative effects of anxiety and depression on functional outcomes and pain following burn injury assessed.	Not specified	Prospective, longitudinal 2- year cohort study	526 patients, Pediatric burn pts from 3 regional burn centers (Johns Hopkins, U. Texas, U. Colorado). At least 16 years old	Collection: SF-26 Questionnaire measures qualify of life in scales; symptom inventory fir psychological symptoms. Analysis: Depressive and anxiety symptoms to pain-related outcomes, repeated measure analysis. GEE equation.	Depression and anxiety are strong prospective predictors of greater pain, fatigue, physical dysfunction; depressive symptoms as more significant predictor of increase in pain; anxiety more significant predictor for fatigue.

TABLE 2. – *Continued*

Reference	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) & Setting	Data Collection (Instruments/tools)	Findings
Goucke, C. R., Jackson, T., Morriss, W., & Royle, J. (2015). Essential pain management: an educational program for health care workers. *World journal of surgery*, *39*(4), 865-870.	After a needs assessment is conducted, is a targeted pain management educational program effective in improving pain knowledge, and also effective in implementing a simple pain management framework?	Not specified	First a needs assessment. Then targeted 8 hour teaching program	Sample: n = 581 respondents. Teaching tool used in 30 countries with 1,600 participants Setting: 30 countries; healthcare settings in rural / underserved nations	Collection: pre and post-tests assessing knowledge of pain; assessment of staff's perception of effectiveness of the project. Analysis: Evaluation of data using the Kirkpatrick method	- Staff members scores improve with teaching - Overall staff members give the course positive feedback - A "teach the teachers" component was added to encourage longevity of the education within each healthcare setting - Both doctors and nurses' scores improve at similar margins

TABLE 2. - *Continued*

Reference	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) & Setting	Data Collection (Instruments/tools)	Findings
Huth, M. M., Gregg, T. L., & Lin, L. (2010). Education changes Mexican nurses' knowledge and attitudes regarding pediatric pain. *Pain Management Nursing*, *11*(4), 201-208.	What barriers and attitudes are present amongst Mexican nurses to proper pain management, and how effective is a targeted educational program?	Not specified	Needs + attitude assessment; pre- and post-test within subjects design	Sample: Convenience sample of 106 nurses Setting: Three hospitals in Mexico City	Knowledge and attitudes assessed with a tested attitude and knowledge survey for nurses, translated into Spanish. Each nurse had 30 minutes to complete survey. Results generated with descriptive statistics, ANOVA, paired t tests. Then, educational lectures on pain management were developed based on the attitudes and knowledge survey results. 4-hour presentations created, which included question and answer format, case studies, props and discussions. Focused on principles of pain management.	Nurses with less experience scored lower on the knowledge assessment. Only 41% of the nursing staff indicated they assess pain. Pre- and post-tests on attitudes and knowledge had statistically significantly higher mean scores in the post-test after educational intervention on objective pain knowledge and self-reported attitudes on the importance of assessing pain.
IASP. (2012). *Survey of education and pain management in developing countries*. Retrieved from http://www.iasp.pain.org	Barriers assessment to identify treatment gap in pain in developing nations.	Not specified	Survey using multiple choice questions and fill-in-the-blanks	Sample: 978 healthcare workers involved in direct patient care Setting: 26 different "third-world" or "developing" nations	Survey distributed in person on paper and collected by IASP task committee members.	Barriers to good pain management: 1) Lack of education 2) Government policies 3) Fear of opioid addiction 4) High cost of drugs 5) Poor patient compliance

TABLE 2. – *Continued*

Reference	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) & Setting	Data Collection (Instruments/tools)	Findings
Johnston, C. C., Gagnon, A., Rennick, J., Rosmus, C., Patenaude, H., Ellis, J., et al. (2007). One-on-one coaching to improve pain assessment and management practices of pediatric nurses. *Journal of Pediatric Nursing*, *22*(6), 467-478.	Does providing pain education to pediatric nurses improve pediatric nurses' knowledge and attitude of pain in children, their rate of pain assessment, their rate of administering analgesics, and their rate of using non-pharmacological interventions?	Promoting Action on Research Implementation in Health Services (PARIHS)	Clustered experimental randomized trial	Six University-affiliated Canadian pediatric hospitals. N = 90 pediatric nurses.	Chart audits of 1,602 pediatric patients were performed, comparing pain variables between nurses who did not receive the pain education and those who did. Charts audited for 2 weeks. Audits were coded by a blinded research assistant and entered into a database. Pain Management Experiment Evaluation form used to review medical records; Pediatric Nurses' Knowledge and Attitudes Survey Regarding Pain to survey nurses. Descriptive statistics performed; knowledge scores analyzed using repeated measures analysis of variance.	Significant improvement in nurses' knowledge of pain; significant improvement of documented pain assessments. Education did not increase the administration of prescribed analgesics nor non-pharmacologic pain management strategies. Significant improvement in all categories directly proportional to the number of pain assessment education sessions attended.

TABLE 2. – *Continued*

Reference	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) & Setting	Data Collection (Instruments/tools)	Findings
Lin, R. J., Reid, M. C., Liu, L. L., Chused, A. E., & Evans, A. T. (2015). The barriers to high-quality inpatient pain management: a qualitative study. *American Journal of Hospice and Palliative Medicine®*, *32*(6), 594-599.	Exploring the lived experience and perceptions of pain management amongst hospitalized patients with pain	Not specified	Chart reviews; semi-structured interviews, survey questionnaires.	Setting: large academic teaching hospital in America Sample: 40 general medical inpatients who experienced pain during their hospitalization. Participants at least 18 years old, >2d hospital stay. Prospective cohort of inpatients.	Collection: Chart reviews to identify potential patients; information gathering from participants by surveys and semi-structured interviews Analysis: Results of interviews were transcribed, deidentified and coded. Qualitative content of textual data and quantitative frequency of thematic responses were performed with chi-square analysis	Patients experienced pain and severe pain, with a lot of time spent in severe pain. Many patients found this highly negatively impactful on daily physical functioning and well being. Opioid SE's were tolerable. Dominant themes identified: - Patient-related barriers (perceived impacts of pain, fear of opioids, lack of control). - Provider-related (lack of communication / trust, lack of commitment, poor communication on pain mgmt. goals) - System-related (significant time delays, lack of trust in pain assessment capabilities leading to further distrust)

TABLE 2. – *Continued*

Reference	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) & Setting	Data Collection (Instruments/tools)	Findings
McGarry, S., Elliot, C., MDonald, A., Valentine, J., Wood, F., & Girdler, S. (2014). Paediatric burns: from the voice of a child. *Burns, 40*(4), 606-15.	Exploration of the psychological experience of trauma in pediatric patients	Not specified	Unstructured face-to-face interviews	Sample: 12 children who suffered injuries, ages 8 – 15 year old. Setting: 6 months after injury	Collection: open-ended, probing questions re: experience, perception, thoughts, feelings of experience Analysis: Transcripts were analyzed according to 7-step Coliazzi method; emerging themes explored for core concepts	6 themes emerged: ongoing recurrent trauma, returning to normal activities, behavioral changes, scarring – permanent reminder, family and adaptation. All patients described the importance of family. 2 stages of trauma: trauma, recovery trauma. Undertreated pain identified as the greatest cause of trauma in both phases.
Namnabati, M., Abazari, P., & Talakoub, S. (2012). Identification of perceived barriers of pain management in Iranian children: A qualitative study. *International journal of nursing practice, 18*(3), 221-225.	Exploration of barriers to proper pain management in hospitalized Iranian children as experienced by bedside nurses. The authors sought to better understand the lived experience of under-treated pain from the nurses' point of view.	Not specified	Phenomenology	Setting: Sample: 16 BSN nurses from medical, surgical and infection wards; employees of a large teaching hospital in Iran. 26-35 years old, 4-10 years RN experience	Collection: Semi-structured interviews that lasted 25-50 minutes Analysis: Based on Collaizi method. Interviews transcribed and deidentified. Clusters of themes of meaningful statements were identified	Common barriers identified: 1) organizational barriers - No organized pain assessment charting, no pain scale used; lack of opioids; lack of a protocol in pain management 2) limitations relating to children characteristics - Gender and mood differences difficult to identify; pain difficult to assess in the very young 3) barriers relating to the nature of disease and its treatment - Hospitalizations are painful for many reasons; side effects of pain medications highly variable

