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EXAMINING NURSES' BEHAVIOR AND ATTITUDES REGARDING OPIOID MEDICATIONS AND OPIOID EDUCATIONAL RESOURCES

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ABSTRACT

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Nurses are responsible for the pain assessment and the administration of opioids for their patients. Nurses use pain assessment tools and non-verbal indicators to ascertain the necessity of pain-relieving drugs. To further understand nurses' behavior and attitudes regarding opioid medications and the resources nurses use to aid them in clinical decisions regarding opioids, a survey was administered to graduate nursing students at a large university. Subjects (n = 332) most commonly reported non-verbal cues and patient requests specific to drug names and doses as significant indicators of drug-seeking behavior. While most of the participants reported that they administer opioids in the workplace, they do not feel the administration of opioids is always necessary. Nearly half of respondents (n = 237, 112 [47.26%]) claim that they only use the opioid education resources provided by their

employer "sometimes." The remaining respondents either never use (57 [24.05%]) or often use (68 [28.69%]) these resources. Although most respondents chose employer resources as their main source of information, participants reported to be moderately confident (65 [28.76%]) to extremely confident (30 [13.27%]) in the usefulness of the education resources provided by their employer.

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CHAPTER 1

REVIEW OF LITERATURE

1.1 Background

Pain is a subjective, multidimensional experience that inflicts torment on the sufferer, but is often undermanaged (Wells, Pasero, & McCaffery, 2008). Inadequately treated pain decreases quality of life, limits mobility and functional recovery, and raises the risk of postsurgical complications (Meissner at al., 2015). The prevalence of unnecessary pain has not changed over the past decade despite increased availability of analgesics, indicating a need for advancement in diagnostics and pain treatment (Meissner et al., 2015). The solution to the problem can also cause further problems such as under-treatment or over-treatment of pain, which may create the misuse and abuse of prescription opioids such as morphine and fentanyl, and even the use of illegal compounds such as heroin (National Institute of Drug Abuse, 2018). As the problem of opioid misuse, abuse, and addiction becomes more prominent in the United States, both the government and healthcare providers are trying to prevent over-prescribing of opioids. However, over 100 million chronic pain patients still seek treatment for pain and their perceived need of opioids (The American Academy of Pain Medicine, 2011).

Nurses play a vital role in pain assessment. According to the nurse's assessment of pain, the nurse will determine the type of pain medication that may be needed. If a range of the drug is given in the orders, the nurse will then determine how much of the pain medication is needed. For example, an order may be written for one or two pain pills; if a

patient self-reports pain greater than a 5, the nurse may then decide to give two pain pills. However, if the patient self-reports pain less than a 5, the nurse may decide to start with one pain pill to see if it will adequately address the pain (Wells et al., 2008).

In nursing school, student nurses are taught that the most important pain assessment tool is the patient's self-report, which is to ask them "on a scale of 0 to 10 with 0 being the least amount of pain and 10 being unbearable pain, tell me where your pain is." The patient's answer determines what interventions the nurse implements for the patient's pain. For example, if the patient reports a 10 as their pain level and there is a choice of two different kinds of pain medication, the strongest pain med that can be given will likely be the one chosen. However, if the patient reports anything less than a 5 on the scale, a less strong pain med may be chosen to alleviate the pain. If there is difficulty communicating with patients like children or confused older adults, there is an increased risk for inappropriately-managed pain (Board of Nursing, n.d.).

To effectively treat pain, nurses must be proficient in pain assessment and organizational guidelines related to pain management and drug administration (Boyle, n.d.). At the same time, a patient's nonverbal cues are critical in the determination of a nurse's intervention. For example, if a patient complains of pain and yet is lying with their eyes shut, it may appear to some nurses that the patient has overstated their pain level and that they actually do not need the strongest pain medication. Instead, the nurse may rely on their own perception about their patient when determining a patient's need for pain medication even when the patient may state that their pain level is greater than a 5 on the scale (Guest et al, 2017). Evidence shows nurses rely more on their experience as a nurse than their formal

teaching from nursing school (Guest et al., 2017). The nurse's integration of knowledge about assessment of pain from different sources is crucial to providing optimal pain relief.

1.1.1 History of Opioids

Opioids are powerful pain-reducing medications derived from opium, including natural, synthetic, and semi-synthetic compounds of the opioid family (National Drug Early Warning System, n.d.). Examples of opioid drugs include prescription drugs such as morphine and fentanyl. Illegal non-prescription drugs include heroin. Opioids were originally discovered and cultivated in Mesopotamia, and while originally used as a recreational drug, were later discovered to have analgesic and medicinal properties. In the 1800s, morphine was isolated and marketed as a new pain medication, and opioid administration was made easier after the invention of the hypodermic needle with the ability to inject it (Foundation for a Drug-Free World, n.d.). As the use of morphine rose and reports of morphine addiction began, heroin was introduced as a "safe, non-addictive alternative" to morphine (Foundation for a Drug-Free World, n.d.). In the early 1900s, chronic pain became a topic of interest in medicine while the United States began to implement bans on opioids such as opium and heroin. Further, there was a restriction placed on prescribing opioid drugs (Foundation for a Drug-Free World, n.d.). In search of a pain-killing alternative to heroin and opium, synthetic opioids such as meperidine (Demerol) and methadone were engineered and distributed (Foundation for a Drug-Free World, n.d.). In the 1960s, pain management officially became a field of medicine and interdisciplinary pain management teams were developed, although hardly affordable to most pain sufferers (Foundation for a Drug-Free World, n.d.). In the 1980s, pharmaceutical companies reported a "low incidence" of pain killer addiction, and into the next decade, the prescription of opioids began

to escalate (Collier, 2017). While chronic pain sufferers benefited, the national crisis of misuse and abuse of opioids began the national opioid crisis (National Institute of Drug Abuse, 2018).

