Evidence-Based Strategies To Improve Primary Care Practitioners' Adherence to Guidelines In The Treatment of Chronic Non-Cancer Pain

by

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Author Note

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ABBREVIATIONS

AAPM	American Academy of Pain Medicine
CDC	Centers for Disease Control and Prevention
CEU	Continuing Educational Unit
CNCP	Chronic Non Cancer Pain
COMM	Current Opioid Misuse Measure
DEA	Drug Enforcement Agency
FDA	Food and Drug Administration
HHS	Health and Human Services
IASP	International Association for the Study of Pain Medicine
IOM	Institutes of Medicine
MBN	Mississippi Bureau of Narcotics
MBON	Mississippi Board of Nursing
MMR	Mississippi Morbidity Report
MME	Morphine Miliequivalent Dose
MNA	Mississippi Nurses Association
NIH	National Institutes of Health
NP	Nurse Practitioner
ORT	Opioid Risk Tool
PMP	Prescription Monitoring Program
SBIRT	Screening, Brief, Intervention and Referral to Treatment
SOAPP	Screener and Opioid Assessment of Patients with Pain

ABSTRACT

Evidence-Based Strategies To Improve Primary Care Practitioners Adherence To Guidelines In The Treatment of Non-Cancer Pain

By Alice Messer, FNP-BC

Nurse practitioners work in primary care more than any other specialty where they are faced with the difficult task of managing patients who present with chronic non-cancer pain (CNCP). Opioid medications are commonly prescribed in primary care for chronic pain however, the misuse, abuse and diversion of prescription opioids has led to an international opioid epidemic with more than 15,000 deaths due to unintentional overdose in 2015. (Centers for Disease Control & Prevention, 2016).

The purpose of this project was to enhance primary care nurse practitioners' knowledge regarding opioid prescribing evidence-based guidelines in the treatment of CNCP. By enhancing prescribers' knowledge of the guidelines, nurse practitioners may help to reduce the prevalence of opioid misuse and decrease the number of deaths due to opioid overdose.

Utilizing Malcolm S. Knowles Adult Learning Theory an educational lecture was created to increase nurse practitioners awareness of the opioid epidemic and provide knowledge regarding the Center for Disease Control and Prevention's (CDC) recommended opioid prescribing guidelines for chronic pain in primary care. This two-hour lecture was disseminated at two MNA sponsored pharmacology lectures. A pre and post- test survey was given to determine nurse practitioners knowledge of the CDC's opioid guidelines and evaluate the usefulness of the lecture.

Eighty-eight participants completed both the pre and post surveys questions. All respondents were nurse practitioners with 67 respondents working in primary care, four in internal medicine, ten in Emergency Room and seven in a specialty clinic or other. Seventy-nine respondents reported possessing a controlled substance prescriptive authority and of those, all 79 reported they currently prescribe controlled substances. Nine of the attendees responded they were not registered by the Drug Enforcement Agency (DEA) to prescribe controlled substances. On the pre survey knowledge questions 57% of respondents answered more than 50% of the questions incorrectly (7 out of 10). On the post survey questionnaire 100%, all 88 respondents answered all 12 questions correctly.

The surveys from the educational lecture revealed improved responses to questions related to recommended guidelines for chronic non cancer pain as evidenced by correct responses on the post lecture questionnaire as compared to the pre survey responses. Of the nurse practitioners surveyed, only two of the attendants reported having prior knowledge of the CDC guidelines for opioid prescribing leaving 77 of the nurse practitioners who possess controlled substance prescriptive authority reporting no prior knowledge of the recommended CDC guidelines. Further research is suggested to assess compliance with the guidelines after attending educational lectures.

INTRODUCTION

Background/Significance. According to the National Institute of Health (NIH) 2015, chronic pain affects 100 million American adults. This is more than the total affected by heart disease, cancer and diabetes combined (American Academy of Pain Medicine, 2013). Chronic non-cancer pain (CNCP) is defined as pain lasting greater than three months or beyond expected tissue-healing time (International Association for the Study of Pain, 2015). The national cost of CNCP is up to 635 billion dollars each year in medical treatment and lost productivity (Institutes of Medicine, 2011).

In the early 1990's, concerns regarding the prevalence of chronic pain emerged and a shift in health care addressing the under treatment of chronic pain resulted in an increase in opioid analgesics prescriptions (Rosenblaum, Marsch, Joseph, Portenoy, 2008). The Declaration of Montreal, a document developed at the 1st International Pain summit in 2010, states that access to pain management by adequately trained health care professionals is a fundamental human right. Healthcare providers have an ethical responsibility to relieve pain-related suffering by providing informed and unbiased access to pain medications (Spitz et al., 2011). Likewise, Cohen & Jangro, (2015) also call for the ethical approach to treatment of CNCP stating untreated chronic pain remains unacceptably prevalent and costly requiring continued efforts at improving quality of life and reducing pain. In response to the concern for the ethical treatment of those suffering from CNCP, the number of opioids prescribed in primary care has shown a steady incline. Statistical reports from the Centers for Disease Control and Prevention reveal that opioid prescribing more than quadrupled over the past decade (CDC, 2015).

Inter-related with the public health burden of CNCP is the overwhelming misuse of prescription opioids. The Centers for Disease Control and Prevention (CDC) 2015, reports everyday 44 people in the United States die from overdose due to prescription painkillers and many more are considered addicted. The CDC's most recent statistics also reveal drug overdose deaths have increased from 7.9% in 2013 to 9.0% per 100,000 in 2014 accounting for a 14% increase in just one year. The American Society of Addiction Medicine (ASAM), 2016 reported 18,893 overdose deaths in the year 2014. In Mississippi alone, the 2015 Morbidity Report shows that overdose deaths related to prescription opioids increased from 23 in 1990 to 351 in 2015. In response to these alarming statistics the CDC (2015) released evidence-based opioid prescribing guidelines for CNCP in primary care to standardize treatment and reduce the mortality rate associated with prescription opioids.