TABLE 2. – *Continued*

Reference	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) & Setting	Data Collection (Instruments/tools)	Findings
Puchalski Ritchie, L. M., Howie, S. R., & Njai, P. C. (2010). Development of a pain management protocol for a paediatric ward in the Gambia, West Africa. *International Journal of Pediatrics*, *2010*.	Does implementation of an educational program and protocol based on evidence improve the management of pediatric pain?	Not specified	Local consultation and capacity assessment; knowledge gathering, protocol circulation and feedback	Sample: Staff members (doctors and nurses) Setting: Pediatric ward in Gambia, West Africa	Collection: Interviews with key stakeholders, review of current standards within the hospital, review of most common diagnoses with pain, protocol circulation. Analysis: Elucidation of emerging themes to barriers of pain management, feedback on generated protocol.	Staff preferred a flowchart be made for simple following at the bedside, early and frequent education furthered staff members desire to improve patient care, ongoing clinical education is needed along with intermittent reassessments
Ratcliff, S., Brown, A., Rosenberg, L., Rosenberg, M., Robert, R., & Cuervo, L. (2006). The effectiveness of a pain and anxiety protocol to treat the acute pediatric burn patient. *Burns*, *32*(3), 554-562.	What is the effectiveness of pain and anxiety protocols in pediatric burn patients?	Not specified	Retrospective chart review	Sample: n= 286 pediatric burn patients Setting: Shriner's hospital in Galveston, TX.	Methods: Chart reviews to assess how well pain, anxiety, symptoms of stress managed Analysis: Comparison of mean scores of pain, stress, anxiety, opioid, non-opioid, benzodiazepine use	This is the 3rd analysis of the management of pediatric pain. Since adopting a pain assessment scale: fewer children report anxiety / PTSD, less provider variability in evaluation and pain management, more opioid and non-opioid usage.
Saxe, G., Stoddard, F., Hall, E., Chawla, N., Lopez, C., Sheridan, R., et al. (2006). Pathways to PTSD: Children with burns. *American Journal of Psychiatry*, *162*(7), 1299-1304	What are the risk factors in development of PTSD in children with intense, acute pain?	Not specified	Randomized prospective study	Sample: n = 72 children ages 7-17, consented to PTSD reaction index, Multidimensional Anxiety Scale for Children, psychopathology self-reporting measures Setting: Shriner's hospital in Boston, MA.	Collection: During hospitalization and 3 months after discharge. Analysis: Series of hierarchically ordinary least squares multiple regression analyses to estimate direct and indirect effects among variables.	Identified two pathways to PTSD: 1) size of burn + level of dissociation. 2) size of injury and level of pain.

TABLE 2. – *Continued*

Reference	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) & Setting	Data Collection (Instruments/tools)	Findings
Summer, G., Puntillo, K., Miaskowski, P., Green, P., & Levine, J. (2007). Burn injury pain: the continuing challenge. *Journal of Pain*, *8*(1), 533-548.	Literature review; what are the most up to date burn pain treatments used today?	Not specified	Peer reviewed medical journal, review of best evidence on burn pain treatment	Search of American Burn Association Affiliated Hospitals protocols / treatment modalities; common themes identified	Literature review	Types of burn injury pain: Procedural pain + associated anxiety, background pain, breakthrough pain. Phases of recovery: acute phase, procedural pain best managed with anxiolysis + opioids. background pain best managed with NMDA antagonists; breakthrough pain best treated with opioids on scheduled intervals. Healing phase (weeks, months years, pain worsens while burns heal): procedural pain during healing phase best treated with: short-acting opioids, local anesthetic blocks, general anesthesia; background pain best treated with regular PO opioids c loading doses as needed; breakthrough pain during healing phase: often associated c movement, treat c IV opioids. Rehab phase: completion of wound closure, scar maturation, to needs aggressive PT: procedural pain best treated with opioids + acetaminophen, clonidine, benzos; background pain best treated with: regularly scheduled PO opioids.

TABLE 2. – *Continued*

Reference	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) & Setting	Data Collection (Instruments/tools)	Findings
Wollgarten-Hadamek, I., Hohmeister, J., Zoshel, K., Flor, H., & Herman, C. (2011). Do school-aged children with burn injuries during infancy show stress-induced activation of pin inhibitory mechanisms? *European Journal of Pain*, *15*(423), 1-10.	Do school-aged children with burn injuries during infancy show stress-induced activation of pin inhibitory mechanisms?	Not specified	Quasi-experimental design	Sample: 10-16 year old patients who had moderate to severe burns @ 6-24 months of age. 20 controls. Setting: Medical charts of burn pts @ children's hospitals between 1990-1997.	Collection: Thermal pain, pressure pain, ischemic pain applied, then stress response tested c HR, BP, RR, stress questionnaire. Analysis: stress analysis, changes in BP measured c ANOVA; HR c ANOVA; pain sensitivity measured c one-way ANOVA	In patients with severe burn injuries during infancy, endogenous analgesia is diminished. Burned patients experienced higher BP, HR, lower pain thresholds.
Yang, H. T., Hur, G., Kwak, I. S., Yim, H., Cho, Y. S., Kim, D., ... & Chun, W. (2013). Improvement of burn pain management through routine pain monitoring and pain management protocol. *Burns*, *39*(4), 619-624.	How does implementation of a BID pain assessment and management protocol affect pain, anxiety, PTSD, stress, depression in adult burn patients?	Not specified	Prospective control trial	Sample: n = 107 Control = 58 Adults Exp grp = 49 Setting: Adult in-patient burn care unit at teaching hospital in Korea	Collection: Control: Analyzed pain of 58 adults in burn unit before implementation of BID burn pain assessment tool. Developed pain monitoring system c # scale assessing background and procedural pain checked BID, used 1-10 scale Analysis: Using # reporting scale, PTSD scale, Hamilton depression scale, Anxiety scale, Stress scale. Independent-sample T- tests, Mann-Whitney U-Test, Chi square test.	- NRS pain scale: less pain in exp. group - Both PTSD + Depression scores less in exp. group - Anxiety + stress scores lower

METHODS

Ethical Considerations

This is a program evaluation of a proposed training program that is educational in nature and has generated a tool for future APRNs to take into third world countries to provide basic pain education. Because there were no direct subjects or participants in this study, there was a very low risk for ethical violation. Before dissemination of the information in this study, approval of all material was granted by the University of Arizona Institutional Review Board (Appendix P).

Respect for Persons

To maintain respect for persons, honesty on the part of the researcher, courtesy to the participants and informed consent are required (U.S. Department of Health and Human Services: Department of Health, Education and Welfare [USDHHS], 1979). Additionally, individuals were treated as autonomous agents, and those with diminished autonomy were protected. No actions on the part of the researcher can obstruct or coerce the subjects, and the subjects were allowed to voice opinions and ask questions without reprisal. Those with diminished autonomy lack the ability to determine if certain activities may cause harm, which should exclude them from research. Autonomy develops with maturity.

All data generated through Survey Monkey was kept anonymous, as the disseminated survey required no self-identification. Additionally, Survey Monkey encrypts all data and maintains a comprehensive physical and electronic security system (Survey Monkey, n.d.). The NVivo system has taken every possible measure to encrypt and secure the data through encoding using the Secure Sockets Layer (SSL) technology (QSR International, n.d.).

All those who use the educational material provided in this project will be adults with professional medical or educational certifications, requiring higher educations. This indicates all practitioners and adopters of the program will possess the maturity to understand their actions, to communicate that participation in the educational program is voluntary, to comprehend the disclosure process, and to act in ways which protect the safety and autonomy of those they teach.

Beneficence

This project was low-risk, as it involved a voluntary assessment of an educational tool. It was assessed by healthcare workers and education professionals, and is aimed at healthcare staff in third world countries. Though this project does focus on pain, no material is graphic or disturbing. The intended benefits were the creation of a helpful pain educational tool which may lead to increased awareness and competency of pediatric pain. This will subsequently help the many patients experiencing pain, as well as their families, in turn generating benefits to society. The ultimate purpose of this project is to improve pain comprehension in third world countries, and to help Western-trained medical professionals make a difference during their outreach work to the third world.

Justice

Differences in participants' ages, experience levels, competence, merit and positions can be delineated, which may require different treatment of the participants (HHS, n.d.). Each of the experts in this study brought widely differing attributes, years of experience and levels of education, however, they were all treated equally and respectfully, even if they declined to participate. To maintain ethical standards, all agreements made between the primary investigator and the participants were honored (Polit & Beck, 2012).

While the APRN is using this material to teach healthcare workers in third world countries, they must be cognizant of treating all trainees receiving pain education uniformly. As such, the teaching material includes instructions on equal dissemination of information, pre- and post-test utilization, maintenance of privacy, and also reminds the APRN of the importance of attaining consent forms from all participants. The disclosure form was provided to all participants, which informed them of their right to privacy and right to decline participation.

Design

This DNP project aimed to create and formatively assess a new pediatric pain educational program. This pediatric pain program can be used by Western-trained medical professionals to educate third world healthcare workers on pediatric pain. The Western-trained professions can also adapt and implement the program in the local context. This is a train the trainer type of program with a future goal of using this same program to improve pain management knowledge of local pediatric health care workers in third world countries. To create this project, a context, input, process, product (CIPP) approach was employed.

The educational tool created will then follow a logic model for its implementation and refinement based on the local setting where employed. This DNP project's clinical question is: Does a teaching program designed with expert consultation on pediatric pain improve the knowledge of Western-trained healthcare workers traveling to third world countries? This is an example of a program evaluation, as a systematic investigation of the merit of an educational program and appropriateness of goals was completed through literature reviews and collaboration with education experts and nurses familiar with developing country cultural dynamics.

