A CORRELATIONAL STUDY OF THE RELATIONSHIP OF NURSES' PAIN ASSESSMENT AND PATIENTS' HISTORY OF SUBSTANCE ABUSE

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A Dissertation

Submitted in Partial Fulfillment

of the Requirements

for the Degree

of

Doctor of Philosophy in Nursing

Adelphi University

College of Nursing and Public Health

April 20, 2023

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Acknowledgments

I would like to express my sincerest gratitude to Dr. William Jacobowitz: my teacher, Committee Chairperson, and mentor. His guidance and unwavering support throughout my professional career will always be greatly appreciated. A very special thanks to Dr. Edwin-Nikko Kabigting and Dr. Shan Liu for providing valuable advice during my research process.

A profound thanks to my parents. Words cannot convey the love and gratitude that I have for the both of you. To my mother, Maria (Napolitano) Esposito, you always know just the right things to say to comfort me and keep me going. You have taught me the importance of life and family; you are my role model for strength and endurance. Thank you. To my father, Anthony Esposito, you always encouraged me throughout my entire education. Pop, you were still with me when I began this journey. I know that your lasting love and spirit are what has kept me steadfast in this process; and that you are the proudest Pop in Heaven.

To my husband Tom, my mesocompound, I am not sure what to say… but you can now call me Doctor. Thank you, for decades of adventure and love.

I would also like to acknowledge all my family and friends who have been witness to my PhD process and share in my joy. Thank you.

Praise God for always keeping His promises, showing His mercy, and walking with me through every day of my life. God is good, all the time!

This dissertation is dedicated to my children, Giovanni Luca, and Generosa Maria. Being your mother has made me want to be a better person every single day. Both of you are my inspiration for love and understanding; I love you to infinity squared! Remember to believe in yourselves, and to search for the positivity in your lives no matter what you are going through. Remember to never give up, and always do your best … anything is possible.

Contents

Abstract

Background: Patients experience physical pain for a myriad of reasons. The patients' expression of pain is often difficult to quantify and treat based on individuality of the patients and the viewpoint of the nurses. Therefore, the treatment of pain can become discounted or marginalized, especially in patients who use alcohol or drugs. The use of opioids is the gold standard for pain management, but current administering trends are to use less, or to use non-opioid treatments for fear of patient dependency. There is also an opioid epidemic and patients are sometimes categorized into this unfortunate situation as a precaution. Nevertheless, pain is real, it cannot be overlooked, and nurses need to assess and treat patient pain for maximum patient outcome.

Conceptual Basis: The AACN Synergy Model was used as a model and mid-range theoretical framework. The AACN uses the patient characteristics and nurses' competencies to drive positive patient outcomes. In this study the patient characteristics are represented by the three patient scenarios. The nurses' competencies are represented by the measurement tools as follows: empathy (IRI); unit culture and drug use (DDPPQ); organizational environment (PES-NWI); and the demographic questions. The patient outcomes are represented as pain assessment using the NPRS and CBS scores.

Methods: This is a descriptive correlational design study that utilized the NPRS and CBS as dependent variables and the IRI, DDPPQ and PES-NWI as independent variables. A demographic questionnaire (CNS) was also used. Three of the same patient scenarios were used with one exception for each: the patient has no drug/alcohol history, the patient has a current drug/alcohol history, and the patient has a past drug/alcohol history. Anonymous surveys were sent to nurses using Data Axle, Giant Partners, and GMass emails and with TxtFlo texting. Data

were entered into SPSS and analyzed for the relationships of patient drug/alcohol status and

nurses' pain assessment. ANOVA was used and regression analysis to look for relationships

between the nurses' demographics and responses to the IRI, DDPPQ, PES-NWI and their pain

scoring in the patient scenarios.

Findings: The dependent variable (NPRS) demonstrated statistically significant difference

among the three scenarios (ANOVA; $F = 9.4$, $df = 2$, $p < 0.001$). Using ANOVA tests for the

dependent variable (adjusted CBS) demonstrated statistically significant differences among the

three scenarios (ANOVA; $F = 12.12$, $df = 2$, $p = <.001$). Multiple linear regression analysis was

used with four models of the dependent variable (NPRS). Groups 2 and 3 versus group 1 in

model 1, ($R^2 = 0.16$); model 2 ($R^2 = 0.21$); model 3 ($R^2 = 0.22$). Models 1, 2 and 3 were

statistically significant with $p < 0.01$. Model 4 was not significant. The total percent of explained

variance for Model 3 was 22%. Scenarios 2 and 3 were observed to be significantly different

from scenario 1 with respect to NPRS ($p < 0.05$), and the Betas indicated inverse relationships

($B_{group2} = -0.54$. $B_{group3} = -0.25$); indicating lower NPRS scores for scenarios 2 and 3 compared to

scenario 1. Multiple linear regression analysis was used with four models to test the differences

in the dependent variable (adjusted CBS) among the 3 groups (scenarios). In model 1, groups 2

and 3 were compared to group 1 ($R^2 = 0.16$), model 2, ($R^2 = 0.21$), model 3, ($R^2 = 0.26$), model 4,

($R^2 = 0.40$). Multiple linear regression analysis for four models showed statistically significant

results with $p < 0.01$. Model 1 $p = 001$; model 2, $p = .002$, model 3, $p = .001$, and model 4, $p =$

.001. The percent of explained variance increased with the models with a total of 40%.

Unstandardized Betas indicated inverse relationships ($B_{group2} = -0.87$. $B_{group3} = -0.72$); suggesting

lower adjust CBS scores in scenarios 2 and 3, compared to scenario 1. The demographics of age,

gender, certification, and specialty (cardiovascular compared to post-op nurses) were significantly related to CBS scores in the final regression model ($p < 0.05$).

Conclusions: Using the AACN Synergy Model, the relationship between nurses' empathy, drug perceptions, work environment and patient pain scoring were not significant. However, age, gender, certification, and specialty, (specifically cardiovascular) were shown to be predictors of lower pain scoring by nurses on the NPRS and CBS pain scales. Furthermore, the lower scores that was given by specialty nurses was identified as statistically significant as opposed to other educated or trained nurses. In examining scenarios 2 and 3 (current or past patient history of alcohol/drug use) compared to scenario 1 (no patient history of alcohol/drug use), scenarios 2 and 3 showed significantly lower pain scores compared to scenario 1; and their standardized betas were approximately of equal proportion (0.40 and 0.32, respectively).

Chapter I - Introduction

Nurses are considered a most trusted profession (Milton, 2018). A contributing factor to that may be that nurses are required to follow a code of ethics. This code emphasizes honesty, integrity, accountability, and respect for human dignity (ANA, 2015). The nurse-patient relationship is essential to the administration of ethical care (ANA, 2015) and empathy has been identified as the foundation of the relationship (Moudatsou et al., 2020). The key to healthcare provider empathy is to validate the patients' experience. Studies of empathy suggests that empathy is a valuable healthcare provider characteristic essential to effectively treating pain management (Jeffrey, 2016). Nurses assessing and managing patients' pain strengthens the nurse-patient relationship and leads to increased quality care and improved patient outcomes (Duarte et al., 2016).

According to the National Institutes of Health (2021) pain is defined as an unpleasant sensory and emotional experience that is associated with actual or potential tissue damage and pain is always subjective. For purposes of this paper, the focus will be on the physical pain experienced by patients and the nursing implications. The American Nurses Association Statement Position (2018) recognizes several declarations that are fundamental in the ethical responsibility for nurses to treat and manage pain. One position stated that nurses have an ethical responsibility to relieve pain and any accompanying suffering. This should be the foundation of nurses for reflection of their own experiences and biases because it will certainly be implicated in the nurses' treatment of pain management (Robbins, 2018). Although assessing and recognizing patient pain is considered an important routine assessment, the number on a pain scale is only a small piece of the equation. Pain is subjective and complex.

It affects the social, emotional, and daily functioning components of the patient. Nurses'

observations and communication, when the patients are able, via therapeutic nurse-patient

relationship is the key to gathering patient pain data (Gregory, 2019).

According to the National Institutes of Health (2021) the Department of Health and

Human Services (HHS) and the Institutes of Medicine (IOM) recognize pain as a substantial

health problem. HHS recommended a blueprint to address pain management in 2011. The

guidelines stated educating the public using a community-based approach and including self-

care management, improving pain assessment and management programs through increased

government financing, individualizing pain management to be patient specific and integrate

specialty disciplines as needed, increase pain education for healthcare providers, assign a lead

institute at NIH and more research to be conducted (NIH, 2021). Considering this IOM

proposal there is no doubt that different perspectives on pain managements exists.

Every person, or system, involved in the pain cycle has their own motivating factors.

The following descriptions apply to a patient in pain who needs their pain addressed to help

heal or decrease their discomfort. The patients' family may view the patients' pain as a

disability leading to an income loss or a disrupted family dynamic, society can process

patients' pain on a larger scale to include loss of productivity or crime (Gross, 2018). The

United States budget for healthcare systems is financially affected by patients' pain through

increased spending in hospital visits and length of stays, and nurses treating the patients' pain

must responsibly establish therapeutic communication with the patient, advocate for the

patients, and work toward positive patient outcomes all while self-reflecting and assessing

their own perception of pain and remaining non-judgmental (Gross, 2018).

History of Pain Management (Civil War to present)

The first people to cultivate poppy were the ancient Sumerians in Mesopotamia around 3400 BC and its use expanded throughout the globe to treat pain and any other ailment (Rosenblum, 2008). In the United States treatment for patients' pain started to emerge in the form of morphine for injured Civil War soldiers. There was resistance to pharmaceutical measures in the late 1800 to early 1900's. Dr. Robert Liston, a surgeon during the Civil War, was known for his speed with which he approached amputation, which was under 30 seconds. Dr. Liston invented the Liston knife to carry out his procedures, although that was not his primary concern. Dr. Liston's attitude towards amputation was driven by his empathy for his patients' pain management, or lack thereof (Hawk, 2021). Some clinicians believed that patients were undertreated, and this may have led to an opioid crisis. However, during the 20th century pain management has become largely medicinal, with some healthcare providers believing that patients were undertreated, and this may have led to an opioid crisis (Collier, 2018).

For several centuries there are recorded uses of opium as analgesics. These recordings exist throughout different civilizations and cultures. Ancient Arabs recognized opium as a drug to cure all and often mixed it with other medications for various treatments. In modern medical times, attempts were made to produce opium-like drugs to reduce the detrimental effects of opium and the addiction potential (Norn et al., 2005).

In the mid 1800s, Chinese immigrants came to the United States to work on building the railroads. They brought opium with them and established opium dens. Opium dens were places to buy, sell or smoke opium and originally were only for the Chinese immigrants. Soon Americans and other immigrants began frequenting these establishments. The first ones were on

the west coast in San Francisco and quickly spread to New York. From the very wealthy to the

working class, many people began using opium (Lee, 2010).

By 1882 the Chinese Exclusion Act was enacted by Congress to prohibit Chinese

laborers from immigrating to the United States and banned all opium imports. Included in this

act was the restriction of the use of opium for medicinal use and this eventually led to the

formation of the Food and Drug Administration. Under the federal government, President T.

Roosevelt required that dangerous or addicted drugs be labeled as such. Although laws were

made and opium dens were closed, this did not deter people from smoking or using opium. In

1909, Congress passed the Smoking of Illegal Opium Act that banned the import and use of

opium, but this only applied to the Chinese opium, not the medicinal opium used by Americans.

This law was designed to fight against opium but created anti-Chinese sentiment in the USA

(Lee, 2010).

The opioid Oxycodone is a medication used to treat moderate to severe pain. In 1916 the

German scientist Friedrich Serturner derived opioid from Thebaine, which is a component of

Opium. By 1939 Oxycodone became available in the United States. Soldiers of the World War II

(WWII) era at times denied physical pain as they were devoted to returning to the battleground to

assist their fellow soldiers. However, after WWII the soldier's return to civilian life included the

persistence of their pain and they were prescribed Oxycodone (Rosenblum, 2008). This created

challenges and disabilities for both the patient and society. Throughout the span of war time,

WWI, WWII, the Korean War, the Vietnam War and Middle Eastern Wars, society has been left

with many disabled veterans due to pain (Gross, 2018). The patients' pain is either treated,

perhaps over treated or undertreated, and healthcare and society face serious demands and

consequences.

The advent of oxycodone for treatment of severe pain

By 1970 Congress enacted the Controlled Substance Act (CSA) as a mechanism to regulate the manufacturing, possession, and regulation of controlled substances including opioids. CSA did endorse opioids as necessary treatment for pain. However, in the 1980s-1990s special interest groups lobbied to have opioids for a more expansive patient population because until then it was mostly for cancer patients. The argument was to use opioids to treat all patients in pain. This led to a less restrictive policy and an increase in prescribing opioids to treat patient pain (Gross, 2019).

The trade name Oxycodone is the immediate release version of the opioid medication used to treat pain and Oxycontin™ is the time released form of the same drug. Oxycodone was approved for use in 1995 and by 2011 it was the top grossing narcotic pain reliever in the United States. As a form to increase to quality of life with pain patients it was found to be safer than morphine. Opioids remain the number one choice to treat sever or acute pain either malignant or non-malignant.

Treatment Issues in Pain Management

Traditionally nurses are responsible for pain assessment. Pain can be seen as a manifestation of underlying pathology that itself must be treated. It is essential for the nurse to perform a competent assessment. This evaluation needs to be done comprehensively to consider that pain includes the physical, emotional, and social connection that is influenced by pain, along with patients' co-morbidities. Nurses are educated and affirm a beneficial attitude toward assessment and management of patients with addictions or co-morbidities. Nonetheless,

data show that nurses are still lacking in treatment skills for pain patients that are addicted. Stigma may impact addicted patients and therefore disrupt the therapeutic nurse-patient relationship (Anandon et al., 2017).

For post-surgical pain the gold standard of management is opioid use, however the increasing use of opioids have negatively impacted patient populations. According to Azar (2021) the United States Department of Health and Human Services has declared the opioid crisis a top concern for the current administration. As of 2017 more than 1312 Americans lost their lives daily to opioid overdose which is an increase from the 2016 data. This crisis also places a hardship on society financially. An estimated 504 billion dollars a year which devastates communities and families. Since 2017 an additional 2 billion dollars have been allocated to fight the opioid crisis. This enormous financial strain on society is paramount to understanding drug addictions. In 2016 guidelines were established by the Centers for Disease Control (CDC) recommending safe opioid prescribing by clinicians as an approach to decrease opioid deaths and rising drug addictions. Unfortunately, an inadvertent repercussion of the guidelines led to inadequate treatment and a reduction of opioid prescriptions regardless of the patients' presentation of symptoms or pathology (CDC, 2016).

Related to opioid deaths in the United States, surgeons and healthcare providers have taken a position of responsibility in helping to decrease patient risk for addictions by complying with a decrease in prescribing pain medications. However, an increase in peri-operative patient education and post-surgical pain treatment needs to be more definitively outlined to meet the needs of patient pain. An effort needs to be directed at delivery high quality pain management while being conscious of the opioid crisis (Theisen, 2018). In March of 2021 the United States Congress introduced a bill in Senate named Non-Opioids Prevents

Addiction in the Nation Act (NOPAIN Act). This bill authorizes individual payments under

Medicare for non-opioid treatment provided by hospital and ambulatory centers.

Post-surgical pain treatment has been driven by a priority on use of opioid reduction

and there are differences in post-operative pain depending on surgeries that are performed

(Kugelman, 2018). It has also been noted that nurse who treat post-surgical pain who also

have a high level of pain knowledge tend to treat patients with a moderate practice of pain

management. The influence of nurses' knowledge of pain treatment does not necessarily

influence the nurse to practice at a higher level. Therefore, understanding and focusing

continuing nursing education that monitors level of practice could lead to better patient

outcomes (Germosa, 2018).

Buresh et al. (2020) discusses Opioid Use Disorder (OUD) and perioperative

management. They indicate that buprenorphine can be used to treat OUD patients' acute and

chronic pain. It acts on opioid receptors but has a ceiling effect for pain relief. Continued use of

buprenorphine was recommended peri-operatively along with NSAIDS, acetaminophen, IV

lidocaine, ketamine, and other non-opioid medications for pain regulation properties. A patient-

specific personalized and interdisciplinary approach to manage OUD patients' pain was also

suggested.

In 2018, the Joint Commission placed into effect a revision of policy with new standards

of pain management that were implemented with all accredited hospitals. These standards

proposed to increase quality of patients' pain management by the following: safe treatment using

opioid prescriptions, actively involving medical leadership to improve quality performance,

continually assess and manage pain while reducing risks associated with treatment and collect

and analyze data on performance. These actions also include actively tracking hospital use of

Naloxone and its use to decrease adverse effects of opioid use (Thiesan, 2018).

When exploring the challenges that patients face having their pain recognized and

effectively treated, the concept of nurse empathy is prevalent. Embodied within the concept of

empathy is ethical dilemmas. Patients have a right to not suffer pain and because of this right the

patients' pain is ultimately an empathic and ethical obligation of the nurse. Further research of

nurse empathy and ethical dilemmas of nurses' perspectives when assessing and treating

patients' pain needs to be examined. When examining the nurses' traits and beliefs, or morals, it

needs to be coupled with a specific patient population. Each population will assuredly invoke a

different response of the nurses' sense of empathy and ethical treatment in pain management,

just as each nurse will have his/her own beliefs and responses to the patients' pain (Alzghoul et

al., 2016). This sense of the nurses' individuality and patients' uniqueness needs to be researched

to provide important clinical knowledge for practice. This knowledge may include nurses'

ethical sense of obligation and their application of it through empathy. Nurses are obligated to

assess and treat patient pain under the ANA. The Code of Ethics for Nurses with Interpretive

Statements establishes the ethical standard for the nursing profession and provides a guide for

nurses to use in ethical analysis and decision making (ANA, 2018). It is foundational to nursing

theory and practice in its expression of moral traditions and obligations that shape the nursing

profession. It is a non-negotiable standard of which nurses are to perform.

Prevalence of Prescription Opioid Addiction Compared to Other Additions

Pain patients, regardless of their co-morbidities of addiction, have a right to pain

management. There have also been strong efforts through healthcare, government agencies, and

private interest groups to misrepresent the risk of addictions using opioids for the treatment of

pain (Zee, 2009). Battista et al. (2019) describes the connection, or lack of connection, between illegal substance use and opioid addictions that began by using legally prescribed opioids. Through precise mathematical analysis the authors were able to extract information that showed that the prevalence of addiction could be decreased by actively regulating prescribers. The researchers further noted that the rate of dependency on illegal drugs or prescribed opioids, even for recovered addicts, showed no increase in addictions when patients were being treated with opioids for pain management. The general population is at life-long risk of becoming addicted at a rate of 3% to 16%. Current data show varying percentages based on pharmaceutical sales perspectives and geographical location with some areas being at a higher risk (Zee, 2009).

There is an ever-present flow of illegal drugs being manufactured or smuggled across US borders, namely cocaine, heroin, or illegal marijuana. The access to purchase these street drugs has become easy, and this leads to frequent use and ultimately addictions (Lincoln, 2019). According to the American Addictions Center (2021) 38% of adults in the US struggle with an illegal drug use disorder.

For patients with co-morbidities and opioid addictions it is a challenge for healthcare providers to manage their pain. Patients with substance use disorder have been reported to have a higher prevalence of pain, their overall pain tolerance is lower. However, the percentage of patients in this category is unknown and an elusive number to quantify (Rosenblum, 2008).

Pain treatment has continued to be poorly managed (Rawal, 2016), and opioids are the main treatment of choice while simultaneously opioid prescribing is restricted in the U.S. The common perception that one treatment choice is designed to fit all post-surgical pain management is a standard approach that does not benefit patients' individuality. There is a widely accepted notion that patient pain management techniques are difficult. Therefore, the

nurses' attitude toward assessment and treatment of pain are paramount for positive patient outcomes (Rawal, 2016).

Coluzzi et al. (2017) also noted the challenge of perioperative pain management with patients addicted to opioids. The authors stated that patients with opioid addictions received deficient pain management due to the healthcare providers' prejudice and misconceptions of addicted patients. As a result, they suggest there is under-treatment of pain with this patient population. The given recommendations are to use intraoperative anesthesia nerve blocks, non-opioid medication management, and an interdisciplinary approach to pain treatment.

In the general population people may choose a drug of choice to use recreationally and without interference with their daily functioning. Only a minority of that population will become addicted, and high addiction rates are uncommon. Furthermore, for many recreational drug users a positive effect is achieved, but society demonizes and overstates the harm of drug use (Hart, 2021). This sweeping assumption of harmfulness may contribute to the negativity and fear of prescribed opioid treatment.