1.1.2 Opioid Crisis Demographics

One in 115 Americans die every day from opioid overdose, putting health, social, and economic burdens on the nation (National Institute of Drug Abuse, 2018). The Center for Disease Control and Prevention (CDC) estimates the economic burden of the opioid crisis at $78.5 billion a year (National Institute of Drug Abuse, 2018). Among those who overdosed, most were non-Hispanic white men ages 25 to 54 years (Centers for Disease Control and Prevention, 2017). In 2014, the CDC reported that almost 2 million people were dependent on prescription opioids. Further, the United States emergency departments treated over 1,000 individuals for opioid misuse every day (Centers for Disease Control and Prevention, 2017).

According to the CDC, the most commonly overdosed opioids are methadone, oxycodone, and hydrocodone (Centers for Disease Control and Prevention, 2017). To reduce the potential for misuse and addiction of opioids, the Food and Drug Administration has initiated a comprehensive action plan that includes an amendment for more extensive research of new opioids, improvement of product labeling to provide doctors and the consumer with better information about risks of opioids, and the best way to prescribe safely. Drug companies are being asked to strengthen post-market requirements related to data on the long-term impact of opioids (United States Food and Drug Administration, 2018). To gain control over the opioid crisis, new legislation and policies aim at limiting opioid prescriptions, while health providers and insurers aim to limit prescriptions and authorization

of opioid use (Ramsey, 2018). The CDC also implemented the Guideline for Prescribing Opioids for Chronic Pain to help ensure that chronic pain patients have access to the medications they need while still preventing abuse and misuse of opioids (Centers for Disease Control and Prevention, 2017).

1.2 Barriers to Pain Management

Pain management has long been a prominent struggle in the nursing and medicine professions (Human Rights Watch, 2011). Additionally, it is difficult to treat both effectively and safely (Human Rights Watch, 2011). In the presence of the opioid crisis and increased fear of healthcare providers to prescribe and administer opioids, the World Health Organization has reported that tens of millions of people across the globe suffer from untreated moderate to severe pain (Human Rights Watch, 2011). Worldwide barriers to pain treatment include lack of health policies, insufficient training for healthcare workers, and poor availability of drugs (Human Rights Watch, 2011). In the United States, the government has extensively outlined policies in regards to administration of pain drugs and healthcare provider's access to drugs (Human Rights Watch, 2011). Therefore, attitudes and behaviors of healthcare workers may be the most prominent obstacle to adequate pain treatment in those with moderate to severe pain (Human Rights Watch, 2011). In addition, healthcare workers may fear legal repercussions for the administration of opioids and they may feel their actions of administering strong drugs may potentially contribute to the growing opioid crisis.

A 2016 study introduces a potential new standard in pain assessment and analgesic administration in two orthopedic units at a university hospital (Schiek et al., 2016). The study focused on assessment of nurse guideline adherence for administration of drugs. The

algorithm-based guideline was developed with intent to provide nurses with a tool to prevent both under-treatment and over-medication and provide a generalized process for adequate pain relief. Firstly, before the intervention, only 6% of nurses adhered to current hospital guidelines in pain management drug administration, but after implementation of an algorithm-based clinical guideline, this increased to 54% adherence (Schiek et al., 2016). This adherence led to more appropriate medication administration, as patients with severe pain were provided more medication and less patients had an unknown pain intensity rating (Schiek et al., 2016). Consequently, the intervention positively affected the quality of nursing care. Next, 26% of nurses administered medication including opioids without asking for a pain intensity rating; this lessened to 3% after the intervention (Schiek et al., 2016). Since patient self-report is the most important indicator of pain, nurses who do not ask their patients for a pain rating are at greater risk for inappropriately managing their patient pain levels. The use of algorithms can guide the pain assessment process, as well as improve adherence. Last of all, although nurses are substantially involved in the assessment and administration of medication, studies exploring intervention concepts have heavily involved physicians and scarcely nurses (Schiek et al., 2016). The algorithm-based clinical guidance tool can help translate complex multidisciplinary recommendations to clinical practice for a nurse, further allowing for standardization and ease of use (Schiek et al., 2016). In summary, the instrument allows nurses to use a step-by-step process that is logical to follow, ensures quality pain treatment, and increases adherence to appropriate pain management guidelines.

While multiple studies that assess physician pain assessment in the emergency setting exist, few research studies have analyzed nurse pain assessment in the emergency

room (Moceri & Drevdahl, 2014). One descriptive study surveyed 91 nurses in 5 United States emergency departments using the Knowledge and Attitudes Survey Regarding Pain, referred to as the KASRP (Moceri & Drevdahl, 2014). Data analysis showed no significant difference in scores by age, educational level, years as a nurse, or years in the emergency department. Five of the eight most missed questions pertained to knowledge of opioid pharmacology and appropriate dosages, two were related to addiction and dependence, and one was on patient self-report (Moceri & Drevdahl, 2014). The results indicated that nurse education and experience does not correlate directly with knowledge of pain management. As a result, there is indication that pain management and opioid education needs to increase.

