

**PRESCRIBING OPIOIDS IN PRIMARY CARE SETTINGS:
EXPERIENCES OF NURSE PRACTITIONERS**

A Dissertation Submitted to the
College of Graduate Studies and Postdoctoral Studies
In Partial Fulfillment of the Requirements
For the Degree of Doctor of Philosophy
In the College of Nursing
University of Saskatchewan

By

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Abstract

Many Canadians access health care for the management of acute or chronic pain. Therapeutic pain management approaches provided by nurse practitioners (NPs) may involve non-pharmacological options and the prescription of medications. When opioids are prescribed by NPs, there is a need for awareness of the concerns for opioid abuse and development of dependence, misuse related to a lack of medication education, diversion of the medication for potential financial gain, and obtaining opioids illegally when prescriptions are tapered or discontinued: which all have been implicated for concerns regarding opioid prescribing and the present opioid crisis (Canadian Centre on Substance Use and Addiction, 2020).

The purpose of this study was to explore the experiences of the NPs who prescribe opioids in primary care settings within the province of Saskatchewan. The following question guided this study: What are the experiences of NPs who prescribe opioids in primary care settings? Interpretive Description was chosen as the guiding method for this inquiry: as interpretive description is most often used to explore practice based clinical questions. Through the use of the scaffolding approach in Interpretive Description (Thorne, 2016), a scoping review of the literature was performed that identified themes across a small number of peer reviewed articles from international studies, and a gap in the Canadian literature on the study phenomena.

The qualitative inductive approach of Interpretive Description was chosen to develop nursing knowledge about opioid prescribing by NPs using interview data collection and analysis. Information about the study and a link to a recruitment survey was distributed to NPs in collaboration with a provincial regulatory body. The recruitment survey asked respondents to complete demographic and practice questions about their practice of opioid prescribing and

indicate their interest in participating in an interview on the topic. This purposive sampling method used a modified Dillman approach, recruited 21 volunteers to conduct semi - structured interviews (Dillman et al., 2014).

Constant comparative analysis of the interview data resulted in two focus areas of thematic development: the practice concerns involved in prescribing opioids and the decision-making process employed by NPs in addressing pain management. Findings from the thematic analysis of practice experiences when prescribing opioids identified three primary themes: learning to prescribe, gaining competence and confidence, and experiencing concerns for personal safety. A second descriptive thematic analysis explored the participants' decision-making when prescribing opioids in primary care clinical settings. This analysis identified three themes that influence participant decision-making in practice: negotiating practice autonomy boundaries, applying clinical practice guidelines, and retribution from authorities.

Findings from the analyses suggests that participants with more years of experience felt their educational preparation was appropriate; however, participants with fewer years of experience felt hesitant and underprepared for the associated level of accountability and responsibility. The outcomes identified a need for increased knowledge and support for NPs when prescribing opioids and a need for policy change within electronic health records to identify clients with opioid contracts to mitigate the potential of opioid prescription abuse, misuse, and diversion.

Acknowledgments

I would like to express my deepest appreciation to my supervisor Dr. Mary Ellen Labrecque, for your continued support and encouragement throughout this journey. Thank you for the friendship we built along the way. A heartfelt thank you to my committee, Dr. Susan Fowler-Kerry, Dr. Tracie Risling, Dr. David Blackburn, and Dr. Kelly Penz my chairperson, without whom I would not have been able to complete this research. I appreciate your ongoing support and many wonderful suggestions. A special thank you to my external examiner, Dr. Roberta Heale, for your positive feedback and encouragement. I would also like to acknowledge two retired committee members Dr. Norma Stewart and Dr. Lorraine Holtslander, for their participant and engagement.

I would like to thank every participant in this study, without you graciously volunteering to share your stories none of this could have been possible. Each one of you will always be a part of this journey. I am grateful for your sharing as ‘we’ together advance our wonderful profession of nursing.

I would also like to thank the College of Registered Nurses of Saskatchewan, (formerly the SRNA) for assisting me with disseminating my research. A special Thank You to Tammy Morrison for assisting with formatting this project and encouraging me to breathe.

Dedications

To my husband, Ken. Thank you for your continued love and support as I chased my dreams. You were always beside me with support and encouragement.

To my children, Amanda, and Matthew. Thank you for just being supportive and loving while I was chasing my dreams. You were always there when I needed a laugh, a hug, or someone just to listen.

To my grandchildren, Anthony, Clark, and Savannah. I love each one of you more than you can imagine. Your loving, playful, adventurous, curious little minds will be a great asset for this world.

To my colleagues past and present. Thank you for our support and encouragement.

Today is a good day to save a life!

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1.0 Introduction and Background

1.1 Introduction

Nurse practitioners (NPs) are essential members of the healthcare system (Almost, 2021; Kaasalainen et al., 2010). NPs have been practicing in an expanded scope since the mid-1960s in many urban, rural, and northern areas of Canada (Kaasalainen et al., 2010), providing safe and accessible health care across the lifespan: focusing on health promotion and prevention of acute and chronic diseases (Almost, 2021; Canadian Nurses Association, 2019). At present, the delivery of health care services by NPs has expanded into many specialty care areas (e.g., chronic pain management, palliative care, and opioid agonist therapy), which evolved from government legislation granting NPs the authority for the prescription of opioids as an element of their scope of practice.

The Government of Canada passed the New Class of Practitioner Regulations in 2012. This change to federal legislation for the prescribing of controlled drugs and substances granted NPs the prescriptive authority for various controlled drugs and substances, including opioids (Government of Canada, 2012a). The expansion to the regulated scope of practice for NPs enhanced the professional capacity to provide comprehensive care to clients with acute and chronic pain, palliative health conditions, and addiction and recovery services. The challenge that NPs face with the prescriptive authority of controlled drugs and substances lies in the education required for decision-making for prescribing opioids, balanced with the concerns related to the opioid crisis in Canada (Health Canada, 2020).

Decision-making in primary care clinical settings is a complex process. This process involves the healthcare practitioners' clinical knowledge, skill, and experience. Although the

literature regarding NPs' experiences when prescribing opioids in clinical settings is limited, a small number of researchers from the United States have studied the decision-making process utilized by NPs in their prescribing practices specific to controlled substances (Craig-Rodriguez et al., 2017; Kaplan & Brown, 2004, 2007; Kaplan et al., 2006; Kaplan et al., 2010). These researchers suggested that the responsibility for prescribing these medications involved a variety of concerns (i.e., education, prescribing practices, legality, abuse and addiction, and practice autonomy) that need further research (Craig-Rodriguez et al., 2017; Kaplan & Brown, 2004, 2007; Kaplan et al., 2006; Kaplan et al., 2010).

Canadian empirical literature on NPs and controlled drugs and substance prescribing practices has not explicitly focused on prescribing opioids (O'Rourke et al., 2019; Pittman et al., 2021). Therefore, given the present national concerns about opioid abuse, misuse, and diversion, it is essential to explore the experiences of Canadian NPs when prescribing opioids in clinical practice.

1.2 Nurse Practitioner

The title "nurse practitioner" and the associated legislated scope of practice are protected in all Canadian provinces and territories (Canadian Institute for Health Information, 2016). NPs are registered nurses who have completed a master's level education program that builds knowledge, application of skills and abilities to enable competence for diagnosing health concerns, ordering and interpreting medical investigations and diagnostic tests, prescribing medications, performing minor surgical procedures, and determining treatment plans. The Canadian Nurses Association defines an *advanced nursing practice* as follows:

An umbrella term used to describe an advanced level of clinical nursing practice that maximizes the use of graduate educational preparation, in-depth nursing

knowledge and expertise in meeting the health needs of individuals, families, groups, communities, and populations (Canadian Nurses Association, 2008, p. 10).

Advanced nursing practice is a term for clinical nurse specialist or nurse practitioner.

The NP, according to the Canadian Nurses Association, is further defined as: a registered nurse with additional educational preparation and experiences who possess and demonstrates the competencies to autonomously diagnose, order and interpret diagnostic test, prescribe pharmaceuticals, and perform specific procedures within the legislated scope of practice (Canadian Nurses Association, 2008, p. 41).

Currently, in Canada, multiple classifications focus on NP education for practice: family-all ages, adults, pediatric, neonatal, nephrology and anesthesia (Canadian Institute for Health Information, 2016). NP practice combines nursing knowledge with additional knowledge, skills and roles that historically have been within the practice domains of medicine. In Canada, the variation in regulating and credentialing was a concern for defining the competencies and practice standards of the NP within the nursing domain (MacLeod et al., 2017). Due to this variation across the country, the Canadian Nurses Association took a concerted approach to standardizing educational content, the NP scope of practice and credentialing processes. Today, Canadian NPs have a standardize practice regulation, national licensing exam, core educational competencies, and standards for practice (Canadian Nurses Association, 2006, 2016; Canadian Nurse Practitioner Initiative, 2006).

NPs provide a broad range of health services, within diverse health settings, to clients

across the lifespan and community organizations. They are competent autonomous healthcare providers that deliver comprehensive health promotion and illness prevention services that may include prescribing medications and referring to specialists (Parry, 2020; Wilson, 2016), initiating treatments and monitoring the healthcare outcomes of clients in collaboration with other health care professionals and community providers for the benefit of the client (Edge & Wilson, 2016).

1.3 Nurse Practitioner Role in Canada

Over the past 100 years, nurses in rural and remote areas of Canada have practiced within an expanded role (Kaasalainen et al., 2010). The seminal article by Kaasalainen et al. (2010) thoroughly accounts for the history of ‘outpost’ nursing, where nurses provided a level of responsibility for health care services, like physicians. In the late 1960s, registered nurses in advanced practice roles became known as NPs (Kaasalainen et al., 2010). The advancement of the NP role required nurses to obtain additional education that emphasized preparation for collaborative practice with physicians. Many physicians supported this advanced nursing role and provided clinical education for nurses to become autonomous healthcare practitioners (Kaasalainen et al., 2010).

1.3.1 History of Expanded Registered Nursing Practice

Three government-funded reports, led by Boudreau (1972), Lalonde (1974), and Romanow (2002), were foundational and recognized the benefit of the NP in the delivery of healthcare in Canada. The Boudreau Report (1972) was commissioned by the Department of National Health and Welfare and supported the expanded role of the NP as a member of the healthcare team that could assist in filling the gaps in healthcare service delivery. Many pilot projects across Canada were initiated following this report, and NPs were reported as an asset to

the healthcare system (Staples et al., 2020).

The Lalonde Report (1974) documented a connection between primary health care and the determinants of health. The benefits of this connection were stated to improve Canadians well-being and society's overall health. The expanded Registered Nurse role was stated as instrumental in health promotion and prevention of disease. Romanow's report distinguished NPs as a driving force in developing primary healthcare structures and creating interdisciplinary teams (2002). With the established emphasis on health promotion and prevention (Lalonde, 1974) and improving healthcare access and quality for all Canadians (Romanow, 2002), the NP role was re-implemented and supported at all levels by nursing education and regulatory licensure processes, and federal and provincial government health care legislation.

Due to the inconsistency across Canada in operationalizing the NP level of educational preparedness, the scope of practice, and provincial legislation and regulation, a dedicated group of stakeholders known as the Nurse Practitioner Planning Network lobbied the government to formalize and optimize the contributions of NPs in the Canadian health care system (Canadian Nurses Association, 2006; Canadian Nurse Practitioner Initiative, 2006). By 2006, the Nurse Practitioner Planning Network evolved and became the Canadian Nurse Practitioner Initiative of the Canadian Nurses Association and began a process of public awareness of NPs, marketing the campaign known as the 'Nurse Practitioners: The Time is Now!' which recommended the increasing integration of NPs into the existing Canadian healthcare system (Canadian Nurse Practitioner Initiative, 2006).

1.3.2 Nurse Practitioner Education Programs

A significant focus for NP education programs was to formalize the advanced nursing education for the differing NP practice roles (Kaasalainen et al., 2010). The first NP educational

program was established in 1967 at Dalhousie University as an outpost nursing and midwifery program. McMaster University and the University of McGill developed similar programs in the early 1970s, focusing on family practice nursing in rural and urban settings (Martin-Miserner et al., 2010). Several other universities, such as Alberta, Manitoba, Western Ontario, Toronto, McGill, and Sherbrooke, followed suit in 1972 with NP programs. The University of Saskatchewan also had an NP program in 1973 (Brown et al., 2008).

Many provinces and territories pushed for formal regulation of the NP educational curriculum (Canadian Institute for Health Information & Canadian Nurses Association, 2006). Educational programs varied from post-diploma and post-baccalaureate to master's degrees (Canadian Nurse Practitioner Initiative, 2006). In 2008, the Canadian Nurses Association recommended that all NP programs be a master's level of preparation as an educational standard. Currently, every province has at least one NP education program (Baker et al., 2020).