Problem Statement

While current information demonstrates the delicate and problematic position of treating patient pain and the continued increase of the opioid crisis, there remains the core reality that patients require quality pain assessment and treatment. Pain is subjective to the patient that is experiencing it. No other person, not even a nurse, can decide the level of pain that the person is experiencing. However, the subjectivity of the nurses' response to the patients' pain is possibly compelled by multiple factors, such as nurse empathy, experience, personal and professional biases, and hospital culture. This path to nurses' response to pain treatment should be explored.

Theoretical Model

Nurses' have many attributes that contribute to their competencies. Additionally, patients

possess many characteristics that add to their needs when they are being treated by nurses.

Collectively, these characteristics and competencies play a role in the successful management of

the patients' pain. The middle range theory American Association of Critical Care Nurses

(AACN) Synergy Model, first developed in 1996 (Curley, 1998) represents the importance of

aligning nurses' competencies and patients' needs to achieve more favorable outcomes for the

patients and satisfaction for nurses. The nurses' competencies in the Synergy Model are clinical

judgment, advocacy and moral agency, caring practices, collaboration, systems thinking,

response to diversity, facilitation of learning and clinical inquiry. The patient characteristics in

the Synergy Model are resiliency, vulnerability stability, complexity, resource availability,

participation in care, participation in decision making, and predictability. The Synergy model

focuses on the extent to which nurses' competencies match their patients' characteristics.

These concepts are related and there is synergistic relationship between the nurse and the patient

that, when matched, delivers a positive outcome. The goal of the model is the restoration of the

patient to optimal health as defined by the patient and family. Although, death of the patient is

considered an acceptable outcome of the model if the nurses have delivered care and assisted

their patients toward a peaceful death.

The Synergy Model was written as a conceptual nursing model but is currently

recognized as a middle-range theory as well. According to Polit and Beck (2017) both nursing

theories and conceptual models are created based on concepts that are significant to certain

subject matter and are used in scientific research. Both have inter-related roles. An alternate way

of organizing phenomena is considered a conceptual model. Whereas a larger scope of a

phenomena with propositions and explanations of relationships is considered a theory. A middle-range theory involves concepts that attempt to clarify phenomena such as illness, health promotion, behavior, comfort, etc.… A conceptual model is represented in a schematic or map. It largely represents the assumptions or philosophical views of the model's author and a visual depiction of the ideas being represented. Currently, The Synergy Model is accepted as both a conceptual framework and is categorized as a middle range nursing theory of significance with strong social value and the model provides an effective framework for nursing practice. The theory affects nursing by assisting nurses in understanding their practice and the importance of the nurse-patient relationship. When the nurses' competencies arise out of the patients' needs (characteristics), a synergistic nurse-patient relationship occurs resulting in quality outcomes for the patient (Hong et al., 2021).

Figure 1

AACN Synergy Model for Patient Care

AACN Synergy Model

8 Patient Characteristics
Resiliency
Vulnerability
Stability
Complexity
Resource availability
Participation in care
Participation in decision making
Predictability

Good
Match

8 Nurse Competencies
Clinical judgment
Advocacy and moral agency
Caring practices
Collaboration
Systems thinking
Response to diversity
Facilitation of learning
Clinical inquiry

Patient and Family Outcomes
Symptom & disease management
Resolution of ethical problems
Achievement of appropriate selfcare
Demonstration of health-promoting
behavior
Health-related quality of life
Rescue phenomena
Patient/family perceptions of being
Well cared for

Unit Outcomes
Shared accountability
and authority for unit
operations and
performance
More experienced
nurses catalyzing
advancement of less
experienced nurses

System Outcomes
Nurse satisfaction
Staffing costs
Resource Utilization and
Patient charges
Multidisciplinary team-
work and satisfaction
Cross-system innovatio

(Curley, 1998).

Chapter II – Review of the Literature

This chapter provides a review of the literature of pain management, nurses attitudes

toward addiction and contributing factors such as nurses' empathy, ethics, work environment,

unit culture, and knowledge in pain management. Also reviewed is pain treatment in patients

with addictions.

The databases that were used are: Proquest Central, CINAHL Complete, Nursing and

Allied Health Collection, PsychNet, Research Library, Health, and Medical Collection, and

Ebsco Health. By conducting a comprehensive search strategy of peer reviewed studies

published from 2016 through August 2021 using the keywords: *pain* and *pain management*

yielded 545,923 results. The addition of *chronic pain assessment* yielded 217, 810 results,

nurses' knowledge in pain assessment yielded 47,389 results, *post operative pain assessment*

yielded 39,797 results, *clinical nursing experience treating pain* yielded 32,449 results, *nurses'*

experience treating pain yielded 15,080 results, *empathy in pain assessment* yielded 18,814

results, *nurse attitude toward addiction* reduced the yield to 376 results, and the addition of

treating addicted patients yielded 177 results. When adding *post-surgical and orthopedic*

patients, the yield was 68 results. These included English language parameters with both

qualitative and *quantitative* filters. There were little quantitative research results found.

Pain

Pain is an individual experience for each patient so overall pain management should

include a timely mindful approach that prepares for symptom regulation. Acceptable pain

management begins with competent pain assessment. Adequate pain assessment aims to improve

symptoms and guide diagnostics. Pain is often recognized as being resolved once the pathology

is uncovered, and with this in mind nurses are in a crucial position of assessment, intervention, monitoring, and evaluation of pain in acute care settings (Mallick-Searle et al., 2018).

Wadenstein et al., (2011) performed a quantitative explorative study of the prevalence of pain and pain assessment among inpatients ($N = 494$) in a university hospital. Using the Numeric Rating Scale (NRS) provided by the nurses, patients were asked to self-assess their pain. 65% of the 494 inpatient reported feeling pain. Using the NRS of 1 - 10 pain intensity, 81% of those who reported pain rated their pain at > 3, and 42.1% rated their pain at > 7. In summary, more than half of hospitalized patient have pain and more than one-third of those in pain have severe pain.

Post-operative pain is an expected situation with surgical patients. Research has shown that 80% of patients experience pain post-operatively in moderate to extreme levels. Post-operative pain is categorized as nociceptive pain, that is pain that occurs as a response to actual tissue damage and generates unwanted sensory experience. The high prevalence of moderate to extreme pain suggests that mismanagement of post-operative pain causes needless discomfort and suffering. An essential aspect for successful pain management is the use of an appropriate validated pain assessment tool (Lapkin, 2021).

Pain was explored by Wu (2020) in 19 different type of inpatient hospital units and the reported rate of pain was approximately 70%. A structured questionnaire was used by 8 interviewers, and they included the NPRS. The study showed that pain decreased as age increases indicating a possible inability to accurately assess pain due to a decline in patients' cognition. In addition, surgical patients had a higher prevalence of acute pain that was treated immediately. However, a more proactive controlled pain approach during surgery may benefit the patients (Wu et al., 2020).

It has been reported that gender differences, male and female, have a meaningful distinction in medical outcomes, particularly with pain management. Chou (2019) studied oncology patients and gender differences in analgesia use, medication compliance and pain management effectiveness using a descriptive, cross-sectional design. 362 oncology patients completed several measurement tools. The Analgesic Adherence Measure, Brief Pain inventory, Pain Management Index, and the Short Version of the Barriers Questionnaire were used. Results showed the S-BQT score for females was significantly higher than for males (female = 3.38, male = 3.19), $p < 0.01$ and males had a higher analgesic adherence rate OR = 1.93, $p < 0.05$. The researchers concluded that gender could predict the oncology patients' medication compliance; women experienced a higher degree of pain than men with a lower propensity to comply with medications and had less effective pain management.

Geriatric patients often have a multitude of diagnoses and nursing care can become complicated when factoring in the comorbidities. The nurse-patient relationship is at the core of assessment and treatment. Teofilo et al. (2019) examined the nurse-patient relationship with geriatric patients, the ethical competencies of nurses and quality of nursing practice. The authors reviewed literature that included pain assessment tools to examine the three factors found to be central to geriatric nursing care. They concluded that more pain assessment tools were needed for a better understanding of the nurse-patient relationship regarding pain management. Digby (2018) found that patients with dementia had better outcomes with pain when the number of assigned patients to each nurse (patient-nurse ratio) was low and proper clinical supervision and nursing education was provided to the nursing staff.

Pain is unique to the person experiencing it. Pain has also been recognized as an expected outcome in postoperative patients. Although there are many assessment tools available to help

treat post-operative pain, the institutions, the patients' comorbidities, and the individual nurses doing the assessment factor into the treatment plan for pain management.

Nursing Pain Assessment [Clinical Judgment]

Best nursing practice suggests that pain should be assessed as commonly as vital signs and conducted using a validated assessment tool (Melia, 2019). In the process of pain assessment there are several validated pain scales that are used by nurses that maintain a measure for evaluating the intensity of pain. Pain scales are designed as a tool for the nurse to use in addition to questioning the patients and obtaining a history. They serve to document the patients' physical experience and reevaluate effectiveness of medication provided for pain relief (Gregory, 2019). An example of a commonly used pain scale is the Numeric Pain Rating Scale (NPRS), which rates pain on a scale of zero through ten with zero representing no pain and ten representing the worst pain. Picture scales are used for nonverbal patients or cognitively impaired patients. Also, the Verbal Descriptor Scale (VDS) uses words such as: 'no pain', 'mild', or 'severe' to describe patient pain experience. All types of scales are accepted forms of use to assess pain and are chosen by the provider or institution depending on the patients' needs and ability to function (Gregory, 2019).

The use or non-use of the various pain assessment tools that are available depends on the individual institution and professional nurse. Mahama et al., (2019) used a semi-structured interview model in their explorative qualitative study involving 12 nurses in a post-operative unit in a large hospital in Ghana. Results showed that some nurses never used a formal pain assessment tool, thereby not accurately assessing the patient's pain. Also found was the need for education and adequate training to ensure the nurses' abilities to assess and manage post-operative pain effectively.

Reliability of tools may also be a factor. Fadayevatan et al. (2019) used a quantitative method to study the Faces Pain Scale (FPS) with an older Iranian population of patients over a one-week period. Using descriptive statistics, it was observed that only 72% of patients agreed that the faces on the pain scale represented their level of pain.

In some situations, the utility of the assessment tools may be an issue. Olsen et al. (2015) implemented and studied a pain management algorithm for nurses working in intensive care units over a three-week period across three different units. The Simplified Acute Physiology Score (SAP) was used as a tool to score severity and mortality during the first 24 hours of an Intensive Care Unit (ICU) patient stay. Linear regression analysis was performed to control for confounders, and the researchers found that nurses ($N = 217$) were not diligent in formal pain assessment and only adhered to using the SAP 74.6% of the time. In addition, the validity of the assessment tool was found to be questionable. The pain assessment of ICU patients observed that patients with severe injuries had a mean score of only 29.6 (SD = 16.5), while patients hospitalized for respiratory disease had a much higher mean score of 41.6 (SD = 14.5, $p < .001$). This suggested that there may be significant problems in the tool's utility resulting in the nurse's limited adherence to using the tool, or there may have been other reasons for nurse's non-use of it.

Of these patients, 38.7% were asked to use the NPRS to self-assess their pain score as being either complete satisfied or not at all satisfied with their pain management. The results showed that 29.6% were completely satisfied and 11.5% were not at all satisfied with their pain management from nurses, indicating that many patients were still suffering from pain and perhaps the NPRS was not effectively being used or the nurses were not effectively administering medication.

The NPRS is commonly used for patient self-reporting of pain. However, when the intensity cannot be ascertained from the patient by the nurse, the nurse should accept a *yes* or *no* from the patient as to whether they have pain. When self-reporting is impossible then a validated behavioral pain scale (a measure of non-verbal indicators of pain) should be used for pain assessment. Some behaviors of patients such as movement of eyes, facial expressions, muscle rigidity or body movements in response to usual nursing care may require a standardized behavioral tool.

For example, assessing pain in sedated patients who are unable to verbal respond can be challenging due to the patients' inability to self-report. Severegnini et al. (2016) used the Critical Care Pain Observation Tool (CPOT; Gelinas et al., 2006) and the Behavioral Pain Scale (BPS; Payen et al., 2001) in both conscious and unconscious patients to identify the best scale to evaluate pain in patients who are unable to communicate, compare both pain scales to the Visual Analog Scale (VAS; Hayes et al., 1921). Subjects ($N = 101$) were evaluated during 303 consecutive assessments over three-day ICU stays. The CPOT and BPS scales were used one minute before, during and 20 minutes after nursing procedures in both conscious and unconscious patients. The results identified that the BPS was more specific than the CPOT (91.7% and 70.8%, respectively). However, BPS was less sensitive compared to the CPOT (62.7% and 76.5%, respectively). Facial expression was found to be the best predictor of pain with a large effect size (Cohen's d = 1.4) with respect to the difference between in assessing conscious versus unconscious subjects. For the purposes of establishing the validity of the BPS and CPOT scores, they were compared to the VAS scores and were found to be significantly correlated ($r_s = 0.56$, $p < 0.0001$ and $r_s = 0.48$, $p < 0.0001$, respectively). Although a small effect

size, when using both the CPOT and BPS scales to determine patient pain level there might be increased accuracy than when using pain scales alone.

Clinical Nursing Experience Treating Pain.

Nurses will have varying experiences treating the multitude of patients and the causes of their pain. Because pain is so prevalent across patient diagnosis and nurses' experiences differ, there have been studies to assess nurses' experiences treating pain. There are many qualitative studies that seek to find themes in nurses' experience when treating patient pain, with a lesser amount of quantitative data available.

Whether pain is acute or chronic, the nurses' role not only involves assessment and management, but also inter disciplinary collaboration and patient-centered care. A qualitative study by Gjesdal et al. (2019) was conducted with 10 nurses working in 10 different pain clinics in Norway. The authors' analysis showed a main theme of nurses' striving to provide complete patient care, but a lack of resources proved to interfere with the nurses' treatment of the patients' pain. Additionally, recommendations for increased and stronger communications between disciplines were noted. This study was done with nurses that treat communicative patients. However, when patients are unable to verbally communicate their pain to nurses due to disease process or other barriers, then assessment and management becomes more complex. Kmetec et al. (2020) performed a cross-sectional descriptive study surveying nurse ($N = 440$), 220 in Slovenia and 220 in Finland. All the participants worked in clinical settings. The purpose was to examine nurses' knowledge, attitudes, and perceptions when providing palliative care to patients. The researchers reported a statistically significant difference in nurses needing more knowledge to provide pain care, Finland 96% (n = 212) and Slovenia 95% (n = 209), with a p = 0.001.

However, an effect size was not reported, and there was no difference in both sets of nurses' overall knowledge.

Another cross-sectional design study that explored nurses' attitudes, experience and knowledge regarding pain management was by AbuBaker et al. (2019) in Dubai, United Arab Emerates. A convenience sample of 200 nurses working in government hospitals were surveyed using the Knowledge and Attitude Survey Regarding Pain (KASRP). The mean years of experience for the participants was 11.88+-6.28. Of the nurses surveyed, 62.5% reported having pain management education. The authors reported no statistically significant difference between the nurses' overall knowledge. Both countries' nurses said that they wanted additional education in pain, 95.7% ($n = 421$). Also revealed was that the nurses with >10 years of experience had a poorer perception about pain management than nurses with 5-10 years of experience. This finding means that as nurses' experiences with pain increases in time then their pain management scores on the survey decreased. Limitations of this study noted that the sample was heterogenous, and no effect sizes were reported.

In summary, numerous pain assessment scales have been validated and nurses use them for post-operative surgical patients. Additionally, the nurses' pain assessment can be done with patient reporting, patient behavior and nurses' observations. Combining these methods or using one alone is determined by each individual patient presentation. Therefore, thorough assessment is a mandatory prerequisite for proper pain management.

Effectiveness of Pain Management [Clinical Inquiry]

Salaudeen et al. (2018) conducted a study at a day surgery center to evaluate effectiveness of pain management. The recruited 70 patients to participate in a descriptive

observational study where the magnitude of pain was measured using the Verbal Pain Intensity

Scale (VPIS). Prompt postoperative pain was assessed at anesthesia recovery and then reassessed

at 6, 12, 24, 48, and 72 hours after discharge. Moderate to severe pain was noted upon anesthesia

recovery in 54.3% (38 out of 70 patients) of patients. Patients received Paracetamol, diclofenac,

and tramadol, each either alone or in combination. At six (6) hours post-surgery, patients had an

average pain score of greater than 2. The pain intensity scores decreased with each time interval

(assessment). The analgesics that were prescribed satisfactorily controlled the patients' pain,

with pain intensity scores being on average less than 2 (Salaudeen et al., 2018). However, a

weakness of this article is that it is a descriptive study was without inferential statistical analysis

and utilized relatively small groups of subjects within each of the treatment modalities (ranging

from $N = 10$ to 26).

Similarly, Poplawski et al. (2016) observed differences in outcome related to the means

of delivering analgesia. They performed a retrospective review of patient charts ($N = 7$) using a

standardized assessment form in addition to interviewing clinicians. Seven cases from three

different clinical settings were reviewed, the treating physicians were interviewed and a standard

form for patients with predictable sets of variables. Diverse surgical patient types that used the

Iontophoretic Transdermal System (ITS) of fentanyl administration were chosen. The patients

that reported moderate to severe post-operative pain responded better to the use of ITS rather

than the traditional intravenous (IV) administration of fentanyl. Most patients did not require

additional analgesic medication for breakthrough pain, but they did have a PRN (as needed)

order of non-steroidal anti-inflammatory drugs (NSAIDS) or opioids available. All seven cases

reported positive results for post-operative pain treatment with Fentanyl ITS. The data collected

show promising results with this newer type of pain management delivered trans dermally.

Patient-controlled fentanyl was easier to use in post-operative recovery and it was demonstrated that ITS was a smoother transition for patients to an oral analgesic. The limitations of this study are the retrospective design and the small number of patients that were followed.

Another type of non-opioid pain management is the use of intravenous administration of acetaminophen. According to Montazer et al. (2018) patients with renal colic frequently visit the emergency room with complaints of pain. Morphine is typically used to treat renal colic. Besides morphine being addictive, it has potentially life-threatening side effects and tolerance readily develops. However, IV acetaminophen does not have the central nervous system effects of respiratory depression like morphine, and it is not addicting, and is therefore considered a safer medication choice. In a double-blind renal colic study with 355 patients, 192 patients were treated with IV morphine and 152 [Of note, the sum of the *N's* of both groups is only 344 and the authors do not explain this discrepancy] patients were treated with IV acetaminophen. Twenty (20) minutes after the IV analgesia was given, the subjects who received morphine had significantly lower post-operative pain scores using the Visual Analog Scale (VAS) which is a measurement tool that is used to capture a range or continuum that is not often easily detected such as pain, (VAS) compared to those who received acetaminophen (m = 2.38, SD = 2.06; m = 2.87, SD = 2.41, respectively; *p* = 0.003). Another consideration in this study was that each patient received fentanyl 1mg/kg IV 30 minutes intra-operatively. According to Montazer et al. (2018) both groups had equal pain management effectiveness despite the significantly different mean VAS scores due to the difference being a small effect size (ES = (2.38 – 2.87)/2.4 = Cohen's d of .20.). Given that morphine had more side effects, IV acetaminophen seems to be the more reasonable choice for side effects alone (Montazer et al., 2018).

Although it often utilizes opioids, Patient Controlled Intravenous Analgesia (PCIA) has been identified as a highly effective treatment for patients' postoperative pain. Erlenwein et al. (2020) looked a two cohorts of hip replacement patients postoperatively. There were 172 patients in one cohort and 175 in another, the first cohort received oral opioid pain management and the second cohort received PCIA. Postoperative pain assessment was done for all patients within 24 hours of surgery using the Quality Improvement Postoperative Pain Therapy Scale (QUIPS) and the NPRS. PCIA was found to be a preferable form of pain management delivery. A significant difference in opioid dosages used to manage patients' pain comparing the first and second cohorts was not observed (mean[sd] morphine equivalents = 54[31] mg., 60[36] mg., respectively). The authors did observe that men required significantly higher dosages of PCIA administered opioids compare to women (mean[sd] morphine equivalents = 155.7[68.1] mg., and 120.9[47.3] mg., respectively, p = not provided). However, the authors did not adjust the opioid dosages for subjects' body weight making this finding questionable. In addition, there was not a significant difference between cohorts with respect to the use of non-opioid medication. Overall, patient satisfaction with pain management was reported as high in both cohorts.