Masterson and Wilson's (2012) retrospective study, also in the emergency department (ED), analyzed the effectiveness of an institution's pain management program and examined whether the number of emergency visits decreased. They also analyzed the relationships between enrollee demographics and patient outcomes. The study examined 134 medical records of patients enrolled in the pain management program over one year. Data analysis showed a 77% reduction in ED visits. The most common interventions of the program in descending order were narcotic restriction, establish of non-narcotic pain interventions, and enactment of "one pharmacy/one provider restriction" (Masterson & Wilson, 2012). In conclusion, proactive pain management can decrease pain-related ED visits and decrease the number of opioids prescribed. The study also demonstrated that coordination is required between all healthcare providers to provide the most appropriate pain management. It was suggested that excessive and repetitive ED visits also create a burden to ED staff, can deplete healthcare resources, and may further contribute to the opioid crisis.

A state-wide Australian study was performed to identify determinants of nurses' intention to administer opioids based on the Theory of Planned Behavior (Edwards et al., 2001). The Theory of Planned Behavior explains behaviors over which an individual has control, and is comprised of six components: attitudes, behavioral intention, subjective norms, social norms, perceived power, and perceived behavioral control (LaMorte, 2016). The results of the study showed perceived control to be the strongest predictor of a nurse's intention to administer a prescribed as needed opioid. Instead of a patient self-report the nurses relied more on their perceived characteristics of a patient's pain. While most nurses showed positive attitudes towards opioids and their administration, the study also highlighted several negative behaviors. For example, nurses were more likely to administer opioids in the smallest dose possible and would rather administer other drugs instead of opioids. Ultimately, beliefs, attitudes, subjective norms, and perceived behavioral control were the strongest predictors of a nurse's intention to administer as needed opioids (Edwards et al., 2001). Over half of the patients surveyed had reported moderate to severe pain, indicating that although nurses may have the best intentions to administer as needed opioids, they may not be managing their patients' pain well (Edwards et al., 2001). Therefore, the nurses' actions may reflect socially desirable intentions.

Errors in administration of high-alert medications can be fatal or inflict serious consequences (Engels & Ciarkowski, 2015). A high-alert drug is a "medication that bears a heightened risk of causing significant patient harm when used in error," which includes opioids (Engels & Ciarkowski, 2015, p. 288). There are five rights of medication administration that are taught across the United States to reduce medication errors and harm: the right patient, the right drug, the right dose, the right route, and the right time (Engels &

Ciarhowski, 2015). A 34-question survey administered in a study at the University of Michigan Health System revealed that the five rights of medication administration were not being consistently utilized (Engels & Ciarkowski, 2015). The most common explanation for the nonuse of the five rights of medication check were interruptions (28%), followed by being busy (27%), then lack of enforcement for procedures (10%) (Engels & Ciarkowski, 2015). Participants were asked where they were first educated on high-alert medications and the results showed that 29.3% reported work experience, 28% reported didactic classroom teaching, and 18.9% reported school clinical rotations (Engels & Ciarkowski, 2015). The most effective methods for education, according to the respondents of the survey, were work experience (242 [31.6%]) and hospital orientation (146 [19.1%]) (Engels & Ciarkowski, 2015). Further, 25% claimed high-alert medication safety was not part of their classroom or clinical education (Engels & Ciarkowski, 2015).

Costello and Thompson (2015) used a 48-item questionnaire administered to nurses in two large urban east coast medical centers in the United States to assess nurse knowledge and attitudes about opioids. Nurses (n=113) that responded to the survey were reported to incorrectly answer knowledge questions, with only twenty-five percent of nurses answering 50% of the questions correctly (Costello & Thompson, 2015). Assessment of the data reveals knowledge gaps in each of the following areas: "patient assessment; pharmacological management; use of adjuvant medications; risks of addiction; risks of respiratory depression; and disposal and storage of opioid analgesics" (Costello & Thompson, 2015, p.515). Years of work experience and level of education did not correlate to performance on the questionnaire (Costello & Thompson, 2015). On the other hand, nurses who had received separate education on opioids showed better performance on the questionnaire

(Costello & Thompson, 2015). This lack of knowledge and insufficient information about opioids and opioid administration may affect a nurse's ability to properly and efficiently administer opioid medications (Costello & Thompson, 2015).

While it is clear there is a problem with pain assessment and opioid medication administration, there is little known about the reasons why nurses may make assessments that do not include opioid pain medication administration (Engels & Ciarkowski, 2015; Costello & Thompson, 2015). Nursing school provides nurses with most of their education about opioids, but nurses are more likely to rely on their own experience versus classroom teaching to make decisions in the clinical setting (Clarke et al., 1996; Guest et al., 2017). The purpose of this study is to further examine nurse behaviors and attitudes regarding pain, pain assessment, and opioid administration and to evaluate the resources available to nurses to help increase knowledge about opioids.

CHAPTER 2

METHODS

2.1 Participants

Because nurses are required to work for two years before applying to enter the Graduate Program at one University in a south-central portion of the United States, they have been identified as having experience assessing and administering pain meds for patients. In fact, it is highly likely that they will have encountered multiple assessments and administration of pain medications to patients. Therefore, they are the target population for this study. The Opioid Survey was created within Qualtrics (see Appendix A for survey and Appendix C for email with link to survey). Qualtrics is a program used at the University that provides security by requiring password protected access. Therefore, the survey cannot be accessed unless a password is used.

2.2 Experimental Design

This is a mixed methods quantitative/qualitative design that will examine nurse attitudes and knowledge about opioid administration and evaluate the resources available to them as a nurse. There are "yes" and "no" questions, short answer questions, and multiple response questions.

2.3 Procedure

The link to the survey will be distributed through email to graduate nursing students at the University. The faculty advisor will send the email with an overview of the study and the survey link to the secretary to forward on to all graduate level nursing students.