CIPP

First described by Stufflebeam in 1971, the CIPP model focuses on program improvement through careful evaluation, and then linking the evaluation with program decision making (Stufflebeam & Shinkfield, 2007). The CIPP model provides a cycle of development, configuration, enactment and review to provide feedback on the project's effectiveness. This model has been used around the world in both short and long-term investigations, spanning various disciplines (Stufflebeam, 2003).

Context. While evaluating the context, the main investigator must ask, "What needs to be done?" (Stufflebeam, 2003). Here, the investigator identifies a need and its effect on the population at risk, the external factors at work, then uses this information to develop program goals.

The literature review section of this paper describes several contextual areas of past research on the problems this project addresses: the sequelae of undertreated pediatric pain; the WHO's identification of under-treated pediatric pain being a major concern in the developing world; and the lack of proper pain education in third-world healthcare workers. The external factors affecting this project are the cultural implications of pain, as well as the available resources within each third world healthcare institution. The population at risk is all of the children living in the 150 countries identified by the WHO as having a severe under-treatment of pain. This program aimed to create a comprehensive, universal teaching program to train the trainer and address the lack of pain education in the third world that any healthcare volunteer can use while doing medical mission work overseas.

Input. According to Stufflebeam (2003), while obtaining input, the investigator should ask, "How should this project be done?" During the input phase, investigators seek previous evidence supporting effective actions, as well as expert consultation on how to successfully meet the targeted needs and goals. Identified in the literature review are documented successful pain education campaigns. A review of the common qualities of these effective educational programs elucidates clear-to-understand language, pre- and post-assessments, interactive lecture components and reinforcement of ideas over time.

According to Frye and Hemmer (2012), educators should include a variety of stakeholder views when developing a program, as each one offers unique and important reflections on the program. In the development of this program, six experts with decades of experience in healthcare, education and overseas teaching were consulted. The teaching material is based on the Oxford Textbook of Paediatric Pain by McGrath, Stevens, Walker, and Zempsky (2013).

Process. While evaluating the process, the investigator asks, "Is the project being done?" During process evaluations, the investigator assesses the plans created to implement the project to conclude if the plans are successful and appropriate. This portion of the assessment is invaluable for supporting accountability to stakeholders and provides formative information for future revisions and adjustments based on the results generated.

The plans to implement this project begin with dissemination of the generated teaching tool to Health Volunteers Overseas (HVO), which is a non-profit organization that specializes in sending and supporting Western-trained medical staff to third world countries. The complete, generated teaching tool was sent to HVO for their interested volunteers to use on their medical mission trips overseas. Permission to receive the tool was granted by HVO (Appendix N).

Included in the teaching program are instructions on proper use, ethical standards, pre- and post-assessments on both objective and self-perceived knowledge on pain, a homework assignment and lecture materials.

Because educational programs are highly affected by context, and minor changes to context can generate minor to major adaptations, the volunteers using this foundational teaching tool can assess the effectiveness of the tool during a process evaluation specific to their site. For further refinement of the teaching material, questionnaires for evaluating the course and the learning process are utilized. Previous research has demonstrated the reliability and validity of using a Likert scale to assess the process (Amini, Kojuri, Mahbudi, Lofti, Seghatoleslam, Karman, & Shams, 2013). Once the process evaluation is completed, this paves the way for product evaluation.

Product. In this final stage, the investigator asks, "Is the program succeeding?" The product evaluation focuses on the outcomes of the program and determines if the goals of the project are being achieved. In the CIPP model product evaluation, the outcomes can include both positive and negative outcomes, short-term and long-term outcomes, impact, effectiveness and sustainability (Frye & Hemmer, 2012).

For measuring the product, included in this comprehensive teaching program are pre- and post-tests which assess self-reported and objective knowledge. The tests, found in Appendices H and J are further explained in the Instructions to the Clinician Using This Tool (Appendix E). The teaching tool generated by this project uses data-based methods to improve clinical healthcare systems, and is also a one-group pretest-posttest design. Utilizing a tool with this

design allows for a logical inference that the pain educational program would be responsible for the significant increase in knowledge (Polit & Beck, 2012).

Continuing Program Use at Individual Sites

Once the CIPP model has been completed to create, disseminate and launch this tool, individual sites can employ a logic model to continue to assess the program and refine as necessary post hoc (Figure 2). Transitioning from the CIPP to a logic model is necessary for the longevity of this teaching tool once implemented, as the CIPP model does not include specific steps or methodologies for executing evaluation, and the need for multiple procedures in gathering data could require a burdensome amount of time.

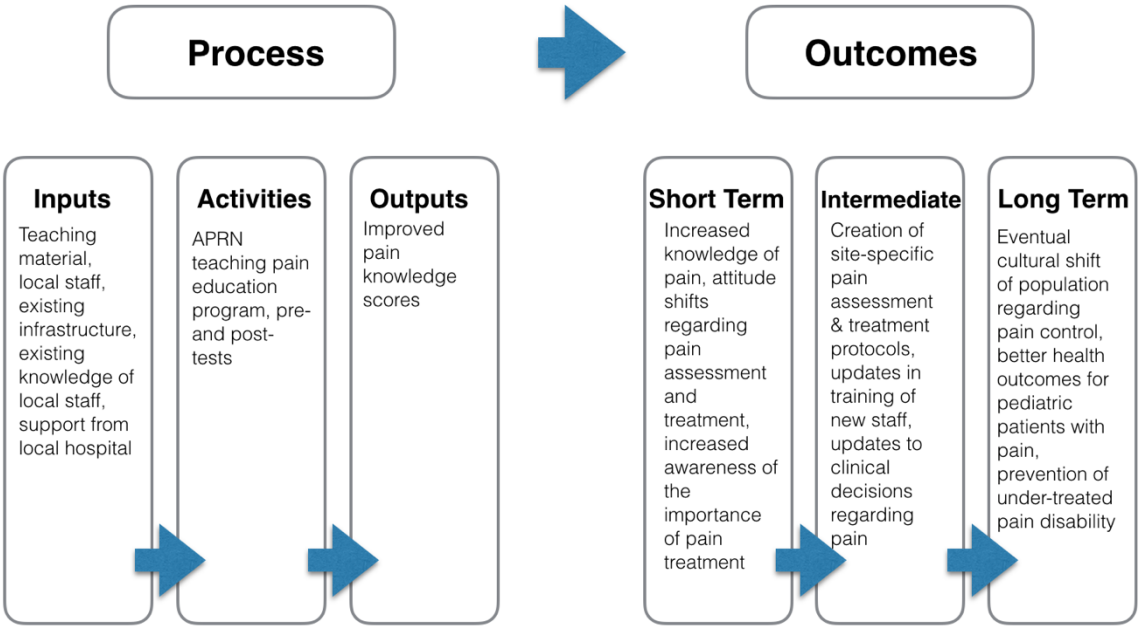


FIGURE 2. Adaptation of a logic model

Participants

The participants in this program evaluation project fell into two categories: Western-trained healthcare professionals who have spent time volunteering in healthcare organizations in third world countries, and experts in healthcare education. These Western-trained staff and education experts were the sources of evaluation data on the developed program.

The inclusion criteria for the first group of third world healthcare experts included a bachelor's degree, or higher, in a medical profession in a Western country. Additionally, direct pediatric patient care in third world or resource poor nation was a requisite.

The participants were recruited for this program evaluation by the primary investigator through direct contact in a pediatric third world healthcare setting, or by direct contact facilitated through Health Volunteers Overseas.

Inclusion criteria for the second group of educational experts was a bachelor's degree, or higher, in education, with at least two years of teaching experience. Because all participants had previously come forward in a willingness to participate, this is an example of a volunteer sample. While this form of sampling is efficient, it is not ideal for collection of the greatest amount of possible information. However, it was necessary as the participants needed to be recruited from particular clinical settings. This project is also an example of interprofessional collaboration being used to enhance understanding of a clinical issue, which affords all participants of different backgrounds the opportunity to share knowledge and expertise on the issue at hand (Moran, Burson, & Conrad, 2014).

For this study, an email with the Instructions and Disclosure Form were sent to all six participants. A total of six educational and healthcare experts were emailed with the information.

All six participants confirmed receipt and understanding of the material. A second email was sent with the teaching material and a link to the SurveyMonkey.com survey. All six participants completed the survey in its entirety within the allotted time of one week.

While there are no fixed rules for sample size in qualitative data collection, three participants from each group would ideally provide ample data. This topic is relatively narrow, included interviewees willing to share personal experience, excluded any sensitive topics, and generated a depth of results from open-ended questions.