In summary, only a few studies of the use of analgesics for pain management were found in the literature. Overall, they suggest a variety of approaches with good efficacy. However, they in general, lack rigor due to limitations related to methodology, samples size, or small effect sizes.

Nurses' Attributes Related to Pain Management

Nursing is a professional discipline trained to provide healthcare free from personal

judgement. However, the very intimate nature of nursing lends itself to emotions and these emotions can at times interfere with providing non-judgmental care, thereby influencing the nurses' practice.

Empathy [Caring Practices]

Empathy plays a large role in nursing care for all types of patients regardless of their diagnoses or comorbidities. Pollack and Ashton (2018) reported that healthcare providers' empathy enhances patient outcomes, adherence, and satisfaction. When providers express empathy towards patients' discomfort, patients tend to be more contented with the care they receive and act more in accordance with treatment plans. However, when the healthcare providers do not respond to the patients' expressions of discomfort with empathy, the patients tend to express disapproval.

Leonard et al. (2018) state that empathy has a positive impact on patients and their families. Not only does empathy allow nurses to understand patients, but it often compels nurses to act on the patients' behalf in a positive manner. According to a descriptive study using a convenience sample, higher empathic responses and higher levels of pain treatment were related to patients who showed a visible expression of pain (Paul-Savoie et al., 2018). The study recruited ($N = 42$) equal numbers of nurses and physicians. Using paired t-test, the researchers determined that pain invisibility is a barrier to quality care and expressed a need for further education for nurses to understand their own bias to pain. However, they did not report the specific means, standard deviations, or p-values.

Lee and Park (2016) performed a cross-sectional study to identify nurse empathy, attitude, and pain management for patients with dementia and found similar results as the

previous study. One hundred fourteen nurses working in 12 geriatric settings used the

Interpersonal Reactivity Index (IRI; Davis, 1983) tool which measures four empathy factors;

nurse attitude towards pain, nurse conduct in pain management, nurse prejudice of pain in

dementia and nurse knowledge deficit in pain. Using stepwise linear regression analysis, the

results showed empathy and attitude to be significantly correlated with pain measurement (B =

0.29, p = .013). This accounted for 24% of explained variance in the results.

Empathy is such a valuable nursing tool that Bas-Sarmiento et al. (2017) studied this

factor in nursing students. The researchers evaluated the effectiveness of the experiential

component of training in nursing students in terms of empathic performance. They performed a

quasi-experimental design using a pre-test, post-test measurement of a single group (N=48) that

received an intervention and follow-up evaluation at one month. The intervention consisted of

training in empathetic communication and was conducted weekly for 10 sessions. The Jefferson

Scale of Empathy (JSE) and the Consultation and Relational Empathy (CARE) scale (Mercer et

al., 2004) measurement tools were used. Additionally, three independent observers, who were

blinded to the pre and post-test, assessed the empathic competency of the students using the

Carkhuff Scale (Carkhuff, 1969). Each student performed 15-minute interviews with actors

trained as patients in front of the observers. Using Spearman correlation coefficients, the

variables were analyzed to identify the interventions' effectiveness. Overall, the study found that

training sessions in empathic communication are associated with increased scores ($p < 0.05$) on

empathy scales.

Similarly, Levett-Jones et al. (2019) acknowledged that empathy is an integral part of

nursing care and sought to quantify the level of empathy in nursing students who participated in

a point of view simulation (from the patients' perspective) of patients with brain injury. Nursing

students ($N = 390$) participated in a pre and post-test design using a published standardized

measure. Descriptive statistics were used with t-tests to analyze changes in empathy pre and

post-test. The results showed the post-simulation empathy score mean (SD) was 3.75 (0.66)

compared to a pre-simulation mean (SD) score of 3.38 (0.61) $p < 0.05$. These results indicated an

increase in empathy related to the simulation experience in nursing students. However, longer

term and real time follow-up to determine the lasting effects of the increase in empathy in nurses

is necessary.

In summary, empathy has been studied in many healthcare disciplines, particularly

nursing. It has been noted that empathy supports the nurse-patient relationship and thereby can

affect positive patient outcomes. The studies explained, above, do show the variability in nurses'

empathy. Patient pain can be an elusive symptom to treat and nurse empathy may be an

important factor in assessing and managing post-operative patient pain.

Nurses' Knowledge [Facilitation of Learning]

Patients depend on nurses to assess and treat their pain. Many studies point to the nurses'

lack of knowledge regarding pain management. This includes knowledge about numerous pain

medications, comprehending the significance of continual assessment of patients' pain level,

proper documentation of patients' complaints of pain and medications that were given, and

nurses attitudes when treating opioid addicted patients for pain (Samarkandi, 2021). Some nurses

have the misunderstanding that patients are falsely seeking medication and rely solely on the

patients' physical presentation of pain alone, such as vital signs, to treat the pain. Samarakandi

(2021) conducted a quantitative study and surveyed 247 nurses who collectively worked in

oncology, burn, ICU, emergency room, and operating units. The Knowledge and Attitudes

Survey Regarding Pain (KASRP), with a Cronbach alpha of 0.70, was used. A demographic data

sheet was used to determine characteristics about the nurses such as: age, sex, level of education,

acquired pain education post licensure, which hospital unit the nurse worked on and their

duration of critical care experience. Also used was a Barriers Questionnaire to help identify any

barriers associated with sufficient pain management. The results showed that the number of years

in nursing practice and the nurses' level of education did impact their answers regarding opioid

use. The Chi square test for nurses' pain education used ($\chi^2 = 8.34$, $p = 0.004$). The cross-

tabulation analysis revealed that 84.6% of nurses failed to differentiate between patients who

were medication seeking versus patients who truly needed pain relief ($\chi^2 = 14.63$, $p < 0.001$;

Samarkandi, 2021).

Nurses are responsible to deliver quality nursing care that includes pain assessment and

management. Adequate or higher levels of nurses' knowledge regarding pain management

enhances the success of pain management (El-Alqoul et al., 2020). Cancer patients have both

acute and chronic pain and the ability of nurses to proficiently assess and manage their pain is

significant. In a quantitative study by El-Aqoul et al. (2020) nurses participated in an education

program that assessed their knowledge and attitudes in pain management with cancer patients. In

a randomized control trial, subjects ($N = 150$) were randomly assigned to either a control or

intervention group. The intervention group received a comprehensive educational program on

pain management. The Knowledge and Attitude Survey was given to both groups before and

after the intervention of an educational program. The results identified a significant increase in

intervention group scores (mean change = 19.7, t = 12.6, SD = 2.8, $p < 0.001$; El-Aqoul et al.,

2020). These support the effect of education on knowledge and attitude change related to

management.

A study by Shamsu-Deen et al. (2020) identified the need for more RN pain education. They performed a quantitative study exploring nurses' knowledge and attitudes pain management in postoperative surgical unit patients. A convenience sample of 211 nurses participated and data were collected using a post-operative pain management tool that was a modified version of the Knowledge and Attitude Survey. A score of 70% and above in both knowledge and attitude is considered desirable scores for this survey. The results for this study showed a mean score of 59% for nurses' knowledge and a mean score of 52% for nurses' attitude score. It is important to reflect that the SD was not reported. The researchers concluded that the nurses had a moderate level of pain knowledge and a negative attitude and recommended knowledge of pain management be included in nursing training and continued education.

Using the KASRP (Knowledge and Attitudes Survey Regarding Pain), a nationwide study was conducted in Ethiopia among 138 nurses working in oncology (Biruk et al., 2020). Only 7.2% scored as having adequate knowledge and attitude about pain management with a Mean (SD) of 20.4 (5.13). The overall finding of knowledge and attitudes of oncology nurses was low. The questions related to nurses' knowledge of pharmacologic pain medication indicated that 77.5% of nurses had excessive concerns regarding opioid use for pain relief and did not want to use it.

In a cross-sectional study conducted in Palestine by Salameh (2015), using data obtained from seven hospitals ($N = 123$ nurses), knowledge about patients' pain was less than that indicated as sufficient using the KASRP scale. The overall mean score was 17.4 (SD = 4.2). While a passing score is reported to be 19.5.

Similarly, Furjanic et al. (2016) recognized pain knowledge was insufficient in nurses working with an elderly population. The researchers conducted a quantitative, cross-sectional

design study using the Pain in Elderly Questionnaire (PEQ) with 35 geriatric subjects. A higher

score on the PEQ indicates a greater knowledge of pain management. The mean score was 65%

with one third scoring below 57%. The researchers concluded that nurses have a knowledge

deficit about pain management and an inadequate understanding of opioid management in the

elderly population.

In a study that controlled for confounders, Dagnew et al. (2018) looked at nurses' ($N =$

411) knowledge of pain management across four general hospitals, using multiple logistic

regression analysis and observed inadequate knowledge of pain management. The results

indicate that only 40.6% of nurses have adequate knowledge. Lack of training in pain

management at the nurses' workplace, lack of academic education in pain management and

professional rank were all predictors of knowledge in pain management.

The researchers defined professional rank by three characteristics: 1) academic rank, 2)

previous pain education, and 3) prior pain training at the institution or another organization. The

professional rank predictor results were that: nurses with more than 5 hours of pain education

were 2.34 times more likely to be knowledgeable in pain management (95% CI: 1.45,3.8), nurses

with onsite training were 2.19 times to be more knowledgeable (95% CI: 1.39,3.44), and nurses

with a BSN were 3.09 times more likely to be knowledgeable (95% CI: 1.37,6.96). This study

shows that ongoing education and on-site training plays a role in nurses' knowledge in pain

management.

A one-group quasi-experimental study was done in a 396-bed tertiary hospital using the

KASRP and pre-posttest design with an educational intervention. The study utilized a small

sample size ($N = 37$, pre-test; $N = 35$, post-test). A passing score was determined to be 80%. For

being able to rate the patients' pain the nurses scored 55% on the pretest and 92% on the posttest.

For being able to recognize facial grimacing as a sign of pain the nurses scored 68% on the pretest and 96% on the posttest. The researchers concluded that in-service nursing education in pain management is needed and contributes to higher quality nursing (Shondell et al., 2020). However, without a control group and a wash out period, the extent that research bias entered the analysis is uncertain.

In summary, nursing knowledge has been studied and it has been shown that nursing education is needed for accurate pain assessment and treatment. An increased level of knowledge regarding pain management and opioid administration could lead to better patient outcomes. Much of the research shows nurses have less knowledge in pain management than is expected. However, some researchers do not report complete statistical analyses and therefore more comprehensive research is needed.

Nurses' Attitude or Bias [Moral Agency/Diversity Issues]

Additional factors that may play a role in nurses' intentions to treat post-operative orthopedic pain were explored through a qualitative ethnographic study by Denness et al. (2017). The use of PRN opioid analgesics is prescribed for acute post-operative orthopedic pain. Nurses are responsible to manage the PRN medication and decide when to administer them. Over a period of six weeks with ten nurses participating, Denness et al. (2017) conducted private semi-structured interviews with nurses and included a vignette that the researchers themselves developed. After reading the vignette the nurses were asked to determine at what point they thought a PRN for pain should be administered to the fictitious patient. The key factors that were identified included the culture of the unit, each nurse's own self-concept, and the individual nurse's self-assessment of their pain evaluation of patients. The researchers recommended that

these three essential elements become the foundation for pain management in acute postoperative settings and be included in nursing education.

An alternate perspective is given by Amy (2018). She provides a perspective from both a nurse practitioner's point of view as well as that of a patient in pain (personally suffers from chronic pain). She asserts that pain patients are not addicts. Rather, they are dependent on pain management to function in life much the same way a hypertensive patient depends on anti-hypertensives and believes legislators need to be educated about these facts.

Racial bias may play a role in pain management. As a result of a study of injury reports of the National Football League's players, Trawalter et al. (2016) tested the hypothesis that black people feel less pain than white people by constructing five experiments using university students (including nursing) and individuals solicited through the internet (including working nurses). The researchers looked at racial and other social factors related to the perception of pain by subjects. The results ($N = 232$) suggested that social status and "perceptions of hardship" ($p = 0.05$) were the main predictors of pain assessment and not race ($p = 0.06$) using general linear model methodology (Trawalter et al., 2016, p. 6).

When treating patients with opioid addictions in a surgical setting the challenges that arise from stigma often inhibit nurses from appropriate pain assessment and treatment. The opioid addicted patients are also at higher risk for adverse surgical outcomes such as infection or pulmonary issues. Despite the additional needs of this patient population there is little literature on how nurses ought to address these needs. Pain management is especially relevant in addicted patients. The recommendations for the nurses that treat surgical patients with a history of addictions are preoperative interdisciplinary collaboration, enhanced patient education and more in-depth nursing assessments (French, 2020).

According to Weiss et al. (2017), the increase of opioid dependent patient admissions and emergency room visits continue to escalate in the USA. Nurses have an ethical duty to treat patient pain, but many nurses wrestle with their own perspective when they are treating patients with a history of addictions. Therefore, the challenge exists and persists for nurses to treat the patient with addictions. Nurse bias with addicted patients leads to inadequate assessment and management of patient pain. The lack of nursing knowledge in treating patients with addictions also places the nurses as risk for deficient pain assessment and management. Nurses are patient advocates, and they should conduct themselves in accordance with the ethical principles of beneficence, non-maleficence, justice, and veracity among others (Sturdicant et al., 2020). However, these ethical principles are challenged when the nurse allows their own subjectivity to guide patient care. For nurses to have self-awareness of any possible personal conflicting values or contradictions in ethical principles, nursing education needs to address these difficulties.

While studying emergency room and 167 mental health nurses' attitudes toward alcoholics, Molina-Mula et al., (2018) used the Seaman-Manello (SM) Scale and observed that the subjects' measurement scores indicating a higher degree of rejection toward patients addicted to alcohol based on gender (male; t-test = 2,352, $p = 0.02$). In addition, scores associated with less punitive attitudes were observed among subjects with less than 12 years' experience compared to those with 12 or more years ($X^2 = 16,792$, df = 5, $p = 0.002$). Furthermore, a significant relationship was not observed between SM scores and knowledge scores.

Nurses' attitudes, perceptions, and education was explored by Horner et al., (2020) in a qualitative study at a large academic medical center. Semi-structured interviews were conducted with 22 nurses. Private interviews were carried out for 15-30 minutes during the workday. Some major themes that emerged were stigma, assessing and treating pain, safety, and feelings of burn

out. Additionally, nurses expressed an overwhelming need for education on how to treat addicted patients. This included recommendations for changes in the culture of the organization combined with increased nursing education to assist nurses in treating this often-marginalized patient population (Horner et al., 2020).

Pain Management of Addicted Individuals [Collaboration]

The existence of pain and substance use disorder (SUD) undoubtedly poses challenges to the formulation of treatment plans. SUD patients often feel that their pain is mismanaged or not addressed at all (Cooper et al., 2016). The World Health Organization views pain relief as a fundamental human right with no stipulations for patient comorbidities. Also, the International Nurses Society on Addictions states that every patient, including SUD patients, have a right to be treated for pain. Accordingly, the assessment and management of pain for SUD patients is the prevailing objective and must be adhered to (Cooper et al., 2016).

Opioid prescriptions written for patients' acute pain have gone through changes over the last few decades that includes closer monitoring by the government. This in turn created a need for healthcare providers to monitor patients use of opioids more meticulously. Conrardy et al. (2016) performed a mixed method study to evaluate patients in the emergency room setting with acute pain and their attitudes and beliefs regarding opioid addiction. Subjects ($N = 174$) completed a brief baseline interview prior to discharge form the emergency room and then a follow up phone interview 4 - 7 days post discharge to discuss their pain and pain control medications. The results indicated that 24.1% of participants did not know opioids are addicting and some patients believed they were not the type of person to become addicted. Only 58.7% of the patients said they could become addicted, 19.5% did not believe in addictions, 17.2% said addiction would depend on how much opioid they take, and 4.6% did not have any knowledge of

addictions. One demographic variable that the researchers looked at was income. Income level was a significant predictor of knowledge in that participant with greater than $50,000 of annual income responded that they were more likely to become addicted than those who earned less income ($p < 0.005$; Conrardy et al., 2016).

Patients with physical trauma and surgical necessities are challenging for healthcare providers regarding pain management. Balancing the use of postoperative opioids and the risk of opioid addiction must be addressed peri and post operatively by the surgical team. Barriers to successful pain management with trauma orthopedic surgical patients was examined through case studies by Wiznia et al. (2018). The use of opioids for pain requires that the surgeons be knowledgeable of potential addictions. However, trauma orthopedic surgeons are often unprepared to manage complex post-operative pain with opioid complications. A multimodal approach to perioperative pain management is recommended that includes nerve blocks, non-opioid analgesics, and interdisciplinary planning. The predicament of treating the patients' pain while acknowledging the potential negative outcomes of opioid use remains an essential responsibility of healthcare providers.

Alternative Approaches

An alternate non-medication approach to pain management is explored by White et al. (2017). The authors evaluate three case studies of patients treated with cold laser treatments for pain using Phoenix Thera-Lase System for pain management with surgical procedures, which was FDA approved in 2001. Each patient underwent an orthopedic surgery, was treated with opioids postoperatively, and they still complained of severe pain. A series of laser treatments was administered on the surgical area over a period of 3-8 weeks. The patients reported a reduced

pain score along with the return to their pre-surgical physical functioning. These findings could

be the results of patient bias and are anecdotal. It is necessary to conduct a larger scale, double-

blind, randomized control trial to replicate the findings of this research.

       Pain is an experience that everyone feels uniquely. Research has shown that patients'

pain is idiosyncratic and therefore could be difficult to treat. Nurses have many assessment tools

and guidelines to aid them in managing the patients' acute pain. However, nurses must use their

own observational skills along with experiential wisdom and interdisciplinary collaboration

when treating pain. The amount of nurses' knowledge and experience in clinical judgment

interfaces with the patients' acute pain needs. This intersection has been studied with some data

suggesting the need for training in pain management both during prelicensure education and

while nurses are practicing. Also noted is the nurses experience, personal perspectives, or biases

and how these relate to treatment of the patients' pain.

Hospital Policies [Systems Thinking]

       Patients' pain is often assessed or treated unsatisfactorily and there are few studies that

evaluate hospital policies or departmental culture. A large majority of patients visit the

emergency room with complaints of pain, but pain assessment is only carried out 26% of the

time (Ferrante et al., 2013). In a study done by Ferrante et al. (2013) nineteen hospitals across

each region of Italy took part in a survey to explore multivariable associations between hospital

policies and characteristics and pain management. Pediatric emergency pain cases were

specifically looked at. The results showed that 47.4% of hospitals did not have pain protocols,

about one third did not use a standardized pain or algorithmic scale, only 3 hospitals routinely

reassessed patients' pain. All emergency departments allowed parents to stay with the children

and 17 (89.9%) allowed them to stay during painful procedures, while 11 (57.9%) allowed

children to be held by parents during blood draws and 21% of hospitals did not chart on pain

assessment. Hospitals specifically treating pediatric and maternal trauma patients (in the northern

region) provided full assessment and were more likely to report policies on pain management.

Additionally, nurses to admissions ratio greater than the median (mean = 6, SD = 1.8) was

associated with better pain management (Ferrante et al., 2013). The researchers concluded that

pediatric pain management across all regions of Italy remain suboptimal despite availability of

national and international guidelines and recommended developing local policies and providing

staff with educational programs.

Similarly, in a retrospective study conducted by Prempeh et al. (2020) medical records

were reviewed for pain assessment and pain treatment in orthopedic and urogynecology patients

(N = 168). Two hospitals in South Africa were studied and both showed fewer pain assessments

than expected. The records were evaluated for the following: the number of patients that were

evaluated for pain, the pain assessor, assessment tools and management plans. The total number

of patients assessed for pain was 85 out of 168, 83 patients did not have a pain assessment

recorded. The number of patients with a documented pain management plan, despite not having a

pain assessment, was 140 out of 168 (83%) and 83 patients (70%) had a pain management plan.

Although these hospitals used pain management guided by the World Health Organization, the

researchers recommended that the health professionals utilize additional guidelines to manage

their patients' pain and integrate the use of assessment tools. Hospital based training programs to

educate healthcare providers was also recommended. The disparity between assessment and

management was concerning and raised questions regarding what information the clinicians

based their treatment plans on.