There will be a link in the email that the students can click to open the survey. The survey will open to a page that first informs the subject regarding the overview of the study. At the end of the study overview, the subject will be asked for their electronic consent. The question is a "no/yes" question asking them if they want to participate after reading the information about the study. If the subject chooses to complete the survey, they will have answered "yes," indicating they indeed agree to be in the study and will be allowed to start the survey questions. If they choose "no," they will not be able to continue to any other questions. Once the data is compiled within Qualtrics, data will be extracted and analyzed. Descriptive statistics will be used to answer the purpose of the study.

CHAPTER 3

RESULTS

3.1 Demographics

Overall, 335 individuals started the survey, but only 332 completed the survey. All individuals agreed to the electronic consent statement. All but one individual obtained their BSN, and all subjects are in professions within nursing. Of the participants (n = 332), 73.49% (244) identify as white, 9.34% (31) as Black or African American, 0.60% (2) as American Indian or Alaska Native, 6.33% (21) as Asian, 0.60% (2) as Native Hawaiian or Pacific Islander, and 9.64% (32) as other. Figure 3.1 demonstrates age distribution among participants. Table 3.1 exhibits demographic information regarding the participants' education and work experience. The minimum number of years since obtaining BSN was zero while the maximum was 39. The mean number of years since obtaining BSN was 5.83 years with a median of four. The minimum of years of nursing experience was two while the maximum was 40. The mean number of years of nursing experience was 10.61 with a median of eight.

Figure 3.1: Age Distribution of Participants
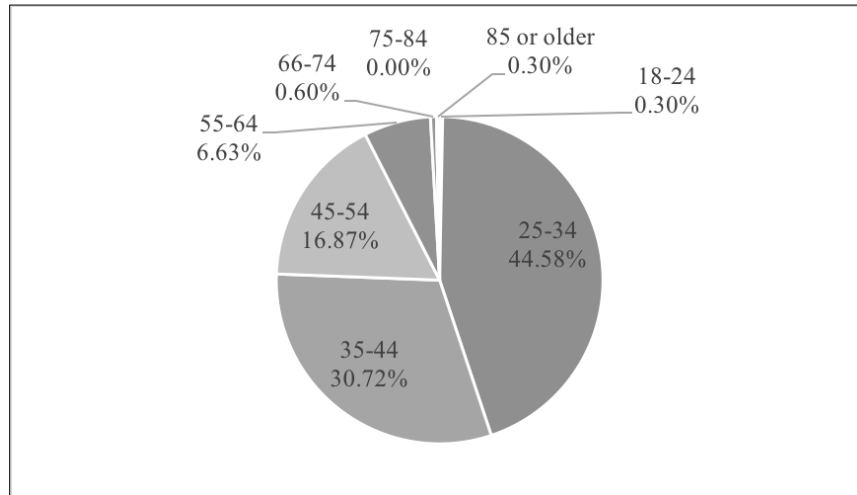
Table 3.1: Educational and Experience Demographics

Years Since Obtaining BSN			Years of Nursing Experience		
Frequency (n = 332)		Percentage	Frequency (n = 332)		Percentage
0 – 5 years	218	65.66%	0 – 5 years	107	32.22%
6 – 10 years	70	21.08%	6 – 10 years	104	31.33%
11 – 15 years	18	5.42%	11 – 15 years	51	15.36%
16 – 20 years	12	3.61%	16 – 20 years	25	7.53%
> 20 years	14	4.22%	> 20 years	45	13.55%

Respondents were asked to identify the setting in which they work. If subjects se-lected "other," they were asked to describe their employment. Participants reported work in medical-surgical (23 [6.94%]), telemetry (17 [5.12%]), pediatrics (21 [6.33%]), adult intensive care (53 [15.96%]), neonatal intensive care (15 [4.52%]), oncology (6 [2.41%]), surgery (17 [5.12%]), emergency room (43 [12.95%]), dialysis (3 [0.90%], rehabilitation (6 [1.81%]), outpatient (16 [4.82%]), and clinic (16 [4.82%]). Of the respondents, 94

(28.31%) reported "other." According to the short-answer descriptions provided by the respondents that selected the "other" option, some individuals could be grouped into already defined categories; 1 to surgery, 2 to medical-surgical, 2 to rehab, and 5 to outpatient. The remaining participants (n = 84) identified areas of work such as women's services (13), academia or nurse educators (9), hospice (7), psychiatric (6), interventional radiology/cardiac catheterization (5), post-anesthesia unit (5), school or community nursing (5), home health (5), pediatric intensive care (3), progressive care (3), "skilled nursing" (3), case management (2), clinical documentation specialist (2), geriatrics (2), or student (2). Some respondents explained they work in more than one area. Others worked in "telehealth," "long-term care," "elective procedural setting," "GI lab," "pain management," and "pre-admission testing."

3.2 Identification of Drug-Seeking Behavior

Of the 335 total survey participants, 262 provided a response to question 14, which asked the subject to name behaviors or characteristics they look for in a patient that would indicate they are drug-seeking. There were several prominent and recurring themes throughout the responses: non-verbal cues that did not correspond to the patient's verbal pain complaints; patients requesting certain drugs at certain doses and demonstrating substantial knowledge of certain opioid medications; rejection of certain medications; claiming to be allergic to certain pain medications; patients claiming they do not feel relief to pain medications; running out of prescriptions before a refill is due; seeking care from multiple prescribers and pharmacies and recurrent emergency room visits; setting timers for when they are due to next receive a pain medication and prompting their nurse to administer the pain medication as soon as possible. Individuals also identified intimidation

tactics, manipulation of staff, and physiologic signs of opioid withdrawal as signs of drug-seeking.