Needs Assessment. Chronic pain is a common complaint in primary care with 63% of those suffering from chronic pain report seeking treatment from their primary care provider (NIH, 2016). And, although the majority of CNCP pain sufferers are treated in primary care clinics, research suggests a lack of adherence to guidelines. Prescriptions by primary care providers account for nearly half of all dispensed opioid prescriptions, and the growth in prescribing rates among these providers has been above average (Levy, Paulozzi, Mack & Jones, 2015). Lasser et al., 2015 report primary care providers (PCP) as the leading prescriber of opioids for chronic pain, yet few PCP's follow standard of care guidelines.

According to The US Department of Health & Human Services (HHS) 2014, the majority of nurse practitioners work in primary care with 48.1% in primary care and

another 13.3% in internal medicine. Nurse practitioners in most states are required to obtain only two pharmacology continuing education units (CEUs) per year to maintain a controlled substance prescriptive authority but there are no current requirements for education specifically focused on CNCP treatment guidelines. The majority of CEUs are obtained through seminars and conferences that cover pharmacology of controlled substances. Little information regarding prescribing guidelines is required. Nurse practitioners working in primary care are faced with providing quality care to patients presenting with CNCP, limited research to support alternative treatment options, and lack of education regarding opioid prescribing guidelines, addiction, misuse and diversion (Hudspeth, 2011).

Literature Review Search Method

Data sources accessed for this review of literature included CINAHL Complete, MEDLINE Complete and Academic Search Complete by accessing Mississippi University for Women Fant Library. Additional information was gained in Scott M. Fishman, MD's book Responsible Opioid Prescribing (2007) and journals including Journal of Pain, The Nurse Practitioner and The American Journal of Nursing. Key terms included opioid, chronic pain, guidelines, opioid education, opioid training, fears, barriers, adherence and nurse practitioners.

The term opioid required a more narrowed approach as it yielded 121,303 citations. When coupled with opioid guidelines the search narrowed dramatically to 1,021. Inclusion of chronic non-cancer pain with opioid guidelines resulted in 32 citations. Several of these articles were eliminated due to published dates greater than 5 years. A further search was

conducted to establish barriers to chronic non-cancer pain yielding seven citations (Appendix G).

Literature review/Barriers.

Barriers to the management of CNCP patients with opioids include inadequate professional education, lack of adherence to guidelines, concerns regarding abuse by family members or caregivers and fear of regulatory scrutiny (Spitz, Moore, Papaleontiou, Granieri, Turner & Reid, 2011). In a white paper by the Nurse Practitioner Healthcare Foundation, barriers to providing high-quality care to chronic pain sufferers who require opioid therapy are described as multifaceted including inadequate professional education/knowledge, ineffective policies/research to support chronic pain interventions, and inconsistency and lack of coordination of federal guidelines and funding (Arnstein, & Marie, 2010). In this qualitative study 81% of attending physicians rated their medical school education and 54% of residents rated their training regarding chronic pain management as inadequate. In the same study, NP's and Physicians Assistants rated their college training in the area of chronic pain as 0 or not at all.

In a similar qualitative study, Spitz et al., 2011 also cited lack of education as a perceived barrier to prescribing opioids as a treatment option for chronic pain among older adults. This qualitative cross-sectional study interviewed 23 physicians and 3 nurse practitioners with open-ended questions as to their perspective on prescribing opioids to older adults with CNCP. The authors concluded from the interviews that implementation of a provider and patient education plan could improve the management of undertreated chronic pain.

Wolfert, Gilson, Dahl, & Cleary 2010 found physicians surveyed held many misconceptions about the prescribing of opioids coupled with lack of knowledge about laws and regulations governing the prescribing of controlled substances resulting in inadequate prescribing of opioids and inadequate management of pain. This study included a 23-question survey mailed to 600 licensed physicians with a response rate of two hundred and sixteen surveys returned. Of these, only 17 reported adequate pain management knowledge and only 16 reported receiving pain management training in medical school furthermore, 53 reported no formal training at all.

In a more recent study by Krebs, Bergman, Coffing, Campbell, Frankel & Matthias (2014) barriers identified were inadequate time and resources, relying on general impression for risk of opioid abuse and viewing opioid monitoring as law enforcement activity. This study analyzed data using a qualitative immersion/crystallization approach interviewing 14 primary care physicians and 26 of their patients who were receiving opioid therapy in primary care. The authors concluded that the identified barriers likely contributed to the underuse of opioid management practices and interventions to improve assessment, prescribing and monitoring of opioid therapy were needed.

Wenghofer, et al. (2011) surveyed Ontario primary care physicians and discovered that although more than half of the respondents indicated that they had participated in educational events on opioid treatment of chronic non malignant pain in the previous year 62.2% participated in pharmaceutical-sponsored dinners or workshops, 51.7% read journal articles, 44.7% attended presentations at conferences or hospitals, 20.3% read pharmaceutical publications and 11.1% participated in some other educational activity

It is concerning here that most of the respondent reported the primary source of education as the pharmaceutical industry.

Literature Review/Education. Literature reviewed found that the lack of education for healthcare providers was the single most consistent reported cause for non-adherence to guidelines in opioid prescribing (Spitz, Moore, Papaleontiou, Granieri, Turner, & Reid, 2011). Literature also revealed that training for primary care residents continues to be lacking despite an increased awareness regarding the misuse of prescription opioids (Sullivan, Gaster, Russo, Bowlby, Rocco, Sinex, Livovich, 2010). Evidence of limited training is demonstrated by the fact that over half of internal medicine residents in this study rated their preparation for CNCP care as fair or poor and their experience in CNCP care as a negative influence on their view of primary care as a career.