Some hospitals both in the United States and internationally use Acute Pain Services (APS), which is a multidisciplinary team approach used to treat patients' pain. This team is comprised of anesthesiologists, nurses, pharmacists, surgeons, and secretarial support staff. APS maintain pain protocols and guidelines, participate in continuing education, evaluate pain treatment methods, evaluate patient satisfaction, and audit cost effectiveness (Kishore et al., 2011). In a study conducted in Hungary by Lovasi et al. (2021), APS teams (or similar models) were assessed in their use of understanding the structure and operation of the facilities and to identify any barriers or facilitators in the hospitals in the context of patients' pain. A survey was sent to 72 hospitals and 52 responded (72.2%). The number of surveys returned was 135 of which were answered by anesthesiologists, nurses, and surgeons. The results showed that only 2 of the hospitals had APS teams. However, the hospitals that did not have APS teams complied with the outline and operation of the facilities to address pain and followed current literature recommendations regarding pain management. The responsibility of treating pain in those hospitals was under the surgical department (33.6%, $N = 43$), while 10.9% ($N = 14$) indicated that the responsibility was under the intensive department or pain clinics. Additionally, only slightly more than half of the participants described some form of cooperation with pain management within various professions in the hospital (55.5%, $N = 71$), the most frequent was the staff caring for the patients and the anesthesiologists (Lovasi et al., 2021). This study revealed a very small use of APS and must also consider financial and educational restraints in this part of Europe as additional factors to poor pain management outcomes.

In summary, hospital policies and governmental controls factor into pain management. There are guidelines that are generally acceptable nationally and internally but are not consistently used. However, resource availabilities are vastly different in certain parts of the

world. This effects nurses and other healthcare providers and sometimes they do not always follow protocols for pain management. Furthermore, there is no follow up or accountability for this lack of action.

Work Environment-Unit Culture

Work environment and unit culture set the tone for nursing practice. It has been noted that there may be a conflict of interest between quality of pain management and priorities in hospitals, or in other healthcare delivery places. Adhering to budget limitations, discharge goals, and patient to nurse ratio may result in substandard pain management. Additionally, nursing units that are understaffed or staffed with inexperienced nurses may have a lower moral and this may also result in less effective pain management (Taylor et al., 2009). Work environment (organizational context) has been shown to be a meaningful determinant in influencing patient outcomes. However, the exact nature of its function in modifying patients' pain treatment is unknown (Yamada et al., 2017). In a Canadian study by Yamada et al. (2017) eight pediatric hospitals were surveyed following a multifaceted interventional education program. This included 32 patient care units and nurses ($N = 779$). The intervention included evidence-based practice content. The organizational context was then assessed in relation to patients' pain outcomes. Organizational context was measured using the Alberta Context Tool (Estabrooks et al., 2009) which includes leadership, culture, evaluation, social capital, informal interactions, formal interactions, structural and electronic resources, and organizational variability (staff, time, and space). The results of the study by Yamada et al. (2017) indicated that pain management stratified by organizational context and testing for the moderating effects scored below the median. The odds ratios (OR) for space, staff, time, and social capital were 0.60, 0.48, 0.65, and

0.44, respectively. Higher context scores tended to reduce pain intensity. Treating pain must take into consideration leadership, changes in the environment, culture of the unit and resources.

Similarly, in a qualitative study by Ely (2001), factors that influence nursing practice (N = 16) related to pediatric pain assessment and management was explored in one pediatric unit of a community hospital. Group discussions were held with the participants every other week for ten weeks for a minimum of 30 minutes with video recording and field notes were taken. Some themes that were discovered were staffing changes, organizational issues, barriers such as time constraints, insufficient or no pain medications ordered by the physician, parental fear of opioids, and child characteristics, such as age. The most consistent category, lack of time, was expressed by the nurses as both an organizational and a clinical issue that interfered with optimal pain management.

Another concept that is new with very little research is implicit rationing. Implicit rationing is the failure to deliver necessary nursing duties or to withdraw from nursing care activities (Zuniga et al., 2015). Using a cross-sectional design, Zuniga et al. (2015), explored 156 nursing homes in Switzerland for self-reporting of implicit rationing in nursing care with 4307 workers, with 25% of them registered nurses. The following scales were used; for implicit rationing the Basel Extent of Rationing Nursing Care (Shubert et al., 2007), for perceptions in leadership the Practice Environment Scale of the Nursing Work Index (Swiger et al., 2017), for teamwork and safety climate the Safety Attitudes Questionnaire (Sexton et al., 2006) and for work stressors the Health Professions Inventory scale (Wolfgang, 1988). Of the items measured Zuniga et al. (2015), the three that scored the highest in the 'never' category for implicit rationing were: 76.8% for assist with drinking, 73.8% assist with food, 68.4% mobilization or changing position, and 68% leave a resident in urine or stool for more than 30 minutes. The

standardized betas from a multiple linear regression analysis for work stressors revealed: conflict

in recognition or work = 0.088, workload = 0.137, lack of preparation = 0.069, and teamwork

and safety = -0.054 ($p < 0.01$). Although results showed that the overall rationing of care was

low for these nursing homes, self-reporting is a limitation of this study. This may have increased

the participants' subjectivity and they may not have accurately reported. Further research is

needed.

In summary, workplace environment has many factors that can play a role in pain

management. Staffing, leadership support, resources, and attitudes of peers and patients are some

examples of determinants in the management of patients' pain. Organizational context is the

medium in which nurses deliver care therefore the relationship between organizations and pain

management is unavoidable connected.

Chapter Summary

Pain is an experience that each individual patient feels uniquely. Patient characteristics

such as resiliency, vulnerability, and complexity all factor into their perceptions of pain.

Additionally, patients with a history of opioid addictions not only present as difficult to manage

but may alter the nurses' intentions to treat pain. Also, research has shown that patients' pain can

be idiosyncratic and therefore difficult to treat. This can present as a challenging set of patients

to be treated. Additionally, nurses' competencies such as clinical judgment, moral action and

caring practices influence nursing assessment. When the patients' characteristics and the nurses'

competencies are combined these both influence each other; and can have an impact on the

patients' outcomes. This confluence of patients' pain and nurses' competencies can be explored

to gather data that may show the intentions, resistance, or inability of nurses to assess and treat

the patients' pain.

Nurses have many assessment tools and guidelines to aid them in managing the patients'

acute pain. However, nurses must use their own observational skills along with experiential

wisdom and interdisciplinary collaboration when treating pain. The amount of nurses'

knowledge and experience in clinical judgment interfaces with the patients' acute pain needs.

This intersection has been studied with some data suggesting the need for training in pain

management both during prelicensure education and while nurses are practicing. Also noted is

the nurses experience, personal perspectives, or biases and how all three may relate to the

treatment of the patients' pain. The structure of the organization could also be a contributing

factor of implicit rationing of nursing care. Examples are hospital policies, work environments,

and unit culture which potentially influence the nurses' treatment, or lack of treatment, of the

patients' pain.

Research Question

How is pain assessment by nurses influenced by a patient's current and past use of drugs

and alcohol; while considering the nurse's empathy towards the patient, their level of

competence, the hospital/unit culture, and other work environment factors?

Figure 2

Research Model Based on the AACN Synergy Model [nurses' assessment of pain]
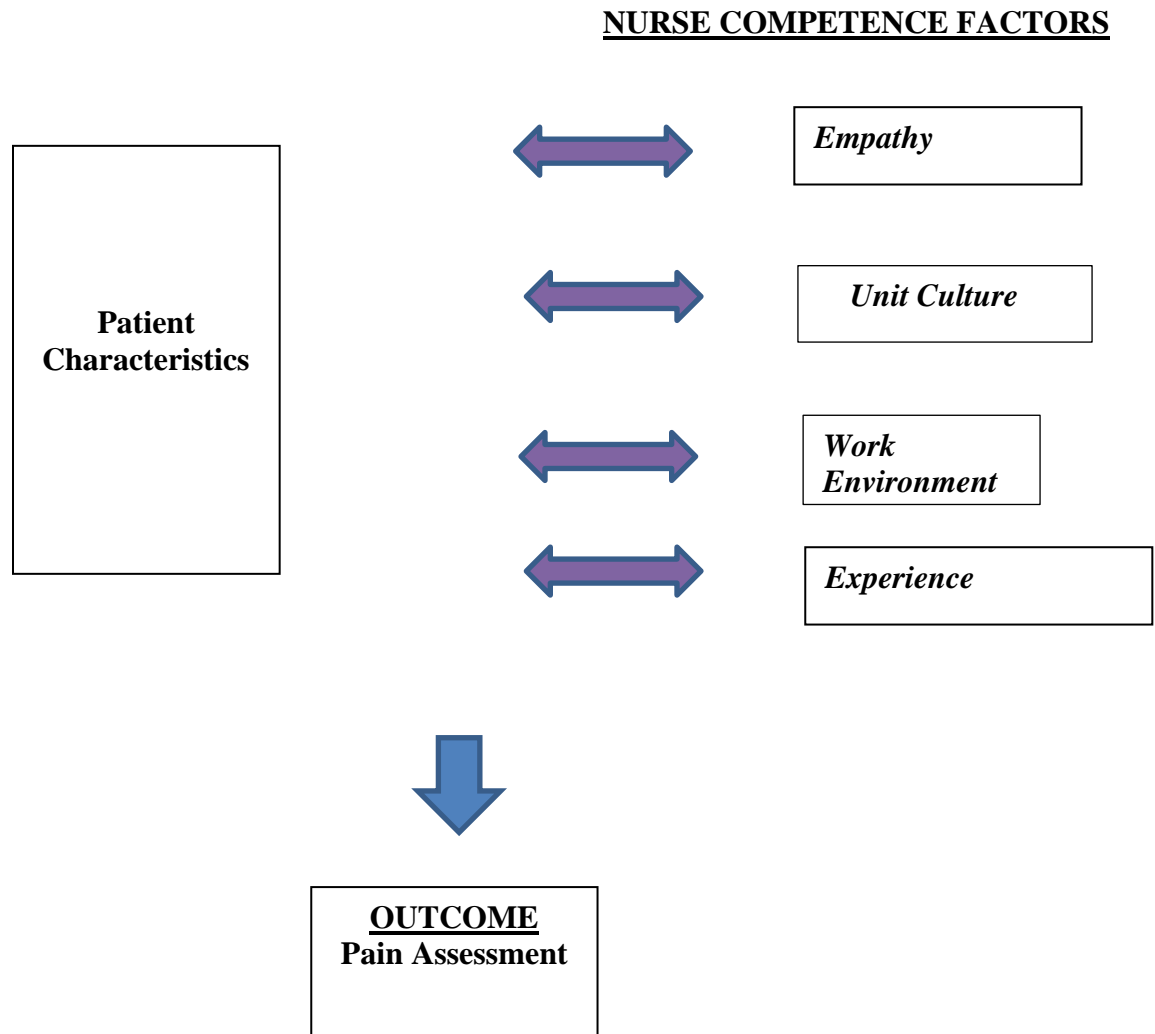
Chapter III - Methodology

This section will outline the research design including descriptions of the samples, methods, participants, and tools used for quantitative data collection. The process to analyze the data will be outlined. Ethical considerations and the IRB process will also be discussed.

Design

This is a descriptive correlational design study. A quantitative approach was used to analyze the relationships among the independent variables of empathy, personal and professional biases, and hospital culture and the dependent variable of perceived patients' pain. A scenario of a hospitalized acute pain patient with chronic disease and a history of prior surgery was created by the researcher and presented to the participants. The scenario described that the patient has managed their disease with non-steroidal anti-inflammatory drugs (NSAIDS), occasional courses of antibiotics and life-style changes. The description also indicated that the patient is currently complaining of pain and showing typical cues of pain: muscle tension, restlessness, guarding, etc.

Three different scenarios were randomly distributed to the subjects. Each was the same except for one characteristic that relates to described patient's prior drug or alcohol use (related to the hypotheses regarding the subjects' attitudes). These additional pieces of information are as follows, scenario: 1) the patient has no history of alcohol/marijuana or opioid use, 2) the patient has a past history of alcohol/marijuana or opioid use 3) the patient is currently using alcohol/marijuana or opioids.

Description of the Population of Interest

The population consists of professional nurses in the United States caring for patients with a variety of types of diagnoses and etiologies of pain.

Sample

The participants were recruited through Data Axle which is a proprietary company that provides email addresses of people in specific industries. The sample email addresses consisted of professional nurses across the US who have assessment of pain as a job responsibility. Nurses were solicited to complete the measurement tools anonymously using Qualtrics^{XM}, a proprietary survey platform. They were solicited to participate voluntarily and do not have a relationship with the researcher. The recruitment method included obtaining email addresses of registered nurses from Data-axle.com. Critical care and oncology nurses as well as RNs and advanced practice nurses were recruited. The participants were then emailed a consent form and survey through Qualtrics. Data were then transferred from Qualtrics reports to Microsoft Excel. The sample size was estimated using G*Power 3.1 (Faul et al., 2009) with power $= 0.80$, $\alpha = 0.05$, EF $=$ medium, using ANCOVA with two groups and 4 co-variates and determined that 196 subjects are needed.

Human Subjects Protections

An application was sent to the Institutional Review Board (IRB) at Adelphi University and was approved. The subjects were protected by collecting data anonymously via email solicitation. No personal identifiers were used in the survey collection tools.

Theoretical Definitions of Key Variables

Pain: is defined as an unpleasant sensory and emotional experience that is associated with actual or potential tissue damage and pain is always subjective (NIH, 2021).

Empathy: is being able to share and feel what another person is feeling. It is being able to understand and share in other people's mood, including pain (Oktem et al., 2021).

Intention: an amalgamation notion based on choices, ideology, attitude, and commitment. The concerns are twofold, the result of an action or the results for the individual carrying out the action (Sadek, 1992).

Unit Culture: values and behaviors that contribute to the unique environment within an organization. This includes the norms, learned behavior, attitudes, practices, knowledge, and assumptions shared by the members of the group, or unit (Andre & Sjovold, 2017).

Organizational Environment: a set of forces or characteristics that affect operations, performance, and resources of an institution (Everson, 2003).

Addiction: is a process of a behavior that serves to provide pleasure and escape from discomfort, physically or emotionally, where there is the inability to control the behavior despite negative outcomes (Goodman, 1990).

Operational Definitions of Key Variables

Pain: patient pain is self-reported or observed by the nurse and assigned a value, ex: Numeric Pain Rating Scale and the Comfort Behavior Scale. The patients' pain was measured in this study. The presence of pain was the dependent variable. Nurses were assigned a numeric pain indicator using the Numeric Pain Rating Scale and completed the Comfort Behavior Scale after reading a patient scenario.

Empathy: nurses' empathy was measured using the Interpersonal Reactivity Index (IRI), a standardized tool (Davis, 1980). The subscales of the IRI include social functioning, emotionality, self-esteem, and sensitivity to others.

Unit Culture: the values and conventions of the nursing unit. The culture of the unit as represented by the nurses' role support, role related self-esteem, and role legitimacy were measured using the Drug and Drug Problem Perception Questionnaire (Watson et al., 2007).

Organizational Environment: was measured using the Practice Environment Scale of the Nursing Work Index (PES-NWI). The scale included specific situational or environmental factors that may enhance or disable nurses' ability to provide care to pain patients (Lake, 2002).

Standardized Measures

There were five standardized measurement tools used in this study. Three were used as independent variables (DDPPQ, PES-NWI and IRI), and two were used as dependent variables (NPRS and CBS). Two scales were employed as dependent variables to measure the subject's assessment of the perceived pain described in the scenario that they received as accurately as possible, given that the tools were designed to be used with an actual patient (not a description of one).

Drug and Drug Problems Perception Questionnaire (DDPPQ)

To measure the unit culture the DDPPQ (Watson et al., 2007) was used. The DDPPQ is a 22-item self-reporting scale with five subscales: *Role Adequacy, Role Support, Job Satisfaction, Role Related Self-esteem,* and *Role Legitimacy*. A 7-point Likert scale rating is assigned to each item ranging from 1 (strongly agree) to 7 (strongly disagree). Higher scores represent nurses' negative attitudes, whereas lower scores denote nurses' positive attitudes. According to Watson et al. (2006), the DDPPQ has a Cronbach's alpha coefficient of 0.87, and the construct and content validity of these measures have been reported as satisfactory. This study utilized all six of the subscales. They are *Role Adequacy* (items 1, 2, 3, 4, 5, 6, and 7; Cronbach's alpha = 0.94), *Nurses' Role Support* (items 10, 12, 13, and 14; Cronbach's alpha = 0.78), *Job Satisfaction* (items 16, 20, 21, and 22; Cronbach's alpha = 0.80), *Role-Related Self-esteem* (items 15, 17, 18,

and 19; Cronbach's alpha = 0.69,), and *Role Legitimacy* (items 8, 9, and 11; Cronbach's alpha =

0.89). Items 15, 16, 17, and 18 were reversed for negative responses on the Likert scale.

Practice Environment Scale of the Nursing Work Index (PES-NWI)

To determine the quality of the nurses' practice environment, the PES-NWI (Lake, 2002)

measurement tool was used. The PES-NWI is a 31-item tool with 5 subscales: *Nurse*

Participation in Hospital Affairs; Nursing Foundations for Quality of Care; Nurse Manager

Ability, Leadership and Support of Nurses; Staffing and Resource Adequacy; and Collegial

Nurse-Physician Relations. Response options utilized a 5-point Likert scale that ranged from

strongly agree to strongly disagree. This study used the following 3 subscales: *Nursing*

Foundations for Quality of Care (items 18, 19, 26, 29, 30, & 31); *Nurse Manager Ability,*

Leadership and Support of Nurses (items 3, 10, 20, & 25); and *Staffing and Resource Adequacy*

(items 1, 8, 9, & 12). The Cronbach's alphas for these subscales are 0.80, 0.80 and 0.86

respectively (Havens et al., 2012).

Interpersonal Reactivity Index (IRI)

The participants' cognitive and emotional aspects of empathy were measured using the

IRI (Davis, 1980). There are 28 items in this scale with four subscales: *Fantasy, Perspective*

Taking, Empathic Concern, and Personal Distress. This study used all four of the subscales:

Empathic Concern consisting of 7 items (2, 4, 9, 14, 18, 20, & 22; Cronbach's alpha = 0.80)*,*

Personal Distress consisting of 7 items (6, 10, 13, 17, 19, 24 & 27; Cronbach's alpha = 0.76),

Fantasy Scale consisting of 7 items (1, 5, 7, 12, 16, 23 & 26; Cronbach's alpha = 0.79; and

Perspective Taking consisting of 7 items (3, 8, 11, 15, 21 25 & 28; Cronbach's alpha = 0.75).

The scores are calculated using the mean for each subscale with items 3, 4, 7, 12, 13, 14, 15, 18

& 19 reverse-scored. The Cronbach's alpha for the overall score is reported as 0.83. The IRI

utilizes a 5-point Likert scale with options ranging from *does not describe me well* to *describes me very well* (Davis, 1980).

Numeric Pain Rating Scale (NPRS)

A variable of assessed pain severity based on the description in the scenarios provided to subjects (developed by the author of this dissertation) utilized the Numeric Pain Rating Scale (NPRS). The NPRS is an 11-point Likert-type scale with one item (Alghadir et al., 2018). This item consists of choices from the numbers 0 through 10 with a range of 0 representing *no pain* and 10 representing the *most severe pain*. The NPRS has been shown to be valid and reliable instrument with good to excellent test-retest reliability. Convergent validity was studied between the NPRS and correlated with the Verbal Rating Scale (VRS). The NPRS was consistent in supporting pain measurement and was found to be strongly correlated with the VRS ($r = 0.94$). The test-retest reliability, and minimal detectable change (MDC) was also studied. Test-retest showed excellent reliability between the scales and good-to-excellent correlation (Alghadir et al., 2018).

Comfort Behavior Scale

The dependent variable of patient pain was again measured; this time using the Comfort Behavioral Scale (CBS) (van Dijk, 2015). CBS is a measurement tool that has been validated in several languages and is used to assess sedation, distress, and pain. The 6-item scale consists of the following score categories: *Alertness, Calmness/Agitation, Respiratory Response, Physical Movement, Muscle Tone*, and *Facial Tension.* Each item was found to have inter-rater reliability with the following test-retest Pearson coefficients: *Alertness (*0.71*), Calmness/Agitation (*0.81*), Respiratory Response (*0.35*), Physical Movement (*0.69*), Muscle Tone (*0.75*), Facial Tension (*0.80*).* The rater uses a 5-point Likert type scale with 1 representing the least and 5 representing

the most. The CBS has a Cronbach's alpha for the overall score reported as 0.87 (Suprawoto et al., 2020). This study used questions 1, 2, 3, 4, and 6 of the CBS. Question 5 refers to respiratory response and is not relevant to the patient scenario.