3.3 Use of Pain Assessment Tools

Respondents were asked to name the pain assessment tool they most often used. Of the 335 total survey respondents, 268 individuals responded to this question. It was common for participants to identify more than one tool. Throughout the short-answer responses, the Likert or 0-10 Scale was mentioned most commonly at 114 responses. The Faces or Wong Baker scale was the second most common response at 35 responses, followed by FLACC at 22 responses and the Critical-Care Pain Observation Tool (CPOT) at 13 responses. Other tools mentioned included the Pain Assessment in Advanced Dementia Scale (PAINAD), Premature Infant Pain Profile (PIPP), BPAS, NPASS, PQRST, and WILDA tool. Several respondents noted that they would use different tools depending on patient condition; for example, some participants regularly use the Likert or 0-10 scale if a patient is responsive and verbal but would use the CPOT tool if the patient was intubated or otherwise unable to respond. Among the respondents who answered question 16 (n = 269), 58.74% (158) of the participants felt that the current pain assessment tool they use is sufficient to capture the patient's pain; 26.02% (70) answered "maybe," and the remaining 15.24% (41) answered "no."

3.4 Administration of Opioid Medications

Most participants (221 [82.15%]) administer opioid medications in their current position as a nurse. Figure 3.2 portrays the responses to question 21 and 22 (see Appendix A) and provides a visual comparison between how often participants feel the administration of an opioid is necessary and the percentage of patients who receive opioids they feel are

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drug-seeking. If the participant does administer opioids in their practice (n = 221), they were asked to identify the percent of the time the patient feels that an opioid is necessary.

Figure 3.2: Necessity of Opioids and Drug-Seeking
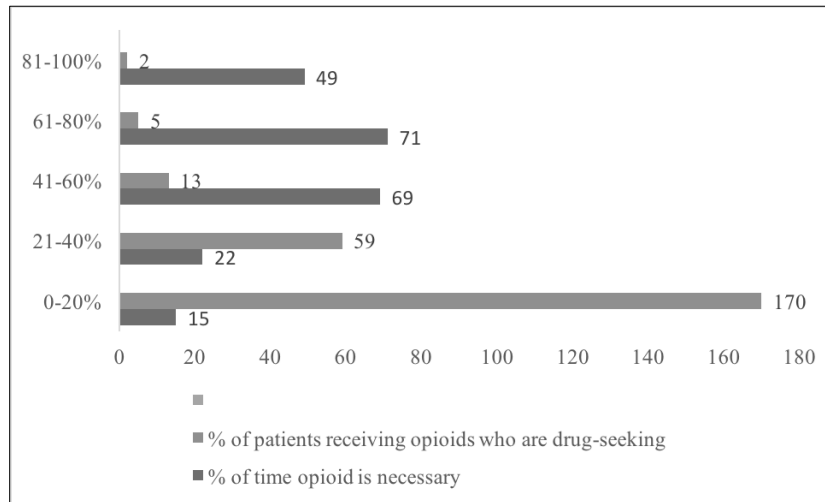
The most common response was 61-80% of the time (71 [31.42%]) followed by 41-60% of the time (69 [30.53%]), 81-100% of the time (49 [21.68%]), 21-40% of the time (22 [9.73%]), and finally 0-20% of the time (15 [6.64%]). While the question prompted only respondents who answered that they do administer opioids in their practice (n = 221), 226 individuals responded to this question. Furthermore, 249 individuals responded to question 22, which has the same prerequisite. Figure 3.3 illustrates the amount of time respondents claim to wait to administer an opioid after initially administering an analgesic. The majority of respondents (153 [57.74%]) claimed that they wait 31-60 minutes after administering an analgesic to administer an opioid. The next most common response was 1 to 2 hours (62 [23.40%]), followed by 0-30 minutes (42 [15.85%]), then greater than 2 hours (8 [3.02%]).

Figure 3.3: Reassessing Patients' Pain
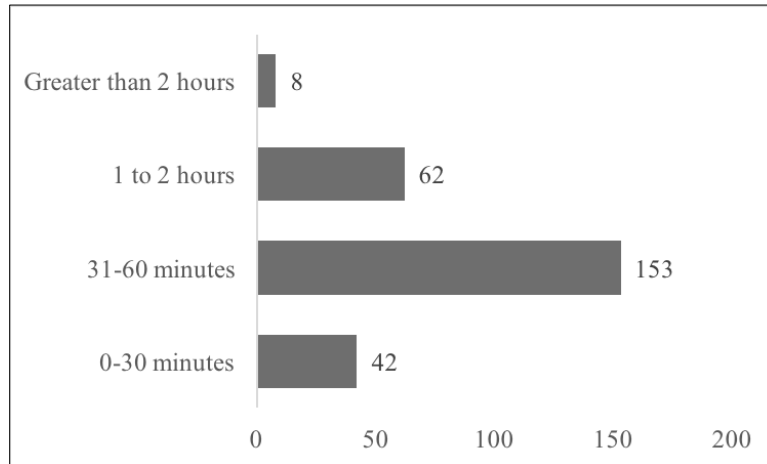
Question 19 employs a sliding scale to measure how comfortable respondents are with administering opioids; Qualtrics Likert and slider scale questions are scored according to a numeric value; for example, if an individual selects "5" from the scale, the assigned score is multiplied by 10 to equal 50. The average score for this question was 58.58; 9% of respondents ultimately were more uncomfortable than comfortable, while 67% were more comfortable than uncomfortable. According to the scale responses, 24% were considered passive in regards to administering opioid medications.