1.3.3 Canadian Nurse Practitioner Workforce

Canadian Institute for Health Information (2022) provides an annual statistical representation of the NP workforce in Canada retrospectively derived from provincial regulatory bodies. According to the Canadian Institute for Health Information, 7,400 NPs were registered to practice in Canada in 2021 (Canadian Institute for Health Information, 2022). NPs were indicated to have the most significant growth among other regulated nursing professional groups (Canadian Institute for Health Information, 2022). Over the previous ten years, the increase of licenced NPs in Canada has more than doubled from 2,777 in 2012 to 7,400 in 2021 (Canadian Institute for Health Information, 2022),

According to the Canadian Institute for Health Information, of the 7,400 NPs in the workforce in 2021, 6,441 were employed within the area of direct care, demonstrating a growth

of two and a half times that of the direct care NP workforce over the past decade (2011, n = 2,563) (Canadian Institute for Health Information, 2022); with 36.2% of the NP workforce employed in hospital-based settings and 37.9 % in community-based practice environments. More than half of NPs in Canada (89.6%) were indicated as employed in an urban setting versus rural and remote communities (14.8%) (Canadian Institute for Health Information, 2022). Yukon the Northwest Territories and Nunavut data reflect a more balanced urban-to-rural and remote NP workforce. Two hundred and fourteen (n = 3.3%) NPs across the country reported working in administration, education, and research (Canadian Institute for Health Information, 2022).

As reported by Canadian Institute for Health Information (2022), the NP's employment status also increased between 2011 to 2021, with 80.6% of NPs employed on full-time bases, 18.9% part-time, and 4.9% reported as working on a casual basis. The average age of NPs has been progressively lowering as younger nurses gain an interest in advanced practice positions (45.3 years = 2011; 44.1 years = 2021). Quebec is the province with the youngest average age of NPs at 38.2 years and Northwest Territories and Nunavut have the oldest average age for NP at 48.8 years (Canadian Institute for Health Information, 2022).

In summary, the evolution of NPs practice in Canada has been profound, from the beginnings as nurses working in an expanded scope of practice in rural and northern outpost clinics to nurses with a master's level education and regulated scope of practice. Through the dedication of many nurses, the regulated NP scope of practice became defined and continues to be refined through additional legislation, such as authorizing the prescription of controlled drugs and substances.

1.3.4 Nurse Practitioners: Prescribing Controlled Drugs and Substances

The Canadian federal government is responsible for regulating the prescribing and

dispensing of controlled drugs and substances in Canada. Health Canada proposed the New Class of Practitioners Regulations in 2007, initiating a discussion among healthcare professional groups and legislators for including of midwives, podiatrists, and nurse practitioners to prescribe controlled drugs and substances. In 2012, the *Controlled Drugs and Substances Act* (1996) legislation was changed, granting prescribing privileges to the professional groups in the New Class Practitioners Regulations (Government of Canada, 2012a). The legislation was required to be implemented in each province as the delivery of health care services is provincially mandated. Each provincial and territorial nursing regulatory body also amended its nursing act and bylaws to broaden the scope of NP prescribing practices. Quebec and Manitoba were among the first provinces to pass provincial legislation for NPs to prescribe controlled drugs and substances in practice in 2012 (O'Rourke et al., 2019). The province of Ontario was the last to implement the legislative changes in 2017 (O'Rourke et al., 2019).

At a National level, the Canadian Association of Schools of Nursing (2016) developed a guiding document for NP education programs, *Nurse Practitioner Education Competencies for Prescribing Controlled Drugs and Substances*. In 2012, when the federal government passed legislation to allow NP to prescribe controlled drugs and substances, the Canadian Association of Schools of Nursing noted variations in the education requirements associated with implementing controlled drugs and substance prescribing education across Canada (Canadian Association of Schools of Nursing, 2016; Government of Canada, 2012a). Representation from all provincial and territorial regions across Canada met to achieve a common goal: to provide and promote competent, knowledgeable, and safe prescribing practices of controlled drugs and substances amongst all NPs. While prescribing is not a new role for NPs, prescribing controlled drugs and substances is complex and associated with a higher level of accountability and responsibility

(Canadian Association of Schools of Nursing, 2016). The competencies provided by the Canadian Association of Schools of Nursing working group were integrated into educational programs and aligned with NP license regulation in each province and territory (Canadian Association of Schools of Nursing, 2016). As part of the educational curriculum for NP programs on controlled drugs and substances, content is specific to safe prescribing, the assessment of pain and risk for developing addiction, and information regarding the potential for drug diversion (Canadian Association of Schools of Nursing, 2016).

1.4 Pain

The International Association for the Study of Pain (2022) has revised the definition of pain since its first writing in 1979. Pain is defined as “an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage” (p. 1). Pain is suggested to be categorized as either acute or chronic. Acute pain is temporary and usually resolves as the injury that caused the tissue damage heals. Acute pain is a warning sign that something is wrong and has caused damage or may cause damage to bodily tissues (Health Canada, 2021).

Chronic pain, non-malignant, is defined as lasting longer than three months (Health Canada, 2021, p. 3). Chronic pain is defined as either primary in nature and exists despite tissue healing or pain with no identifiable cause. Whereas chronic pain that is suggested to be secondary is associated with an underlying disease process (Health Canada, 2021). Regardless of the nature of chronic pain as primary or secondary, the World Health Organization has designated chronic pain as a separate diagnosis in the International Classification of Diseases 11th revision (Health Canada, 2021, p. 3).

Pain is subjective to the individual and is multifactorial (Health Canada, 2021).

Individual experiences may be influenced by culture, previous painful experiences or events, beliefs, or their ability to cope with pain. The health care providers must consider all these factors when a client presents with a health concern that includes the experience of pain. For some individuals, it is challenging to communicate the subjective experience of painful stimuli and therefore, healthcare providers need to acknowledge the client and their need for pain relief.

1.4.1 Pain Assessment and Tools

Pain assessment is a broad multidimensional concept that involves three aspects of measurement. The first aspect of pain assessment is that pain is subjective and therefore relies on the self-report of pain from the client. A second focus in assessing of pain relates to the observed behavior of an individual experiencing pain. This may be more objective as the practitioner can visualize this aspect (e.g., activity or position of the client, a verbal response to pain such as crying or screaming, and for children or infants, they are consolable). The last aspect of assessment, and the most objective, are the physiological clinical signs that are suggestive of pain, such as an increase in heart rate, respiratory rate, and blood pressure that occur when clients are experiencing pain (Clinical Practice Guidelines: about Clinical Practice Guidelines, n.d.).

Assessing pain in a child, or a non-verbal adult, can be challenging as can the performance of a pain assessment on an adult under the influence of alcohol or drugs. Many scales such as the Wong-Bakker FACES pain rating scale, are available for young children or non-verbal adults. This scale is a row of cartoon faces that change from happy to unhappiness or severe pain. For adults, the use of a numerical rating scale from 0 – 10, or the acronym OPQRST, is the most common approach used to assess the subjective experience of pain (Onset, Provocation/Palliation, Quality, Region/Radiation, Severity, and Time) (Clinical Practice

Guidelines: about Clinical Practice Guidelines, n.d.). Regardless of the assessment tool used by the NP, a thorough history should be performed and include all three aspects of pain (subjective, behaviour, and physiologic) in the decision-making process.

1.5 Opioids

The *Controlled Drugs and Substance Act* (1996) is legislation belonging to Canada's federal government. The act aims to control and regulate classes of drugs, in either synthetic or natural forms, and designate the type of health care practitioners who may have the authority to prescribe these medications. The act has eight substances\ schedules and is regulated by the federal government to protect the public interest of Canadians.

A controlled substance is defined by Health Canada (n.d.b.) as:

any type of drug that the federal government has categorized as having a higher-than-average potential for abuse or addiction. Such drugs are divided into categories based on their potential for abuse or addiction. Controlled substances range from illegal street drugs to prescription medications (p. 2).

Opioids are an example of a class of controlled substance in the legislation (Government of Canada, 2012a). Opioids are derived from the opium poppy and are either semi-synthetic or synthetic (Rosenblum et al., 2008). Opioids are commercially available in many forms, such as oral pills or liquids, transdermal patches, and solutions for intramuscular or intravenous administration (Rosenblum et al., 2008). Opioids are an analgesic considered to be the most reliable and effective treatment used for acute and chronic pain management (Canadian Center on Substance Use and Addiction, 2022; Health Canada, 2021). However, opioids are also considered to have the most significant potential for the development of addiction (Hilal-Dandan & Brunton, 2014; Jensen & Regier, 2012). A plethora of research documents the inadequate

management of Canadians living with chronic pain (Lynch, 2011). Jones et al. (2021) documents that between 2011 to 2016, all Canadian provinces reported an increase in the number of opioid drugs dispensed. Following the implementation of new Canadian opioid prescribing guidelines in 2017, a more restrained prescribing practice ensued. In 2019, a Canadian Pain Task Force was established to help the government understand the needs and support required for individuals with chronic pain (Health Canada, 2021). The Canadian Pain Task Force currently has six goals for Phase 3 of the action plan, which include: 1) enable coordination, collaboration, and leadership across Canada; 2) improve access to timely, equitable, and person-centred pain care; 3) increase awareness, education, and specialized training for pain; 4) support pain research and strength related infrastructure; 5) monitor population and health system quality; and 6) ensure equitable approaches for populations disproportionately impacted by pain (Health Canada, 2021, p. 2).

1.5.1 Physiological Mechanisms of Action

When opioids are prescribed for acute, chronic, or palliative care pain management, prescribers must understand the physiological mechanism of action of the class of drugs. Opioids can provide beneficial therapeutic actions for pain control while posing challenges related to monitoring the development of opioid dependency and addiction (Hilal-Dandan & Brunton, 2014).

Opioids taken in the presence of pain bind to the opioid receptors in the human body. These opioid receptors are widely distributed in the central and peripheral nervous systems (Hilal-Dandan & Brunton, 2014). When opioids are used to manage pain, ‘mu agonists’ can fully activate the receptor (Rosenblum et al., 2008, p. 3), initiating a physiological response to the pain. When the pain receptors are bound to the opioid, an analgesic effect takes place. This

analgesic effect provides relief for the client from their pain; however, the client may also experience a varying degree of adverse side effects from the opioid, such as reduced peristalsis leading to constipation, pruritus (itchy skin), miosis (pupillary constriction), altered level of consciousness, and respiratory depression (Hilal-Dandan & Brunton, 2014). Central nervous system activation of opioids might also produce mood effects such as dysphoria or euphoria. Most opioids have a relatively short half-life, which can create challenges in determining a treatment regime for pain management if prolonged analgesia is required to alleviate pain (Rosenblum et al., 2008).

Failure to manage pain can negatively affect a client's physiological and psychological function. Physiological functions, such as autonomic hyper-reflexivity (symptoms include elevated blood pressure, increased heart rate, and decreased gastrointestinal motility and secretions) may add to the feelings surrounding illness severity the experience of pain. Inadequate pain relief may decrease the client's mobility, deconditioning muscle strength, increasing muscle wasting, joint stiffness, and potentially decalcifying of bone mass. Immobility may also lead to coagulopathy and peripheral or central circulation clots. Psychological feelings of depression, hopelessness, and withdrawal from normal daily activities are some of the changes observed in the emotional wellbeing of the individual suffering from untreated pain (Hilal-Dandan & Brunton, 2014).

Opioids used in the absence of pain produce an opioid effect of euphoria that may lead to 'drug liking,' increasing tolerance to higher amounts of a drug, physical dependence and ultimately, addiction. Three opioid receptors known as the mu (μ), kappa (κ) and delta (δ) represent the classified receptors for opioid use (Al-Hasani & Bruchas, 2011) and make up the 'reward center' in the brain (Fields & Margolis, 2015).

The mu receptor is considered the most effective analgesia receptor and is responsible for the pleasure experienced with an opioid that produces a reward for continued drug use leading to dependence and addiction (Fields & Margolis, 2015): as the mu receptors produce a positive reinforcement or 'reward' following the chemical attachment of opioids. Mu receptors are broadly distributed within the brain, including the mesolimbic dopaminergic neurons that originate from the ventral tegmental area and project towards the nucleus accumbens, which is part of a network that includes the prefrontal cortical areas, hippocampus and the basal forebrain structures that are known as the extension of the amygdala (Hilal-Dandan & Brunton, 2014; Younger et al., 2011). The amygdala is part of the limbic system known as the emotion center. Younger et al. reported that the amygdala and the hippocampus 'drive' the reward center towards an association with "drug-induced associative learning, drug craving, reinforcement, the development of dependence, and the experience of acute withdrawal" (2011, p. 1808).

When opioids stimulate mu receptors without pain, the receptors motivate repeated drug use for simple pleasure (Fields & Margolis, 2015). This repeated stimulation of this circuit in the midbrain or the mesolimbic reward system causes the ventral tegmental area to stimulate the release of dopamine in the nucleus accumbens, causing a "feeling of pleasure" (Kosten & George, 2002, p. 2). From here, other areas of the brain, such as the hippocampus, create a memory of the immediate sense of satisfaction and associate the sensation with the events prior to the feeling, known as "conditioned associations" (Kosten & George, 2002, p. 2). The amygdala creates a conditioned association the opioid stimuli that leads to 'drug liking' (Fields & Margolis, 2015; Kosten & George, 2002; Younger et al., 2011). Opioids alleviate pain, but they also provide an intense feeling of euphoria. The repeated stimulation of the 'reward system' through conditioned associations builds over time and can increase drug tolerance and

dependence.