Demographic Questionnaire

A modified version of the Clinical Nurse Specialist (CNS) Demographic Questionnaire (Mayo et al., 2001) was used to obtain demographic information about the participants. Questions 1, 2, 3, 4, 6, 10, 11, 12, 14, 15, 16, 17, 20, 21, 22, and 23 of the survey were included. The questions contained the: participants' age; gender; ethnicity; degree held; if they are certified as an advanced practice nurse; the number of years licensed as an RN; if they are currently employed (full or part-time employment status was solicited); if they are employed, are they employed in an acute care setting (if so, the size of the hospital was requested and the number of departments they work in); if they are employed in ambulatory care (if so, the number of departments covered was requested); area of employment, major professional activity; are they working in a clinical specialty area of the hospital; what is the primary specialty in which they are currently practicing; and what is the job title of the person to whom they directly report.

Patient Scenario:

The patient is a 54-year-old individual who was admitted to the hospital via the emergency room 2 days prior for complaints of severe abdominal pain, The patient has had prior surgery for the treatment of this disease. Since the surgery, the patient has managed their disease with non-steroidal anti-inflammatory drugs (NSAIDS), occasional courses of antibiotics and life-style changes. The patient was most recently admitted to the hospital in acute pain. The patient is currently complaining of pain, has facial grimacing, is bent over in the bed and is asking for pain medication.

Each of the following statements will be added to the Patient Scenario to create 3 differing versions that will be randomly assigned to study subjects.

1) The patient does not have a history of alcohol, marijuana, or opioid use.

2) The patient has a past history of alcohol, marijuana, or opioid use.

3) The patient is currently frequently using alcohol, marijuana, or opioids.

Research Question

How is pain assessment by nurses influenced by a patient's current and past use of drugs and alcohol; while considering the nurse's empathy towards the patient, their level of competence, the hospital/unit culture, and other work environment factors?

Hypotheses

Ha1: There is a significant difference in IRI scores among the 3 patient scenarios.

Ha2: There is a significant difference in DDPPQ scores among the 3 patient scenarios.

Ha3: There is a significant difference in PES-NWI scores among the 3 patient scenarios.

Ha4: There is a significant difference in NPRS scores among the 3 patient scenarios.

Ha5: There is a significant difference in CBS scores among the 3 patient scenarios.

Ha6: The NPRS scores for the 'frequent use…opioids' (scenarios 2 and 3) patient scenario are significantly different from no drug history (scenario 1) while controlling for IRI, DDPPQ and PES-NWI scores.

Ha7: The CBS scores for the 'frequent use…opioids' (scenarios 2 and 3) patient scenario are significantly related to IRI, DDPPQ and PES-NWI scores.

Figure 3

Independent and Dependent Variables in the Research Model

Case Scenarios
(patients' characteristics)

IRI
(empathy)

DDPPQ
(unit culture;
drug use)

PES-NWI
(organizational
environment)

Demographic
Questions

NPRS
CBS
(pain assessment)
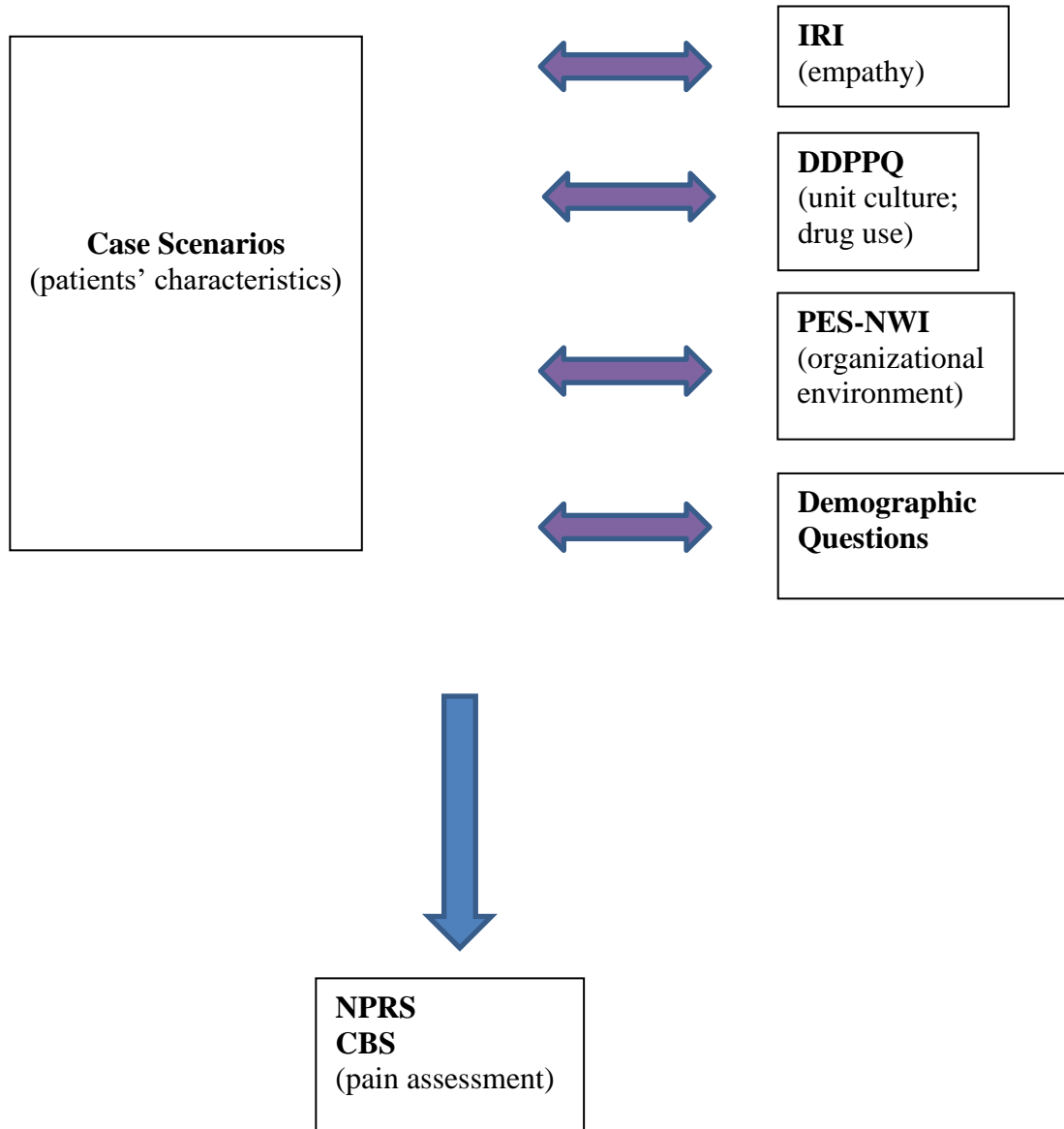
Data Analysis Procedure

   The focus of this study is to examine differences in key variables among the 3 patient-descriptions (scenarios) to determine the effect of attitudes toward substance use with respect to pain assessment scores. The data was collected using Qualtrics™ and downloaded to an Excel file where it was cleaned and prepared for import into SPSS version 28 for analysis. The analyses involved 4 steps. In step 1, the data was evaluated for normality of the distributions. In step 2, the pain assessment scores (dependent variables) were compared to the descriptive variables and standardized measure scores to determine to potential for confounding effects, using univariate and bivariate tests. In step 3, the hypotheses were tested using univariate analyses (ANOVAs). Finally, in step 4, the factors observed to have been significantly related to the dependent variables were entered into a multiple regression analysis to determine their unique and combined relationships while controlling for each.

Chapter IV – Results

Recruitment of the Sample

The sample of RN participants that answered the surveys were solicited several ways. First was via professional work emails using the data collection company Data Axle starting on 9/28/2022 for one month with minimal results. Next the internet platforms of GMass and TxtFlo were used as a form of solicitation. Gmass used personal and work emails and TxtFlo used texting to personal cell phones. Additionally, the surveys were uploaded to the American Psychiatric Nurses Association Discussion Board, Long Island Nurses Group on Facebook, and emailed to professional colleagues for snowball sampling. The surveys were closed on Qualtrics on 11/22/2022 and data collection was discontinued.

The following results were derived from analyzing the data. The data was first examined for response rate, initiated respondents, partially completed, and fully completed surveys, and eliminated participants who did not answer questions or only provided demographic data. Qualtrics[XM] reported 296 respondents to the surveys, with 223 (75.0%) of participants as having initiated the surveys. Out of the 223 initiated, 130 (43.9%) of the participants fully completed the surveys, and 93 (31.4%) of the participants partially completed the surveys.

Table 1
Response Rate and Missing Data

Response Rates	N	Percent
Clicked on survey website	296	100.0
Number initiated the survey	223	75.3
Number fully completed	130	43.9
Number partially completed	93	31.4
Mean percent of answers by participant (partial completers)		74.7
Mean percent of answers by question (partial completers)		62.7

Description of the Sample (Total Participants)

The demographics of the participants are reported as majorities and are as follows: 27.9% ($n = 64$) ages 60 or more and 24% ($n = 55$) ages 50-59; 79.5% ($n = 182$) reported female and 16.2% ($n = 37$) male; 61.1% ($n = 140$) reported being Caucasian and 21.0% ($n = 48$) African American; 82.1% ($n = 188$) reported being non-Hispanic/Latino; 50.2% ($n = 115$) reported having a Bachelor of Nursing degree, 19.2% ($n = 44$) having a Masters in Nursing; 42.8% ($n = 98$) report having 21 or more years of nursing experience, 17.9% ($n = 41$) have 11-20 years; 72.5% ($n = 166$) report not having a certification in a clinical specialty; 83.8% ($n = 192$) are currently employed; 68.6% ($n = 157$ work more than 35 hours per week; 43.7% ($n = 100$) work in acute care, and 14.4% ($n = 330$ work in ambulatory care; 31.4% ($n = 72$) report working in a facility with 250 beds or more; 55.5% ($n = 127$) provide direct patient care, 9.6% ($n = 22$) are supervisors or managers.

Table 2

Demographic Statistics of Respondents to the Three Scenarios

Category	Levels	Scenario 1		Scenario 2		Scenario 3		Total		Test
		n	%	n	%	n	%	n	%	Chi-Squ.
Age	20-29	9	11.8	7	8.8	8	12.1	24	10.5	NS
	30-39	10	13.2	13	16.3	9	13.6	32	14.0	
	40-49	15	19.7	19	23.8	13	19.7	47	20.5	
	50-59	18	23.7	17	21.3	20	30.0	55	24.0	
	60 or more	24	31.6	24	30.0	16	24.2	64	27.9	
	Missing	0	0	0	0	0	0	7	3.1	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
Gender	Male	15	19.7	11	13.8	11	16.7	37	16.2	NS
	Female	59	77.6	68	85.0	55	83.3	182	79.5	
	Non-binary/third gender	0	0	0	0	0	0	0	0	
	Prefer not to say	2	2.6	4	1.3	0	0	0	1.3	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
Race Group	Caucasian	41	53.9	51	63.7	48	72.7	140	61.1	NS
	African American	22	28.9	18	22.5	8	12.1	48	21.0	
	American Indian	1	1.3	0	0	1	1.5	2	9	
	Asian	11	14.5	4	5.0	6	9.1	21	9.2	
	Pacific Islander	0	0	0	0	0	0	10	4.4	
	Missing	0	0	1	1.3	0	0	0	0	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
Ethnicity	Hispanic/Latino	7	9.2	10	12.5	4	6.1	188	82.1	NS
	Non-Hispanic/Latino	63	82.9	66	82.5	59	89.4	21	9.2	
	Missing	6	7.9	4	5.0	3	4.5	0	8.7	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
Degrees	Diploma in nursing	2	2.6	2	2.5	0	0	4	1.7	NS
	Associate Degree in nursing	12	15.8	6	7.5	9	13.6	27	11.8	

	Associate in another field	0	0	0	0	0	0	0	0	
	BSN	44	57.9	42	52.5	29	43.9	115	50.2	
	BS/BA another field	5	6.6	2	1.3	3	4.5	9	3.9	
	MSN	9	11.8	18	22.5	17	25.8	44	19.2	
	Master in another field	0	0	3	3.8	3	4.5	6	2.6	
	PhD in nursing	0	0	1	1.3	0	0	1	0.4	
	DNP	4	5.3	5	6.3	3	4.5	12	5.2	
	DNSc	0	0	0	0	0	0	0	0	
	Doctorate in another field	0	0	1	1.3	2	3.0	3	1.3	
	Missing	0	0	1	1.3	0	0	8	3.5	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
Years as RN	1-2	2	2.6	2	2.5	1	1.5	5	2.2	NS
	1-2	5	6.6	5	6.3	6	9.1	16	7.0	
	3-5	11	14.5	9	11.3	7	10.6	27	11.8	
	6-10	13	17.1	10	12.5	11	16.7	34	14.8	
	11-20	10	13.2	16	20.0	15	22.7	41	17.9	
	21 or more	35	46.1	37	46.3	26	39.4	98	42.8	
	Missing	0	0	1	1.3	0	0	8	3.5	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
Certified as Clinical Nurse Specialist?	No	64	84.2	56	70.0	46	69.7	166	72.5	$p = 0.03$
	Yes	10	13.2	23	28.7	20	30.0	53	23.1	
	Missing	2	2.6	1	1.3	0	0	10	4.4	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
Currently employed	Yes	65	14.5	10	87.5	57	86.4	192	83.8	NS
	No	11	85.5	70	12.5	9	13.6	30	13.1	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	

Employed status	35 or more hours per week	53	69.7	58	72.5	46	69.7	157	68.6	NS
	15-34 hours per week	14	18.4	13	16.3	10	15.2	37	16.2	
	other	6	7.9	8	10.0	9	13.6	23	10.0	
	Missing	3	3.9	1	1.3	1	1.5	12	5.2	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
Are of employment	Acute inpatient	29	38.2	38	47.5	33	50.0	100	43.7	NS
	Ambulatory	12	15.8	12	15.0	9	13.6	33	14.4	
	Long term	7	9.2	7	8.8	3	4.5	17	7.4	
	Home health/hospice	9	11.8	4	5.0	4	6.1	17	7.4	
	School	2	2.6	0	0	0	0	2	9	
	College/Academia	2	2.6	3	3.8	2	3.0	7	3.1	
	Industry	4	0	1	1.3	0	0	1	0.4	
	Private practice	2	5.3	5	6.3	8	12.1	17	7.4	
	Other	10	13.2	9	11.3	7	10.6	26	11.4	
	Missing	1	1.3	1	1.3	0	0	9	3.9	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
If in Acute care-how many beds	Less than 100	12	15.8	9	11.3	8	12.1	29	12.7	NS
	100-250	11	14.5	21	26.3	16	24.2	48	21.0	
	Greater than 250	27	35.5	22	27.5	23	34.8	72	31.4	
	Missing	26	34.2	28	35.0	19	28.8	80	34.9	
	Total	76	100.00	80	100.0	66	100.0	229	100.0	
Professional activity	Private direct patient care	41	53.9	46	57.5	40	60.6	127	55.5	NS
	Research	0	0	0	0	0	0	0	0	
	Administration	0	0	4	5.0	4	6.1	8	3.5	
	Infection Control	0	0	0	0	1	1.5	1	0.4	
	Supervisor/Manager	5	6.6	7	8.8	10	15.2	22	9.6	
	Quality Improvement	1	1.3	1	1.3	0	0	2	0.9	

		n	%	n	%	n	%	n	%	
	Case Management	5	6.6	2	2.5	3	4.5	10	4.4	
	Insurance/Utilization Review	0	0	1	1.3	0	0	1	0.4	
	Patient Education	2	2.6	2	2.5	3	4.5	7	3.1	
	Staff Education	1	1.3	0	0	0	0	1	0.4	
	Nursing Education/Academia	3	3.9	4	5.0	2	3.0	9	3.9	
	Employee Health	1	1.3	1	1.3	0	0	2	0.9	
	Other	16	21.1	11	13.8	2	3.0	29	12.7	
	Missing	1	1.3	1	1.3	1	1.5	10	4.4	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	
Clinical specialties in current practice	Adult health	5	6.6	7	8.8	6	9.1	18	7.9	NS
	General med/surg	12	15.8	11	13.8	12	18.2	35	15.3	
	Post-operative	6	7.9	8	10.0	4	6.1	18	7.9	
	Cardiovascular	2	2.6	1	1.3	2	3.0	5	2.2	
	Family health	1	1.3	1	1.3	1	1.5	3	1.3	
	Critical care	4	5.3	7	8.8	5	7.6	16	7.0	
	Parent/Child health	2	2.6	3	3.8	0	0	5	2.2	
	Psych/Mental health	8	10.5	10	12.5	15	22.7	33	14.4	
	Pulmonary	0	0	1	1.3	0	0	1	0.4	
	Community	2	2.6	1	1.3	2	3.0	5	2.2	
	Gerontological	7	9.2	7	8.8	5	7.6	19	8.3	
	Neurology/neurosurgery	3	3.9	1	1.3	3	4.5	7	3.1	
	Home health	6	7.9	0	0	3	4.5	9	3.9	
	Oncology	0	0	2	2.5	1	1.5	3	1.3	
	Other	15	19.7	16	20.0	6	9.1	37	16.2	
	Missing	3	3.9	4	5.0	1	1.5	15	6.6	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	

Job title you directly report to										
	Nurse Executive	5	6.6	4	5.0	2	3.0	11	4.8	NS
	Director of Nursing	6	7.9	7	8.8	9	13.6	22	9.6	
	Director of Education	1	1.3	1	1.3	0	0	2	0.9	
	Associate/Assistant Director of Nursing	5	6.6	3	3.8	2	3.0	10	4.4	
	Nurse Manager or Assistant Nurse Manager	39	51.3	39	48.8	33	50.0	111	48.5	
	Quality Management Director	1	1.3	0	0	1	1.5	2	0.9	
	Physician	2	2.6	8	10.0	4	6.1	14	6.1	
	School Principal/Superintendent	2	2.6	2	2.5	0	0	2	0.9	
	Hospital Administrator	2	2.6	2	2.5	3	4.5	7	3.1	
	Self-Employed	3	3.9	12	15.0	1	1.5	6	2.6	
	Other	7	9.2	0	0	11	16.7	30	13.1	
	Missing	3	3.9	2	2.5	0	0	12	5.2	
	Total	76	100.0	80	100.0	66	100.0	229	100.0	

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Significant descriptive statistical differences among the 3 groups of subjects. Using Chi Square in SPSS there were not any statistically significant differences among the three scenario surveys except for Group One. The participants that answered the survey in Group One had less certified clinical specialist nurses, according to the demographic results question six; *Are you certified as a clinical nurse specialist by a specialty organization?* Yes or no were the answer options. The *p*-value for the Chi-Square for question six was $p < 0.001$.

Quality of the Data

Missing Data. The mean percent of answers by participant was 74.70% and the mean percent of answers by question (participant) was 62.7%. Patterns of missing-ness for both the demographic and the standardized measure items were not observed by reviewing the frequency of missing values by survey item. Therefore, the item mean scores were used to replace standardized measure missing statistics (Cohen et al., 2003). However, missing values for demographics were not replaced due to the unique characteristics of those data.

Normality of the Distributions. Although the Kolmogorov Test consistently reported $p < 0.05$, suggest skewed distributions, the means and medians are less than one standard deviation apart for each of the standardized measures, and the Skewness and Kurtosis statistics were within +1.5 and -1.5 for all measures, as well. In addition, visualization of the histograms for each measure suggested reasonably normal distributions for all the measures except for the NPRS which is based on a single item.

Outliers. The mean scores were converted to Z-scores to identify outliers using a 95% confidence interval. A total of 60 outliers were observed among the 4 standardized measures' data. This represents 7% of the data. As a result, the means were converted to Z-scores and those

that were greater than 2.0 were adjusted to 2.0 and those less than -2.0 were adjusted to -2.0.

This resulted in outliers representing 5% or less of the mean data per standardized measure

which is deemed adequate by Cohen (Cohen et al., 2003).