On the other hand, research does indicate improvements in adherence to opioid prescribing guidelines in primary care providers in those who are exposed to educational material specifically focused on recommended guidelines (Young, Alfred, Davignon, LaSharn, Hughes, Robin, Chaudhry, 2012). The Food and Drug Administration (FDA) recently issued a statement encouraging training incentives for prescribers and supports the guidelines set forth by the CDC (Kuehn, 2016). While the AAPM argued that some of the CDC's recommendations are not evidence based and further sensitivity analysis should be performed and added to the literature review they do support education as the most important strategy for combating the opioid epidemic (AAPM, 2016). And although DeRemer, Fleming, Brown and May (2011), concluded that lack of training led to perceived inadequacies among physicians they did highlight the opportunity for educational

intervention and institution specific guidelines for prescribing and documenting pain management.

Evidence clearly suggests that education improves opioid prescribing practices but there is still some backlash noted with 13.4% of physicians indicating they would no longer prescribe opioids if mandatory risk evaluation and mitigation strategy training and ongoing mandatory continuing medical education (CME) were instituted (Schataman & Darnall, 2013). Conversely CEU initiatives such as Pain Resource Nurse Programs have demonstrated improvement in knowledge and attitudes about pain and improved patient satisfaction with pain control. CEU workshops for family practitioners for example, found improved clinical outcomes and satisfaction among patients with chronic low back pain (Manworren, 2013). Education is an important activity to improve adherence to opioid prescribing guidelines in primary care and improves patient satisfaction.

In a pilot study by McCracken, Boichat & Eccleston (2012) eighty -one general practitioners (GP) attended 2 training experiences to improve appropriate opioid prescribing for chronic pain. This randomized controlled trial found general practitioners were highly acceptable to training and resulted in an improvement in knowledge of prescribing guidelines while reducing the practitioners concerns.

The results from a survey by Young, et al. (2011) of 508 physicians concerning how to appropriately prescribe, document and treat patients who need opioid medications for pain management, indicated that when faced with limited resources, an organizational strategy that first targets solo and primary care practitioners may improve physician practice when prescribing opioids. In this study, the Responsible Use of Opioid: A Physician's Guide by Scott Fishman was distributed to physicians in Georgia. Thirty-two

percent of the respondents claimed they would make changes to their practice after reading the book with 41.6 percent of primary care physicians citing changes to practice more than any other specialty. This demonstrated the value of educating physicians about how to appropriately prescribe, document, and treat patients who need opioid medications for pain management and supported the recommendation of organizations seeking better education for prescribers.

*Literature review/*Non-adherence to guidelines.

A retrospective cross sectional study of persons greater than 18 years of age in HIV outpatient care who were prescribed opioids from Onen, et al. (2011) found that opioid prescribing practices were lacking in terms of documentation as to the indication for the opioid prescription, rare use of objective pain severity scores, and limited documentation of therapeutic efficacy. Furthermore, urine drug screens were underutilized and aberrant drug-related behaviors did not appear to alter opioid prescribing practices. Six hundred fifty nine persons were included in this study with 140 patients identified as receiving chronic opioid medications. Of the 140 patients prescribed opioids long term, only 6 received urine drug testing with 100 percent of these containing illicit drugs and even after the UDS revealed the use of illicit drugs, no further action was taken and the patients continued to receive opioid prescriptions.

Lange et al., (2015) studied adherence to guidelines among primary care practitioners using electronic health records documentation of opioid treatment agreement, urine drug screens, and early refill request. This study found that primary care providers varied significantly in adherence to opioid prescription guidelines with 56% of the 67 charts reviewed revealed the presence of UDS, 36% revealed evidence of early refills

and only 48% contained patient pain agreements. The authors of this study view these findings as an increase in risk to patients and a greater potential for opioid misuse.

A retrospective chart review in the Veterans Affairs Medical Center found non-compliance to guidelines in more than half of the patients receiving opioid therapy. In this study by Sekhon, Aminjavahery, Davis, Roswarski & Robinette (2013) a random sample of 800 patients were selected for review. Of these, 51% contained an opioid contract, 52.3% contained a urine drug screen in the last year and only 28.2% revealed discussion with patient or discontinuation of opioids after an abnormal urine drug screen. The findings of this study indicated that compliance with opioid prescribing guidelines for CNCP remains low and education is needed especially regarding the use of treatment agreements and understanding of the urine drug tests.

In a statewide survey of healthcare professionals 2015, four hundred and twenty six respondents completed a survey with 31.6% of the respondents listed as advanced registered nurse practitioners. Within the nurse practitioner group only 50% reported obtaining a written agreement, 28.6% required a urine drug screen, and 57.6% stated they conducted a review of stable or non-stable patients. The data obtained from the nurse practitioner group on an average however, did show a higher rate of compliance than did medical doctors, physician assistance, doctors of osteopathy and dentist (Howell & Kaplan, 2015).

As nurse practitioners move toward more autonomous practice, regulatory scrutiny regarding opioid prescribing and potential lawsuits from patients has the potential to increase. One case study of 3 nurse practitioners investigated by the DEA and regulatory board of nursing revealed disciplinary action due to lack of adherence to guidelines

including poor documentation and monitoring after a patient was placed on Fentanyl. In this particular case study, the Fentanyl was sold to a 19 year old who died from overdose. Competency in pain management begins with education (Hudspeth, 2011). Nurse practitioners who lack awareness of national pain management standards and the risk of chronic opioid prescribing put themselves and their patients at risk.

Problem Statement/Purpose

Nurse practitioners work in primary care more than any other practice site where most CNCP patients present for treatment. CNCP is detrimental to quality of life, affects millions of American adults and cost billions of healthcare dollars. Past efforts to treat CNCP however, has resulted in a dramatic increase in the number of opioid prescriptions by PCP's compounding the current opioid epidemic with severe consequences including the misuse, abuse, and diversion of opioids, and in some cases death.

Healthcare providers must implement effective strategies to reduce the adverse results of opioid medications while providing for the ethical treatment of chronic non cancer pain including education that focuses on adherence to evidenced based guidelines.