Tolerance to an opioid is caused by repeated exposure to the drug to produce a similar 'feeling of pleasure' in the reward center. Tolerance occurs when the opioid receptors become less responsive to the stimulation. Therefore, more opioid is needed to stimulate the ventral tegmental area to release a similar amount of dopamine and produce the same effect over time. Tolerance will develop in clients at different rates (Fields & Margolis, 2015; Younger et al., 2011). Examples of the signs of tolerance may be pupillary miosis, a minor sign progressing to analgesia and sedation or euphorogenic as rapid signs of tolerance (Hilal-Dandan & Brunton, 2014).

Opioid dependence and withdrawal stem from changes in the locus of ceruleus located at the brain's base. In the locus ceruleus, noradrenaline is produced and distributed to stimulate vital functions such as breathing, blood pressure, alertness, and wakefulness (Fields & Margolis, 2015; Younger et al., 2011). According to Fields and Margolis (2015) and Kosten and George (2002), when the mu receptors in the locus ceruleus are repeatedly stimulated with opioids, the locus ceruleus causes an increase in the activity of noradrenaline production to offset the opioid effect, otherwise noted as dependence. However, when no opioids are present to suppress the locus ceruleus enhanced activity, noradrenaline is released in excessive amounts causing signs of withdrawal (Fields & Margolis, 2015; Younger et al., 2011). Signs of withdrawal may be reflected by agitation, hyperthermia, hypertension, diarrhea, pupillary dilatation, dysphoria, anxiety, and depression (Hilal-Dandan & Brunton, 2014). These unpleasurable withdrawal signs may also further contribute to continued use and dependence. Addiction is the continual use of opioids to stimulate the reward system for the 'feeling of pleasure.' This cyclical exposure to an opioid induces drug dependence and the avoidance of withdrawal symptoms further driving the

addiction (Fields & Margolis, 2015; Younger et al., 2011).

1.5.2 Opioid Prescription

Pain is a common reason for Canadians to seek medical attention. Health Canada (2021) reported that one in five individuals (an estimated 7.6 million Canadians) across the lifespan are living with chronic pain in Canada. Children and youth make up one in five individuals that experience ongoing pain. However, as our population ages, one in three people over 65 is reported to experience chronic pain (Health Canada, 2021). Many patients with pain report longer wait times to receive pain treatment services from a specialist and rely on primary care providers to initiate medication. Prescription opioids are one way to address care for chronic pain. The National Advisory Council on Prescription Drug Misuse stated, “A key challenge is when and how to use these medications effectively and safely” (2013, p. 8). Opioids can benefit patients when prescribed in the appropriate context, administered, and consumed as directed (Health Canada, 2021).

When opioids are not prescribed in the appropriate context and not administered or consumed as directed, there is a greater chance of adverse events. NPs and other health care professionals should not be afraid to assist a client with an opioid prescription when they present to a clinic with complaints of pain. Opioids are an appropriate choice for moderate-to-severe pain persistently impacting an individual’s quality of life (Hilal-Dandan & Brunton, 2014; Sehgal et al., 2012; World Health Organization, n.d.).

1.5.3 Opioid Abuse, Misuse, and Diversion

The prescription of opioids has benefits for the health and wellbeing of the client who is experiencing pain. The most significant benefit of opioid use is pain management. The most significant concern is the potential for prescription drug abuse, misuse, and diversion. Balancing

the benefits and concerns of opioid use can be supported through a risk assessment for each prescription of an opioid (Health Canada, 2021).

Non-medical prescription opioid use is cause for great concern. The literature commonly refers to misuse and diversion when clients seek access to non-medical prescription opioids (Bettinardi-Angres et al., 2012; Fischer & Argento, 2012; Lusted et al., 2013). The Canadian Center on Substance Use and Addiction defines *misuse* as: “use by people other than those to whom the medication is prescribed or use in a manner or for a purpose contrary to what is intended” (2015, p. 1).

The Canadian Centre on Substance Use and Addiction (2022) reported that prescription opioid use when prescribed and taken as intended for pain relief, improved the quality of life for the individual. Opioids consumed for non-medical use have the potential to lead to dependency and even death (Canadian Centre on Substance Use and Addiction, 2022). Over 30,000 opioid-related deaths occurred in Canada between January 2016 and March 2022 (Canadian Centre on Substance Use and Addiction, 2022). Most of these deaths (greater than 88%) occurred in British Columbia, Alberta, and the province of Ontario (Canadian Centre on Substance Use and Addiction, 2022).

The National Advisory Council on Prescription Drug Misuse (2013) reported higher rates than the general population of non-medical prescription opioid use in women, youth, seniors, First Nations, and Inuit, as well as newborns born to mothers with opioid addictions. The Canadian Community Health Survey (2018) collected data on opioid use that was later reported by the Canadian Centre on Substance Use and Addiction (2020). The data analysis indicated that approximately 40 % of Canadians aged 15 and older (11.8 million) used opioids for pain relief (Canadian Centre on Substance Use and Addiction, 2022). The Canadian Tobacco, Alcohol and

Drugs Survey (Health Canada, n.d.) reported that the prevalence of opioid users in the general population was 11.8%.

1.5.3.1 Vulnerable Populations.

1.5.3.1.1 Seniors. Seniors are the most likely population to experience chronic illnesses, of which pain is one of the presenting symptoms of concern. Chronic illnesses with associated painful symptoms are commonly treated with an opioid, and where opioids have the most significant potential for drug interactions and produce severe adverse side effects, such as confusion and drowsiness. These adverse side effects may contribute to the client repeating a dose of opioid medication, which may lead to the development of toxic levels and an increase in the likelihood of trauma from falls (i.e., fractured bones or intracranial bleeds) (The National Advisory Council on Prescription Drug Misuse, 2013). Additionally, concerns arise in this population as a target for abuse and threats of violence when individuals dependent on opioids become aware that opioids are in the possession of an older adult. In contrast, a study by Inciardi et al. (2009) reported that given the financial constraints of fixed incomes, some elderly individuals were also reported to divert their medication to address financial concerns.

The Canadian Drug Summary on Prescription Opioids reported older adults, aged 65 plus years of age, used opioids at a rate of 11.3% of the population in 2017 (Canadian Centre on Substance Use and Addiction, 2020, p. 4). When the older adult group was combined with all adults aged 25 years and older, the prevalence of the use of opioids for pain relief was 14.7% in 2019 (Canadian Centre on Substance Use and Addiction, 2022, p. 4). The data from these reports suggest that the population of older adults most often obtains opioids from interactions with healthcare professionals.

1.5.3.1.2 Youth. The National Advisory Council on Prescription Drug Misuse (2013) reported that Canada’s youth are at high risk for opioid drug misuse and “view prescription drugs as safer than illegal drugs” (p. 22). The data in this report that support this risk assessment indicated that:

- the prevalence of youth aged 15 – 19 years who self-report the use of opioid pain reliever medication was 9.8% in 2019, up from 8.4% in 2017 (Canadian Centre on Substance Use and Addiction, 2022, p. 3 – 4).
- the prevalence for young adults aged 20 – 24 years was reported at 12.1% in 2019 and 12.0% in 2017 (Canadian Centre on Substance Use and Addiction, 2022, p. 4; Canadian Centre on Substance Use and Addiction, 2020, p. 3).

Both prevalence rates are cause for concern in relation to levels of use and potential for misuse and diversion.

Youth from First Nations populations appear to have disproportionately higher use of opioids. Prescription opioid use amongst First Nation youth aged 12 – 17 years was reported at 10.4 % for the year 2015 – 2016 (Canadian Centre on Substance Use and Addiction, 2020, p. 5). It has been suggested that the problem of opioid abuse may be traced back to the longstanding issues of colonialism and residential schools.

1.5.3.1.3 Infant. The use of opioids during pregnancy may result in the occurrence of drug withdrawal in the newborn infant, a syndrome known as “Neonatal Abstinence Syndrome” (The National Advisory Council on Prescription Drug Misuse, 2013). Symptoms of Neonatal Abstinence Syndrome include irritability, poor sleeping, and poor feeding may be seen up to 72 hours after delivery and potentially last for up to 30 days, with mild symptoms continuing up to 6 months (Lacaze-Masmonteil & O’Flaherty, 2018). The Canadian Pediatric Society endorsed a

report by Lacaze-Masmonteil & O’Flaherty (2018) that reported 50 - 75% of infants born to mothers using opioids might require treatment for withdrawal symptoms. The symptoms and treatment plans for these infants vary depending on the amount and frequency of the mother’s use while the infant is in utero (Haas, 2019; Lacaze-Masmonteil & O’Flaherty, 2018).

Canadian Institute for Health Information reported a 27% increase of cases in Neonatal Abstinence Syndrome over four years of data collection from 2012 - 2013 and 2016 - 2017 (does not include data from Quebec) (Canadian Institute for Health Information, 2018a). Over half the cases were in Ontario (n = 988), followed by British Columbia (n = 252), and Alberta (n = 207) (Canadian Institute for Health Information, 2018a). The rapid and extensive development of the infant and adolescent brain may be affected by substance use and misuse. According to the Canadian Centre on Substance Use and Addiction, early onset use of opioids is associated with an increased risk of drug dependency later in life and poly-drug use (2007).

1.5.4 Clinical Guidelines Related to Opioid Prescribing

Clinical practice guidelines are systematically developed evidence-based statements that assist practitioners in providing appropriate care for simple to complex health problems. Clinical guidelines are not to be viewed as concrete solutions for diagnostic and treatment concerns; instead, guidelines are to be used as tools or building blocks to assist with health-related assessment, diagnostic reasoning and treatment decisions, actions, and outcomes (Kredo et al., 2016). Clinical Practice Guidelines support health professionals with evidenced-based client care decisions in practices and avoiding opinion-based assumptions (Kredo et al., 2016). Clinical practice guidelines assist the health care provider with clinical decision-making in relation to patient care, health promotion and prevention education with individuals or groups, assuring the quality of care provided, stewardship of resource allocation, and reducing the risk of legal

liability and neglect (Field & Lohr, 1992). In Canada, many healthcare associations (i.e., Canadian Diabetes Association, Canadian Mental Health Association, Global Initiative for Chronic Obstructive Lung Disease) have developed clinical guidelines to systematically aid in appropriate assessment, investigation, diagnosis, treatment planning and implementation, and outcome strategies for acute and chronic disease processes. The Canadian Nurses Association and the Canadian Medical Associations' websites have links to many evidenced-based clinical recourses for practitioners.

The 2017 Canadian Guidelines for Opioids for Chronic Non-Cancer Pain were published. Information within the guidelines included how to utilize the guidelines, initiation and dosing of opioids, rotation and tapering of opioids, and use of immediate versus controlled release compounds. The guidelines also recommended risk mitigation, including treatment contracts, tamper-resistant formulations, and co-prescribing of naloxone as a harm reduction safety option (Busse, 2017; Busse et al., 2017). Clinical practice guidelines for acute pain management were also made available from the TopAlbertaDoctors.org website. However, this resource is limited to managing acute pain concerns related to headaches and low back pain (TopAlbertaDoctors, 2018).

1.5.5 Opioid Prescription Contracts

When opioids are prescribed, best practice recommendations include the use of opioid prescription 'contracts' with every client presenting with acute or chronic pain to educate clients about concern for the potential of abuse, misuse, or diversion. An opioid prescription contract is a document that clearly lists the expectations of the treatment plan that includes the use of opioids: from initiation to titration, titration to discontinuation of the opioid, and monitoring when prescriptions are obtained by the client and the prescriber of the medication. The contract

indicates the name of the provider who will prescribe opioids to the client, the dose, the number of pills, and the refill frequency of the medication. This contract is an agreement between a provider and a client or designated clinical practice team that the client will only access the member providers of this team to obtain their opioid medication. A designated pharmacy might also be indicated. The contract includes these client expectations, and prohibited behaviours, (i.e., co-ingestion of alcohol or other illegal substances; termination of prescription renewals for obtaining additional prescriptions from other providers). The contract may also include expectations for random urine drug screening to monitor use, misuse, or diversion. The random urine drug screening ensures the client is taking the opioid and may identify whether other substances are co-ingested (i.e., cannabis or street drugs). This contract needs to be reviewed frequently to maintain alignment with the client's medical condition and healthcare needs and assess potential risks for addiction (Busse et al., 2017).

1.5.6 Opioid Prescription Monitoring

A cautionary measure developed to guard against the potential for drug abuse, misuse, and diversion is the prescription monitoring programs in Canadian provinces and territories. These programs have been implemented across Canada, to monitor healthcare providers' prescription of controlled drugs and substances (e.g., physicians, nurse practitioners, dentists, etc.). The data collected by prescription monitoring programs vary across provinces, as does the type and frequency of communication with prescribers about potential prescribing practice concerns. Provinces operating prescription monitoring programs include British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Nova Scotia, New Brunswick, and Newfoundland and Labrador. Prince Edward Island is in the developmental stages. The Yukon is in a collaborative monitoring agreement with the Alberta monitoring program (Canadian Centre on

Substance Abuse, 2015; Canadian Association of Schools of Nursing, 2016). Saskatchewan is the only province where the nursing regulatory body is documented as having an institutional association as a stakeholder in the prescription monitoring program. It assists with the monitoring program communication to NPs concerning prescribing practices with controlled drugs and substances (Canadian Centre on Substance Abuse, 2015). Consistency in the opioid prescribing and monitoring is essential to address concerns for the use, misuse and diversion of opioids and other controlled drugs and substances across the country; for the safety of clients receiving these medications. All healthcare provider education programs are encouraged, and may be required through regulatory policy, to include information on the Canadian Guidelines for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain (Busse et al., 2017).