Table 3

Table of the Normality Statistics of the Standardized Measures

Measure	Mean	Median	STD	Max.	Min.	Skewness	Kurtosis	No. Outliers
NPRS	2.60	3.00	0.65	3.00	0.00	-1.8	1.3	
CBS	3.87	3.79	0.56	5.0	2.6	0.14	-0.23	19
IRI	2.38	2.38	0.33	3.25	1.29	0.07	0.497	15
DDPPQ	2.78	2.78	0.69	4.68	1.0	-.037	0.51	13
NWI	3.10	3.10	0.417	4.0	1.51	-.361	1.37	13

Table 5

Cronbach's Alphas for the 4 Multi-Item Standardized Measures

Measure	Cronbach's Alphas	N
IRI	.60	174
DDPPQ	.82	168
NWI-PES	.97	130
CBS	.77	188

The NPR was not calculated for a Cronbach's alpha in this study because it is a one question

measurement tool. The Cronbach's alphas used in this study were calculated for the IRI,

DDPPQ, NWI-PES and the CBS measurement tools. The results showed that the DDPPQ (.82)

has very good level of internal consistency; the NWI-PES (.97) is considered excellent reliability

and CBS (.77) is acceptable reliability. The observed Cronbach alpha associated with the IRI was

.60. The IRI Cronbach's alpha of .83 was calculated by the measure's developer (Davis, 1980).

According to Polit and Beck (2017) coefficients of .80 or higher are accepted as preferable and

higher values reflect better internal consistency. This is a limitation of the study in that

significant relationships related to empathy may have gone undetected due to this issue of the

IRI's reliability.

Bias related to Sampling. The adjusted mean standardized scores (Z scores) for each of the

standardize measures (excluding the NPRS) were then compared to each of the descriptive

statistics using One-Way ANOVAs. Ten (10) significant relationships were found among two of

the four standardized (CBS and IRI) measures using an alpha level of 10% ($\alpha = 0.10$). They are

indicated below in Table 4.

Table 4

Descriptive Variables Significantly Related to Standardized Measures

Measure	Descriptive Variable	*p*-value
CBS	Age	0.04
	Gender	0.09
	Race	0.50
	Degree	0.07
	Certification	0.001
	Hosp. Size	0.07
	Specialty	0.04
	Report to…	0.05
IRI	Ethnicity	0.08
	Setting	0.01
	Specialty	0.01

Several significant relationships were observed among descriptive statistics and the

standardized measures. The value of $p = 0.10$ was used in the preliminary analysis of the

adjusted scores of the effects of the descriptive statistics on the CBS. They are age in relation to

CBS (ANOVA; $F = 2.68$, $df = 4$, $p = 0.04$); certification in relation to CBS (ANOVA; $F = 11.0$,

$df = 1$, $p = 0.001$); role in relation to CBS (ANOVA; $F = 2.08$, $df = 8$, $p = 0.05$); specialty in

relation to CBS (ANOVA; $F = 1.93$, $df = 13$, $p = 0.04$); who the nurse reports to in relation to

CBS (ANOVA; $F = 2.07$, $df = 8$, $p = 0.05$); race in relation to CBS (ANOVA; $F = 2.4$, $df = 4$, p

$= .05$ degree in relation to CBS (ANOVA; $F = 1.97$, $df = 7$, $p = 0.07$); gender in relation to CBS

(ANOVA; $F = 2.54$, $df = 2$, $p = .09$); hospital size in relation to CBS (ANOVA; $F = 2.74$, $df = 2$,

$p = .07$).

The value of $p = 0.10$ was used in the preliminary analysis of the adjusted scores of the

effects of the descriptive statistics on the IRI. The following results yielded: ethnicity in relation

to IRI (ANOVA; $F = 3.20$, $df = 1$, $p = .08$) setting in relation to IRI (ANOVA; $F = 3.17$, df = 5, p

$= 0.01$); and specialty in relation to IRI (ANOVA; $F = 2.26$, $df = 13$, $p = 0.01$).

Results of Hypotheses Tests

Hypothesis 1: *There is a significant difference in IRI scores among the 3 patient scenarios.*

Result: A significant difference among the three scenarios was not observed with respect

to IRI (ANOVA; $F = 1.65$, $df = 2$, $p = 0.19$).

Hypothesis 2: *There is a significant difference in DDPPQ scores among the 3 patient scenarios.*

Result: A significant difference among the three scenarios was not observed with respect

to DDPPQ (ANOVA; $F = 1.27$, $df = 2$, $p = 0.28$).

Hypothesis 3: *There is a significant difference in PES-NWI scores among the 3 patient*

scenarios.

Result: A significant difference among the three scenarios was not observed with respect

to PES-NWI (ANOVA; $F = 0.878$, $df = 2$, $p = 0.42$).

Hypothesis 4: *There is a significant difference in NPRS scores among the 3 patient scenarios.*

Result: Using ANOVA for hypothesis 4 testing, the dependent variable (NPRS)

demonstrated statistically significant difference among the three scenarios (ANOVA; $F = 9.4$, *df*

= 2, $p < 0.001$). The group means were as follows: group 1 = 2.73; group 2 = 2.36; and group 3 =

2.59). Using a Bonferroni post hoc adjustment, NPRS differences were observed between groups

1 and 2 ($p < .001$) and groups 2 and 3 ($p = 0.036$). The difference between groups 1 and 3 was

not significant.

Interpretation of the results: The patient scenarios with either past or current histories of

drug use (nos. 2 and 3) had lower NPRS scores. However, the patient scenario with a current

drug use history had a higher NPRS score than the scenario with a past history.

Hypothesis 5: *There is a significant difference in CBS scores among the 3 patient scenarios.*

Result: Using ANOVA for hypothesis 5 testing, the dependent variable (adjusted CBS)

demonstrated statistically significant differences among the three scenarios (ANOVA; $F = 12.12$,

$df = 2$, $p = <.001$). The group means were as follows: group 1 = 4.108; group 2 = 3.693; group 3

= 3.794. Using Bonferroni post hoc adjustment, CBS differences were observed between groups

1 and 2 (p = < .001) and groups 1 and 3 (p = .002). The difference between groups 2 and 3 was

not significant.

Interpretation of the results: The patient scenarios with either current or past histories of

drug use (groups 2 and 3) had lower CBS scores. However, the patient scenario with the current

history of drug use had a higher CBS score than the scenario with a past history. There were five

questions utilized in the CBS and it has shown to be a more reliable measurement tool.

Hypothesis 6: *The NPRS scores for the 'frequent use…opioids' (scenarios 2 and 3) patient*

scenarios are significantly different from no drug history (scenario 1) while controlling for IRI,

DDPPQ and PES-NWI scores and significant descriptive statistics.

Result: Multiple linear regression analysis was used with four models, for hypothesis 6

testing of the dependent variable (NPRS) while controlling for IRI, DDPPQ and PES-NWI and

significant descriptive statistics. Groups 2 and 3 versus group 1 in model 1, controlled for

adjusted IRI, DDPPQ and PES-NWI ($R^2 = 0.16$); model 2 controlled for adjusted IRI, DDPPQ,

and PES-NWI plus race, age, gender, and ethnicity ($R^2 = 0.21$); model 3 controlled for adjusted

IRI, DDPPQ, and PES-NWI, race, age, gender, ethnicity, plus degree and certification ($R^2 =$

0.22). Models 1, 2 and 3 were statistically significant with $p < 0.01$. Model 4 was not significant.

The total percent of explained variance for Model 3 was 22%. Scenarios 2 and 3 were observed

to be significantly different from scenario 1 with respect to NPRS ($p < 0.05$), and the Betas

indicated inverse relationships ($B_{group2} = -0.54$. $B_{group3} = -0.25$); indicating lower NPRS scores for

scenarios 2 and 3 compared to scenario 1. Other than the scenarios, none of the standardized and

demographic variables were found to be significantly correlated with NPRS in Model 3. Overall,

these results suggest that the scenarios are the only predictors of pain assessment and that the

projected pain assessment scores are lower in individuals with either past or current histories of

substance abuse.

Hypothesis 7: *The CBS scores for the 'frequent use…opioids' (scenarios 2 and 3) patient*

scenario are significantly related to IRI, DDPPQ and PES-NWI scores and significant

descriptive statistics.

Result: Multiple linear regression analysis was used with four models to test the

differences in the dependent variable (adjusted CBS) among the 3 groups (scenarios), while

controlling for IRI, DDPPQ and PES-NWI and significant descriptive statistics. In model 1,

groups 2 and 3 were compared to group 1 while controlling for adjusted IRI, DDPPQ and PES-

NWI ($R^2 = 0.16$). In model 2, the variables of race, age, gender, and ethnicity ($R^2 = 0.21$) were

added to the regression. In model 3, the descriptive variables of degree and certification ($R^2 =$

0.26) were added. In model 4, specialty; who nurses report to; and hospital size were added ($R^2 = 0.40$).

Models 1, 2, 3 and 4 were statistically significant with $p < 0.01$; (model 1 = < .001); (model 2 = .002); (model 3 = < .001); and (model 4 = < .001). The percent of explained variance increased in each model resulting to a total of 40% (model 4). Scenarios 2 and 3 were observed to be statistically different from scenario 1 with respect to adjusted CBS ($p < 0.001$), and the Unstandardized Betas indicated inverse relationships (B_{group2} = -0.87. B_{group3} = -0.72); suggesting lower adjust CBS scores in scenarios 2 and 3, compared to scenario 1. Like the results in hypothesis 6 related to NPRS scores, these results suggest lower projected pain assessment scores in individuals with either past or current histories of substance abuse. However, unlike the results of hypothesis 6, age, gender, certification, and specialty (cardiovascular compared to post-op nurses) were significantly related to CBS scores in the final regression model ($p < 0.05$).

Table 5

Table of Multiple Linear Regression Analyses of Adjusted CBS Scores

	Variable	B		Standard Error B	Standardized Beta		$R^{2,+}$	ΔR^2
Model 1	Constant	0.58		0.15		***	0.16	0.16
	Adjusted Z IRI	0.05		0.08	0.05			
	Adjusted Z DDPPQ	-0.10		0.09	-0.09			
	Adjusted Z NWI	0.07		0.09	0.07			
	Group 2	-0.96	***	0.21	-0.44	***		
	Group 3	-0.67	***	0.21	-0.30	***		
Model 2	Constant	0.98		0.47		***	0.21	0.04
	Adjusted Z IRI	0.04		0.09	0.04			
	Adjusted Z DDPPQ	-0.10		0.10	-0.09			
	Adjusted Z NWI	0.04		0.09	0.04			
	Group 2	-1.00	***	0.21	-0.45	***		
	Group 3	-0.70	***	0.21	-0.31	***		
	Age	0.07		0.07	0.09			
	Gender	-0.32		0.19	-0.15			
	Afr. American	0.11		0.22	0.04			

		B		SE	β			
	American Indian	-0.03		1.05	-0.003			
	Asian	-0.24		0.26	-0.08			
	Other Race	0.23		0.54	0.04			
	Ethnicity	0.05		0.31	0.02			
Model 3	Constant	0.70		0.48		***	0.26	0.05
	Adjusted Z IRI	0.02		0.08	0.02			
	Adjusted Z DDPPQ	-0.09		0.09	-0.08			
	Adjusted Z NWI	0.04		0.09	0.04			
	Group 2	-0.93	***	0.21	-0.43	***		
	Group 3	-0.64	***	0.21	-0.29	***		
	Age	0.08		0.07	0.10			
	Gender	-0.33		0.19	-0.15			
	Afr. American	0.02		0.22	0.01			
	American Indian	-0.23		1.03	-0.01			
	Asian	-0.32		0.26	-0.11			
	Other	0.11		0.50	0.02			
	Ethnicity	0.03		0.30	0.01			
	Degree	0.08		0.05	0.13			
	Certification	-0.52	**	0.20	-0.21	**		
Model 4	Constant	0.73		0.72		***	0.40	0.14
	Adjusted Z IRI	0.01		0.09	0.009			
	Adjusted Z DDPPQ	-0.05		0.10	-0.04			
	Adjusted Z NWI	-0.01		0.10	-0.01			
	Group 1 = Reference Group							
	Group 3	-0.71	***	1.30	-0.32	***		
	Group 2	-0.87	***	1.50	-0.40	***		
	Age	0.17	*	0.30	0.22	*		
	Gender	-0.40	*	0.60	-0.18	*		
	Caucasian = Reference Group							
	Afr. American	-0.26		0.23	-0.10			
	American Indian	-0.24		1.04	-0.02			
	Asian	-0.24		0.28	-0.08			
	Other	-0.63		0.56	-0.10			
	Ethnicity	-0.03		0.31	-0.01			
	Degree	0.10		0.05	0.15			
	Certification	-0.46	*	0.20	-0.19	*		
	Hospital Size	-0.05		0.13	-0.03			
	Report To	0.02		0.04	0.03			
	Nursing Specialty							
	Post-op = Reference Group							
	Adult health	-0.73		0.41	-0.18			
	General Med/Surg	0.32		0.32	0.12			

Cardiovascular	-1.24	*	0.55	-0.22	*
Family Health	0.09		0.76	0.09	
Critical Care	-0.18		0.37	-0.05	
Parent/Child Health	-0.77		0.55	-0.12	
Psych/Mental Health	-0.29		0.42	-0.09	
Pulmonary	0.27		1.00	0.02	
Community	-0.59		0.61	-0.10	
Gerontology	-0.03		0.42	-0.01	
Neuro/Neurosurgical	0.66		0.48	0.14	
Home Health	-0.79		0.64	-0.11	
Other	-0.52		0.33	-0.18	

Dependent Variable: adjzcbs

* $p < .05$, ** $p < .01$, *** $p < .001$

The regression standardized residuals for the adjusted CBS scores in the analysis of hypothesis 4 suggest good homoscedasticity and the scatterplot indicates sufficient variability that supports the reliability of the results of the regression analysis.

Normal P-P Plot of Regression Standardized Residual Dependent Variable: adjzCBS

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: adjzcbs

Scatterplot Dependent Variable: adjzCBS
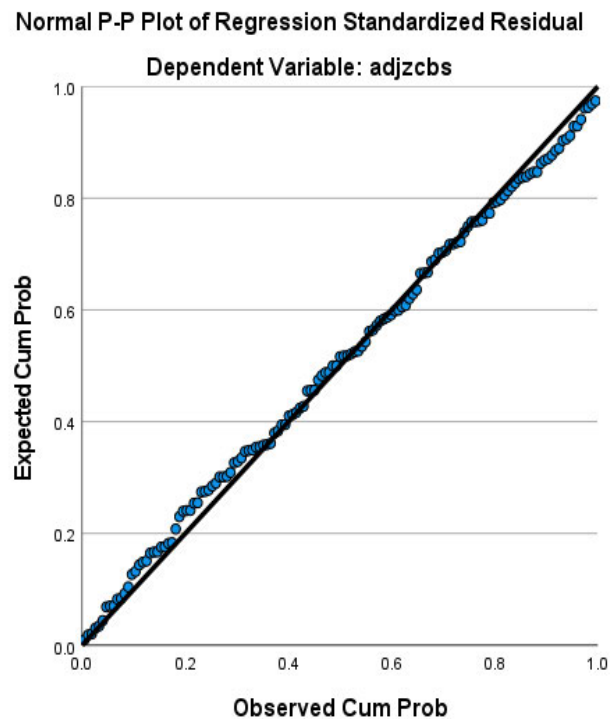
Scatterplot
Dependent Variable: adjzcbs
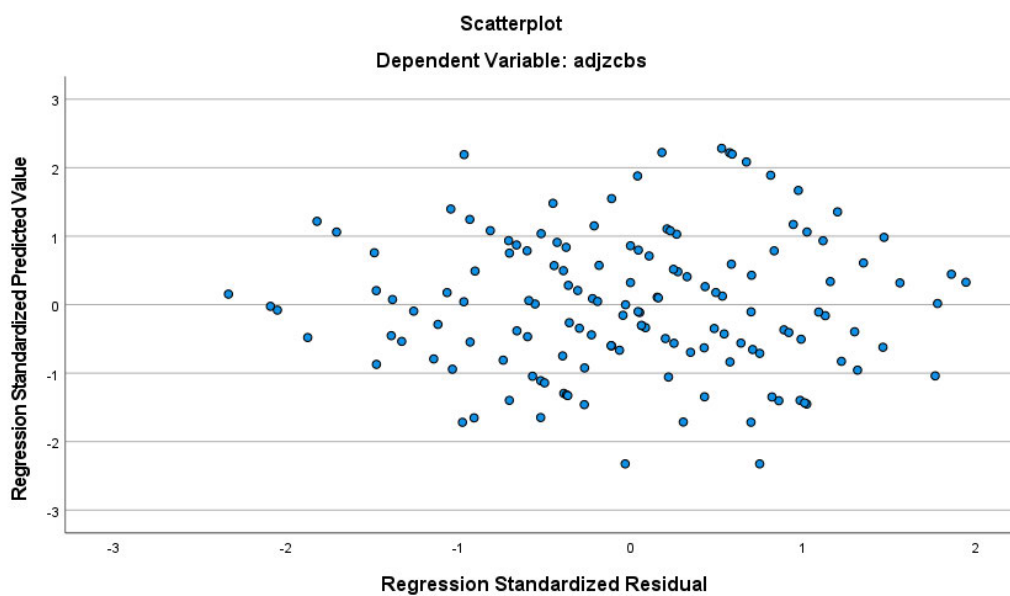
Chapter V - Discussion

This chapter presents a discussion of the findings in this study. A summary is provided with study findings with connections to literature. Also discussed are study limitations, nursing education and implications along with possible ideas for future nursing research.

The purpose of this study was to identify differences in nurses' empathy, drug use perception, and work environment in relation to pain evaluation. This study looked at the relationship between opioid, marijuana or alcohol use and the pain scale ratings given by acute care nurses using three patient scenarios while controlling for empathy, drug perceptions and work environment. In examining scenarios 2 and 3 compared to scenario 1, scenarios 2 and 3 showed significantly lower pain scores compared to scenario 1; and their standardized betas were approximately of equal proportion (0.40 and 0.32, respectively). Empathy, drug perception, and work environment were not significant predictors of that relationship. It was not reported that lack of empathy, negative attitudes or workplace environments influenced the nurses pain scoring. However, age, gender, certification, and specialty, (specifically cardiovascular) were shown to be predictors of nurses' lower scoring on the NPRS and CBS pain scales.

There may be other unknown attributes. Considering this information, some possible reasons to consider are the nurses' personal traits, their concerns of triggering additional patient problems with addictions, pain medication could cause future problems for the patient, or struggles with their own (or someone close to them) addictions.

Summary of the Study's Findings

The purpose of this study was to examine the nurses' empathy, drug perception and work environment in relation to the nurses' scoring of patient pain and pain management in the context

of the nursing theory of AACN Nursing Synergy Model of nurse competencies (empathy, drug

perception and work environment), patient characteristics (no history, history or current history

of alcohol, marijuana, or opioid use), and outcomes (patient pain assessment). Using the Synergy

Model, the relationship between nurses' empathy, drug perceptions, work environment and

patient pain scoring were not significant. However, the CBS and NPRS pain scoring were lower

for patients that had a history or current use of alcohol, marijuana, or opioids. Furthermore, the

lower scores that was given by specialty nurses was identified as statistically significant as

opposed to other educated or trained nurses. Additional descriptive statistics that were shown to

be predictors were age, gender, and certified nurses. The demographics were significant in the

regression analysis models of the scenarios.

Comparison of NPRS versus CBS as Pain Assessment Tools

A search for literature related to the NPRS compared to the CBS did not yield anything.

There are several studies that evaluate the use of different pain assessment tools in addition to the

CBS and the NPRS in unresponsive or ventilated patients, but none comparing solely the NPRS

and the CBS in responsive patients. In this study, the NPRS was found to perform similarly to

the CBS regarding the nurses discriminating between patient scenarios in this study.

This research utilized the two pain assessment measures as dependent variables to

triangulate the data analysis and identify reliable results given the subjectivity that appears to be

a part of a nurse's assessment of pain in another individual. In addition, the fact that the NPRS

has a single item 11-point Likert-type scale format caused concern that there may be limitations

in its reliability and validity. Nevertheless, the NPRS has been shown to be a valid and reliable

instrument with good to excellent test-retest reliability. Alghadir et al. (2018) looked at

convergent validity between the NPRS and the Verbal Rating Scale (VRS; Won et. al., 2001).

The NPRS was consistent in supporting pain measurement and was found to be strongly

correlated with the VRS (r = 0.94).

Despite the NPRS' acceptable validity, nurses' decisions (in real life) based on the use of

the NPRS to determine whether to medicate a patient for pain can be called into question.

Research by van Djik et al. (2015) noticed a discrepancy in the NPRS scores and patient's

reported need for pain medication. In their study, postoperative patients scored their pain using

the NPRS, and they were given opioids based on a score higher than 3. However, some of those

patients did not feel that they needed opioids and although some had scores higher than 3, the

pain was tolerable without medication. The researchers concluded that the NPRS scores need to

be evaluated by individual patient because the guidelines for medicating could lead to over-

treatment. Using just the NPRS could present as an inaccurate patient assessment of pain

creating and an over-medicating situation.