3.5 Opioid Educational Resources

Of the 264 participants that responded to question 25 (see Appendix A), most respondents (192 [73.00%]) report they have received education about opioid medications from their employer's administration. Of the 192 respondents who answered "yes," 131 completed the short-answer section and identified online and in-service education, required and optional training, online courses, mandated learning modules, and administration protocols as sources of opioid education. Participants also identified software such as Healthstream and Lexicomp and required continuing education that provide them with learning materials. The majority of respondents to question 25 (n = 265, 143 [54.17%]) report that

their employer does not provide in-services on opioid medication administration. Nearly half of respondents to question 27 (n = 237, 112 [47.26%]) claim that they only use the opioid education resources provided by their employer "sometimes." The remaining respondents either never use (57 [24.05%]) or often use (68 [28.69%]) these resources. Table 2 illustrates results to question 28, which asks if the respondent feels the educational resources regarding opioids provided by their employer are useful to them; most respondents (n = 226, 65 [28.76%]) feel that the resources are "moderately useful" to them. The second most common response was "slightly useful" (46 (20.35%]) followed by "very useful" (40 [17.70%]). The majority of question respondents felt that the resources were more useful (181 [80.08%]) than useless (45 [19.91%]).

Table 3.2: Usefulness of Opioid Educational Resources Provided by Employer

Frequency (n = 226)		Percentage
Extremely Useful	30	13.27%
Very Useful	40	17.70%
Moderately Useful	65	28.76%
Slightly Useful	46	20.35%
Slightly Useless	13	5.75%
Moderately Useless	8	3.54%
Very Useless	9	3.98%
Extremely Useless	15	6.64%

According to respondents to question 30 (n = 268), participants are most likely to seek their employer or computer resource (130 [48.51%]) if they have a question about opioids. They are more likely to consult a drug book (79 [29.48%]) as opposed to Google or other search engine (32 [11.94%]), a colleague or friend (26 [9.70%]), or the Pixys. Respondents to question 31 (n = 268) report that nearly all have accessed the library for research on opioid medications and how to administer them between 0 and 5 times in the

last month (242 [90.30%]). Others reported to visit between 5 and 10 times (23 [8.58%]).

Less than 1% reported visiting the library between 11 to 20 times (2 [0.75%]) or greater

than 20 times (1 [0.37%]).

CHAPTER 4

DISCUSSION

4.1 Study Purpose

The purpose of this study was to further examine nurse behaviors and attitudes regarding pain, pain assessment, and opioid administration and to evaluate the resources available to nurses to help increase knowledge about opioids.

The overwhelming majority of nurses (240 [90.23%]) claimed that their experience within nursing has not caused them to assume that most patients who receive opioids are drug-seeking. Past research supports this study's findings because it has revealed that nurses mostly rely on their experience to make clinical judgments (Moceri & Drevdahl, 2014). Further, it is reported that their clinical experience has not negatively affected their attitudes and beliefs about patients who receive opioids (Moceri & Drevdahl, 2014). The most common pain scale reported being used by the subjects in the current study was the Likert pain scale and use of verbal descriptors. This data is supported by a pilot study analyzing the use of pain assessment tools in the clinical setting, which reports the Likert scale and use of verbal descriptors utilized most (Gregory & Richardson, 2014). However, the CPOT tool, which assesses both intubated and nonverbal patients, was also commonly used (Gélinas, Fillion, & Putillo, 2009). It was created for an intensive care unit use because the patients may not be able to respond to verbal cues.

The data demonstrated uniformity among free-response questions and reflected both what is learned in nursing education and after having nursing experience. Some

respondents chose to provide opinions about their patient assessment and use of pain scales when allowed to write in responses. For example, one respondent reported "I HAVE to use the pain scale (1-10) due to hospital policy but it is the biggest flaw of our healthcare system." Another participant reported they "make up [their] own pain scale." While respondents were not asked to express their opinions of pain scale and were only asked to identify the one they most commonly use, these responses indicate that some nurses have strong negative feelings towards the standardization or use of certain pain scales. This may suggest a need for change in pain assessment tools, or re-education on the pain assessment tool that is used by their place of employment. Some respondents shared descriptions of situations where they would use certain tools. For example, a participant responded that CPOT is used for their ventilated patients, but the Likert scale is used if they are awake, alert, and oriented. Research supports the common use of the pain scales the respondents are referring to, which supports the findings in the current study (Gregory & Richardson, 2014).

While most respondents (221 [82.15%]) administer opioids in their nursing setting, over half (140 [62.01%]) feel that the opioid is only necessary between 41% and 80% of the time. Furthermore, nearly all (229 [91.96%]) respondents felt that less than 40% of the patients they administer opioids to are drug-seekers. A retrospective study in an emergency department reported that drug-seeking patients appear to exhibit classically described drug-eliciting behaviors, such as report of a headache, loss of prescription, and requesting medication by name, with only low to moderate frequency (Grover, Elder, Close, & Curry, 2012). This supports the study's result that nurses do not frequently think their patients are drug-seeking. Another study investigating clinicians' assessment of drug-seeking behavior

concluded that physicians are most likely to identify drug-seeking if a patient requests a certain opioid medication, but the authors also call for the development of better clinical tools to assess and manage pain (Fischer et al., 2017). While there is research regarding what nurses and clinicians identify as drug-seeking behavior, there is no substantial research that evaluates why nurses feel an opioid is or is not necessary to administer to a patient and why nurses administer the drugs even though they do not support the intervention, which could be a future research study.