1.6 Canadian Opioid Crisis

The Opioid Crisis in Canada is growing at an alarming rate (Hatt, 2022). The Canadian Centre on Substance Use and Addiction (2022) reported in 2019, an estimated 14.2% of Canadians used opioid prescriptions for both medical and non-medical reasons. Of this 14%, approximately 6% of Canadians reportedly use opioids for non-medical reasons. In Canada, statistics are gathered to record the number of deaths for both accidental opioid toxicity and intentional (suicide) opioid toxicity. Intentional opioid toxicity deaths have decreased yearly between 2017 and 2020. However, the accidental opioid toxicity death rate has continued to increase (Hatt, 2022, p. 2).

A national report from the Special Advisory Committee on the Epidemic of Opioid Overdoses (2018) reported a substantial increase in opioid-related deaths in many provinces. In 2019, Health Canada reported that 94% of opioid deaths are accidental. It indicated that youth aged 15 to 24 were the fastest-growing population accessing healthcare to treat overdoses from

opioids. The Public Health Agency of Canada released the report from the Special Advisory Committee on the Epidemic of Opioid Overdoses (2022), titled “*Apparent Opioid and Stimulant Toxicity Deaths*” in 2022. The data analysis on toxicity deaths between January 2016 to September 2021, indicated that approximately 26,700 deaths were related to opioid toxicity and that approximately 5,400 deaths occurred from opioid ingestion: averaging approximately 20 deaths per day across Canada. Before the beginning of the COVID-19 pandemic in early 2020, the average number of deaths per day from opioids was reported as 7 in 2016 and 12 in 2018 (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2022, p. 5). Whereas, within the first nine months of 2021, almost 88% of the deaths that occurred in British Columbia, Alberta, and Ontario were related to opioid toxicity, and increasing rates were also reported in Saskatchewan and the Yukon (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2022, p. 6). It is important to note that while some of these deaths may be related to prescription opioids, the access and use of illegally obtained opioids and other street drugs remains a significant concern.

The Opioid Crisis in Canada has had a profound economic impact on the fiscal resources of the healthcare system. In 2017, according to the Canadian Substance Use Cost and Harms Working Group, the opioid crisis cost Canadians over \$5.9 billion. Healthcare costs for opioid related illness and injury were estimated at around \$438 million, which included (but were not limited to) emergency medical services, treatment in emergency rooms, and intensive care units (Hatt, 2022, p. 6). The increasing cost of care for opioid-related toxicity and deaths are an essential concern for the health and wellbeing of the Canadian population and a significant element in the ongoing focus on appropriate prescribing and monitoring by all healthcare prescribers.

1.6.1 Saskatchewan Opioid Crisis

Many of the western Canadian provinces have had a significant rise in the number of fatalities from opioid toxicity. The Saskatchewan Coroners Service Division, in 2017, reported 95 accidental deaths due to drug toxicity. This number rose in 2018 to 139 and in 2019 to 154 deaths (Government of Saskatchewan Coroners Service, 2021, p. 1). In 2020, the first year of the COVID-19 pandemic, the number of Saskatchewan-recorded accidental opioid-related deaths was 285. The most concerning data specific for opioid-related deaths per year in females were reported as ten deaths for those aged 20 - 29 years and 13 deaths among those aged 30 - 39 in 2018, and 11 and 12 deaths for the respective female age groups in 2019. In 2020, 15 deaths were recorded for those aged 20 - 29 years, and 21 deaths for females aged 30 - 39 years were reported from opioid toxicity (Government of Saskatchewan Coroners Service, 2021, p. 8). Numbers reported in 2020 for accidental opioid-related deaths of the male gender, identified 49 deaths within the age group of 30 - 39 years and 36 deaths within the age group of 40 – 49 years (Government of Saskatchewan Coroners Service, 2021, p. 8). These age groupings demonstrate the populations at most risk for accidental overdoses within the province and need to be a focus of concern for health policy and the careful attention by healthcare prescribers in their practice.

1.6.2 Public Health Agency of Canada Opioid Strategy

The Public Health Agency of Canada has identified four pillars that form their approach to the current Opioid Crisis: prevention, treatment, harm reduction, and enforcement (Health Canada, 2018). Prevention relates to addressing assessment and education at the first contact with clients accessing the health care system. Prescription monitoring and access to patient prescription profiles is also a prevention method that can aid the prescriber in making informed medication and treatment options for clients before to prescribing opioids (Health Canada, 2018).

Harm reduction has become a significance pillar in addressing the opioid crisis. Harm reduction activities include the development of safe, supervised consumption sites, and access to naloxone kits with every opioid prescription. The Public Health Agency of Canada recommends that healthcare services need to be committed to increasing support for individuals experiencing opioid addiction who seek emergency assistance and the creation of increased community supports for individuals for problematic substance use (Health Canada, 2018).

The Public Health Agency of Canada is mobilizing a collaborative approach with all healthcare members and the society at large to address the current opioid crisis. The four pillars that inform an approach to the opioid crisis cannot be addressed independently and should be viewed as interlocking elements of a whole system that is working together to address this national concern for the population's health (Health Canada, 2018).

1.6.3 Nurse Practitioners and Opioid Prescribing

The legal authority for NPs to prescribe opioids was provided in 2012 through the New Class Practitioners Regulations (Government of Canada, 2012a). As many NPs are employed in remote and rural communities, and with vulnerable populations, the benefit for the populations served by NPs has been the increase in access to care for client health concerns involving acute or chronic pain management. Increasing timely access to care for clients with acute or chronic pain assists in decreasing pain and suffering by shortening wait times and the financial burden for clients who previously might have travelled significant distances to access pain management services (Canadian Association of Schools of Nursing, 2016; Saskatchewan Registered Nurses' Association, 2019).

Palliative care clients also benefit when the NP in their small remote and rural communities can prescribe opioids. In the past, many people living in these communities may

have been unable to receive palliative care services within their community and stay close to their families. The ability of the NP to prescribe opioids, a standard pain management therapy in palliative care, supports clients for whom a return home at the end of life provides for a holistic approach to the dignity and care of the client and family (Health Canada, 2018; Saskatchewan Registered Nurses' Association, 2019).

Although there can be a few benefits for clients to have an increase in access to care providers when experiencing pain, the treatment of clients with opioid addictions, with opioid agonist therapy, can be concerning for the NP. Providing access to treatment for opioid abuse, misuse, and diversion is a challenge in many urban, rural, and remote communities. Some community policymakers support an increased NPs working in opioid use disorders and harm reduction programs such as needle exchanges and safe consumption sites. These programs offer support to individuals who have an addiction to opioids and other drugs, through an approach that does not perceive their addiction as a personality weakness; instead supports the individual to address their health care needs and avoid potential illness and injury in obtaining and administering their drug of choice: often involving medical assistance with withdrawal, education on therapies for supported use, and avoidance of street drugs with unknown chemicals and opioid or other drug dosages. As harm reduction approaches and treatment centres increase and evolve to help curb the opioid crisis, healthcare practitioners need to educate about opioid-use disorders and the options available for supportive assisted medication therapies (Health Canada, 2018).

1.7 Purpose of the Study

The study aimed to explore the experiences of NPs who prescribe opioids in primary care settings within the province of Saskatchewan.

1.8 Research Question

The research question that guided this study was: *What are the experiences of NPs who prescribe opioids in primary care settings?*

The following additional sub-questions were also explored in the interviews with participants that informed the data collection and analysis:

- 1) How often do NPs prescribe opioids in primary care?
- 2) What attitudes, beliefs and perceptions do NPs report in relation to prescribing opioids and the associated benefits and risks?
- 3) What elements do NPs believe influence their decision-making in relation to prescribing opioids in their clinical care setting?
- 4) What opioid prescribing concerns do NPs have in relation to opioid abuse, misuse, and diversion?

1.9 Relevance and Significance

The opioid crisis in Canada is a complex health and social concern. Many prescriptions of opioids written for the management of acute and chronic client conditions (i.e., involving pain) are evidence-based and provide therapeutic benefits. A growing body of literature describes prescription opioid abuse, misuse, and diversion (Health Canada, 2022). In 2019, prescription opioids were used by 14.2% of Canadians for medical and non-medical reasons (The Canadian Centre on Substance Use and Addiction, 2022). Within the first nine months of 2021, approximately 20 people died daily from opioid toxicity. Before the COVID-19 Pandemic, the approximate daily death toll for opioid toxicity was seven persons per day in 2016 and 12 deaths per day by 2018 (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2022, p. 5).

Given the current public health concerns about opioid abuse, misuse and diversion, there is an urgent need for research to understand the processes used by NPs in prescribing opioids. There is a limited amount of Canadian literature regarding NP prescribing practices. A scant amount is specific to prescribing controlled drugs and substances or focused on opioids for the clients served within their practice settings (O'Rourke et al., 2019; Pittman et al., 2021). Little international literature contributes to documenting the abuse, misuse, and diversion of opioids prescribed by NPs (Fong et al., 2015). The number of NPs prescribing opioids in Canada is currently unknown. Therefore, this study is timely to begin an exploration of opioid prescribing by NPs at the provincial level. The findings of this study will add to a growing body of literature about opioid prescribing practices by healthcare professionals in Canada.

1.10 Organization of the Dissertation

This dissertation is presented in a manuscript-style format. Chapter two will provide information on the method used for the study. The third chapter will present manuscript one, *Opioid Prescription by Nurse Practitioners in Primary Care: A Scoping Review*. Chapter four will present manuscript two on the data and analysis of findings from the interviews with participants about their experiences prescribing opioids in primary care clinical settings. Chapter five will present manuscript three on the findings that influenced the decision-making by NPs about opioid prescribing processes. Chapter six discusses of the research findings concerning the literature, the strengths and limitations of the study, the conclusion, and the impact this study may have on the current body of nursing knowledge, including recommendations for future research. A personal reflection will conclude this dissertation. A reference list specific to each manuscript will be included in the associated chapter, and a comprehensive reference can be found at the end of the dissertation.

1.11 Chapter Summary

The role of the NP in Canada has evolved over the past 50 years to where NPs have become integral members of health care teams (Kaasalainen et al., 2010; Staples & Ray, 2016). With the addition of the authority to prescribe opioids, NPs have broadened their ability to participate in caring for patients with acute, chronic, and palliative care needs, increasing access to health care services.

The opioid crisis in Canada continues to grow. Families and communities suffer from loss of life and increased crime rates related to the underlying need to maintain access to addictive substances. Although several programs have been proposed and delivered to curb opioid addiction and death, there is still an immense amount of work to be done to save lives and support families affected by the opioid crisis.

The clinical decision-making processes that NPs utilize to prescribe or not prescribe opioids is an area in nursing literature that needs addressing. A Canadian NP perspective on current national concerns about opioid use, abuse, misuse, and diversion is essential when prescribing in primary care clinical settings. However, little is known about the experience of NPs as they prescribe opioids in primary care settings and navigate through the opioid crisis.

2.0 Methodology

2.1 Relationship of Chapter Two to the Dissertation

This chapter presents the methodological approach of Interpretive Description that was chosen to guide this study. The chapter continues to inform the reader how the method was used to inform the approach to the problem through the research design, sample recruitment strategy, data collection and analysis, ethical consideration, and strategies to ensure rigour and data trustworthiness. From this study, two manuscripts were produced to discuss the findings.

2.2 Methodological Approach

Qualitative researchers can choose from many different theoretical methodologies (Denzin & Lincoln, 2018; Sandelowski, 2000). Qualitative research aims to make the world visible through interpretive practices. Qualitative research might be considered when the following situations are present: when little is known about or when the phenomena of study has not been researched; or when the potential study participants have personal experiences with the phenomena of interest, and they are willing to share their experiences about the phenomena of interest (Thorne, 2016). Qualitative methodologies, unlike quantitative methodologies, are not concerned with controlling for variables. Instead, qualitative methodologies are concerned with findings that are grounded from in-depth interactions and the ‘real-life’ impact of human experiences shaped and created through emotions and interactions between individuals and their environment (Denzin & Lincoln, 2018).

2.2.1 Interpretive Description

The qualitative methodology selected for this research project was Interpretive Description. Interpretive Description was developed, in 1997, by Thorne et al. who are all nurse scholars. Interpretive Description is a non-categorical qualitative method that was developed to

address research questions in the applied health sciences and to advance clinical knowledge (Thorne, 2016; Thorne et al., 1997).

Interpretive Description is a qualitative approach that “requires an integrity of purpose” from an “understanding of what we do know and do not know based on the available empirical evidence (from all sources)” (Thorne, 2008, p. 35). Thorne emphasized that the applied aspect of interpretive description significantly focuses on the inquiry question so that the goal is tangible to the practitioner. Interpretive Description grew from practitioners in the applied health sciences requiring a better understanding of complex health and illness phenomena that would generate applied knowledge ‘from the field’ (Hunt, 2009; Thorne, 2008). Natural science research examines the behaviour of a social phenomenon and explains it in terms of causes, whereas applied science research addresses the understanding or meaning of a social phenomenon or action (Denzin & Lincoln, 2018; Hunt, 2009; Thorne, 2008, 2016). The “so what” motivates all applied disciplines (Thorne, 2008, p. 33).