In summary, the NPRS despite its having only 1 item has been shown in this study to

perform in a similar way as the CBS (which has well-supported reliability and validity).

Literature of Substance Abuse Affecting Pain Assessment

Upon searching the literature for studies involving pain assessment in the drug use

population using the same or similar measurement tools 25 articles were found. However, most

of the articles were anecdotal, case studies and reviews, or recommendations for policy on

assessing and treating pain in the addicted population. There are a small number of related

studies that examine relationships between nurses and pain treatment in drug addicted patients.

Of this small number, only four articles were found that were relevant to this study that address

relationships between patients' current or past addictions and nurses' knowledge and responses,

namely treatment.

Ford (2011) looked at behavior of patients with histories of illicit drug use. Through a mixed-methods research design, the researcher explored nurses' attitudes and therapeutic range of professional and personal characteristics. Several themes from the qualitative part of the design were found, specifically two: *interpersonal challenges in the nurses' role,* and *manipulation and violence as an impediment to care.* The nurses were reportedly frustrated by perceived deception of patients and struggled with daily care of this patient population.

Another consideration is nurses' knowledge of patients that have a history or are currently using drugs. According to Bohm et al. (2019) through a qualitative semi-structured interview of eight emergency room nurses, the researchers uncovered several themes: *mistrust of patient's pain experience, uncertainty about the same treatment goals as the patient, uncertainty of right or wrong in the patient treatment decision,* and *uncertainty and frustration in pain treatment and caregiving goals for the patient.* The researchers concluded that despite the nurses appearing knowledgeable in pain treatment, the behavior and attitude of the addicted patients with pain needs posed challenges to the nurses' ability to support them.

An additional factor to consider may be that nurses have concerns treating patients with substance use history and fear that treatment may cause additional problems. Inadequate patient pain management in patients with a history of substance abuse was examined by Morgan (2014). Using qualitative research, Morgan sought to understand nurses' attitudes and interactions while treating pain in patients with substance use disorders. Using Grounded theory, 14 nurses were interviewed in hospital settings. The nurses expressed having difficulty treating pain in patients with substance use and they struggled to provide care other than basic physical needs. The researcher determined that the nurses' reactions to this patient population often led to labeling patients as drug-seeking and the nurses experienced barriers in the patients' pain management.

Similarly, a Jordanian study by D'emeh et al. (2016), through descriptive cross-sectional design, explored nurses' knowledge and attitudes concerning pain assessment and effective pain management in patients with a history of drug addiction or alcohol abuse. Using the Nurses' Knowledge and Attitudes Survey Regarding Pain measurement tool, a 32-item questionnaire, (N = 439) the results showed a mean score of 13.39 (41.84%) answered the questions correctly (SD = 4.31). None of the participants answered all the items correctly. Surgical nurses were noted to significantly know more about pain management ($p = 0.008$). The nurses' ages did not influence knowledge (ANOVA; $F = 1.662$, $p < 0.05$). The nurses' barriers to effective pain management were: 27.1% were reluctant to give opioids and 64% reported that having patients with alcohol/drug addictions were a problem to treat, from the nurses' perspective. Therefore, nurses underestimated or undertreated this patient population for pain. Furthermore, the nurses (31%) in D'emeh's study admitted to a reluctance to contact physicians for pain medications for this patient population. A factor to consider may be that nurses may have concerns treating patients with substance use history and fear that treatment may cause additional problems. In this study knowledge was not a factor, but age was a factor in that the nurses scored lower for pain for the patient scenarios that represented alcohol/drug use. Additionally, in this study the DDPPQ did not show a relationship between nurses' perspectives with alcohol/drug use patients.

In summary, there is a paucity of research related to the nurse's perception of a patient's drug/alcohol use and their judgement in assessing pain. Only 4 relevant research articles were found. All these publications support the findings of this study in that the nurse's perceptions can have a potential effect on the nurse's accurate perception of a patient's pain severity. Furthermore, the results of the studies mentioned above include perceptions of manipulation by the patient, or patient potential for violence. In recognizing these impressions, the nurses'

responses were mistrust, feelings of manipulation and frustration, propensity to label patients and undertreat them for pain. These viewpoints can create barriers for the nurses and interfere with appropriate and positive pain management in the drug addicted patient population.

Literature related to the demographic variables as predictors of pain assessment

In this study, the four demographic variables that showed to be predictors of pain assessment were age, gender, specialty (cardiovascular) and certification. The demographic variable, age of the nurses, was shown to be an inverse relationship as a predictor of pain scoring in the scenarios in the final regression model. In contrast, a study by Samarkandi (2018) observed that age was not a significant factor related to nurses' pain management knowledge and attitudes. Nurses' knowledge and attitudes toward pain treatment was examined in various contexts. The researcher examined nurses' pain management using the Knowledge and Attitudes Survey (KARPS) and found a significant mean score in the nurses' gender demographic (female mean = 18.7, SD = 5.4, $p = 0.011$; male mean = 15.8, SD = 4.4) using a One-way ANOVA. In addition, age did not show a significant relationship using Spearman's correlation coefficient ($r = 0.057$, $p = 0.487$, $N = 247$). The difference in findings between Samarkandi's (2019) and this study is likely due to the difference in methodology, i.e., using a standardized measure of Knowledge and Attitudes versus the use of patient scenarios. In Samarkandi's (2019) study age was not significant in relation to nurses' knowledge of pain management. In this study the age demographic was found to be significant. This could be a factor of age not accurately representing experience because experience was not significant in this study.

In another study testing nurses' knowledge of pain management, McCaffrey et al., (2002) unlike Samarkandi (2018) observed a statistically significant relationship between age and knowledge. The participants were graded and a passing score was set at 80%; important to note

is that only 42.2% of respondents passed. Older nurses and nurses with more experience scored higher for overall pain knowledge. Because more than half of the respondents did not have a passing score, the results of this study may be biased due to an inadequate distribution of scores. Furthermore, 46.1% of the nurses responded that they believed that all patients receiving opioids for pain treatment will become addicted. Like the study by Samarkandi (2018), the above research addresses the relationship of knowledge and age. In this study, the significant finding was between age and pain assessment. In total, age appears to be inconsistently related to pain management whether it involves knowledge of pain management practices or pain assessment. In McCaffrey et al., (2002) there was a relationship between age/experience and nurses' knowledge. However, almost half the nurses studied reported belief that administering opioids would cause addiction without any contributing factors. In this study experience demographic was not found to be significant in the nurses' pain scores of patient scenarios. This may be like the nurses in the Samarkandi study that assumed patient addiction as a possibility of using opioids for pain.

The demographic variable of nurses' gender in relationship to treatment of patients' pain has not been well studied. There are data and research that explores patients' gender and their responses to pain treatment or lack thereof. Interestingly, in this study the gender of the patient in all three of the scenarios was not disclosed.

In this study, the cardiovascular nurses were observed to assess lower pain scores compared to post-operative nurses with respect to scenarios 2 and 3 (current use of marijuana, opioids, or alcohol use; and history of marijuana, opioids, or alcohol) versus scenario 1 for both the CBS and NPRS measurement tools. Another study comparing cardiovascular nurses' pain assessment compared to other specialties was not found during the literature search. However, a

study of cardiovascular nurses and pain knowledge and attitude related to pain management was

conducted by Shondell et al. (2020). They looked at the value of in-service education for

postoperative cardiovascular nurses using the paired t-test for pre-test post-test educational

analysis and the KARSP survey. The researchers found a significant difference between the two

groups. The results were reported as questions answered correctly, and results showed that in-

service education increased the nurses' knowledge and attitude related to pain management.

Post-education survey scores were higher than pre-education surveys ($p = < .001$, $N = 82$), but no

other statistics were reported. The researchers concluded that education for cardiovascular nurses

was needed to help them manage patients' pain. In this study the cardiovascular nursing specialty

scored patients' pain lower in the scenarios. However, education was not a predictor of low pain

scoring.

       The fourth significant predictor observed in this study was the variable of certification.

This study showed certified nurses scored lower on the NPRS and the CBS for patients with drug

histories. This appears to be counter-intuitive in that one would expect certified nurses to not be

affected by bias toward alcohol or drug use as part of patients' history. Upon searching the

literature several studies were found that examined certified nurses. Whitehead et al. (2018)

performed a systemic review of current evidence of the relationship between specialty certified

nurses and patient outcomes. A total of 41 research studies were reviewed in the final analysis

and 33 were related specifically to the relationship of specialty nurse certification and patient

outcomes. Four of these studies were found to be related to nurses' knowledge and skills. The

first study was Coleman et al. (2009), mentioned below. In the second study Santiano et al.

(2003) focused on the nurses' perceived level of confidence post certification (n = 36) using the

20 competency standards for acute care nurses. An increase in all the standards were reported

with *recognizing own abilities and professional competence'* as the largest increase. No further

data was reported. Overall, the information was incomplete but found that the nurses'

certification was supported. However, there was lack of information to show that certification

has a positive impact on patient care outcomes. The third study by Shroeter et al. (2012) stated

that the certified nurses (n = 149) reported an increase in knowledge in the operating room and

interpreted this as better care to be rendered. No further data was reported. The fourth study by

Valente (2010) surveyed nurses' knowledge after certification and reported an increase in

knowledge from 75% to 95% (*p* = < 0.01. No methodology, sample size or further data was

reported.

Using a descriptive cross-sectional correlational approach Brant et al. (2017) observed

nurses' (n = 216) knowledge and attitudes about pain, personal and professional characteristics

and patient reported pain satisfaction. The patients did not participate however data was obtained

through chart review. The Pain Knowledge and Attitudes Survey was given with the average

score 72% (*SD* = 9.5); 88 (41%) of the nurses were certified in critical care but none were

certified in pain. The scores were as follows with highest to lowest by specialties: long term care

nurses 88%; psychiatric nurses 77%; dialysis nurses 67%; and ambulatory surgery nurses 65%.

The researchers concluded that having > 5 year of experience, being specialty certified and

receiving pain education were predictors of high scores correlated to patient satisfaction surveys.

Also noted was that pain management overall may be under treated due to nurses' fear of opioid

usage and current opioid epidemic. However, in general nurses with advanced knowledge likely

would lead to higher quality care. Compared to this study's findings which showed specialty

certification to be a predictor for a lower scoring pain assessment and lower pain management.

Another descriptive cross-sectional mixed method approach design was used by Eaton et al. (2015) to examine evidence-based practice beliefs and behaviors of oncology nurses (n = 40) who provide pain management; 22 academic center nurses and 18 community nurses. The Evidence-Based Practice Beliefs Scale (EBP; Melnyk et al., 2008) and Prior Conditions Instrument (Carlson, 2008) was used to collect data. Additionally, a subgroup of 12 nurses were interviewed via semi-structure format. Results showed that both nurse groups believed that EBP was positive and in their ability to implement it. The nurses were in support of EBP for pain management (mean = 4.19, *SD* = 0.40) and were satisfied with their pain management practices (mean = 3.34, *SD* = 0.71). A significant relationship (r = 0.46, *p* = 0.003) was found with oncology certification and innovativeness, which is associated with EBP. Four themes emerged from the qualitative interviews: *limited definition of EBP, varied evidence-based pain management decision making, limited identification of evidence-based pain management practices,* and *integration of non-pharmacological interventions into patient care.* Once more, this study does not correspond with the findings mentioned above. This study did not find nurses perspectives (DDPPQ) to predict patient pain scoring. In fact, this study showed that NPRS and CBS scores were scored lower by nurses with specialty certification despite having no significant scores on the DDPPQ.

Beck et al., (2016) studied pain knowledge between 28 certified oncology nurses, 37 non-certified nurses, and 320 pain patients. The patients were surveyed using the Brief Pain Inventory short form and the Pain Care Quality-Nursing surveys. Both sets of nurses were surveyed using the Nurse Knowledge and Attitudes Survey Regarding Pain (NKASRP) and found that the knowledge of pain was higher in certified nurses. The researchers found no statistically significant relationship between certified nursing status and patient outcomes or higher quality

pain treatment ($p < 0.05$). In this study nurses' knowledge was not significant, and certified

nurses scored the patient scenarios lower for pain. Both findings are opposed to the Beck study.

Coleman et al. (2009) studied the management of nausea, vomiting and pain symptoms

by comparing certified with non-certified nurses and patient satisfaction. Out of 93 nurses in the

study, 35 (38%) were certified oncology nurses. The NKASRP as well as the Nausea

Management: Nurses' Knowledge and Attitudes Surveys were used. The 270 patient participants

used the Patient Pain Questionnaire (PPQ), the Rhodes Index of Nausea, Vomiting and Retching

and the Press Ganey Inpatient Survey (INVR). Chart review was also performed and revealed a

non-significant difference between certified and non-certified nurses for documentation ($p =$

0.65). Certified nurses scored significantly higher on knowledge of pain management (mean =

77.5, $SD = 8.4$) than non-certified nurses (mean = 72.5, $SD = 10.4$) with $p = 0.02$. For nausea

knowledge the certified nurses (mean = 65.7, $SD = 9.8$) were slightly higher than the non-

certified nurses (mean = 62.8, $SD = 111.5$). In this study certified nurses scored the patients in

scenario 2 and 3 lower for pain suggesting less successful pain management outcomes in patients

treated by certified nurses.

In summary, the studies mentioned above that were relevant to this study found that age

was not significant in relation to nurses' knowledge of pain management. In this study the age

demographic was found to be significant. This could be a factor of age not accurately

representing experience because experience was not significant in this study. In this study the

experience demographic was not found to be significant in the nurses' pain scores of patient

scenarios. This may be like the nurses in the Samarkandi study that assumed patient addiction as

a possibility of using opioids for pain. In this study the nursing specialty of cardiovascular scored

patient pain lower in the scenarios. Perhaps nursing knowledge and experience should be looked

at in cardiovascular nurses. Certified and non-certified oncology nurses for pain knowledge showed significantly higher scores for pain knowledge in certified nurses in the studies above. When patients were surveyed their satisfaction scores for pain management were higher with no relationship found whether they were treated by certified or non-certified nurses. Interestingly, in this study the certified nurses scored patients lower for pain, even though no patient perspective was studied, a lower patient satisfaction from pain management would be expected. Overall, one would have expected that the nurses in this study would conform with EBP and not allow any attitudes or biases toward drug/alcohol users to interfere with pain assessment. While the other studies mentioned found successful pain management with certified nurses this study did not. In the final analysis this study's results could be suspect because more examples of other research points in the opposite direction. However, more reach is needed that could explain the differences and possible nurses' biases.

Limitations of the Research

A recognized limitation of this study was the use of fictitious patient scenarios in place of an actual clinical situation. This may have implications for the participant that does not include a complete picture of the patient or the severity of the situation. Nursing assessment may differ when a *real* patient is presented in person, rather than a scenario. Using scenarios does not consider the emotional complexities of the nurse-patient interactions. It is also important to note the use of several measurement tools, and the length of the survey included many questions. Response fatigue may have been the cause of partial answers by the respondents leading to incomplete surveys.

Another item that may have posed a limitation in this study was the lower Cronbach's alpha score for the IRI measurement tool that was used. Although the score (.60) within the .00

and +1.00 range it is considered a lower accepted score (Polit & Beck, 2017). There may have

been some bias in empathy that was not captured due to less reliability of the IRI in this study.

This is a limitation of the study in that significant relationships related to empathy may have

gone undetected due to this issue of the IRI's reliability. Also, the descriptive statistics of

ethnicity, setting, and specialty in relation to the IRI showed lower p values.

Another possible limitation of this study was the age and experience demographics were

not congruent findings. The age demographic that was significant may not be a reliable finding

in that upon further examination the experience demographic was not significant in this study.

There were no indicators that showed age and experience to be predictors in nurses' pain scoring

in the patient scenarios.

Additionally, this dissertation faced the challenge of survey responses initially through

Data Axle. Invitations to participate were sent via email distribution, however there was

evidence of participants opening the survey and either not completing it or not starting it at all.

After using Giant Partners, and GMass email with TxtFlo texting, the response rate was higher.

Also, the surveys were placed on professional discussion boards, and snowball recruitment

occurred. The participant number predicted using G*Power distribution was able to be obtained

and 296 responses were studied.

Other conceivable limitations were the use of the CBS scales five questions. The CBS

scale consists of six items, however for this study one item was eliminated and five of the

remaining questions were used. The question that was not used reflected respiratory rate

regarding a ventilator dependent patient. This study's scenarios presented with a spontaneously

breathing patient.

Lastly, this study used correlational research as opposed to experimental research. Correlational design is an observational approach to examine relationships and correlations between independent and dependent variables. This is done without manipulation, or experimentation, of the independent variables. Correlational design is not as strong in supporting casual inferences. However correlational studies are noted for their strength in authenticity (Polit et al., 2017). In experimental design the researcher is the active agent and through intervention, treatment, or some form of manipulation of the independent variables, the conditions are controlled for reliable cause and effect relationships. This experiment did not have an intervention group or control group. Future experimental educational research should be done with nurses assessing patients' pain and management in the drug addicted population.

Clinical Relevance of the Findings

The table (A) below shows the means and standard deviations of the three scenarios (groups) for the CBS measurement tool. This study used 5 of the questions on the CBS. The question of ventilator patients was not included as the patient in the scenario was spontaneously breathing, and the question of crying only refers to children. The items that were addressed were alertness, calmness/agitation, physical movement, muscle tone, and facial tension. There are five questions within each category and the participants use a 5-point Likert-type scale with 1 representing the least and 5 representing the most. Group 1 has a higher pain score (mean = 4.1, SD = 0.1), groups 2 and 3 have lower scores (mean = 3.7, SD = 0.1, 3.8, SD = 0.1) respectively. Groups 2 and 3 (past history and current history of drug/alcohol use) are very similar in score and lower than group 1 (no history of drug/alcohol use). The clinical implications of the CBS assessment result that the nurses performed on the scenarios may suggest that the lower scores

indicate that the nurses are highly cautious of using opioids to treat patients' pain. Additionally,

the lower the patient pain score (< 5) the use of non-opioids are recommended.

Table of the Comfort Behavior Scale Scores (A)

Group	Mean	Std. Error
1	4.1	0.1
2	3.7	0.1
3	3.8	0.1

Dependent Variable: CBS

The table (B) below shows the means and standard deviations of the three scenarios

(groups) for the NPRS measurement tool. The NPRS is an 11-point Likert-type scale with one

item. This item consists of choices from the numbers 0 through 10 with a range of 0 representing

no pain and 10 representing the most severe pain. Group 1 (mean $= 2.7$, SD $= 0.1$), group 2

(mean $= 2.4$, SD $= 0.1$), and group 3 (mean $= 2.6$, SD $= 0.1$). Group 1 (no history of drug/alcohol

use) and groups 2 and 3 (past history and current history of drug/alcohol use) have lower pain

scores. Again, lower pain scores (< 5) indicate clinically that no opioids would be used as pain

management. These results illustrate that the lower pain scores of both the CBS and NPRS

measurement tools would influence the treatment of pain management. Thus, the likelihood of

administering opioids is extremely low. Both tables A and B represent the clinical decisions and

both measurement tools performed well in predicting pain scores.

Table of the Numeric Pain Rating Scale Scores (B)

Group	Mean	Std. Error
1	2.7	0.1
2	2.4	0.1
3	2.6	0.1

Dependent Variable: NPRS

Implications for Nursing Practice, Education and Research

This dissertation sought to identify possible relationships between nurses' empathy, drug perception, work environment and nurses pain scoring and patient management in patients with a history of drug abuse or are currently identified as drug abusing. The literature review uncovered some studies on these variables, however this study identified nurses with specialty certification to be lower scoring for patients with a past or current history of alcohol, marijuana, or opioid use. This could have been a conscious or unconscious bias on the nurse participants. The literature shows lack of knowledge as a barrier to treating patient pain, however this study findings are not consistent with previous studies: nursing specialty was a predictor of lower pain scoring in the patients' scenarios that included history of drug use. Additionally, nurses' age and gender were identified as a predictor and needs further exploration. Nurses treating substance users has been studied in various contexts. However, the personal characteristics of nurses and their view of this patient population has small amounts of qualitative studies and further investigation could reveal more information. The quantitative data available shows some nurses' competencies that predict pain assessment and treatment, but more specific research is recommended.