Next, we wanted to evaluate the resources available to nurses that help them increase knowledge of opioids. While most nurses do access resources provided by their employer, they may not access them often enough to impact their clinical decisions. Nurses are most likely to use employer computer resources (130 [48.51%]) when they have a question about opioids, and overall, nurses are unlikely to access the library for information. This evidence is supported by a pilot study finding newer nurses are more likely to use their employer's educational resources. It was suggested that nurses now tend to prefer on-demand access to information (Wahoush & Banfield, 2014). A multitude of educational resources, including those related to the opioid epidemic and opioid drug administration, are available to nurses through professional organizations such as the American Nurses Association. In this study, results showed that nurses are more likely to use their provider's educational resources versus other methods of information-seeking, such as an Internet search engine or a colleague. Most participants (193 [73%]) reported that they have received education about opioids from their employer but most often use them "sometimes" (112 [47.26%]), which may suggest that nurses do not choose to use resources provided by their employer. Some of those reasons could be due to the time demand on a nurse. Nurses

have so many things going on at the same time that they may not have the opportunity to use the resources at the time it is most needed. Instead, they may use the resources at a later time, which may have affected the outcome in the earlier need for the resource. The majority of respondents (n = 265, 143 [54.17%]) report that their employer does not provide in-services on opioid medication administration, indicating a potential lack in interactive opportunities to gain information and knowledge. Previous research has concluded that although nurses are provided with formal opportunities to continue their education, nurses seldom engage in these learning experiences and prefer to gain knowledge through their experience in the work environment (McDiarmid, 1998). Other analyses have implied that nurses are most likely to seek information by patient request rather than personal learning reasons, and time constitutes a major barrier between nurses and the use of educational resources (Jones, Schilling, & Pesut, 2011). While there is research that emphasizes the importance of focusing on educational resources and evidence-based practice in the nursing setting, there is no previous research that analyzes the nurses' perception of the usefulness of said resources, which could be an area of study for future research.

4.2 Limitations

The study was conducted among nursing students pursuing a graduate education and may not accurately represent the majority of the nurse population, which could confine the generalizability of results. Also, some nurses may not work in the hospital setting and may be required to find resources on their own. For example, a school nurse, or an occupational nurse, or a clinic nurse may not have the same opportunities as nurses in the hospital who have access to an education department. Many hospitals have skills fairs, and educational offerings on a yearly basis. Again, this would not be available to other types

of nursing specialties outside of the hospital. Last, this study utilized self-reporting which invites the subject to share their opinion and is not always a factual representation. An observational study that observes nurse actions might reveal differences in the data.

4.3 Implications

This study found that different tools are used to identify pain levels. Nurses at the bedside reported that the tools they used are not always reliable; therefore, it is important for new tools to be developed. Further, it is important for nurses to feel comfortable that they are able to accurately identify pain levels; thus, further education may be needed on pain levels and opioid use. Employers should also encourage nurses to use the library as an educational resource.

In academia, faculty can help new nurses to better understand how to accurately assess for pain by providing discussion on the different tools and a critique of literature on opioid use. It might be helpful to discuss literature in the classroom that will focus on limitations of the tools that are used to assess pain.

Further research is needed to evaluate specifically what educational resources are provided to nurses on the job, and specifically to opioids and other aspects relevant to the administration of medications in nursing practice. In addition, more research is necessary to evaluate the efficacy and usefulness of such resources and the barriers to seeking information "on-the-job" and the qualities of resources that nurses feel are most helpful to them.

APPENDIX A

OPIOID SURVEY TOOL

Qualtrics Survey: https://uta.qualtrics.com/jfe/form/SV_39SKknDjo35y70V

What is your age?
        Under 18
        18-24
        35-44
        45-54
        55-64
        75-84
        85 or older

What is your ethnicity?
        White
        Black or African American
        American Indian or Alaska Native
        Asian
        Native Hawaiian or Pacific Islander
        Other
How many years have you had your BSN?

How many years have you worked as a nurse?

What units have you worked in and for how many years?
        Medsurg
        Telemetry
        Pediatrics
        Intensive Care
        NICU
        Oncology
        Surgery
        Emergency Room
        Dialysis
        Rehabilitation
        Outpatient
        Clinic
        Other

If you chose other to the last question, please describe below.

What characteristics or behaviors do you look for to determine if a patient is drug-seeking?

What characteristics or behaviors lead you to think a patient is not experiencing pain when they say they are?

What pain assessment tool do you most often use?

Do you feel the current tool you use is sufficient to capture the patient's pain?

      Yes
      Maybe
      No

If you have the choice, do you choose to administer an analgesic before administering an opioid?

      Yes
      Maybe
      No

After administering analgesics and the patient further complains, how much time do you wait before you administer an opioid?

      0-30 min
      31-60 min
      1 to 2 hours
      Greater than 2 hours

How comfortable are you administering opioids?

      1-10 SCALE

In your current position as a nurse, do you administer opioid medications?

      Yes
      Maybe
      No

If you answered yes to the last question, what percent of the time do you feel like the opioid is necessary?

      0-20%
      21-40%
      41-60%
      61-80%
      81-100%

What percent of the patients you administer opioids to do you feel are drug seekers?

      0-20%
      21-40%
      41-60%
      61-80%
      81-100%

Have you received education about opioid medications from your hospital administration?

      Yes
      Maybe
      No

If so, what kind of education?

Does your employer provide in-services on opioid medication administration?

      Yes
      Maybe
      No

What resources are provided for you by your employer to increase your knowledge on opioids?