Interpretive description was chosen for this research study as the methodology of inquiry is directed toward discipline-specific knowledge to address the practical application of the results in the clinical setting (Thorne, 2013, 2016). Nurse Practitioners (NPs) practice in complex health care settings, and prescribing medication, specifically opioids, have many diverse clinical practice applications and concerns.

2.2.2 Philosophical Framework of Interpretive Description

Qualitative research methods are associated with many theoretical paradigms (Denzin & Lincoln, 2018; Hunt, 2009). A research paradigm is a philosophical framework upon which research is based. Research paradigms consist of an ontology and an epistemology that provide a foundation for the research method. Constructivist and naturalistic orientations are two

paradigms associated with interpretive description (Thorne, 2016). The foundational underpinnings of interpretive description are: (1) for the researcher to conduct a respectful and ethical inquiry with a naturalistic approach; (2) to attend to the value of experiential and subjective knowledge as an essential source of data; (3) benefit from both individual, and group experiences; (4) be mindful of the time and context to which each phenomenon occurs; (5) that human experiences cannot be separated from human nature; (6) to be aware that ‘reality’ may represent multiple constructed contradictory realities; and (7) to understand the exchanges between the participant and the researcher that may influence each other (Thorne, 2016, p. 82). The foundational underpinnings of interpretive description must align with the ontological and epistemological underpinnings to ensure that the methodology selected addresses the research question.

2.2.2.1 Ontology. Ontology explores “What is the nature of reality” (Denzin & Lincoln, 2018, p. 19). Interpretive description follows a closer relativist perspective: where reality is perceived as subjective and, therefore, cannot be separated from the individual or generalized to others (Thorne, 2016). However, many truths may exist as knowledge evolves and changes and may be transferred to other circumstances (Bradshaw et al., 2017; Thorne, 2015). Interpretive description allows the participant to describe their experience to the researcher, who then interprets the experience for multiple potential realities by developing a social relationship with all the participants (Thorne, 2016).

Interpretive description is a beneficial inquiry methodology for applied health research. The experiences of the reality of participants’ lives and stories advance nursing knowledge. Thorne et al. (2004, p. 4) noted that the product of interpretive description research represents a “tentative truth claim” that is accessible to the discipline of nursing and will inform clinician reasoning and application. For this study, interpretive description allows the experiences of NPs

who prescribe opioids in a primary care clinical practice to advance nursing knowledge and the welfare of clients seeking healthcare services for acute and chronic pain management.

2.2.2.2 Epistemology. Epistemology is described as the “relationship between the inquirer and the known?” (Denzin and Lincoln, 2018, p. 19). Epistemological assumptions are based on knowledge that is constructed socially by the participant’s experiences (Thorne, 2016). Thorne noted that interpretive description’s, the theoretical foundation is grounded in a naturalistic inquiry perspective. According to Thorne et al. (2004), interpretive description recognizes that the many realities identified between the participant(s) and the researcher(s) are bidirectionally influenced. Thus, grounded in the data, these realities are subjective, complex, and constructed (Thorne et al., 2004; Thorne, 2016). Knowledge is active within nursing, and nursing theory, facts, and advancements in clinical practice are constantly changing.

When using interpretive description, the researcher must acknowledge there is something unknown about the focus of the study. The researcher continually reflects on the data through reflective journaling to explore why they developed the research question that led the inquiry. As the participants describe their experiences, researchers attempt to understand that the information provided may shift over time and context (Thorne, 2016). Consistent with qualitative inquiry methods, the study findings do not speak for themselves. However, instead the researcher presents the messages conveyed by the participants and presents the findings as a constructed interpretation (Thorne, 2016).

2.2.3 Interpretive Description – Applying the Methodology

The scope of practice for NPs continues to advance and includes the authority to prescribe controlled drugs and substances. Interpretive description is a form of inquiry that supports the generation of new knowledge about the experiences of prescribing opioids to clients

in a primary care clinical setting. There is limited research on the prescribing of opioids in health care settings by NPs. The application of interpretive description allows the participant experiences to contribute to advancing the current state of clinical knowledge in this focused area of practice.

Thorne (2016) noted that interpretive description is a practical and logical method of qualitative inquiry for the applied science fields. She recognized the need for applied science researchers to advance knowledge within their field of study that is flexible and practical in application to the profession (Thorne, 2016). The use of interpretive description for this study was assessed as an appropriate methodology for exploring the experiences of NPs who prescribe opioids in primary care and applying the knowledge derived through the study findings into the clinical setting. Thorne (2016) noted that one ultimate reason for entering research is to advance knowledge development within the nursing discipline and applied profession. The researcher who uses interpretive description applies the method to a clinical field of interest where relevant clinical concerns require change or improvement.

2.2.3.1 Scaffolding. Scaffolding is a process used in preparation for a research project to explore what is known and what else could be known. According to Thorne (2016), scaffolding a study has two critical elements: a review of the literature available to identify gaps in the research area and an examination of personal reflections on ‘what it is that you [*the researcher(s)*] will be bringing into your own study’ (Thorne, 2016, p. 60). Scaffolding is an essential step to understanding what the researcher is trying to accomplish within the specific applied science field to advance nursing knowledge.

2.2.3.1.1 Conducting a Literature Review. Step one of the scaffolding processes for this study involved conducting a comprehensive literature review (Thorne, 2016). This literature review allowed the researcher to examine what is known about NP prescribing practices of

opioids and identify gaps within the current research. This process helped direct the current study so that the findings contribute to expanding nursing knowledge in this area. In this study, the literature review took the form of a scoping review presented in manuscript one of this dissertation (See Chapter 3). The literature review identified a knowledge gap and supported exploration of Canadian NP experiences and perspectives on prescribing opioids in clinical practice.

2.2.3.1.2 Clarifying the Theoretical Forestructure. The second step in the scaffolding of the study was for the researcher to ‘locate’ themselves inside the theoretical surroundings of their discipline (Thorne, 2016). According to Thorne (2016), the researcher becomes an ‘instrument’ within the study where their actions and thoughts may influence the outcome. Researchers must reflect thoughtfully, explore their theoretical allegiances, locate themselves within their nursing discipline, and locate their relationship to ideas they may hold (Thorne, 2016, p. 70). This reflection on the researcher’s “baggage” brought to the study provides integrity for the researcher and the study (Thorne, 2016, p. 60). The ‘lens’ the researcher uses to observe the field identifies observations, and what is identified becomes the fundamental part of the forestructure (Thorne, 2016, p. 74). The researcher needs to reflect on who they are, their professional role, and what they are trying to accomplish with this research.

Thorne explained that the researcher’s thoughts, perspectives, and personal experience influence the lens the researcher takes to the study; however, understanding the researcher’s motives, bias, and interpretive angle need to be understood prior to the study. The researcher needs to reflect on this and be accountable for their potential effect on the interpretation. The researcher of this study reflected on three decades of nursing practice as an RN and NP with the clinical ability to prescribe opioids in the care of patients with opioid addictions. This lens allowed the researcher to inform the research question and the study's focus. In alignment with

Thorne's (2016) process of scaffolding, I needed to reflect on my perspectives on opioid prescribing and assumptions about how opioids are prescribed in primary care clinical settings: as I work in an emergency room where my experiences may not be the same as NPs who work in primary care. The aim was not to 'give voice' to individual participants but to construct new knowledge for NPs and the nursing profession. Data was collected to provide an interpretive description of a combined account of the participant's experiences and the analysis of these experiences that align best within an interpretive paradigm.

In a qualitative research design, the researcher is an instrument for data collection (Denzin & Lincoln, 2018; Polit & Beck, 2021). Thorne (2016) suggested that the researcher brings a conceptualization of the problem, a knowledge base about the problem area, and a philosophy about the problem. Thorne (2016) cautions that researchers must be aware of their co-participant role when using in this method. Integrity and respect towards the participants, the process of data collection, and the analysis of the data, are fundamental for the researcher. Findings from the data will not emerge from the interviews, rather are constructed by the researcher. The researcher is an instrument in the analysis, interpreting the data and study phenomena. Researchers may develop psychological and emotional responses to the participants, the data, the analysis, and the final product of the report; bias resulting from these factors is controlled using an audit trail (Denzin, & Lincoln, 2018; Polit & Beck, 2021; Thorne, 2016).

Using an audit trail is essential for the credibility of the study findings. The audit trail for this investigation included field notes after each interview. Additionally, separate notes documented methodological decisions regarding interview question modifications and coding with corresponding rationale. The interview data, field notes, and method documentation were dated, synchronizing the assessment of the phenomena and increasing the dependability of the

research_ (Polit, & Beck, 2021; Rossman & Rallis, 2012; Thorne, 2016).

Thorne (2016) states the importance of reflective journaling as supporting reflection by the researcher in relation to the inseparable interaction between the inquirer and the object or subject being researched, which may influence the production of the research outcomes. A journal of reflective thoughts was kept with the researcher during this project. The researcher did an initial reflective entry before collecting data for this study, describing personal experiences with the subject matter. During subsequent interviews, journal entries were posted by the researcher and considered data. The journaling allowed for thoughts to be documented and for any potential bias in the data entry process to be identified. As part of the scaffolding process for interpretive description a personal reflection of the researcher is provided here, with a final reflection at the end of chapter six, following the conclusion.

2.3 Research Design

The focus of this research project is to explore, interpret and explain the experiences of NPs in their clinical decision-making when prescribing opioids. The method of interpretive description corresponds with the aim of the proposed study, where the central premise of inquiry is for NPs to participate in generating knowledge relevant and accessible to their practice; by informing clinical reasoning for practice decisions for the identified clinical focus of prescribing opioids (Thorne, 2016; Thorne et al., 1997; Thorne et al., 2004).

2.3.1 Setting

The study was situated in the western Canadian province of Saskatchewan. NPs in urban, rural, and remote geographical areas were offered an opportunity to participate in this study. The year of data collection for this study was 2019. The goal was to gather information from diverse primary care clinical settings where NPs prescribe opioids.

2.3.2 Sample

The sample for this study was drawn from the population of NPs with active registration with the provincial regulatory body (N = 231) (Saskatchewan Registered Nurses' Association, 2017). Purposive sampling was used to recruit volunteers to participate in this study. This sampling method focuses on the attributes of a specific population, viewed as 'key informants,' that provide data to enhance the understanding of the area of concern (Thorne, 2016). Sampling criteria for this technique are informed by prior knowledge of what is already known around a focus area for exploring a research concern.

A sampling technique, such as purposive sampling, is appropriate for an exploratory study design using a qualitative interpretive description method (Thorne, 2016). Purposive sampling allows the researcher to either directly approach participants who may fit within the population of interest or advertise an invitation within a setting where the potential population of interest might be located to find volunteer participants who would fit the sampling inclusion and exclusion criteria (Richards & Morse, 2007).

The inclusion and exclusion criteria for participating in the study are consistent with the qualitative research design and the unknown scope of the problem. All NPs registered with the provincial nursing association were invited to participate in a recruitment survey, to collect data about their practice and invite participation in an interview. The participants were asked to self-identify as either prescribing or not prescribing opioids in their clinical practice. Recruitment for an interview addressed the inclusion criteria of prescribing opioids in practice and those who did not prescribe opioids, they were still encouraged to volunteer for an interview.

From the total population of NPs registered in Saskatchewan (N = 231), one hundred eighty-three indicated on their annual registration form that they were open to receiving

information about participation in research studies (Saskatchewan Registered Nurses' Association, 2017). Sixty-five NPs participated in the survey (35.5% response rate), 35 indicated an openness to being contacted for an interview, and of these NPs, 21 responded to an email to set up a time and date for an interview.

2.3.3 Participant Recruitment

Following ethics approval (Appendix A), a letter of support was requested and obtained from the College of Registered Nurses of Saskatchewan (formerly known as Saskatchewan Registered Nurses' Association) (Appendix B), for the distribution of information about the study through an e-mail to all NPs who indicated on their annual registration that they were open to receiving information about research projects. The e-mail included a study description, and a recruitment survey link (Appendix C). The email and the recruitment survey included a statement indicating that participation in the study was voluntary, that the information that participants would be providing would maintain their confidentiality as a participant, and that if they chose not to participate after viewing the recruitment survey questions, exiting the survey prior to submitting would delete their information and remove them from the study data. An invitation for an interview was included at the end of the survey with a request for the participants to provide their name, a phone number or email address.

The survey was developed using the Survey MonkeyTM platform endorsed and available for researchers at the University of Saskatchewan. Survey MonkeyTM is a company with servers located in the United States. At the beginning of the survey, participants were informed that while their information would be kept confidential, the American government has the right to access information held in electronic databases. Every participant was also provided a link to more information about data collected using Survey MonkeyTM.

The recruitment survey used a modified Dillman method for data collection (Dillman et al., 2014). To ensure the highest possible return rate, a reminder email was sent at two and four weeks after the initial email. The recruitment survey data collection period was to be closed at 6 weeks after the initial email and the responses were reviewed to identify potential participants who could be contacted for an interview. The survey was open from March 21, 2019, and closed on May 11, 2019. The delay in closing on May 11, 2019, instead of May 2, 2019, was due to an Annual Provincial NP Education Day on May 3rd and 4th, 2019, which was an opportunity to increase the recruitment of participants. A poster invitation was placed on each table at the Education Day to recruit additional participants (Appendix D).