There are data to support nursing education and treatment in pain management is necessary and should be ongoing. What needs to be added to curricula is the self-awareness on the nurses' acceptance of patients' pain. There is scant information to date on nurses' views on treating patients with substance use. However, Dolan et al. (1999) investigated the extent to which people change their perception of patients based on certain information. Through focus groups people were asked, via questionnaires, their views before and after meetings to prioritize and determine which groups would have more sympathy from healthcare providers. It was determined that priorities were lowered for alcohol drinkers, smokers, and illegal drug users.

This perception may overflow into the healthcare setting and play a negative role in nursing care. More research is needed specifically for nurses who practice self-awareness and their perceptions of treating substance users in the context of pain management. Additionally, self-awareness techniques and practices should be incorporated into pre-licensure nursing programs.

The scope of nursing practice includes treating patients' pain. Nowhere is it categorized into specific patients' histories, or that only certain types of patients should be given pain treatment. Every patient has a right to have their pain treated regardless of substance use status. There are obviously different algorithms for treating pain in different patients and that is why nursing practice is idiosyncratic with the nurse-patient relationship at its core. It is difficult for some nurses to bracket their own experiences and judgments, and therefore self-awareness is crucial in nursing practice. The AACN Nurse Synergy Model shows the nurses competencies and the patients characteristics interacting with one another and forging the patient outcomes. In practice, nurses' competencies could include their ability to be self-aware while interacting with patients who have histories of substance use therefore affecting patient outcomes.

Conclusions

Nurses' empathy, drug perception and work environment did not show to be a large predictor in relation to pain scoring. However, nurses designated a lower pain score in patients with a history of, or current use of alcohol, marijuana, or opioids. There were significantly lower CBS and NPRS scores for both patient scenarios with active drug use and patients with a history of drug use than compared to patients without history of, or active use of drugs. The CBS is a validated measurement tool and performed as expected in this study. However, the NPRS, a one question measurement tool, without the ability to confirm reliability, was able to be validated in this study. Additionally, the demographics: age, gender, specialty nurse, and certified nurse

showed significant difference in their pain score for patients with history or current use of

alcohol, marijuana, or opioids; those patient scenarios were scored lower for pain than the patient

scenario with no history of drug use. The explained variances of past history of drug use (-.32)

and current history of drug use (-.40) are medium range effect sizes. The results of pain scoring

are low for both past and current history of drug use patients.

Literature shows some data on nurses treating patients' pain in a variety of perspectives.

However, nursing education and treating pain in patients that have a current or past drug history

should be explored in relation to specialty, certified nurses, nurses' gender, and age. Also,

nursing education should include more self-examination by nurses, or nursing students', while

treating patients with drug histories. Self-awareness is a nurse competency that interacts with

patient characteristics of drug history. Peplau (1952) stated that the central feature of nursing

practice is the nurse-patient relationship and stressed the importance of the nurses' ability to be

self-aware to assist patients in their perceived difficulties. Teaching and practicing self-

awareness may increase the appropriate response by nurses to patients' pain. The future of

nursing will continue to include patients in pain. Some of those patients will have a history of

drug use, and it is not acceptable for the nurses to not treat, or mislabel, the patients' pain.

However, with continued research and nursing education there may be more awareness, and

practice of positive pain treatments with more favorable outcomes in the drug addicted

population.

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nursing care in Swiss nursing homes – A cross-sectional study, *International Journal of*

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https://doi.org/10.1016/j.ijnurstu.2015.05.005.

Appendices

Appendix A- CNS Demographic Questionnaire

CNS Demographic Questionnaire

Please fill in the blank or check the appropriate boxes for each of the following questions.
1. What is your age?_____yrs. [1]
2. What is your gender? [2] ☐ Female ☐ Male
3. What is your race group? [3]
☐ Caucasian ☐ African American
☐ Hispanic ☐ American Indian
☐ Asian ☐ Pacific Islander
☐ Other (specify)_____
4. Which of the following degrees do you hold? (please check all that apply) [4]
☐ diploma in nursing ☐ MSN
☐ associate degree in nursing ☐ MN
☐ associate degree in other field ☐ masters in other field (specify)_____
(specify)_____ ☐ PhD in Nsg
☐ BSN ☐ DNSc
☐ BS/BA other field ☐ doctorate in other field (specify)_____
(specify)_____
6. How long have you been a RN? _____ yrs. [6]
10. Are you certified as a clinical nurse specialist by a specialty organization? [10]
☐ No
☐ Yes (Please provide name of specialty organization, i.e. Oncology Nursing Society
and certification specialty, i.e., Oncology CNS) _____
11. Are you currently employed? [11] ☐Yes ☐ No (If No, STOP here)
12. Are you employed: [12] ☐ full time ☐ part time ☐other (specify)_____
14. What is your area of employment? (check all that apply) [14]
☐ acute care ☐ ambulatory care ☐ for profit
☐ community ☐ long term care ☐ not for profit
☐ home health/hospice ☐ school
☐ college/academia ☐ industry
☐ private practice ☐ joint practice
☐ other (specify)_____
15. If you are employed in an acute care setting how many available beds does your
institution have? [15]
☐ less than 100 beds ☐ 100-250 beds ☐ greater than 250 beds
16. If you are employed in an acute care setting, how many departments/units do
you cover? [16]
17. If you are employed in an ambulatory clinic setting, approximately how
many departments/clinics do you cover?_____ [17]
20. If NO, please check the box that best describes your major professional activity. [20]
☐ provide direct patient care ☐ research

☐ administration ☐ infection control
☐ supervisor/manager ☐ quality improvement
☐ insurance/utilization review ☐ case management
☐ staff education ☐ patient education
☐ nursing education/academia ☐ employee health
☐ other (specify)_____
21. In which clinical specialties are you currently practicing? (check all that apply) [21]
☐ adult health ☐ general med/surg ☐ perioperative
☐ cardiovascular ☐ family health ☐ critical care
☐ parent/child health ☐ psych/mental health ☐ pulmonary
☐ community ☐ gerontological ☐ neurology/neurosurgery
☐ home health ☐ oncology ☐ other_____
22. What is your primary clinical specialty? [22]
☐ adult health ☐ general med/surg ☐ perioperative
☐ cardiovascular ☐ family health ☐ critical care
☐ parent/child health ☐ psych/mental health ☐ pulmonary
☐ community ☐ gerontological ☐ neurology/neurosurgery
☐ home health ☐ oncology ☐ other_____
23. What is the job title of the person to whom you directly report? [23]
☐ Nurse Executive ☐ Director of Nursing
☐ Director of Education ☐ Associate/Assistant Director of Nursing
☐ Quality Management Director
☐ Physician ☐ School Principle/Superintendent
☐ Hospital Administrator
☐ Self-employed
☐ Other (specify)

Ann Mayo <amayo@sandiego.edu>	Wed, May 4, 2022, 9:46 PM

to me

Yes, Valerie, you may. I've attached the survey.
I would appreciate an abstract of your dissertation when you are finished with your research.
Ann
--
Ann M. Mayo, RN; DNSc; FAAN
Professor
Hahn School of Nursing & Health Science and Beyster Institute for Nursing Research
5998 Alcala Park
San Diego, CA 92110
619.260.7481 (office)
Amayo@sandiego.edu

Comfort assessment
● ● ● ● ● ● ● ● ● ●
Behavior Scale

Place a mark

Date/time 1   Date/time 2

Date/time 3   Date/time 4

Sticker with
patient's name

The Numeric Pain Rating Scale Instructions

<u>General Information</u>:
- **The patient is asked to make three pain ratings, corresponding to current, best and worst pain experienced over the past 24 hours.**
- **The average of the 3 ratings was used to represent the patient's level of pain over the previous 24 hours.**

<u>Patient Instructions (adopted from (McCaffery, Beebe et al. 1989)</u>:
"Please indicate the intensity of current, best, and worst pain levels over the past 24 hours on a scale of 0 (no pain) to 10 (worst pain imaginable)"

```
 0   1   2   3   4   5   6   7   8   9   10

None    Mild          Moderate          Severe
```
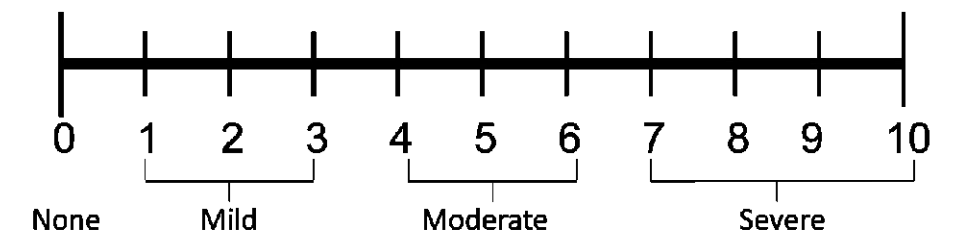
<u>Reference:</u>
McCaffery, M., Beebe, A., et al. (1989). <u>Pain: Clinical manual for nursing practice</u>, Mosby St. Louis, MO.

From: Monique van Dijk via ResearchGate <no-reply@researchgatemail.net>
Date: May 20, 2022 at 02:13:40 EDT
To: Valerie Kubanick <Vkubanick@york.cuny.edu>
Subject: Monique van Dijk sent you a message on ResearchGate

Monique van Dijk
Erasmus MC

Dear Valerie,
That is fine. Please find the pdf of the COMFORT-B scale (in various languages) at

kind regards Monique and good luck with completing your dissertation

Appendix C – Interpersonal Reactivity Index (IRI)

INTERPERSONAL REACTIVITY INDEX

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter on the answer sheet next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

ANSWER SCALE:

	A	B	C	D	E	
	DOES NOT				DESCRIBES ME	
	DESCRIBE ME				VERY	
	WELL				WELL	

1. I daydream and fantasize, with some regularity, about things that might happen to me. (FS)

2. I often have tender, concerned feelings for people less fortunate than me. (EC)

3. I sometimes find it difficult to see things from the "other guy's" point of view. (PT) (-)

4. Sometimes I don't feel very sorry for other people when they are having problems. (EC) (-)

5. I really get involved with the feelings of the characters in a novel. (FS)

6. In emergency situations, I feel apprehensive and ill-at-ease. (PD)

7.   I am usually objective when I watch a movie or play, and I don't often get completely caught up in it. (FS) (-)

8. I try to look at everybody's side of a disagreement before I make a decision. (PT)

9. When I see someone being taken advantage of, I feel kind of protective towards them. (EC)

10. I sometimes feel helpless when I am in the middle of a very emotional situation. (PD)

11.   I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)

12. Becoming extremely involved in a good book or movie is somewhat rare for me. (FS) (-)

13. When I see someone get hurt, I tend to remain calm. (PD) (-)

14. Other people's misfortunes do not usually disturb me a great deal. (EC) (-)

15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (PT) (-)

16. After seeing a play or movie, I have felt as though I were one of the characters. (FS)

17. Being in a tense emotional situation scares me. (PD)

18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (EC) (-)

19. I am usually pretty effective in dealing with emergencies. (PD) (-)

20. I am often quite touched by things that I see happen. (EC)

21. I believe that there are two sides to every question and try to look at them both. (PT)

22. I would describe myself as a pretty soft-hearted person. (EC)

23. When I watch a good movie, I can very easily put myself in the place of a leading character. (FS)

24. I tend to lose control during emergencies. (PD)

25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)

26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me. (FS)

27. When I see someone who badly needs help in an emergency, I go to pieces. (PD)

28. Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)

NOTE: (-) denotes item to be scored in reverse fashion
           PT = perspective-taking scale
           FS = fantasy scale
           EC = empathic concern scale
           PD = personal distress scale

           A = 0
           B = 1
           C = 2

          D = 3
          E = 4

Except for reversed-scored items, which are scored:

          A = 4
          B = 3
          C = 2
          D = 1
          E = 0

Mark Davis <davismh@eckerd.edu>   Sat, May 7, 2022, 10:36 AM

to me

Dear Valerie:

Thanks for your interest in the IRI. You have my full permission to use the instrument in your research, and I am attaching a few items that might be of some use to you. Please let me know if I can be of further assistance. Best of luck with your research!

Regards,
Mark

Appendix D – Drug and Drug Users' Problems Perceptions Questionnaire (DDPPQ)

DRUGS AND DRUG USERS' PROBLEMS PERCEPTIONS QUESTIONNAIRE (VALIDATED VERSION)

Used with permission from Crown copyright Open

Please indicate how much you agree or disagree with each of the following statements about working with people who use licit (legal) or illicit (illegal) drugs in a non-therapeutic way.

Please circle one number for each question.	**Strongly agree**	**Strongly disagree**
1. I feel I have a working knowledge of drugs and drug related problems. Optional Comments:	1 2 3 4 5 6 7	
2. I feel I know enough about the causes of drug problems to carry out my role when working with drug users. Optional Comments:	1 2 3 4 5 6 7	
3. I feel I know enough about the physical effects of drug abuse to carry out my role when working with drug users. Optional Comments:	1 2 3 4 5 6 7	
4. I feel I know enough about the psychological effects of drug to carry out my when working with drug users. Optional Comments:	1 2 3 4 5 6 7	
5. I feel I know enough about the factors which put people at risk of developing drug problems to carry out my role when working with drug users. Optional Comments:	1 2 3 4 5 6 7	
6. I feel I know how to counsel drug users over the long term. Optional Comments:	1 2 3 4 5 6 7	
7. I feel I can appropriately advise my patients/clients about drugs and their effects. Optional Comments:	1 2 3 4 5 6 7	

Please circle one number for each question.	**Strongly agree**	**Strongly disagree**
8. I feel I have the right to ask patients/clients questions about their drug use when necessary. Optional Comments:	1 2 3 4 5 6 7	
9. I feel that my patients/clients believe I have the right to ask them questions about drug use when necessary. Optional Comments:	1 2 3 4 5 6 7	
10. I feel I have the right to ask for any information that is relevant to their drug problems. Optional Comments:	1 2 3 4 5 6 7	

11. If I felt the need when working with drug users, I   1 2 3 4 5 6 7
could easily find someone with whom I could discuss
any personal difficulties that I might encounter.
Optional Comments:

12. If I felt the need when working with drug users, I   1 2 3 4 5 6 7
could easily find someone who would help me clarify
my professional responsibilities.
Optional Comments:

13. If I felt the need, I could easily find someone who   1 2 3 4 5 6 7
would be able to help me formulate the best approach
to a drug user.
Optional Comments:

14. I want to work with drug users.   1 2 3 4 5 6 7
Optional Comments:

15. I feel that there is little I can do to help drug   1 2 3 4 5 6 7
users.
Optional Comments:

16. In general, I have less respect for drug users than   1 2 3 4 5 6 7
for most other patients/clients I work with.
Optional Comments:

17. I feel I do not have much to be proud of when   1 2 3 4 5 6 7
working with drug users.
Optional Comments:

18. At times I feel I am no good at all with drug   1 2 3 4 5 6 7
users.
Optional Comments:

Please circle one number for each question.   **Strongly Strongly
                                                    agree disagree**

19. On the whole, I am satisfied with the way I work   1 2 3 4 5 6 7
with drug users.
Optional Comments:

20. In general, one can get satisfaction from working   1 2 3 4 5 6 7
with drug users.
Optional Comments:

21. In general, it is rewarding to work with drug   1 2 3 4 5 6 7
users.
Optional Comments:

22. In general, I feel I can understand drug users.   1 2 3 4 5 6 7
Optional Comments:

 Additional optional comments:

 From: ResearchGate <no-reply@researchgatemail.net>
 Date: May 19, 2022 at 05:18:27 EDT
 To: Valerie Kubanick <Vkubanick@york.cuny.edu>
 Subject: Hazel Watson sent you a message on ResearchGate

Hazel sent you a message

Hazel Watson

Hello Valerie,

Thank you for being in touch.

You are very welcome to use the DDPPQ in your research. I wish you well with your studies.

Kind regards,

Hazel Watson

Professor of Nursing (Retired)

Appendix E – The Practice Environment Scale of the Nursing Work Index (PES-NWI)

The Practice Environment Scale of the Nursing Work Index

For each item, please indicate the extent to which you agree that the item is PRESENT IN YOUR CURRENT JOB. Indicate your degree of agreement by circling the appropriate number.

		Strongly Agree	Agree	Disagree	Strongly Disagree
1	Adequate support services allow me to spend time with my patients.	1	2	3	4
2	Physicians and nurses have good working relationships	1	2	3	4
3	A supervisory staff that is supportive of the nurses.	1	2	3	4
4	Active staff development or continuing education programs for nurses.	1	2	3	4
5	Career development/clinical ladder opportunity.	1	2	3	4
6	Opportunity for staff nurses to participate in policy decisions.	1	2	3	4
7	Supervisors use mistakes as learning opportunities, not criticism.	1	2	3	4
8	Enough time and opportunity to discuss patient care problems with other nurses	1	2	3	4
9	Enough registered nurses to provide quality patient care.	1	2	3	4
10	A nurse manager who is a good manager and leader.	1	2	3	4
11	A chief nursing officer who is highly visible and accessible to staff	1	2	3	4
12	Enough staff to get the work done	1	2	3	4
13	Praise and recognition for a job well done.	1	2	3	4
14	High standards of nursing care are expected by the administration	1	2	3	4
15	A chief nursing officer equal in power and authority to other top-level hospital executives	1	2	3	4
16	A lot of team work between nurses and physicians.	1	2	3	4
17	Opportunities for advancement.	1	2	3	4
18	A clear philosophy of nursing that pervades the patient care environment.	1	2	3	4
19	Working with nurses who are clinically competent.	1	2	3	4
20	A nurse manager who backs up the nursing staff in decision making, even if the conflict is with a physician.	1	2	3	4
21	Administration that listens and responds to employee concerns.	1	2	3	4
22	An active quality assurance program.	1	2	3	4

23	Staff nurses are involved in the internal governance of the hospital (e.g., practice and policy committees).	1	2	3	4
24	Collaboration (joint practice) between nurses and physicians.	1	2	3	4
25	A preceptor program for newly hired RNs	1	2	3	4
26	Nursing care is based on a nursing, rather than a medical, model.	1	2	3	4
27	Staff nurses have the opportunity to serve on hospital and nursing committees.	1	2	3	4
28	Nursing administrators consult with staff on daily problems and procedures	1	2	3	4
29	Written, up-to-date nursing care plans for all patients.	1	2	3	4
30	Patient care assignments that foster continuity of care, i.e., the same nurse cares for the patient from one day to the next.	1	2	3	4
31	Use of nursing diagnoses.	1	2	3	4

From: "Barol, Andrea L." <ajb@nursing.upenn.edu>
Date: May 16, 2022 at 09:57:56 EDT
To: vkubanick@adelphi.edu
Subject: FW: Permission to use the PESNWI tool

Dear Valerie Ann Kubanick,

Thank you for your email to Dr. Lake. Enclosed, please find the instrument, scoring instructions, an article containing PES-NWI scores for ANCC Magnet hospitals from 1998 in Table 1, and a Warshawsky & Haven article you may find useful. These materials are sent to everyone who makes the request.

Dr. Lake's permission is not needed as the instrument is in the public domain due to its endorsement by the National Quality Forum in 2004 and re-endorsement in 2009: http://www.qualityforum.org/QPS/QPSTool.aspx?m=1129&e=3. However, if you prefer to have Dr. Lake's permission, this email serves as her permission.

Please direct any reply to Dr. Eileen Lake at elake@nursing.upenn.edu. If you need anything else, feel free to write to us again. Best of luck with the successful completion of your doctoral thesis.

All the best,

Andrea Barol
Research Center Coordinator
Center for Health Outcomes and Policy Research
University of Pennsylvania School of Nursing

Appendix F – Institutional Review Board Proposal Exemption

ADELPHI
UNIVERSITY

INSTITUTIONAL REVIEWBOARD
T 516-877-3259
F 516-877-3297
adelphi.edu
PO Box 701
ONE SOUTH AVENUE
GARDEN CITY NEW YORK 11530

November 15, 2022

Valerie A. Kubanick
College Of Nursing and Public Health
Adelphi University
Garden City, NY 11530

Dear Ms. Kubanick:

The Institutional Review Board (IRB) has met and reviewed your proposal, *A Descriptive Correlational Study of Pain Assessment by Nurses in a Hypothetical Patient Using the AACN's Synergy Model of Nursing (Submission #081422)* and the committee has granted your proposal **exemption**. Should you wish to make any modifications to your research, you are required to submit an amendment to the IRB to have your classification as exempt reconfirmed. Please note that you remain obligated to observe the Belmont principles with respect to the protection of human subjects.

If you have any questions, please feel free to contact me at 516-877-4753 or e-mail me at springer@adelphi.edu

Sincerely,

Carolyn Springer, Ph.D., Chair
Adelphi University Institutional Review Board

CC: Dr. Jacobowitz