Data Collection

To collect evaluation data, surveys with open-ended questions were used. According to the Office of Medical Education Research Development at Michigan State University (OMERAD) (n.d.), surveys are the appropriate measurement method when assessing the usefulness of a particular program. Open-ended surveys consist of a series of issues the interviewer wants to investigate (Terry, 2015). Typically, pre-determined, open-ended questions are created to guide the investigator in the exploration of particular themes (Appendix D).

The survey questions were worded clearly and simply, and avoided shorthand or confusing phrases. Ample time was allowed for data collection – exactly one week – allowing for all six participants to comprehend the disclosure and participate in the program evaluation. The survey answers were de-identified.

The following sequential steps took place in the data collection phase:

1) All participants were emailed the Instructions and the Disclosure Form (Appendix A & B). The participants were allowed to clarify any issues with the Disclosure Form or process before the surveys and material were disseminated.

2) Next, an email was sent to the participants (Appendix C). Within the body of the email was a SurveyMonkey.com link to the open-ended survey questions (Appendix D). Attached to the email was the teaching program: Instructions to Clinician Using This Tool (Appendix E), the Teaching Material (Appendix G), the Learning Assessment Tool (Appendix H), and the Self-Assessment Survey (Appendix J).
3) After one week passed, the SurveyMonkey.com survey closed, and the collected data was analyzed.

Content Analysis

According to Moran, Burson and Conrad (2014), the purpose of data analysis is to organize results in such a way that provides meaningful feedback for the project purpose. The purpose of this program evaluation was to create a clinical teaching tool that was then refined according to expert commentary.

To begin organizing the data from the survey, the answers were separated into their respective sections: content, instructional methods, and attitudes. The answers were repeatedly reviewed and analyzed for emerging common themes. Once the themes were identified, groups of shared content were then elucidated (Polit & Beck, 2012).

The software NVivo was then employed to illustrate common themes from the data into Mind Maps. NVivo is a commonly used tool to help academic and medical researchers organize, evaluate, and classify unstructured, rich, text-based data to provide deep levels of qualitative analysis (QSR International, n.d.). Mind Maps are a useful tool for evaluating topics based on associated ideas, and to explore how the people discuss a topic (QSR International, n.d.). The

results of each of the Mind Maps then allowed the primary investigator to update the teaching program.

RESULTS

Common Themes

Section One: Content

The first section of the survey sought feedback on the content of the teaching program. First assessed was the correctness of the content presented. All six participants found no errors in the factual accuracy of the teaching program.

Next assessed was whether the content was missing any crucial information. Five of the six participants identified that there was no answer key included with the Learning Assessment. Other areas for improvement identified by participants included the addition of more open-source images, a list of ineffective pain treatments, involving family and all healthcare providers in pediatric pain assessments, more continual reinforcement of pain assessment importance, and the addition of a homework assignment for the Western-trained medical professional to provide the local staff. These common themes are illustrated with a mind map in Figure 3.

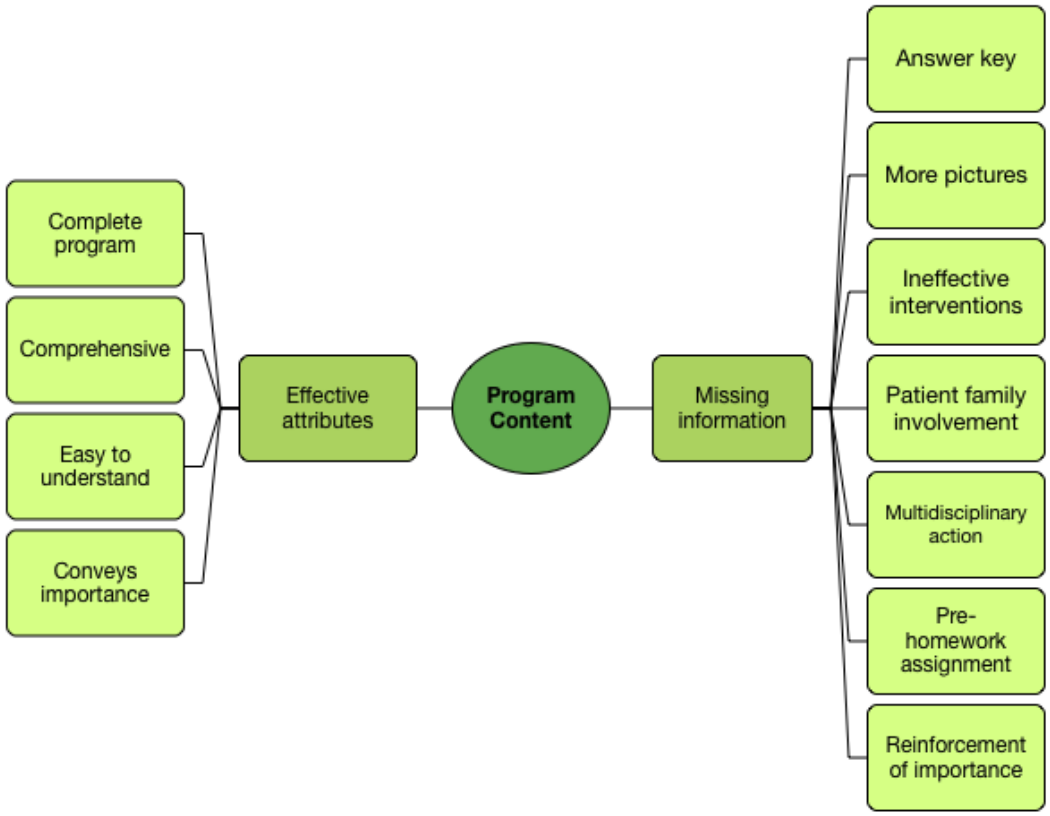


FIGURE 3. Section 1 Mind map

Section Two: Instructional Methods

In this section, the participants were asked to assess if the teaching program would increase the knowledge of third world healthcare workers being taught using this tool, and why the participants felt this way. All six participants felt the teaching program would increase the knowledge of third world healthcare workers on pediatric pain. Shared answers on why this tool will be effective include the fact that pain is a highly relevant and salient topic in the third world. Participants also identified that the tool incorporates interactive components such as exams, and question / answer portions, which they felt were also effective methods in knowledge transfer. Additionally, participants felt that the information presented is factual and non-explicit, making

it culturally appropriate in all settings. The common themes in the effectiveness of this teaching tool are illustrated in a mind map in Figure 4.

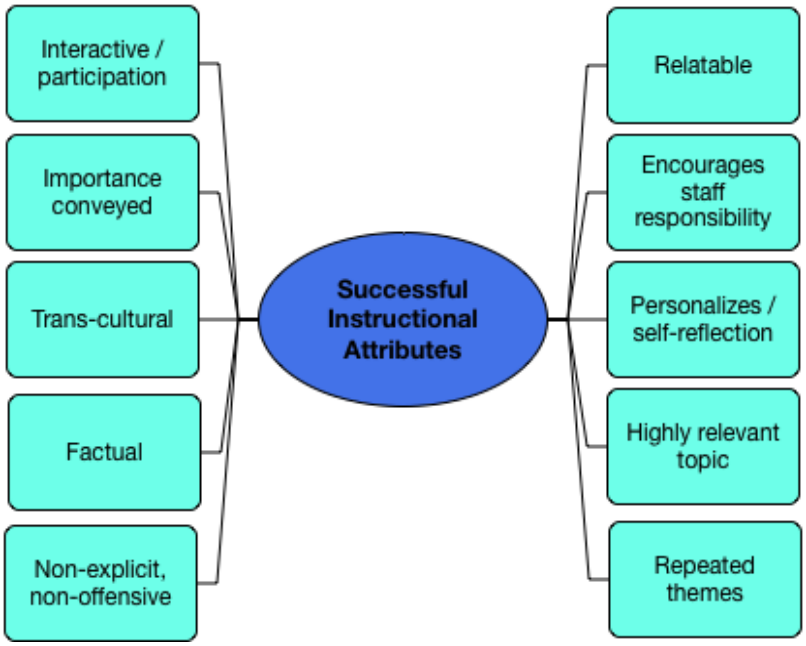


FIGURE 4. Section 2 Mind map

Section Three: Attitudes

The third section was an assessment of the attitudes of the participants evaluating this teaching program. The first question assessed if a volunteer using this teaching tool will feel more confident in their own knowledge of pediatric pain, to which all six participants answered in the affirmative. The second question examined the attitudes on the lasting changes of this teaching tool. All six participants indicated this tool could improve pain practices in the third world (Figure 5).

Question	Answer
Do you think that a Western-trained healthcare provider will feel more confident in their knowledge of pain after taking part in this program?	Yes n = 6
Will Western nurses feel that providing an educational program on pediatric pain lead to changes in attitudes and improve pain practice of third world healthcare providers?	Yes n = 6

FIGURE 5. Attitudes on effectiveness of program

Section Four: Experience

The fourth section of the survey elucidated the highest degree obtained by each participant, as well as the number of years of experience in their field.