The literature reviewed supported education as an effective tool to facilitate adherence to evidence based guidelines. NPs however, receive limited training in the treatment of CNCP with no uniform mandated evidence based guideline treatment content. NP students generally rotate through clinical sites that allow for a broad range of experience however, preceptorship in pain–management is rare and is usually not part of the overall clinical experience (Hudspeth, 2011). CEU's mandated by the board of nursing to maintain controlled prescriptive authority in the past has been directed toward the pharmacology of opioids and not the overall treatment of chronic non-cancer pain or

guidelines for opioid prescribing. Nurse practitioners lack sufficient formal pain management education leaving them at risk for incomplete assessments, poor documentation, and failure to implement necessary safeguards. These deficiencies can lead to regulatory complaint investigation and disciplinary measures (Hudspeth, 2011). In an article from the Mississippi Board of Nursing, 2015, attorney Westley Mutziger, acknowledges the boards investment in training to improve enforcement of transgressions involving diversion and abuse cases involving nurses.

Education specifically geared toward opioid prescribing guidelines has shown to improve documentation, compliance and satisfaction for both the patient and the provider reducing the most common cited barrier to CNCP management. Evidence based educational lectures derived from the newly published CDC guidelines disseminated at seminars, conferences and in nurse practitioner programs can improve nurse practitioners adherence to guidelines in the treatment of CNCP, reduce risk of overdose, misuse, diversion and addiction, improve patient/provider satisfaction, reduce regulatory board sanction and promote continued treatment of CNCP. Therefore, the purpose of this doctor of nursing practice (DNP) project was to enhance primary care nurse practitioners' knowledge regarding the CDC's evidence-based guidelines in the treatment of non-cancer pain.

Theoretical Framework

Malcolm Knowles (1956) Adult Learning Theory was chosen to guide the use of educational seminars in addressing nurse practitioners lack of knowledge and non-adherence to evidence based guidelines in the treatment of CNCP. Malcolm S. Knowles adult learning theory uses the term andragogy as the art and science of adult learning

(Appendix A). There are five assumptions associated with andragogy. Self –concept refers to the adult learner's experience, readiness to learn, orientation to learning, and a mature persons internal motivation to learn. As applied to adult learning, Knowles principles include involving the adult in planning and evaluation of their instruction, providing experiences, providing education that will have an immediate relevance and impact on job and personal life, and providing education that is problem-centered rather than content-centered. For this project nurses are considered mature adult learners who have moved from a dependent learner to one of self-direction, they have accumulated learning experiences from their career and continue to build on this by attending continuing education or by seeking advanced degrees thereby demonstrating a willingness and readiness to learn.

A systematic review of literature by Mckee & Billman (2011) revealed a need for practical solutions for preparing nurse educators to teach. The Institute for Nurse Educators (IFNE) was developed based on the theoretical framework of andragogy. The use of this model by the IFNE in educating nurses supports my decision to utilize this theory as a model for nurse education.

Furthermore, Draganov, Andrade, Neves, & Sanna (2012) conducted a review of literature involving the use of andragogy in nursing. Fifty-one publications were found with the term andragogy and seventy one percent using andragogy for theoretical base was found. This study analyzed the process of involving eight stages of stimulating and supporting students and found that preparing the student for self direction, establishing a climate of learning, creating mechanisms for joint planning, knowing and satisfying the

learning needs, formulating objectives, and designing and conducting the opportunity to exchange experiences resulted in an overall positive learning experience.

To address this projects stated problem, an interactive educational lecture was developed to increase nurse practitioners' knowledge of the CDC's evidenced based opioid prescribing guidelines utilizing the concepts of Knowles adult learning theory to steer the lecture process. All of the principles described in andragogy can be applied to nurse practitioners seeking continuing education. Lecture content had an immediate relevance and impact to their job and is problem centered. Interactive case studies combined with lecture content provided involvement and interaction by participants allowing them to exchange experiences with CNCP patients and enforce a positive learning experience.

PICOT

The PICOT question that guided this DNP project was (will primary care nurse practitioners' adherence to evidence based guidelines improve with education provided in educational conference ultimately reducing the prevalence of opioid abuse, misuse and diversion?) This DNP project's population included nurse practitioners working in primary care who attended the continuing education lecture regarding the treatment of CNCP. The Control included examination of pre and post lecture surveys evaluating the effectiveness of the lecture and a comparison of correct responses to survey questions indicting improved knowledge surrounding the treatment of CNCP post lecture.

Measuring process stability of lecture content was done through surveys taken before and after the lectures to assess attendees' knowledge before and after, current practices and anticipated change in practice.

The primary outcome of the project was that correct post survey responses improved in all participants showing an increase in knowledge. The project took approximately twelve months to complete.

Costs included:

Gas 300.00

Lodging 500.00

Salary/ 1,000.00

Paper/printing supplies 500.00

Food 300.00

Total 2600.00

Definition of Terms

Chronic non-cancer pain:

Theoretical: Pain that lasts longer than 3 months or beyond expected tissue-healing time. (IASP, 2015).

Operational. For the purposes of this project patients treated in primary care with pain lasting greater than 3 months excluding a diagnosis of conditions considered terminal or requiring palliative care such as cancer.

Opioids/Opiates

Theoretical: An Opioid is defined by the National Institute on Drug Abuse, 2014 as a medication that relieves pain, reduces the intensity of pain signals reaching the brain and affect those brain areas controlling emotion. Opioids are any synthetic narcotic that has opiate-like activities that are not derived from opium (Medical Dictionary Online, 2015).

According to the Substance Abuse and Mental Health Administration, 2016, opiates are a class of drug found in opium poppies or derived from opium.

Operational: For the purposes of this project any controlled prescriptive substance with opiate like properties including synthetic and non-synthetic opioids are referred to as opioids including Tramadol, Hydrocodone, Oxycodone, Tapentadol, Morphine, Oxycontin, Codeine, Fentanyl, Demerol or Hydromorphone, Methadone or Suboxone. This includes any formulation of these compounds generic and brand name products.

Primary care provider:

Theoretical. A primary care practitioner is a health care provider who medically treats patients with common medical problems (US National Library of Medicine, 2016).

Operational. For the purposes of this project a primary care practitioner is a nurse practitioner working in primary care or internal medicine clinic in Mississippi who prescribes opioids in the treatment of chronic non-cancer pain and does not work in a specialty field.