The recruitment survey initial yielded 65 respondents, three incomplete surveys were removed, leaving 62 completed surveys for data analysis. Survey results from the 62 respondents: 57 that prescribe opioids in practice, and 5 who indicated that they do not prescribe. The main reasons for not prescribing were a specialized area of clinical practice that did not involve pain management, a specialized patient population in acute care where physicians prescribed all medication, and personal preference not to prescribe.

Of the survey respondents, 47% practiced in an urban setting (n = 29), 39% practiced in a rural setting (n = 24), and 14% (n = 9) reported practicing in a remote location. Indication of their practice setting as primary care was selected by approximately 63% (n = 39), acute care 11% (n = 7), and long-term care or nursing home was 2% (n = 1). Approximately 24% (n = 15) of respondents marked other as their practice setting. The description provided of their practice was either in a specialized outpatient clinic or emergency/urgent care facility.

Demographic data from the recruitment survey is provided below in Table 2.1. Thirty-seven percent of the respondents indicated that the length of time employed as an NP ranged

from 0 - 5 years (n = 23). The respondents who indicated that the length of time employed as an NP ranged from 6 – 10 years and those who indicated 11 – 15 years, were almost equal at 24% (n = 15) and 29% (n = 18), respectively. Those who indicated that the length of time employed as an NP ranged from 16 – 20 years, and 21 years plus, were equal at 5% (n = 3). The majority of respondents indicated their age between either 31 – 40 years and 41 – 50 years, with both categories almost equal at 33% (n = 21) and 32% (n = 20). From the 62 respondents to the recruitment survey, 35 responded in favour of an interview to further explore their experiences with prescribing opioids in practice.

Table 2.1 - Survey Demographics

Demographics	Participants (N = 62)
	n (%)
Prescribe Opioids in Practice	
Yes	57 (92)
No	5 (8)
Age group	
20 – 30 years	1 (2)
31 – 40 years	21 (34)
41 – 50 years	20 (32)
51 – 60 years	14 (23)
61 plus years	6 (10)
Years of practice	
0 – 5 years	23 (37)
6 – 10 years	15 (24)
11 – 15 years	18 (29)
16 – 20 years	3 (5)
20 plus years	3 (5)
Location of Practice	
Urban	29 (47)
Rural	24 (39)
Northern/Remote	9 (14)
Practice Setting	
Primary Care	39 (63)
Acute Care	7 (11)
Long Term Care	1 (2)
Other:	15 (24)

2.3.4 Interviews

All participants that responded with a willingness to participate in an audio-taped interview were contacted by email. The email included a consent form, information about the purpose of the research and a request for a phone number to facilitate contact by telephone for the interview. Participants were requested to indicate three appropriate dates and times when they would be available for an interview.

At the beginning of the interviews, the purpose of the research and their consent to participate in an audio-recorded interview was reviewed. The consent form did describe the responsibilities of the researcher and participant, any associated risks with participation, a description of the confidentiality of the data, and the potential use of the information that would be collected. Interviews were conducted via telephone with audio recording for transcription purposes. (See Appendix H for Interview Guide). Each interview lasted approximately 30 – 60 minutes.

Interview data was analysed using a borrowed technique from grounded theory, known as constant comparative analysis (Glaser & Strauss, 2006; Thorne, 2016). Data was sorted into categories while systematically comparing data and categories with each other as new themes arose. The data collection process continued until no new themes were found in the data (Thorne, 2016). Following the transcription of the first interview, NVivo 12 was used to sort and code the data, organize categories and development of themes. NVivo 12 software provided an organized clerical management system allowing the researcher to focus on analysis (Richards & Morse, 2007; Thorne, 2016). To aid the analysis of the data collected, all audio-taped interviews were transcribed verbatim by a transcriptionist following each interview and then the transcription was compared to the audio files for accuracy. This allowed for immersion in the data prior to initial coding.

2.3.5 Data Collection

Interviews began by reviewing the purpose of the research and obtaining informed consent to participate and agree to an audio-recorded interview. A semi-structured interview guide was used to initiate the conversation using open-ended questions. (Appendix H). All participants were asked the same questions in the same order to ensure the continuity of the

process. At times probing questions were asked of the participants for clarification (Richard & Morse, 2007). The interview guide was used to gain insight into the clinical practice of the NP in a primary care setting as they assist clients with acute, chronic, and palliative pain management concerns. Participants were asked to share their experiences with patient encounters where opioids were requested or provided by prescription. All participants who prescribed opioids in their practice were interviewed.

2.3.6 Data Analysis

The interpretive description method identifies that the researcher can only claim to know somethings regarding a particular subject of study (Thorne, 2016). Interpretive description differs from other methodologies as there is no definite exit point from data collection when no new information appears to be brought forward from the interview process (Thorne, 2016). The researcher must understand that other variations of the phenomena of the study may still exist even after the study is completed (Thorne, 2016).

The transcripts were reviewed to pull words or thoughts to create open codes. The codes were grouped into large categories to identify similar themes (Thorne, 2016). Relationships amongst the codes and themes were explored back and forth, looking for connections between and within the themes. Of importance to interpretive description, the researcher in constructing new data did not just give ‘voice’ to the participants; rather, the researcher carefully and actively interpreted the participant experiences to construct meaning (Thorne, 2016).

Qualitative methodologies tailor the sampling technique and size to meet the targeted population study of interest. According to Thorne (2016), the sample size for a study using interpretive description should be selected to represent the perceptions needed to address the research question. Twenty-one interviews were completed for this study. Data collection and

analysis continued until the researcher noted no new variations in the interview data collected. In the 21 interviews conducted, an abundance of rich data was extracted. The main research question that guided this study was: *What are the experiences of NPs who prescribe in primary care settings?* One of the sub-questions was regarding: *What elements do NPs believe influence their decision-making in relation to prescribing this class of controlled drug and substance in their clinical care setting?* Therefore, from this one study, two main concepts; one being experiences and the other decision-making were observed. Two manuscripts were written utilizing data from this study. Manuscript two presents' findings from the 21 interviews regarding the NPs' experiences with prescribing opioids in practice and manuscript three presents the findings regarding the elements that influence decision-making by NPs who prescribe opioids in practice.

2.3.7 Ethical Considerations

Ethics approval was obtained from the University of Saskatchewan Advisory Committee on Behavioral Research Ethics Board (Appendix A). The ethics proposal included a description of the study and information about participant recruitment (Appendix C), using a link to an online recruitment survey (Appendix E), and a participant consent form describing how the participant information and interview data would be used (Appendix F). The confidentiality of participant information was protected using code names. The participant names will not appear in any written or presented material. Their identity is only known to the researcher. Privacy and confidentiality during the interviews were maintained through the use of an interview location chosen by the participant. The audiotapes, transcribed information, and all other research documents remained stored in a locked cabinet accessible only by the researcher during the duration of the research study. Confidentiality was also maintained through the use of an audio-

tape recorder specifically set up for the sole purpose of the study. Participants were informed that on the conclusion of the study, all the data will be retained and stored by the dissertation supervisor Dr. Mary Ellen Labrecque, in a secure area at the University of Saskatchewan for a minimum of five years.

2.3.8 Rigor

Rigor was maintained in this study using an audit trail and field notes, reflecting all decisions made about data collection and analysis (Richard & Morse, 2007). Qualitative research does not employ the use of instruments to measure outcome metrics to establish the validity and reliability of the study. Instead, qualitative data analysis demonstrates rigor using the element of trustworthiness, often used to critique the research process. Although Thorne mentions, “checklists and guidelines do little to ensure the excellence of any specific qualitative product” and to “focus more squarely on matters of purpose, process, and context” (2016, p. 239). Thorne (2016) suggests that the findings of the novice researchers should be evaluated against four criteria: epistemological integrity, representative credibility; analytic logic; and interpretive authority. Thorne (2016) also presented five standards for the novice researcher to critique their findings against. These five standards are: moral defensibility; disciplinary relevance; pragmatic obligation; contextual awareness; and probable truth.

2.3.8.1 Epistemological Integrity. Epistemological integrity is defined as the defensible line of reasoning in the use of methodological rules aligned with ontology and epistemology (Thorne, 2016). New knowledge was constructed within the interpretive naturalistic assumptions (Thorne, 2016). As an instrument within this study, the researcher initially started the reflective journaling process, following each interview-maintained field notes and a data analysis record to document the logical path of decisions that were made.

2.3.8.2 Representative Credibility. Credibility refers to the researcher's confidence in

the study findings to relate truths about the phenomena (Polit & Beck, 2021; Sandelowski, 2000). This is commonly performed by examining the consistency of data sources (population of participants) using a consistent approach to the interviews and questioning, comparing the data from different participants with different points of view and at different points in time. The twenty-one interviews provided different perceptions of the topic in question. The research supervisor was an active participant ensuring that the novice researcher did avoid the potential for selective perception on the topic and illuminated any narrow interpretations during the analysis. Keeping an open mind is important to accept multiple ways to interpret the data and avoid the potential for making early assumptions about the developing data categories or themes.

2.3.8.3 Analytic Logic. Thorne (2016) directs researchers to guard against the assumption that an inductive reasoning process occurred unless it is supported by a logical, physical chain of evidence. Throughout the study, a reflective journal was used to identify prior knowledge and assumptions about this topic. During the data collection and analysis process, an audit trail was also used to assist in the documentation of changes to and additions of new questions to guide the collection of data when new elements were discovered. Guidance was received from the supervisor during the audit process.

2.3.8.4 Interpretive Authority. The assistance of the supervisor and committee members guided the researcher in the collective analysis of the interview data to develop a common truth and avoid an individual interpretation. This allowed the interpretation of data to be confirmed as not biased by the novice researchers' clinical experiences (Thorne, 2016).

2.3.8.5 Moral Defensibility. Prior to any personal data being collected, the participants were made aware of the importance of the research and the purpose of the data collection. According to Thorne the research must be necessary and purposeful for advancing knowledge in our field (2016). One of the findings may be used to advance and enhance our education of NPs

prior to practice. Additional findings will hopefully inform government policy changes with regards to mental health and addictions for ongoing support for authorities when caring for these clients

2.3.8.6 Disciplinary Relevance. According to Thorne, (2016) the purpose and potential knowledge gained from the study needs to be of relevance to the discipline of study. The findings from this research needs to be justified as essential and applicable to the discipline of nursing (Thorne, 2016). The importance of this study to the discipline of nursing may have a positive impact for additional educational preparation for new NPs as they learn to prescribe in practice. This study will also assist to enhance the education around marginalized populations and addiction to medications such as opioids.

2.3.8.7 Pragmatic Obligation. Thorne (2016) stated that the pragmatic obligation of the research findings must be practical to the discipline of nursing. The findings of this research may be indeed applicable to practice with no intend to do harm. In other words, it is not good enough to just report the findings, the researcher mut explain how they may be used in practice. The findings and implications from this research may be used in consideration for policy changes, educational curricula additions, and the potential for benefits to harm reduction. These findings have been included in the recommendations section of the final chapter of this dissertation.

2.3.8.8 Contextual Awareness. It is unreasonable to assume that the researcher will not in any way influence or bias the constructed data from the society to which they live. It was identified in the beginning that the researcher does possess some prior knowledge and experience in the field of study. It is important for the researcher to keep a reflective journal to maintain rigor in this area. Also, of importance is to acknowledge or understand our construction of data is socially constructed and subject to multiple realities, and therefore not infallible. These realities are subject to change and may not stand the test of time (Thorne, 2016).

2.3.8.9 Probable Truth. Thorne noted that as a researcher, we must acknowledge the best of our ability the findings of a probable truth however, being mindful of other possible probable truths may be available (2016). Absolute truth using interpretive description is not possible therefore this is the best truth until we have another reason to abandon the current state of knowledge known as the probable truth. Interpretive description has allowed the research the ability to create a probable truth that provides credibility for the NPs as they prescribe opioids in primary care settings.

2.4 Chapter Summary

In this chapter, the method of Interpretive Description was discussed. Interpretive description is a good fit for the current study as it is flexible, allows for creativity, and is pragmatic. The research design was discussed including the setting and sample, data collection tools such as the survey and interviews, followed by the analysis process. Ethical considerations for this study were discussed as well as the rigor to ensure trustworthiness of the entire process. This method was a good fit for the purposed study as the pragmatic findings will fill a knowledge gap in the applied health science field for practicing nurse practitioners.

3.0 Manuscript One

Opioid Prescription by Nurse Practitioners in Primary Care:

A Scoping Review

Prepared for submission to the Journal of Advanced Nursing

3.1 Relationship of Manuscript One to the Dissertation

Manuscript one in this dissertation is the findings of a scoping review of NP prescribing opioids in primary care. In the method of Interpretive Description by Thorne (2016), it is essential as part of the scaffolding process to review the current literature about the study for the research project. The literature review is needed to be able to place the researcher within the literature that is known and direct the research questions to identify the gaps of knowledge. This review examined literature from 2004 – 2022, with inclusion criteria focused on NPs prescribing opioids in primary care settings. The research question guiding the literature review was: *What is the current state of knowledge in the literature about the prescription of opioids by nurse practitioners who practice in a primary care clinic?* The findings from the scoping review revealed a lack of literature published on the experiences of NPs prescribing opioids in primary care settings in Canada. However, this literature review also identified a limited number of global research studies on NP practice and opioids that commented on education and practice concerns with abuse, misuse, and diversion. The identified literature gap of limited research regarding experiences of NPs prescribing opioids in primary care settings supports the need for this current study.