Expert Type	Degree Obtained	Years Experience
Medical Experts	Bachelor's of Science in Nursing	8
	Master's of Science in Nursing	15
	Medical Doctor	15
Education Experts	Bachelor's of Science in Education	4
	Master's Teaching Certificate	10
	Doctorate in Education	27
		Total: 79

FIGURE 6. Education and experience of participants

DISCUSSION

Summary

Three education experts and three third world healthcare experts were asked four open-ended questions, two binary questions and two questions about work experience in a program evaluation of a pediatric pain educational tool designed to educate third world healthcare workers. These questions were developed so that experts could provide feedback used to evaluate the educational program designed by this program developer which assessed content, the instructional methods used, and the attitudes about this educational program.

In the assessment of program content, all participants indicated the presented information was accurate. Four themes regarding why this program will be successful in enabling future Western-trained healthcare volunteers traveling to the third world were elucidated. Seven common themes in missing areas of content were also made clear, and the teaching program was updated to incorporate all missing items. Additionally, 10 common themes were revealed in the successful instructional methods employed by this teaching program, which served as a guide to the primary investigator while ameliorating the identified areas for improvement.

In the assessment of attitudes, all six participants indicated they felt that the Western-trained medical volunteer using this project would likely feel more confident in their own knowledge of pediatric pain. Lastly, all six participants indicated this teaching program could lead to lasting improvements in pediatric pain management in the third world healthcare settings where this program is employed. Using all the feedback generated, the teaching tool was updated accordingly (Appendix F & O).

Strengths

The benefits to open-ended questions include allowing for an unlimited number of possible answers that provide more details that are enriched with information, and therefore allow for respondents to answer in great detail and permit creativity (Polit & Beck, 2014). The strength of this program evaluation project is that it sought expert feedback from two separate groups of specialists with equally important expertise – one group who specializes in education, and another that specializes in third world healthcare settings. The six multi-disciplinary evaluators of this program offered a combined 79 years of healthcare or educational experience from which they drew in evaluating the program. The results yielded from these two groups

greatly improves the likelihood that the created teaching program will be successful when implemented in a third world healthcare setting.

Limitations

Answers to open-ended questions are difficult to code and compile into charts making their results problematic to compare and analyze. Additionally, open-ended questions require more effort on the part of the respondents, as they take more time and effort than multiple-choice questions (Polit & Beck, 2012).

Another limitation to this study was a small sample size. While the participation rate was 100%, a larger expert panel would have provided more feedback for program improvement. The larger size could have further supported the common themes, or brought new areas of improvement to light, resulting in a more comprehensive program.

Areas for future research include seeking feedback from a greater number of healthcare professionals, or the intentional inclusion of a wider variety of disciplines, such as healthcare administrators. Because this comprehensive program does include pre- and post-tests along with instructions for data collection and analysis, this program lends itself to continual research, adaptation and refinement based on its use.

Conclusion

Undertreated pediatric pain is a highly relevant, complex, multi-factorial, issue. Evidence strongly supports a lack of proper education for third world healthcare staff on pediatric pain. The intention of this project is to equip any APRN wishing to travel to a third world country with a basic and comprehensive foundational pediatric pain education program in which to help train the local staff who care for pediatric patients. The dearth of pain knowledge, and the deleterious

effects of undertreated pain have been well studied and documented, as well as the potential benefits to educational programs regarding pain. The CIPP model was employed to create a universal, comprehensive and complete teaching tool disseminated to Health Volunteers Overseas for future volunteers to use in their selected third world healthcare organizations. A summary poster on this project was also presented at the Arizona Association of Nurse Anesthetists annual conference in Scottsdale, AZ in March 2018. Included in this project are instructions on how to use all material, the interactive educational lectures, pre- and post-tests for objective and self-assessed pain knowledge, a homework assignment, guidelines for data analysis, and outlined plans for continued refinement of the program (Appendix K). The effect this project hopes to create is a lasting attitude change in local staff regarding pain, which then leads to updates in practice for pain management that are appropriate for the local setting. Additionally, this project aimed to inspire all APRNs to do outreach work, where their potential for positive influence is greatly increased.

APPENDIX A:

DISCLOSURE FORM

University of Arizona
Disclosure Form

Project Title: Creation of a Universal Pediatric Pain Education Program for Third World Healthcare Workers Using the CIPP Model for Improvement

Principal Investigator: Erin L. Galligan

You are being asked to participate in a program evaluation. Your participation in this program evaluation is voluntary and you do not have to participate. This document contains important information about this project and what to expect if you decide to participate. Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate.
The purpose of this program evaluation project is to create a complete but basic teaching tool for a Western-trained healthcare professional to use while teaching third world healthcare workers about pediatric pain with Health Volunteers Overseas. I would like to know what you think about a pediatric pain educational tool I created, which includes a lecture, pre- and post-tests and instructions for their use.
I will provide you with the teaching material, along with a survey administered via Survey Monkey with six open-ended questions.

- It will take about 60 minutes of your time.
- You will have two weeks to provide feedback via the Survey Monkey Survey
- Your response will be anonymous and no identifiers such as name will be recorded with the data and responses at any point. All responses are confidential.
- There are no foreseeable risks associated with this project, nor are there direct benefits to you.
- There is no payment for participating; however, your participation is very greatly appreciated.
- Your participation is voluntary and you may stop participating in the survey at any time.
- No identifiable information will be stored or shared throughout this process.

The information that you give in the study will be anonymous. Your name will not be collected or linked to your answers. Identifiable data will be encrypted and password protected
Information collected about you will not be used or shared for future studies.
The information that you provide in the project will be handled confidentially.

If you have any questions or concerns about the survey and your rights as a participant, please contact Erin Galligan, the primary investigator at +1(503) 706-6750 or egalligan@email.arizona.edu.

I voluntarily agree to participate in this program evaluation.

APPENDIX B:

INTRODUCTORY EMAIL WITH DISCLOSURE

Introductory and Disclosure Email

Dear Participant,

Thank you for showing interest in this program evaluation.

Attached to this email you will find the Disclosure Form which indicates your rights as a participant, as well as instructions on the progression of this program evaluation project.

Over the next week, please feel free to contact the primary investigator should you have any questions.

In one week, you will receive another email from me containing a teaching program and a link to the survey which will be used to evaluate it.

Thank you for your time.

Sincerely,
Erin Galligan
Primary Investigator
Doctorate of Nursing Practice Candidate, Nurse Anesthesia
College of Nursing
The University of Arizona
TEL: +1(503) 706-6750
Email: egalligan@email.arizona.edu

APPENDIX C:

PROGRAM MATERIAL AND SURVEY EMAIL

Program Material and Survey Email

Dear Participant,

Thank you for participating in this program evaluation project.

Attached to this email are PDFs of the following:

1) A Power Point on the basics of pediatric pain
2) An objective pre- and post-test on the knowledge presented
3) A pre- and post-test that is a Self-Assessment tool for those receiving the education

After reviewing the attachments, please [**click here**] to be directed to the survey where your feedback will be collected to help me to refine and improve the attached material.

Thank you for your time.

Sincerely,
Erin Galligan
Primary Investigator
Doctorate of Nursing Practice Candidate, Nurse Anesthesia
College of Nursing
The University of Arizona
TEL: +1(503) 706-6750
Email: egalligan@email.arizona.edu

APPENDIX D:

SURVEY QUESTIONNAIRE FOR PARTICIPANTS

SURVEY QUESTIONNAIRE FOR PARTICIPANTS

Content:

1) Is the information presented in this program on pediatric pain management accurate?

2) Is this PowerPoint missing any crucial information?

3) Does this program enable Western healthcare volunteers traveling to developing countries to implement an educational program on pain education in pediatric patients to 3rd world healthcare providers? Why? Why not?

Instructional Methods:

1) Will this educational program as outlined with utilization of PowerPoint and pre/post assessments regarding a basic, introductory lesson on pain in pediatric patients improve third world healthcare workers understanding of pain? Why or why not?

Attitudes:

1) Do you think that a Western-trained healthcare provider will feel more confident in their knowledge of pain after taking part in this program?

2) Will Western nurses feel that providing an educational program on pediatric pain will lead to changes in attitude and improve pain practices of third world healthcare providers?

Your Training in Education or Healthcare:

1) Please indicate your highest degree in your field:

2) How many years of experience do you have in this field?

APPENDIX E:

INSTRUCTIONS TO CLINICIAN USING THIS EDUCATIONAL TOOL

Instructions on How To Use this Tool

To Whom It May Concern:

This project was designed to help any Advanced Practice Registered Nurse (APRN) or other Western-trained clinician teach healthcare professionals in Third-World or Resource-Poor nations about pediatric pain. This is all original material, created with the CIPP program evaluation with feedback from educational experts and Western-trained healthcare workers with experience volunteering in third world healthcare institutions.

The project provides you with:

1) Pre- and post-assessments on pain, which are identical, to be administered immediately before and after the educational program has taken place;

2) A self-assessment tool for participants to rate their knowledge of pain both before and after the educational program has taken place, to be administered only after the educational program has taken place;

3) A homework assignment to be given to the third world healthcare staff. This should be administered and completed before the lecture is given.