Educational conference

Theoretical. An educational seminar is a course of study pursued in a scheduled meeting (Merriam-Webster Dictionary Online, 2015).

Operational. For the purposes of this project the educational conference is the course of study delivered at any workshop, lecture, seminar, or conference sponsored by the Mississippi Nurses Association or district meetings in the state of Mississippi or any lecture conducted at colleges or universities of nursing.

Evidence based guidelines:

Theoretical. Standard of care guidelines are defined as a diagnostic and treatment process that a clinician should follow for a certain type of patient, illness, or clinical circumstance (MedicineNet.com, 2016).

Operational. For the purposes of this project standard of care guidelines are a set of evidenced based guidelines outlining recommendations for providing the highest quality of care to patients with chronic non-cancer pain. The standard of care guidelines utilized in this study was the CDC's opioid prescribing guidelines for primary care.

Opioid abuse:

Theoretical. Opioid abuse is defined as self administration of medications to alter one's state of consciousness leading to significant impairment or distress such as repeated failure to fulfill role obligations, recurrent use in situations in which it is physically hazardous, causes legal problems, or recurrent social and interpersonal relationships (American College of Preventative Medicine, 2011).

Operational. For the purposes of this project opioid abuse is the use of prescription opioids in any manner to alter mental status, negatively affects interpersonal relationships, or produces situations that are potential physically hazardous. This includes taking more than prescribed, developing strong cravings, the inability to control drug use, or compulsive drug use despite doing harm to oneself or others. Also known as substance use disorder.

Opioid misuse:

Theoretical. The intentional or unintentional use of a prescribed medication in a manner that is contrary to directions, regardless of whether a harmful outcome occurs (American College of Preventive Medicine, 2011).

Operational. For the purposes of this project, opioid misuse is taking or using a controlled substance in ways other than prescribed including not taking medications as directed, taking more medication than prescribed, altering the prescribed route, drug seeking behavior, or reluctance to try other treatment options.

Opioid diversion:

Theoretical. Opioid diversion is defined as redirection of a prescription drug from its lawful purpose to illicit use (American College of Preventative Medicine, 2011).

Operational. For the purposes of this project opioid diversion is redirection of prescription opioids for the purpose of illicit drug use including selling, trading or sharing medications with other.

Methodology

In an effort to address the opioid epidemic, the CDC released evidence-based guidelines for primary care practitioner's treatment of chronic pain. The Mississippi Board of Nursing (MBON), the Food and Drug Administration (FDA), Drug Enforcement Agency (DEA) and the Mississippi Bureau of Narcotics (MBN) have recommended the use of these guidelines in the treatment of chronic pain in primary care. The FDA also recently announced plans to recommend mandatory training for opioid prescribers (Han, 2016).

Forces influential in educating nurse practitioners to implement strict adherence to guidelines include the Mississippi Nurses Association, ANCC and Colleges or Universities who provide nurse practitioner degrees. IRB approval was obtained and the educational lecture was presented to nurse practitioners utilizing the CDC's recommended opioid prescribing guidelines.

Setting

Conferences sponsored by the Mississippi Nurses Association (MNA), Mississippi Association of Nurse Practitioners (MANP) or MNA district meetings were identified as sites to implement the guideline. This project was implemented at two pharmacology workshops at MNA in Madison, Mississippi.

Population

Practicing nurse practitioners attending MNA sponsored pharmacology lectures were identified as the population for this study.

Design

The design of the project was descriptive with information gathered from the pre and post surveys (Appendix B). A comparison was made between the pre and post lecture responses to evaluate NP's responses to knowledge questions and responses as to their opinion regarding the efficacy of the lecture. The Survey questions were derived from the CDC's guidelines. The lecture content included statistical data surrounding the opioid epidemic and prevalence of chronic pain, standard of care guideline recommendations including chart documentation with patient's past medical history, past surgical history, current medications, allergies, family medical history, social history, current symptoms, previous workup, previous treatment or medications and physical examination.

Recommended tools for use by PCP's to evaluate patients who are being considered for opioid therapy including the Opioid Risk Tool (ORT), Screener and Opioid Assessment of Patients with Pain (SOAPP), Current Opioid Misuse Measure (COMM) and Screening, Brief, Intervention and Referral to Treatment (SBIRT) was included. Attendee participation was encouraged with interactive case studies to address special considerations in the treatment of elderly patients, high-risk patients, and identification of patients presenting with aberrant drug seeking behaviors. Monitoring and compliance tools such as the prescription- monitoring program (PMP), patient-prescriber agreements and urine drug testing was included and education was provided regarding Morphine milligram equivalent (MME) dose comparisons between the most commonly prescribed opioids such as Morphine, Oxycodone, Hydrocodone, Hydromorphone and Fentanyl. Recommendations for tapering and discontinuing opioids in primary care and when to refer to an addictionologist, disposal of unused medications, common side effects of opioids, patient education regarding safe storage and patient responsibilities with opioid prescriptions was also presented.

This two hour interactive power point presentation was submitted to the Mississippi Nurses Association and ANCC for approval of continuing educational units and approved.

Implementation

Surveys were distributed to attendees' prior to the presentation and immediately collected. Following the course the same survey was distributed. A comparison of answers before and after the lecture was done to determine the number of correct responses. The

post survey included additional questions regarding attendees' opinion as to the efficacy of the lecture and plans to change practice. (Appendix C).

Results

Eighty-eight nurse practitioners attended the seminar. Eighty -six were Masters prepared nurses and two were Doctoral prepared. Seventy-nine of the eighty-eight attendees indicated that they do possess controlled substance prescriptive authority and all 79 of these indicated they do prescribe controlled substances. Results of the pre survey (Appendix D) knowledge questions revealed 65 respondents answered more than half of the questions incorrectly (7 out of 10 incorrect answers). On the post survey (Appendix E) knowledge questions, all 88 or 100% of the responses were correct. Furthermore, out of all 88 attendees, only 2 responded that they read the CDC guidelines for opioid prescribing in primary care leaving 77 nurse practitioners, without prior knowledge of the recommended standard of care guidelines for prescribing opioids. All 88 attendees felt the lecture style stimulated the learning experience, case studies and plan to change.