3.2 Abstract

The global opioid crisis is a concern for nurse practitioner practice. Although there are only a small number of countries where NPs have been reported to have prescriptive authority related to opioids, it is important to explore experiences of NPs clinical practice of opioids prescribing (Fong et al., 2015). A scoping review was completed to synthesize the current state of knowledge on nurse practitioner prescribing of opioids in primary care settings. The research question for this review was: *What is the current state of knowledge in the literature about the prescription of opioids by nurse practitioners who practice in a primary care clinic?* Guided by the scoping review process by Arksey and O'Malley (2005), three healthcare databases were searched (CINAHL, Medline, and Embase), ten articles met the criteria for inclusion in the study. Five themes were identified from the analysis of the literature: 1) preparing for practice; 2) prescribing patterns; 3) regulating prescriptive practice; 4) fearing reprisal, and 5) avoiding addiction. Discussion of the findings of this study suggest that the positive result of opioid prescriptive authority for NPs includes the broadening the autonomy of practice. The scope of practice of the NP contributes to the provision of more comprehensive care for their clients with pain management needs. Additional research in this area of clinical practice is needed to ensure NP prescribing practices are safe, guided by evidence based clinical guidelines and address prescribing concerns in relation to the opioid crisis.

Keywords: narcotics, analgesic, prescriptions, prescribe* or prescript*, nurse practitioner

3.3 Introduction

The opioid crisis is growing at an alarming rate. Americans and Canadians are reported to be the highest consumers of opioids worldwide (World Health Organization, 2020). Pain is a common reason patients seek health care services provided by physicians and nurse practitioners (NPs) in primary care community-based clinics. Opioids are most often prescribed to alleviate acute and chronic pain; and health care providers need to be aware of the potential for dependency and addiction with this classification of drugs. Many countries have reported a substantial increase in opioid-related addiction, overdose, and accidental death (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2018). The increase in non-fatal overdoses causes an economic impact on increased emergency medical resources such as ambulances, emergency rooms and intensive care units (Canadian Institute for Health Information, 2018b).

The purpose of this paper is to present a scoping review of the literature on NP prescribing of opioids in primary care clinical settings. The research question: *What is the current state of knowledge in the literature about the prescription of opioids by nurse practitioners who practice in a primary care clinic?*

3.4 Background

3.4.1 Nurse Practitioners

The NP scope of practice specific to medications prescribed commonly involves legislative and regulatory guidelines for use in the safe, competent care of patients (International Council of Nurses, 2008, 2020). Educational programs that prepare NPs are required to teach and evaluate the knowledge, application, and evaluation of medication prescribed for the treatment of medical conditions and emphasize the importance of continuous education on the use of evidence-based practices in the care of their patient populations (International Council of Nurses,

2020).

Over the past two decades, prescribing opioids has become an element included in the NP scope of practice in several countries (Fong et al., 2015). In Canada, federal legislation granted prescriptive authority for NPs to prescribe opioids in their clinical practice for clients requiring pain management (i.e., acute, chronic pain from injury, disease, surgery and in palliative care) (Government of Canada, 2012a).

In other countries such as the United States of America, NP started prescribing of opioids in the late 1960s (Fong et al., 2015). Initially, in the United States, some of the regions required the NPs to hold a Joint Practice Agreement with an accepting physician. This joint practice agreement is no longer a requirement for NPs to obtain (Fong et al., 2015). In 2016, Florida was the last state to grant NPs prescriptive privileges for opioids (Craig-Rodriguez et al., 2017).

In New Zealand prior to 2014 NPs were allowed to prescribe opioids for a short course up to three days from a set formulary. NPs in the country of New Zealand are given the option to register as either having opioid prescriptive authority or not (Fong et al., 2015). In Australia, the NPs have been granted prescriptive authority since 2001 (Fong et al., 2015).

Within Europe and the United Kingdom, the title NP is not protected. Literature from Europe and the United Kingdom has identified prescribing nurses as ‘nurse prescribers’ in Ireland, ‘nurse specialist’ in the Netherlands, and ‘independent nurse prescribers’ in the United Kingdom (Maier, 2019). Even though nurses from Europe and the United Kingdom have not been included in the literature review due to the uncertainty of their title, some nurses have had prescriptive authority since 1994 (Maier, 2019).

The ability to prescribe opioids has expanded the NP scope of practice (Fong et al., 2015). However, the global opioid crisis has required NPs to thoroughly assess and balance

proper pain management and the potential for addiction and opioid abuse, misuse, and or diversion of prescriptions.

3.4.2 Opioid Prescribing

Opioid medications are derived from the opium plant and are naturally or semi-synthetically manufactured. Their potency may be ‘weak’ or ‘strong’ and are available in many different formulations (Canadian Institute for Health Information, 2019). This category of drugs has a substantial prevalence for the unintended development of dependence and addiction. Some examples of opioids are fentanyl, morphine, oxycodone, and tramadol. Access to opioids may result in dependency and addiction. This may arise through legal prescriptions for a health concern and or access to the illicit drug market (World Health Organization, 2020 & Organization for Economic Co-operation and Development, 2019). A growing number of individuals use opioids for non-medical purposes mainly in the form of misuse and diversion of the drug (Ling et al., 2011)

3.4.3 Global Opioid Crisis

The opioid crisis is growing at an unnerving rate. Worldwide, approximately half a million individuals have died due to opioid use (World Health Organization, 2020, p. 2). More than 70 percent of the half million individuals who died was attributed to the misuse of opioids (World Health Organization, 2020, p. 2). The World Health Organization reported in the United States, between the years of 2010 and 2018, there was a 120% increase in individuals dying from opioid overdoses (World Health Organization, 2020, p. 3).

The United Nations Office on Drugs and Crime reported an estimated 61 million individuals used opioid in 2020. Half of these individuals (1.2% of the global population) resided in South Asia and South-West-Asia (2022, p. 28 – Book 1). The Americas and Australia are the

countries that represent the highest use of opioids for non-medical purposes in 2020 (United Nations Office on Drugs and Crime, 2022, p. 84 - Book 3 Map 2). In the same year, the United States reported 3.3% prevalence of individuals aged 12 years and older whom used opioids for non-medical purposes with the highest prevalence (4.1%) in the age group 18 to 25 years (Canadian Center on Substance Use and Addiction, 2022, p. 7). Australia data from 2019, recorded 2.7% of individuals aged 14 and older used opioids for nonmedical purposes, which suggested a downward trend from 3.6% in 2016 (Canadian Center on Substance Use and Addiction, 2022, p. 7).

As part of the Americas, Canada is the second highest consumer of opioids worldwide behind the United States (Canadian Institute for Health Information, 2017). Many provinces in Canada have reported a substantial increase in opioid-related deaths (Canadian Center on Substance Use and Addiction, 2022); and an increase in non-fatal overdoses that has caused an economic impact on scarce healthcare resources (e.g., ambulance, emergency rooms, and intensive care units) (Canadian Institute for Health Information, 2018b). These numbers highlight an increased burden on the health care system and awareness of the need for harm reduction practices.

3.4.4 Primary Health Care vs Primary Care

Primary health care and primary care are terms that are used interchangeably within the literature. *Primary health care* is a term coined by the World Health Organization in 1978 with the Declaration of Alma-Ata (Declaration of Alma-Ata, 1978). This form of care is considered universal and accessible to all individuals, families, and communities. The focus of primary health care is to address the individual needs and the population (Muldoon et al., 2006; Romanow, 2002). The Government of Canada noted that primary health care can involve a

spectrum of services (responding to the determinants of health) provided beyond the boundaries of any traditional healthcare system (2012b).

Primary care is care that is delivered at community-based healthcare facilities; sometimes referred to as the 'point of first contact' with the health care system. This level of care is delivered by health care professional, such as physicians and NPs, and interprofessional teams. Health care services in the community provide care to all ages of clients; from infants to seniors (Muldoon et al., 2006). Primary care focuses on health promotion and prevention of illness, and treatment of illness and injury (Government of Canada, 2012b).

NPs are employed in primary care facilities that are found in urban, rural, and remote communities (Canadian Institute for Health Information, 2022). Smaller rural and remote clinics commonly employ a limited number of health professionals. The most common arrangement involves physicians, nurse practitioners and nurses; with the more remote clinics employing primarily nurse practitioners and nurses, who work to full scope of practice to meet the health needs of the community: including the prescription of opioids for clients requiring pain management.

3.5 Review

3.5.1 Aims

This scoping review aimed to explore the current state of knowledge about the prescribing opioids by NPs in primary care settings, and to identify gaps in the literature that support further research. The research question that guided this review was: *What is the current state of knowledge in the literature about the prescription of opioids by nurse practitioners who practice in a primary care clinic?*

3.5.2 Design

Scoping reviews are conducted to identify gaps in the literature regarding the phenomena being studied (Arksey & O'Malley, 2005; Levac et al., 2010). The framework by Arksey and O'Malley (2005) was used for this scoping review. The outlined steps of the scoping review by Arksey and O'Malley (2005) included: identifying the research question; identifying relevant studies; study selection; charting the data; and collating, summarising, and reporting the results. This framework allows the integration of diverse methodologies in qualitative and quantitative studies, allowing for the scope to be either broad or narrow and the analysis to be narrative.

3.5.3 Search Methods

A comprehensive search was performed using three electronic healthcare databases: Medline (OVID), Embase and CINAHL. Two main search terms guided the literature search: "opiate(s)" and "nurse practitioner." A combination of MeSH headings and keywords were used in the search: "narcotic (s)," "analgesic," "prescription (s)," "prescribe* or prescript*," and "nurse practitioner."

3.5.4 Search Outcomes

Articles published in peer review journals from January 2012 through to August 2022 were considered, retrieved, and evaluated to determine the state of knowledge about NPs and opioid prescribing. Inclusion criteria limited the search to peer-reviewed journal articles published in English (Arksey & O'Malley, 2005; Levac et al., 2010). The years of accepted publications ranged from 2004 to 2020 for the scoping review. Due to the few articles found in the initial literature search a manual reference list review was implemented. The inclusion of articles extended to 2004 was the result of the manual reference list check of the articles that meet inclusion criteria.

The literature search process followed is documented pictorially using the PRISMA Guidelines Diagram in Figure 3.1 (Preferred Reporting Items for Systematic Reviews and Meta-Analysis (Page et al., 2021). The initial search resulted in 472 articles (Embase - 209; Medline - 116; and CINHALL - 147) that met the search term criteria. Following removal of duplicate articles (n =155), 317 articles were assessed in an initial review to ascertain the focus of the article on NPs prescribing of opioids.

Articles were excluded if the focus was a comparison of NPs to other primary care providers' practices for prescribing opioids (e.g., physicians or physician assistants). They were also excluded if the practice setting focus for research was not a primary care clinic (e.g., excluded clinical settings such as palliative end-of-life care, pain clinics and addiction or rehab centers). These specialized populations and clinics were excluded to focus the analysis on NP practice within a primary care population, where prescriptions for opioids would involve the routine care of patients in a practice roster, including episodic visits.

Two hundred and eighty-seven articles were excluded on the review of title and abstract. The remaining 30 full-text articles were reviewed following the inclusion and exclusion criteria; population for the study were NPs practicing in a primary care clinic with information about opioid prescribing. Six articles met the inclusion criteria for this review. An additional four articles were included following a manual search of a reference list of an article that met the inclusion criteria. In total ten articles were included in the scoping review and are presented chronologically by year of publication in Table 3.1: including author, country of origin, purpose, sample, design, results, and implications.

3.5.5 Data Extraction

According to Levac et al. (2010), a team approach to data extraction is recommended.

For this review, two researchers reviewed the articles. The team approach provided for assessment of information of that met the inclusion criteria and partner review of the data extraction and interpretation. While the main focus of a scoping review is to provide an overview of existing literature a critical appraisal or bias risk is not required (Pollock et al., 2021; Tricco et al., 2018). The researchers of this scoping review did not perform a critical appraisal of the included ten papers that met criteria; however, data extraction and evaluation was guided by the research question.

Peters et al. (2015), reported a data extraction table often referred to as ‘charting the results’ (p. 144). This table was developed to record study characteristics from the included studies and information considered to be key and relative to the research question. The data extraction table is presented to allow the data to be readily displayed and further reduced and compared (Table 3.1) (Garrard, 2017; Peters et al., 2015; Pollock et al., 2021).

3.6 Results

Six articles reviewed used qualitative designs with three studies using a descriptive quantitative analysis. The methods included an online survey (n = 3), exploratory descriptive study (n = 3), retrospective observational study, scoping review, literature review, and focus groups. The studies reviewed represented three countries: United States (n = 5), Australia (n = 4) and New Zealand (n = 1). Four articles represented the same sample population of NPs (Kaplan & Brown, 2004, 2007; Kaplan et al., 2006; Kaplan et al., 2010).