4) A lecture in plain English that includes very basic, factual material on pain that is both informative and interactive.

5) Justification for this project's design.

6) Instructions on how to perform data analysis from the provided pre- and post-tests.

Please note that it is your responsibility to obtain consent from the institution in the country which you are visiting, to maintain the local standards and to abide by local laws. It is

also your responsibility to obtain informed consent from each of the participants, maintain their confidentiality, share results with them, maintain justice, beneficence and the highest ethical standards when conducting research, and also to inform them that their participation is voluntary. Each participant must be treated equally and fairly. Please also adhere to the cultural norms of the locale in which you are using this teaching program.

APPENDIX F:

HOMEWORK ASSIGNMENT

Homework Assignment
Understanding Pain

1) Write down examples of patients with the most pain – why did they come to your hospital?

2) How do you feel when you have pain?

3) Which staff members in your hospital are responsible for helping patients with pain?

4) Do you think it is okay to sometimes not treat pain? Why or why not?

5) What words can be used to describe pain?

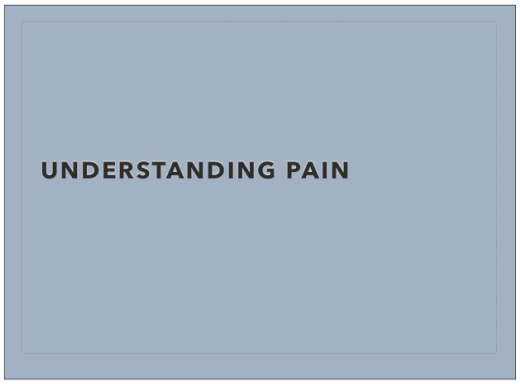
6) How do young patients / babies act when they are having pain?

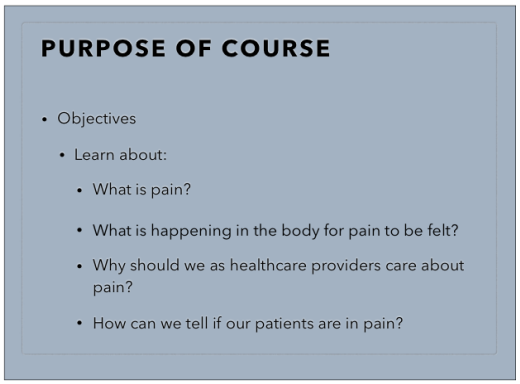
7) What tools do you have in your hospital to help you take care of patients in pain?

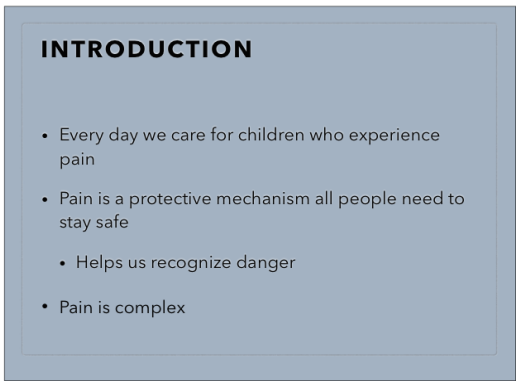
APPENDIX G:

TEACHING MATERIAL

Teaching Material







WHAT IS PAIN?

- Take a moment to write down what you think pain is? What does it mean to have pain?

WHAT IS PAIN?

- Pain is unpleasant
- Pain protects humans from dangerous things, such as something that is too hot (burns), something that makes us sick (infections), something that can damage our bodies (trauma)
  - Usually caused by disease or injury
- Associated with ***suffering***

WHAT IS PAIN?

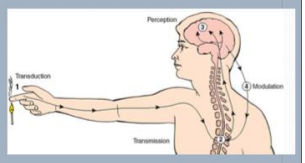
- Take a moment to write down examples of patients with the most pain - why did they come to your hospital?

WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 4 steps ***rapidly*** take place when a patient has pain
  - 1) Transduction
  - 2) Transmission
  - 3) Perception
  - 4) Modulation

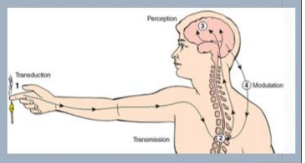
WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 1) Transduction
  - Injured body part releases chemicals
  - Nerves notice the chemicals and are activated



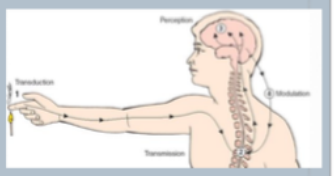
WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 2) Transmission
  - Nerves notice chemicals, send signal to the brain



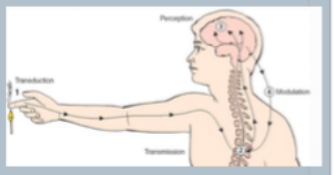
WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 3) Perception
- Signal arrives at brain and pain is felt!



WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 4) Modulation
  - Brain releases chemicals to help the patient not feel as much pain



WHY DO WE CARE ABOUT PAIN?

- Painful problems are what bring the majority of patients to the hospital
  - Trauma (broken bones, burns, cuts, wounds)
  - Infections (abscesses, swelling)
  - Surgery (operations and recovery can be very painful)

WHY DO WE CARE ABOUT PAIN?

- Take a moment to write down how you feel when you have pain.

WHY DO WE CARE ABOUT PAIN?

- If not treated, pain can cause problems in the entire body!

WHY DO WE CARE ABOUT PAIN?

Effects of Undertreated Pain

Body System	Effect of Pain
Heart	Increased work (hard on heart muscle), risk of blood clots
Lungs	Small, shallow breaths + less coughing = increase risk for lung infection
Stomach / GI	Slows food digestion and movement
Brain / behavior	Constant stress, anxiety = increase risk for behavioral problems for entire life
Whole body	Lack of sleep, increased fear, increased risk of having chronic pain (experiencing pain all the time, forever), decreased quality of life.

WHY DO WE CARE ABOUT PAIN?

- Is it ever okay to not treat pain?
  - NO!
  - No evidence shows that withholding treatment is good for patients. It does not "build character" or make them stronger.
  - Pain is normal body process but it is NOT normal to let a patient experience pain without treating it.

HOW DO WE KNOW WHEN A PATIENT IS IN PAIN?

- Think of a patient you recently cared for with pain.
  - How did they describe it to you? What words did they use?
  - How did they act?

HOW DO WE KNOW WHEN A PATIENT IS IN PAIN?

- A patient is in pain *whenever they say that they are*.
- Words used to describe pain:
  - Aching cramping heavy hot
  - Sharp shooting stabbing bad
  - Tender throbbing burning dull
  - Sore stiff tight

HOW DO WE KNOW WHEN A PATIENT IS IN PAIN?

- Think of a very young patient who cannot yet talk. How can you tell if they are in pain?

HOW DO WE KNOW A PATIENT IS IN PAIN?

- Non-verbal signs of pain
  - Crying, grimacing, tantrums, throwing things, flailing arms and legs, clinging to mom or dad, arching body off bed, flailed nostrils
  - Increased heart rate, respiratory rate and blood pressure

NEXT STEPS

- Think about your hospital. Now that you understand pain better, how can you go on to help your patients?
- What tools (medications, education, other staff members) are available to you to help your patients with pain?

NEXT STEPS

- When to assess for pain?
  - *Every time you see your patients*
- Benefits to effective pain management for:
  - The patient
  - Their family
  - Society (hospital and local community)

APPENDIX H:

LEARNING ASSESSMENT TOOL

Learning Assessment Tool
Pain

1) Which of the following statements is true:
   A. Pain helps us to protect ourselves
   B. Pain is only caused by something we can see, like a cut or a burn
   C. We should only believe a patient is in pain if they are crying
   D. Pain does not cause harm to the body or mind

2) Pain is both psychological and physiological in nature.
   A. True
   B. False

3) Pain transduction is when:
   A. The patient reports feeling relief after receiving pain medicine
   B. When the brain receives a painful stimulus
   C. The brain releases chemicals to decrease the feeling of pain
   D. When the injured body part releases chemicals

4) Pain modulation is when:
   A. The patient reports feeling relief after receiving pain medicine
   B. When the brain receives a painful stimulus
   C. The brain releases chemicals to decrease the feeling of pain
   D. When the injured body part releases chemicals

5) If we do not treat pain, it is possible for the patient to be disabled for the rest of their life.
   A. True
   B. False

6) Which body systems are affected by severe pain?
   A. Heart
   B. Lungs
   C. Stomach / gastrointestinal
   D. Brain / psychological
   E. All of the above

7) Pain can be described with which of the following words:
   A. Aching, sharp, sore
   B. Throbbing, stabbing, dull
   C. Cramping, heavy, hot
   D. Bad, stiff, shooting
   E. All of the above

8) In a patient unable to describe their pain, what are some non-verbal signs of pain (select two)?
   A. Increased temperature, heart rate, blood pressure, respiratory rate
   B. Sleeping in mother's arms
   C. Crying that stops when the child is held
   D. Crying with grimacing, flailing arms and legs, and an arched back

9) If we notice our patient is in pain, it is sometimes okay to wait before treating it, or not treat it at all.
   A. True
   B. False

10) It is only the nurse's job to notice if a patient is in pain.
   A. True
   B. False

APPENDIX I:

LEARNING ASSESSMENT TOOL ANSWER KEY

Learning Assessment Tool Answer Key

1)A

2)A

3)D

4)C

5)A

6)E

7)E

8)A & D

9)B

10) B

APPENDIX J:

SELF-ASSESSMENT SURVEY

SELF-ASSESSMENT SURVEY

For each of the areas listed below use the scale of 1 to 5, with 5 representing "full understanding":
1. Think about and rate your understanding of the knowledge or skull on each of the following areas **before** you participated in the *Understanding Pain* training.
2. Then, think about and rate your understanding of the knowledge or skull on each of the following areas **after** you completed the training.