Implications/Recommendations

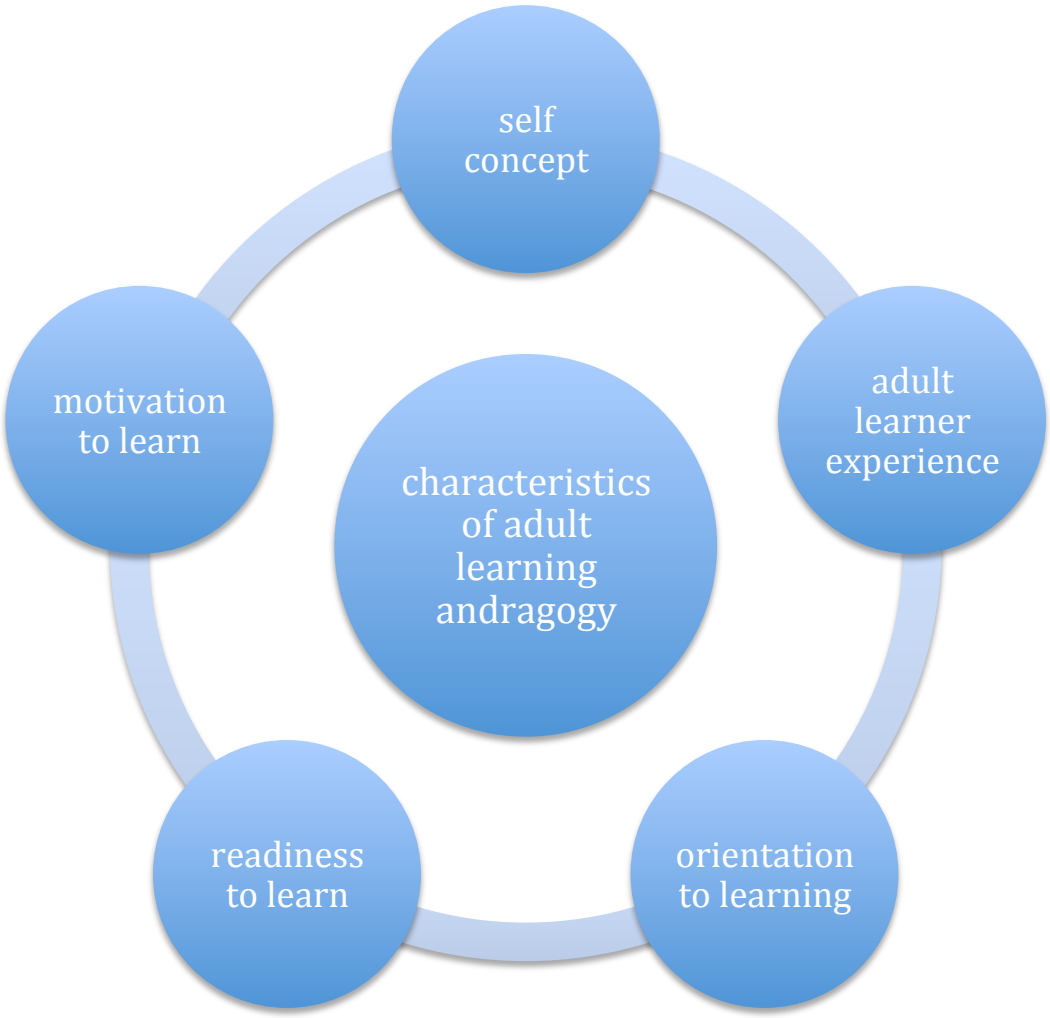
Research is ongoing in the area of chronic pain and the use of opioids as well as prescription drug abuse. Future research related to nurse practitioners adherence to opioid prescribing guidelines will be needed to assess application to practice. Electronic medical records retrospective chart reviews may provide access to the evaluation of nurse practitioners adherence. Should further action be warranted, organizations such as the Drug Enforcement Agency, Mississippi Bureau of Narcotics, American Nurses Credentialing Center, nursing journals and the Mississippi State Board of Nursing may provide additional

resources to help implement adherence through further lectures and educational information.

Millions of people suffer daily from chronic uncontrolled pain. While the risk of opioids may outweigh the benefits in some patients, human beings have the right to quality evidenced based care from providers who are knowledgeable and can provide ethical treatment options. Nurse practitioners working in primary care are often the first health care providers patients seeking pain relief see. Fear, lack of knowledge, and poor adherence to national guidelines are barriers that place patients at risk for addiction, suicide, doctor shopping, and overdose. Education regarding safe opioid prescribing practices and national guidelines has shown to improve the quality of care provided to these patients. While nurse practitioners receive education regarding opioid prescribing practices, inclusion of national guidelines, nurse practitioner chronic pain preceptorship, and mandated education specifically toward CNCP management with evidence based guidelines is limited. Nurse practitioner education must include these concepts into the current curriculum for students and CEU's for advanced practice nurses.

As healthcare providers become more aware of the opioid epidemic, prescribers may become reluctant to treat patients presenting in pain with controlled substances. This has the potential to result in unnecessary human suffering and social stigma in patients who take opioids. Nurse practitioner education should include the ethical treatment of patients presenting in pain.

Appendix A



Malcolm Knowles Adult Learning Theory demonstrates the adult learners readiness to learn, motivation to learn, orientation to learning (problem centered), self concept and experience.