How often do you use those resources?
      A great deal
      A lot
      A moderate amount
      A little
      Not at all

Do you feel that your employer's educational resources about opioids are useful to you?
      Extremely useful
      Very useful
      Moderately useful
      Slightly useful
      Neither useful or useless
      Slightly useless
      Moderately useless
      Extremely useless

Do your feel that your experiences as a nurse have caused you to think that most patients are drug seeking?
      Yes
      Maybe
      No

What resource do you seek first if you have a question about opioids?
      Google or other general search engine
      Employer computer resource
      Drug book
      Pixis
      Colleague

In the last month, how often have you accessed the library for research on opioid medication?
      0-5 times
      6-10 times
      11-20 times
      Greater than 20 times

APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

UNIVERSITY OF
TEXAS
ARLINGTON

September 20, 2018

Jacqueline Kirby Dr. Deborah Behan College of Nursing The University of Texas at Arlington
Box 19407

Protocol Number: 2018-0641 Protocol Title: *Examining Nurses' Behavior and Attitudes Regarding Opioid Medications and Opioid Educational Resources*

APPROVAL OF MINIMAL RISK HUMAN SUBJECTS RESEARCH WITHOUT FEDERAL FUNDING

The University of Texas Arlington Institutional Review Board (UTA IRB) or designee has reviewed your protocol and made the determination that this research study involving human subjects is approved in accordance with UT Arlington's Standard Operating Procedures (SOPs) for minimal risk research. You are therefore authorized to begin the research as of September 20, 2018.

Note that this project is not covered by UTA's Federalwide Assurance (FWA) and the researcher has indicated it will not receive federal funding. You must inform Regulatory Services immediately if the project may or will receive federal funding in the future, as this will require that the protocol be re-reviewed in accordance with the federal regulations for the protection of human subjects.

As Principal Investigator of this IRB approved study, the following items are your responsibility throughout the life of the study:

UNANTICIPATED ADVERSE EVENTS

Please be advised that as the Principal Investigator, you are required to report local adverse (unanticipated) events to The UT Arlington Office of Research Administration; Regulatory Services within 24 hours of the occurrence or upon acknowledgement of the occurrence.

INFORMED CONSENT DOCUMENT

The IRB approved version of the informed consent document (ICD) must be used when prospectively enrolling volunteer participants into the study. Unless otherwise determined by the IRB, all signed consent forms must be securely maintained on the UT Arlington campus for the duration of

the study plus a minimum of three years after the completion of all study procedures (including data analysis). The complete study record is subject to inspection and/or audit during this time period by entities including but not limited to the UT Arlington IRB, Regulatory Services staff, OHRP, FDA, and by study sponsors (as applicable).

REGULATORY SERVICES

The University of Texas at Arlington, Center for Innovation 202 E. Border Street, Ste. 300, Arlington, Texas 76010, Box#19188 (T) 817-272-3723 (F) 817-272-5808 (E) regulatoryservices@uta.edu (W) www.uta.edu/rs

OFFICE OF RESEARCH ADMINISTRATION REGULATORY SERVICES

MODIFICATIONS TO THE APPROVED PROTOCOL

All proposed changes must be submitted via the electronic submission system and approved prior to implementation, except when necessary to eliminate apparent immediate hazards to the subject. Modifications include but are not limited to: Changes in protocol personnel, changes in proposed study procedures, and/or updates to data collection instruments. Failure to obtain prior approval for modifications is considered an issue of non-compliance and will be subject to review and deliberation by the IRB which could result in the suspension/termination of the protocol.

ANNUAL CHECK-IN EMAIL / STUDY CLOSURE

Although annual continuing review is not required for this study, you will receive an email around the anniversary date of your initial approval date to remind you of these responsibilities. Please notify Regulatory Services once your study is completed to begin the required 3-year research record retention period.

HUMAN SUBJECTS TRAINING

All investigators and personnel identified in the protocol must have documented Human Subjects Protection (HSP) training on file prior to study approval. HSP completion certificates are valid for 3 years from completion date; the PI is responsible for ensuring that study personnel maintain all appropriate training(s) for the duration of the study.

CONTACT FOR QUESTIONS

The UT Arlington Office of Research Administration; Regulatory Services appreciates your continuing commitment to the protection of human research subjects. Should you have questions or require further assistance, please contact Regulatory Services at regulatoryservices@uta.edu or 817-272-3723.

UNIVERSITY OF
TEXAS
ARLINGTON

REGULATORY SERVICES SERVICES

The University of Texas at Arlington, Center for Innovation 202 E. Border Street, Ste. 300, Arlington, Texas 76010, Box#19188 (T) 817-272-3723 (F) 817-272-5808 (E) regulatoryservices@uta.edu (W) www.uta.edu/rs

APPENDIX C

SURVEY E-MAIL

Title: Honors student seeks input on opioid crisis

Dear UTA Masters of Nursing Students,

How do you feel about opioids?

My name is Jacqueline Kirby and I am an undergraduate honors nursing student at UTA, graduating in December. My faculty advisor for my senior project is Dr. Deborah Behan. My senior project is to better understand nurses' behaviors and attitude regarding pain assessment, pain management, and the administration of opioid medication. We are living and practicing nursing in the era of the opioid epidemic, and some may be labeled as a pain med seeker. I am inviting you to participate in an anonymous survey regarding your beliefs and attitude of opioids. The anonymous survey will take about 10-15 minutes to complete.

You can access the survey using the following link: https://uta.qualtrics.com/jfe/form/SV_39SKknDjo35y70V

Thank you.

Best regards,
Jacqueline Kirby

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BIOGRAPHICAL INFORMATION

Jacqueline L. Kirby graduated with an Honors Bachelor of Science in Nursing in December 2018. She has a particular interest in studying the opioid crisis and its impact on chronic pain patients. She enjoys spending time with her family and friends, taking unplanned road trips, and taking care of her bearded dragon, Napoleon. While she worked through her college years as a bartender, she plans to begin her residency at Methodist Dallas in the Neuro Critical Care Unit and to continue her education on the path to becoming a Certified Registered Nurse Anesthetist or a Nurse Practitioner.