KNOWLEDGE	BEFORE TRAINING No Understanding Full Understanding	AFTER TRAINING No Understanding Full Understanding
1. Understand the purpose of pain	1 2 3 4 5	1 2 3 4 5
2. Understand the complexity of pain	1 2 3 4 5	1 2 3 4 5
3. Explain the experience of pain	1 2 3 4 5	1 2 3 4 5
4. Describe pain physiology	1 2 3 4 5	1 2 3 4 5
5. Describe the steps in feeling pain	1 2 3 4 5	1 2 3 4 5
6. Understand the body's response to pain	1 2 3 4 5	1 2 3 4 5
7. Describe the importance of understanding pain	1 2 3 4 5	1 2 3 4 5
8. Understand why pain is bad	1 2 3 4 5	1 2 3 4 5
9. Describe how pain can harm the body	1 2 3 4 5	1 2 3 4 5
10. Explain what pain does to each body system	1 2 3 4 5	1 2 3 4 5
11. Explain how a patient might describe their pain	1 2 3 4 5	1 2 3 4 5
12. Explain how a non-verbal patient might act if they are experiencing pain	1 2 3 4 5	1 2 3 4 5

APPENDIX K:

TOOL DESIGN, DATA COLLECTION AND RATIONALE

Teaching Tool Design, Data Collection and Rationale

Project Design

To assess the effectiveness of this teaching program intervention, baseline data will be obtained with the Learning Assessment tool pre- and post-test which is an original creation based on the Oxford Textbook of Paediatric Pain by McGrath, Stevens, Walker, and Zempsky (2013). This tool contains nine multiple-choice items, with each of the four learning objectives covered. This exam should be offered both immediately before and after the teaching intervention, as a determination of knowledge gained from the teaching program.

Additionally, a Self-Assessment survey tool is included for those participating in the educational program. The purpose of this tool is to evaluate if the trainees' self-perceived knowledge, skills and comfort with pain knowledge has changed. This tool was adapted with permission from the "Pre/Post Self-Assessment of Learning Voluntary Case Planning" by the San Diego State University School of Social Work Academy for Processional Excellence (2016) (San Diego State University, 2016). To align with the content of this project, the self-assessment tool was modified to include applicable topics and learning objectives. To assess participants' self-awareness and knowledge, as well as perceived improvement in understanding pain before and after the intervention, the self-assessment tool uses a Likert scale (1= no understanding and 5 = full understanding).

Learning Objective	Learning Assessment Tool	Self-Assessment Tool
1. Understanding what pain is	1, 2	1, 2, 3
2. Understanding pain physiology	3, 4	4, 5, 6
3. Understanding why untreated pain is bad	5, 6, 9	7, 8, 9,
4. Signs and symptoms of pain	7, 8	10, 11, 12

FIGURE. Relationship of Learning Objectives and Intervention Tools

Data Analysis

According to Moran, Burson and Conrad (2014), the purpose of data analysis is to organize results in such a way that answers the clinical question. The clinical question is whether a pain teaching program will create a statistically significant improvement in both objective and self-perceived pain knowledge.

Because this is a within groups, pre-test post-test design that will generate ordinal data, results should be analyzed from both the Knowledge Assessment and Self-Assessment using the Wilcoxon signed rank test. This test compares the means of two groups, and will allow for the inference of the educational program creating a significant improvement in objective and self-perceived pain knowledge. The Wilcoxon signed-rank test is a non-parametric test when attempting to compare repeated measurements on a single sample.

Rationale

Logic models are intuitive tools used to continually evaluate the effectiveness of programs. They present a clear image of how an initiative is supposed to work, and show the relationship between effort, activity, goals and outcomes.

According to the Centers for Disease Control, logic models have two sides: the process side and the outcome side (Silverman, Mai, Boule, & O'Leary, 2009). Within the process side are three sections: the inputs, which are available resources, scientific knowledge, staff members and leaders; the activities, which are how the proposed change is brought about; and the outputs, which are the direct products of the activities. Within the outcome side are three more sections which illustrate the short, intermediate and long term outcomes, or the sequences of changes which take place as a result of the program.

For this project, the inputs are the APRN using the teaching material, the teaching material itself, the staff being taught, and the existing infrastructure within the third world hospital are the inputs. The activity will be the APRN teaching the staff members and assessing knowledge, and the outputs will be increased pain knowledge demonstrated with the change in pre- and post-assessment scores. The outcomes will be related to the increased knowledge leading to better pain assessment for pediatric patients, attitude shifts regarding pain, eventual development of setting-appropriate pain assessment and management protocols, updates in provider decision making, all of which lead to better health of all local pediatric patients with pain. The principles of this project directly align with a logic model (See Figure).

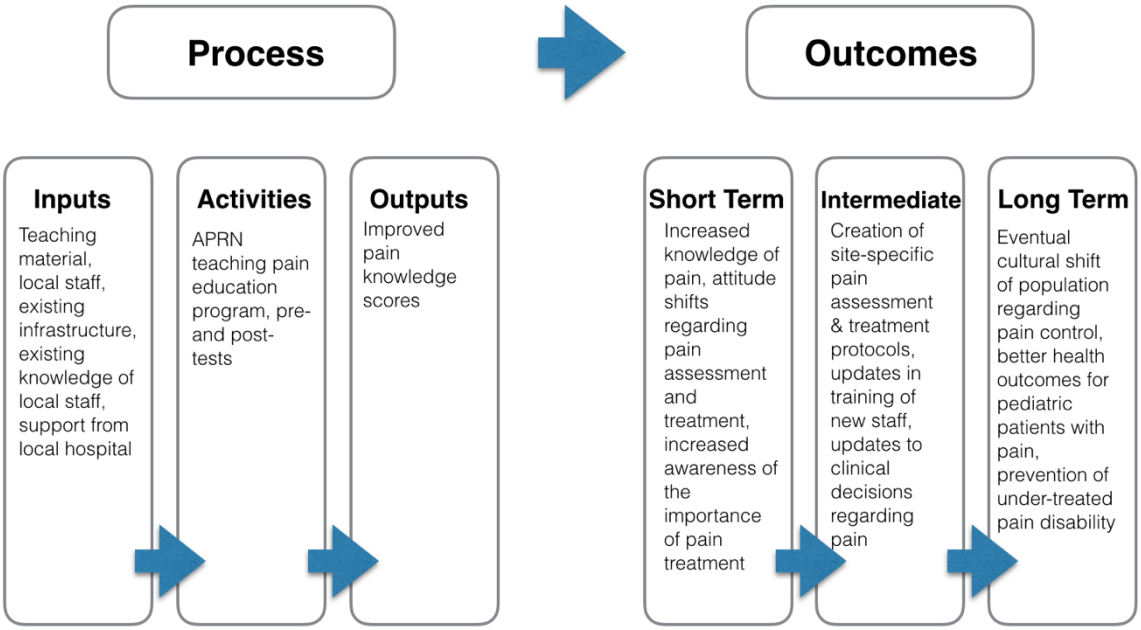


FIGURE. Adaptation of a Logic Model

PROGRAM REFERENCES

McGrath, P. J., Stevens, B. J., Walker, S. M., & Zempsky, W. T. (Eds.). (2013). *Oxford textbook of paediatric pain*. Oxford, UK: Oxford University Press.

Moran, K., Burson, R., & Conrad, D. (2014). *The doctor of nursing practice scholarly project: a framework for success*. Burlington, MA: Jones & Bartlett Learning.

Silverman, B., Mai, C., Boulet, S., & O'Leary, L. (2009). Logic models for planning and evaluation. Atlanta, GA: Centers for Disease Control.

APPENDIX L:

PERMISSION TO ADAPT SURVEY TOOL FROM SAN DIEGO STATE UNIVERSITY

Permission to Adapt Survey Tool from San Diego State University

Jennifer Baum <jbaum@mail.sdsu.edu> Mon, Dec 11, 2017 at 1:08 PM
To: Erin Leigh Galligan <egalligan@email.arizona.edu>

Hi Erin,

You have our permission to utilize and adapt the tool as needed. Thank you for your research and efforts in the field. Best of luck with your dissertation.