Teaching and Learning Consulting Network, LLC, (2016). Retrieved from www.teaching and learning network.com

Appendix B

Pre-Lecture Survey Questionnaire

Demographic questions include:

1. Identify your highest educational degree: vocational, Associates, Bachelors, Masters, Post Masters, Doctorate
2. Identify your professional designation: Nurse Practitioner, Physician Assistant, Physician, Registered Nurse, Other (Specify) _____
3. State your clinical practice site: Primary care, Internal Medicine, Emergency Room, Specialty Clinic, Other
4. Are you registered by the DEA to prescribed controlled substances? Yes No
5. Do you currently prescribe controlled substances? Yes No

Pre lecture survey true/false questions related to knowledge are:

1. Pain that significantly impairs physical and psychological function is very prevalent in persons over age 65. True or False. **Correct response is True**
2. Patients with a history of substance abuse disorder are at higher risk of addiction to opioids than those without substance abuse disorder. True Or False. **Correct response is True**
3. The risk of addiction to opioids increases with duration of use. True Or False. **Correct response is False**
4. When a patient asks for increasing doses of pain medication they are probably addicted. True Or False. **Correct response is False**

5. Providers should switch patients taking short acting narcotics to long acting narcotics when duration of use is greater than 3 months. True Or False. **Correct response is False**
6. Practitioners should secure a good faith agreement prior to prescribing ANY controlled substance. True Or False. **Correct response is True**
7. Non-pharmacologic therapy is the preferred treatment for chronic pain patients. True Or False. **Correct response is True**
8. Prior to initiating opioid therapy and at each follow up visit provider and patient should discuss risk and benefits of the medication, a treatment plan, goals for treatment, and reasons to discontinue treatment. True Or False. **Correct response is True**
9. Morphine is twice as strong as Hydrocodone. True or False. **Correct response is False**
10. I have read the CDC's Opioid Prescribing Guidelines. True or False
11. I received education in nursing or nurse practitioner school regarding the treatment of chronic non cancer pain. True or False.
12. Clinical rotations while in nurse practitioner school included preceptorship with pain management. True Or False.
13. I feel the training I received in nursing school adequately prepared me to treat chronic non cancer pain with opioids. True Or False.
14. A urine drug screen should be done prior to prescribing a controlled substance. True Or False. **Correct response is True.**

Appendix C

Additional Post Lecture Survey

Post survey will include the above questions plus these additional questions.

1. The content of the lecture was relevant to my practice. Yes or No
2. The lecture style stimulated the learning experience. Yes or No
3. I plan to change my practice in response to the information obtained in this lecture. Yes or No
4. Case Studies presented in the lecture were beneficial for the learning experience. Yes or No

Comments:

Appendix D

Pre survey responses n=88 surveys

1. Identify your highest educational degree: vocational, Associates, Bachelors, Masters, Post Masters, Doctorate **0 vocational, 0 associates, 0 Bachelors, 86 Masters, 2 Doctorate**

2. Identify your professional designation: Nurse Practitioner, Physician Assistant, Physician, Registered Nurse, Other (Specify) **88 nurse practitioners, 0 PA's, 0 Rn's, 0 other**

3. State your clinical practice site: Primary care, Internal Medicine, Emergency Room, Specialty Clinic, Other **67 primary care, 4 internal medicine, 10 emergency room, 7 specialty clinic, 0 other**

4. Are you registered by the DEA to prescribed controlled substances? Yes No **79 yes responses 9 no responses**

5. Do you currently prescribe controlled substances? Yes No **79 yes responses 9 no responses**

Pre lecture survey true/false questions related to knowledge are:

1. Pain that significantly impairs physical and psychological function is very prevalent in persons over age 65.

True 37 False 51

2. Patients with a history of substance abuse disorder are at higher risk of addiction to opioids than those without substance abuse disorder.

True 88 False 0

3. The risk of addiction to opioids increases with duration of use. True Or False.

True 58 False 28

4. When a patient asks for increasing doses of pain medication they are probably addicted.

True 70 False 18

5. Providers should switch patients taking short acting narcotics to long acting narcotics when duration of use is greater than 3 months.

True 65 False 23

6. Practitioners should secure a good faith agreement prior to prescribing ANY controlled substance.

True 35 False 53

7. Non-pharmacologic therapy is the preferred treatment for chronic pain patients.

True 88 False 0

8. Prior to initiating opioid therapy and at each follow up visit provider and patient should discuss risk and benefits of the medication, a treatment plan, goals for treatment, and reasons to discontinue treatment.

True 87 False 1

9. Morphine is twice as strong as Hydrocodone.

True 83 False 5

10. I have read the CDC's Opioid Prescribing Guidelines .

True 2 False 86

11. I received education in nursing or nurse practitioner school regarding the treatment of chronic non -cancer pain.

True 65 False 23

12. Clinical rotations while in nurse practitioner school included preceptorship with pain management.

True 3 False 85

13. I feel the training I received in nursing school adequately prepared me to treat chronic non- cancer pain with opioids.

True 67 False 21

14. A urine drug screen should be done prior to prescribing a controlled substance for chronic pain.

True 42 False 46

Appendix E

Post lecture responses

1. Pain that significantly impairs physical and psychological function is very prevalent in persons over age 65.

True 88 False 0

2. Patients with a history of substance abuse disorder are at higher risk of addiction to opioids than those without substance abuse disorder.

True 88 False 0

3. The risk of addiction to opioids increases with duration of use.

True 0 False 88

4. When a patient asks for increasing doses of pain medication they are probably addicted.

True 0 False 88

5. Providers should switch patients taking short acting narcotics to long acting narcotics when duration of use is greater than 3 months.

True 0 False 88

6. Practitioners should secure a good faith agreement prior to prescribing ANY controlled substance.

True 88 False 0

7. Non-pharmacologic therapy is the preferred treatment for chronic pain patients.

True 88 False 0

8. Prior to initiating opioid therapy and at each follow up visit provider and patient should discuss risk and benefits of the medication, a treatment plan, goals for treatment, and reasons to discontinue treatment.

True 88 False 0

9. Morphine is twice as strong as Hydrocodone.

True 88 False 0

10. I have read the CDC's Opioid Prescribing Guidelines.

True 2 False 86

11. I received education in nursing or nurse practitioner school regarding the treatment of chronic non- cancer pain.

True 43 False 45

12. Clinical rotations while in nurse practitioner school included preceptorship with pain management.

True 3 False 85

13. I feel the training I received in nursing school adequately prepared me to treat chronic non- cancer pain with opioids.