[Quoted text hidden]
--

Jennifer Baum
Assistant Director and Chief Financial Officer

Academy for Professional Excellence

San Diego State University

School of Social Work

6505 Alvarado Road, Suite 107

San Diego, CA 92120

619-594-0765

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APPENDIX M:

APPROVAL FROM HEALTH VOLUNTEERS OVERSEAS

Approval from Health Volunteers Overseas

Kim Rodgers via healthvolunteersoverseas.onmicrosoft.com 11:25 AM (3 minutes ago)
to me

Dear Erin,

We approve of the tool you have created for HVO and we would be delighted to use it!

Thanks so much,

Kim Rodgers
Volunteer Placement Coordinator
Health Volunteers Overseas
1900 L St., NW, Suite 310 • Washington, DC 20036
Tel: (202) 296-0928 ext. 115 • Fax: (202) 296-8018 • www.hvousa.org

Invest in the future of anesthesia care with a matching gift to the SEA-HVO fellowship fund.

APPENDIX N:

UPDATED TEACHING MATERIAL

Updated Teaching Material

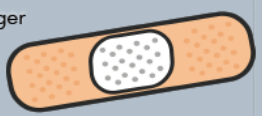
UNDERSTANDING PAIN

PURPOSE OF COURSE

- Objectives
  - Learn about:
    - What is pain?
    - What is happening in the body for pain to be felt?
    - Why should we as healthcare providers care about pain?
    - How can we tell if our patients are in pain?

INTRODUCTION

- Every day we care for children who experience pain
- Pain is a protective mechanism all people need to stay safe
  - Helps us recognize danger
- Pain is complex



WHAT IS PAIN?

- Take a moment to write down what you think pain is? What does it mean to have pain?

WHAT IS PAIN?

- Pain is unpleasant
- Pain protects humans from dangerous things, such as something that is too hot (burns), something that makes us sick (infections), something that can damage our bodies (trauma)
  - Usually caused by disease or injury
- Associated with ***suffering***

WHAT IS PAIN?

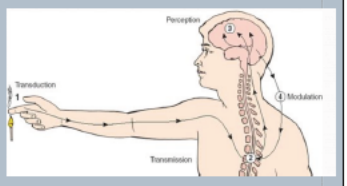
- Take a moment to write down examples of patients with the most pain - why did they come to your hospital?

WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 4 steps ***rapidly*** take place when a patient has pain
  - 1) Transduction
  - 2) Transmission
  - 3) Perception
  - 4) Modulation

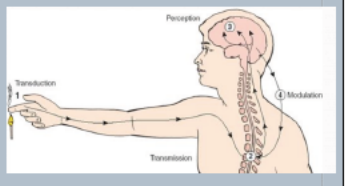
WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 1) Transduction
  - Injured body part releases chemicals
  - Nerves notice the chemicals and are activated



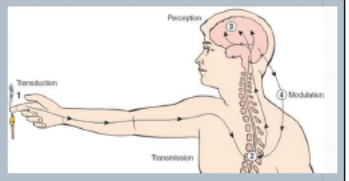
WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 2) Transmission
  - Nerves notice chemicals, send signal to the brain



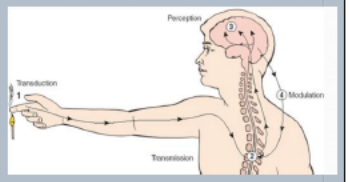
WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 3) Perception
- Signal arrives at brain and pain is felt!



WHAT HAPPENS IN THE BODY WHEN PAIN IS FELT?

- 4) Modulation
  - Brain releases chemicals to help the patient not feel as much pain



WHY DO WE CARE ABOUT PAIN?

- Painful problems are what bring the majority of patients to the hospital
  - Trauma (broken bones, burns, cuts, wounds)
  - Infections (abscesses, swelling)
  - Surgery (operations and recovery can be very painful)

WHO IN THE HOSPITAL SHOULD CARE ABOUT PAIN?

- Everyone!
  - Doctors
  - Nurses
  - Physical Therapists
  - Pharmacists
  - **All staff members**

WHY DO WE CARE ABOUT PAIN?

- Take a moment to write down how you feel when you have pain.

WHY DO WE CARE ABOUT PAIN?

- If not treated, pain can cause problems in the entire body!

WHY DO WE CARE ABOUT PAIN?

Effects of Undertreated Pain

Body System	Effect of Pain
Heart	Increased work (hard on heart muscle), risk of blood clots
Lungs	Small, shallow breaths + less coughing = increase risk for lung infection
Stomach / GI	Slows food digestion and movement
Brain / behavior	Constant stress, anxiety = increase risk for behavioral problems for entire life
Whole body	Lack of sleep, increased fear, increased risk of having chronic pain (experiencing pain all the time, forever), decreased quality of life.

WHY DO WE CARE ABOUT PAIN?

- Is it ever okay to not treat pain?
  - NO!
  - No evidence shows that withholding treatment is good for patients. It does not "build character" or make them stronger.
  - Pain is normal body process but it is NOT normal to let a patient experience pain without treating it.

ACTIONS THAT DO NOT HELP PATIENTS WITH PAIN

- Lying, and telling patients something painful will not hurt
  - Example: It is better to tell the patient their IV will hurt instead of being dishonest and saying it won't
- Telling the young patient to be brave and not to cry
  - Crying and being afraid are normal - console them
- Threatening young patients with painful procedures
  - Then they will not trust you

HOW DO WE KNOW WHEN A PATIENT IS IN PAIN?

- Think of a patient you recently cared for with pain.
  - How did they describe it to you? What words did they use?
  - How did they act?

HOW DO WE KNOW WHEN A PATIENT IS IN PAIN?

- A patient is in pain *whenever they say that they are.*
- Words used to describe pain:
  - Aching cramping heavy hot
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  - Tender throbbing burning dull
  - Sore stiff tight

HOW DO WE KNOW WHEN A PATIENT IS IN PAIN?

- Think of a very young patient who cannot yet talk. How can you tell if they are in pain?

HOW DO WE KNOW A PATIENT IS IN PAIN?

- Non-verbal signs of pain
  - Crying, grimacing, tantrums, throwing things, flailing arms and legs, clinging to mom or dad, arching body off bed, flailed nostrils
  - Increased heart rate, respiratory rate and blood pressure

HOW DO WE KNOW A PATIENT IS IN PAIN?

- If you are unsure about a patient being in pain, who can you ask?
  - **Their family**
    - Moms, dads, brothers and sisters will know if the patient is acting differently
  - **Always involve the family in the care of a patient with pain**

NEXT STEPS

- Think about your hospital. Now that you understand pain better, how can you go on to help your patients?
- What tools (medications, education, other staff members) are available to you to help your patients with pain?

NEXT STEPS

- When to assess for pain?
  - ***Every time you see your patients***
- Benefits to effective pain management for:
  - The patient
  - Their family
  - Society (hospital and local community)

APPENDIX O:

THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW BOARD LETTER

THE UNIVERSITY OF ARIZONA
Research, Discovery & Innovation

Human Subjects Protection Program

1618 E. Helen St.
P.O.Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
http://rgw.arizona.edu/compliance/home

Date:	March 26, 2018
Principal Investigator:	Erin Leigh Galligan
Protocol Number:	1803393452
Protocol Title:	Creation of a Universal Pediatric Pain Education Program for Third World Healthcare Workers Using the CIPP Model for Improvement
Determination:	Human Subjects Review not Required

Documents Reviewed Concurrently:

Data Collection Tools: *Learning assessment.docx*
Data Collection Tools: *self assessment survey.docx*
Data Collection Tools: *SURVEY QUESTIONNAIRE FOR PARTICIPANTS.docx*
HSPP Forms/Correspondence: *Advisor Signature.pdf*
HSPP Forms/Correspondence: *determination_v2018 Galligan1.pdf*
Informed Consent/PHI Forms: *Disclosure form 26Mar2018.docx*
Other Approvals and Authorizations: *HVO Approval.docx*
Participant Material: *Instructions on How To Use this Tool.docx*
Participant Material: *PROGRAM MATERIAL AND SURVEY EMAIL.docx*
Participant Material: *Project Components 26Mar2018.docx*
Participant Material: *TEACHING MATERIAL.docx*
Recruitment Material: *Introductory and Disclosure Email.docx*

Regulatory Determinations/Comments:

- Not Research as defined by 45 CFR 46.102(d): As presented, the activities described above do not meet the definition of research cited in the regulations issued by U.S. Department of Health and Human Services which state that "research means a systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge."

The project listed above does not require oversight by the University of Arizona.

If the nature of the project changes, submit a new determination form to the Human Subjects Protection Program (HSPP) for reassessment. Changes include addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the study activity. Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

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