True 43 False 45

14. A urine drug screen should be done prior to prescribing a controlled substance.

True 88 False 0

Appendix F

Post survey additional responses n=88 surveys

1. The content of the lecture was relevant to my practice. **88 yes 0 no**
2. The lecture style stimulated the learning experience. **88 yes 0 no**
3. I plan to change my practice in response to the information obtained in this lecture.

   88 yes 0 no
4. Case Studies presented in the lecture were beneficial in the learning experience.

   88 yes 0 no

Comments:

"Enjoyed the case scenarios"

"Thank you for the information on the board of nursing website about the good faith agreement"

" I had no idea urine drug screens had to be done before writing a narcotic"

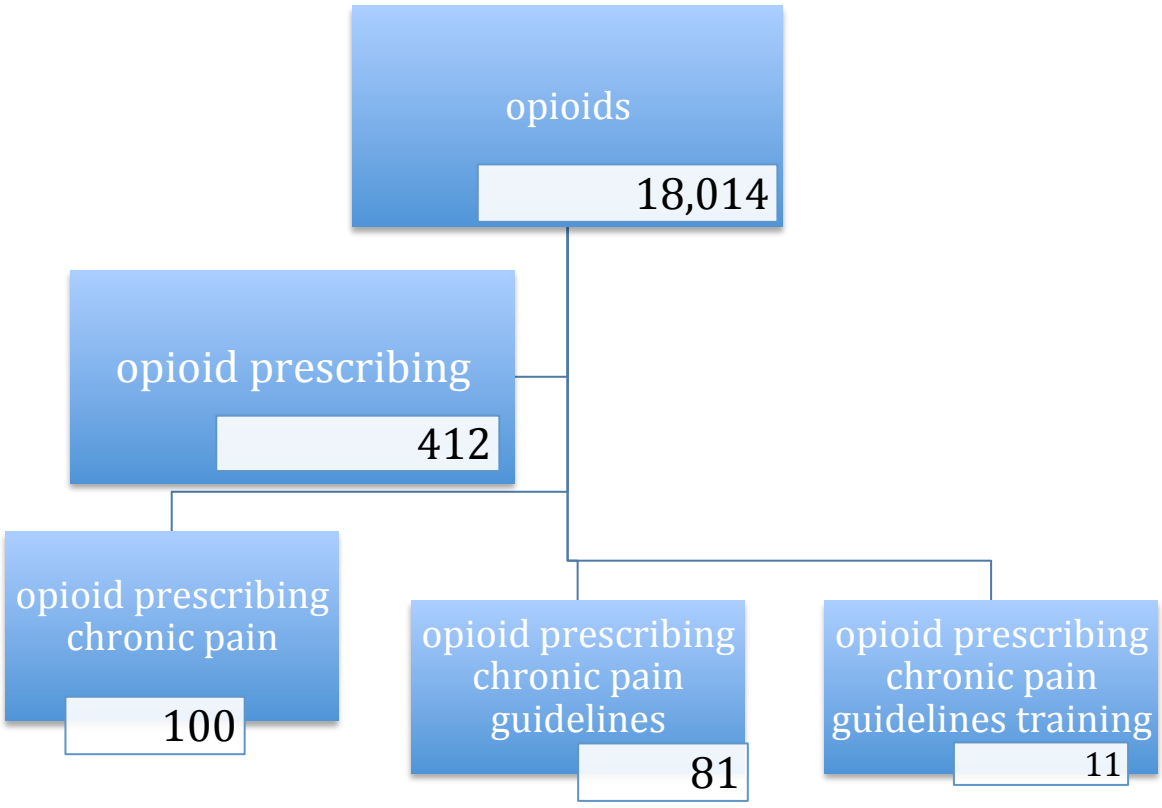
Excellent

"I think too many people take narcotics for no reason"

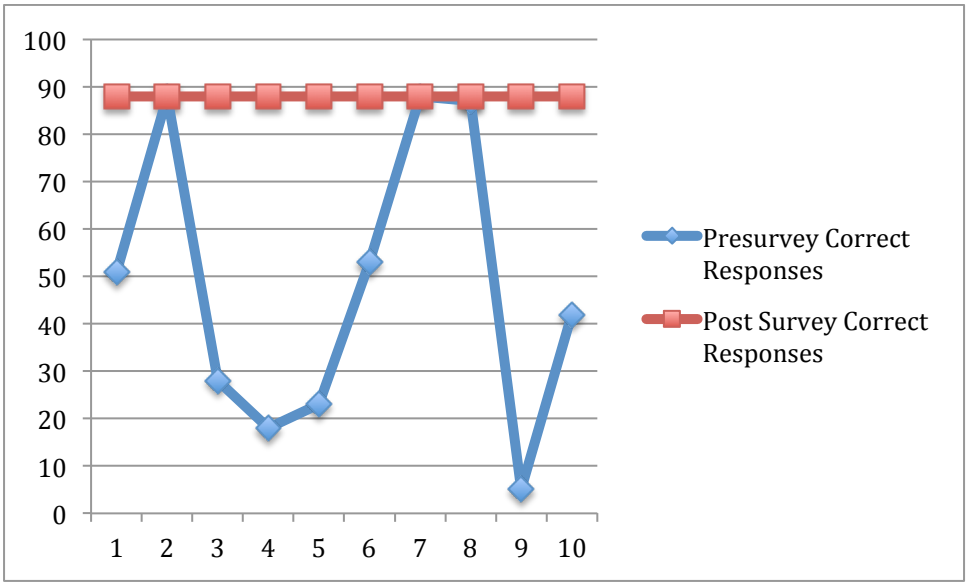
" good job"

Appendix G

Strategy Map



Tables


100
90
80
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30
20
10
0
1
2
3
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5
6
7
8
9
10
Presurvey Correct Responses
Post Survey Correct Responses

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