3.6.1 Thematic Findings

Data evaluation and analysis allowed for constant comparison between articles and the development of patterns and themes (Arksey & O’Malley, 2005). Five key themes were identified in the literature: preparing for practice, prescribing patterns, regulating prescriptive

practice, fearing reprisal, and avoiding addiction.

3.6.1.1 Preparing for Practice. A common theme in the literature was the participants' descriptions about how educational programs prepared NPs to prescribe opioids. Participants in literature from all three countries, USA, New Zealand, and Australia, indicated that NPs were educated at a master's level and needed to successfully pass a regulatory exam to become licensed to practice. In Australia, participants reported that to prescribe opioids required an additional continued professional development course (Fong et al., 2015; Fong et al., 2020). Participants from New Zealand (Poot et al., 2017) stated that they must obtain four years of clinical experience before being allowed to prescribe opioids. For the participants from studies that occurred in the USA, responses described being able to prescribe opioids in practice was a function of the regulated scope of practice that differed by state; where some states did not allow NPs to prescribe this class of drugs.

Of the studies that examined the quality of educational preparation specific to prescribing opioids. An American study reported that participants were split equally in their ratings of their preparation between being poorly prepared, moderately, well and very well prepared (Kaplan et al., 2010). Craig-Rodriguez et al., (2017), also reported a gap between knowledge and confidence to prescribe indicators that were suggestive of a strong understanding of opioid prescribing included the assessment of patients with pain and the understanding that proper opioid prescriptions lower patient reports on pain scores and a client's overall self-perception of improvements in health status. Participants reported feeling that their knowledge and confidence was stronger when assessing pain and providing opioid medications for acute pain management, which contrasted with their confidence when managing patients with chronic pain. Participants reported a good understanding of knowledge when prescribing combinations of medications and

understanding of interactions between opioids and non-opioid medications (i.e., non-steroidal anti-inflammatory drugs causing an opioid-sparing effect for the patient).

3.6.1.2 Prescribing Patterns. Prescribing of opioids by participants was found to vary with the degree of independent practice or autonomy; and was seen as a function of practice patterns. Some of the variables of interest in the article dataset included reports on the level of education of the participants (Buckley et al., 2013; Kaplan et al., 2010; Poot et al., 2017), comfort with prescribing opioids (Fong et al., 2016, Fong et al., 2020), the clinic roster of clients that present to be seen (Buckley et al., 2013; Poot et al., 2017) and the employment policies of their institutions or organization (Kaplan & Brown, 2004). Prescribing patterns for opioids varied with the degree of autonomy of each of the studies participants with a holistic nursing approach to patient care compared to physician colleagues. Within a holistic approach, the NP participants were reported to implement complementary methods before prescribing opioids (Fong et al., 2016). Two studies noted that many participants reported prescribing opioids as part of their daily practice (Buckley et al., 2013; Poot et al., 2017). Both Buckley et al. (2013) and Poot et al. (2017) noted that participants employed in primary care in underserved communities reported writing more prescriptions for opioids (Poot et al., 2017). An American study noted that many NP participants could prescribe as part of their clinical practice, with a little over half who reported prescribing a moderate amount. In this same study, over one-third of all participants did not want to prescribe, and the same number of NPs had developed a practice that does not include opioid medications (Kaplan et al., 2010; Fong et al., 2016). It was also reported that as the number of years of NP practice increased confidence in prescribing opioids also increased.

3.6.1.3 Regulating Prescriptive Practice. Having privileges to prescribe opioids within a practice allows the NPs to practice to the full scope and, more importantly, allows the NP to

provide complete holistic care to their clients autonomously. The transition was suggested as a paradigm shift with a group of NP participants in Washington State. NPs reported a loss of autonomy in their ability to provide comprehensive care regarding decision-making for providing opioid prescriptions to clients before removing a required 'Joint Practice Agreement' (Kaplan & Brown, 2007). A Joint Practice Agreement is a legal document between a physician and NP allowing the NP to prescribe opioids to patients with acute or chronic pain concerns (Kaplan & Brown, 2007). Following legislative changes that removed the Joint Practice Agreement, most NPs in Washington State reported feeling more independent in their practice. Prescribing opioids was stated as providing some of the NP participants a sense of "becoming legitimate" and "affirming one's practice" (Kaplan & Brown, 2007, p. 188). However, the ability to practice independently did not mean that collaboration with physicians or pharmacists on prescribing practices was a sign of a lack of knowledge. Overall, participants reported that having the ability to be fully autonomous in their practice and be able to prescribe opioids where appropriate is a benefit to the patient: the patient receives holistic care from their practitioner; which allows the patient to start treatments immediate instead of making additional appointments; and decreased number of appointments lessens the financial burden for patients (Kaplan & Brown, 2007; Kaplan et al., 2010).

3.6.1.4 Fearing Reprisal. From the perspective of prescribing opioids in clinical practice, another theme in the literature revolved around fear and scrutiny from the nursing regulatory bodies or local drug enforcement agencies (Kaplan et al., 2006; Kaplan & Brown, 2007). Authors reported the participants as suggesting they had a 'responsibility to protect' the individual and society from opioid abuse and misuse (Kaplan et al., 2006). Participants in an American study felt that having the privilege to prescribe opioids eliminated the 'having a

scapegoat' response, such as "I can't prescribe, I don't have the license to prescribe these types of meds that are potentially addictive. You'll have to work that out someplace else" for potential drug seekers and avoid the possible addiction cascade (Kaplan & Brown, 2007, p. 186).

3.6.1.5 Avoiding Addiction. A significant barrier to prescribing opioids for NP participants was a concern for dealing with abuse and misuse of opioids seen with drug-seeking behaviours (Kaplan et al., 2006). The review identified addiction as a common theme (Kaplan & Brown, 2007; Kaplan et al., 2006). Participants from two American studies avoided obtaining their prescriptive authority to avoid having to deal with drug seeking behaviours (Kaplan & Brown, 2007; Kaplan et al., 2006).

3.7 Discussion

The purpose of this study was to synthesize the current state of knowledge from the literature on NP prescribing opioids to clients in primary care settings. The reviewed articles represented NP participants from New Zealand, Australia, and the United States. Overall, the education of the NP participants in the articles was at a master's level, with two studies that reported on additional educational preparation specific to opioid prescribing (Fong et al., 2015; Poot et., 2017). This finding of educational preparedness is an influential factor that demonstrates the need for NP curricula to include content specific to evidence-based opioid prescribing practices. In addition to developing continuing professional education programming with a focus on building autonomy for independent prescribing across the range of specialty areas of practice (e.g., palliative care, chronic pain management and opioid replacement therapy).

Policies surrounding prescribing practices should be consistent among healthcare providers who prescribe opioids. The physician, pharmacist, and nurse practitioner educational

preparation to prescribe opioids may be a barrier to developing organizational policies. Some participants lacked confidence in initiating a prescription, renewing a prescription, and tapering off the opioid prescription. However, the utilization of clinical practice guidelines for prescribing opioids did not appear in any of the studies reviewed. Clinical practice guidelines offer information on what type of opioid to start with, how to adjust dosages according to the client's therapy needs, and how to taper such highly addictive medications. Clinical practice guidelines also offer practitioner monitoring information and opioid contracts (Busse et al., 2017).

Buckley et al. (2013) examined many medications, including opioids, prescribed by NPs. Many different prescription medications suggest a vast depth and breadth of practice and care provided to patients with diverse health concerns. The importance of diverse prescribing possibilities is another strong indication for NP educators to assist with educational preparation for various clinical patient health concerns. This preparation is vital for health care practitioners, most often nurses and NPs, in a rural or remote setting where consultations with other professionals may not be readily available.

Pain is very subjective, and it is usually difficult for the client to describe or rate on a numerical pain scale to exactly represent what or how they are feeling. Physiological responses to pain may aid in interpreting the client's honesty, such as heart rate and blood pressure, as these parameters usually rise with the pain response (Rosenblum et al., 2008). The use of placebo medication to determine the honesty of the client reporting pain does lead to an ethical interpretation of the prescriber's opinion of the client's response to pain.

The autonomy to prescribe opioids does not limit collaboration within patient care. Autonomy to make independent decisions in practice; however, it is crucial for NPs from expert to novice levels to appreciate their limitations and know when to collaborate with other

interprofessional team members. In one study from the United States (Kaplan & Brown, 2007), the participants initially required a joint practice agreement with a physician to prescribe medication. The result of the Joint Practice Agreement left some NPs feeling a ‘loss of autonomy’ and others ‘embracing the collaborative relationship’ (Kaplan & Brown, 2007). Some participants reported not ‘wanting to prescribe’ (Kaplan et al., 2006), while others used not prescribing as a ‘scapegoat - Sorry I cannot prescribe that’ to not deal with clients requesting opioid prescriptions (Kaplan & Brown, 2007, p. 186).

Overall, NPs having the preparation to prescribe opioids has helped them feel they are providing holistic client care as well as enhancing the profession of the NP. Only a small number of NPs identified barriers to practice. Some external barriers included policies of the institution or the long bureaucratic wait to obtain a licence to prescribe (Fong et al., 2016). The internal barriers were, for example, NPs not being able to afford the licencing fees to obtain opioid prescribing privileges to their practices.

Addiction was identified as a common theme in the research. Many participants felt comfortable prescribing for those with acute pain management versus chronic pain management (Fong et al., 2016; Fong et al., 2016; Poot et al., 2017). NPs who prescribe opioids as part of their practice must always be aware of the potential for abuse, misuse, or diversion of opioids. Although NPs who prescribe cautiously lead with the primary concern for protecting the individual, family, and community from potential adverse outcomes related to addiction, these NPs had a similar concern about the fear of reprisal for prescribing from drug enforcement agencies and professional regulatory bodies. Further research is needed to explore and increase the communication between the regulatory bodies and prescribing for pain management without the fear of being reprimanded and exploring a collaborative healthcare team approach to acute

and chronic pain management.

3.7.1 Limitations

This scoping review is not without limitations. The literature was limited to studies conducted on NPs who practiced in primary care settings, including ten articles representing NPs in three countries. Therefore, there may be potential selection bias when excluding studies from countries and practice settings where NPs and registered nurses with opioid prescribing privileges were eliminated. Extrapolating data findings and generalization to all NPs must be done with caution. A significant limitation is that the number of NPs represented within this scoping review is a fraction of those practicing within the three represented countries; therefore, even to generalize within these countries, caution needs to be utilized.

A Canadian article by O'Rourke et al. (2019) did not appear in the review of the literature analyzed for this paper. However, this study was designed to understand current controlled drugs and substances prescribing patterns in Canadian provinces and examine factors associated with these practices (O'Rourke et al., 2019). The study was a secondary analysis of data from a larger study focused on prescribing patterns and identify associated factors where the data collected was not specific to examining the prescription of opioids.

A research paper by Maier (2019) that included 13 European countries was also excluded. The inclusion criteria in our study of 'nurse practitioner' excluded nurse prescribers. Three of the thirteen countries in this article have granted complete or nearly complete prescribing privileges to a select group of nurses; however, they are identified as 'nurse prescribers' in Ireland, 'nurse specialists' in the Netherlands, and as 'independent nurse prescribers' in the United Kingdom (Maier, 2019). Future research should explore a comparison of processes for prescribing across international nursing regulatory bodies to define the

transparency of educational and regulatory privileges (Maier, 2019).

One significant limitation is that many research articles were excluded as they compared the NP practice to that of the physician or physician assistant. NPs that work in specialty areas such as pain clinics and acute care hospital units were excluded from being able to grasp a picture of the NP in a primary care clinic setting with limited specialist support. Resources are sparse for NPs working in many rural and remote areas. Support such as policing may be a distance away, making it very challenging for the practitioner to provide the care that some individuals appear to want, or demand and still live within the community for the NP. Working within the ongoing opioid crisis and the fear of reprisal, responses may have been blunted to protect the individuals licensed of practice. With Canadian NPs having prescriptive authority to prescribe opioids in practice settings and the ongoing opioid crisis, it is crucial to understand the challenges for NPs.

3.7.2 Implications for Further Research

This study was undertaken to identify the state of the science regarding NP prescribing opioids. Additional research may include reviewing prescribing practices across the spectrum of NP practice environments, from acute care to palliative placements. Identifying the prescribing practices between NPs and our physician colleagues may shed light on our similarities and differences and yield more cohesive practice patterns for prescribing during the current opioid crisis. More specifically, this study was conducted to fill a gap in the Canadian literature about NPs prescribing opioids in primary care.

3.8 Conclusion

This scoping review of the literature examined factors influencing therapeutic choices for NPs prescribing opioids in the primary care setting. A small number of articles met the inclusion criteria for this review, representing NPs from only three countries. Therefore, caution must be exercised when extrapolating the findings to NP practice in other countries. The findings identify valuable information for addressing the professional needs of NPs providing care for patients presenting with conditions where opioids are an element in a treatment plan.

3.9 Relevance to Practice

Understanding the scope of practice of the NP, and prescribing patterns related to opioids, is essential as NPs are prescribing opioids during the current international opioid crisis. Knowledge sharing among NPs about their concerns when prescribing opioids will hopefully lead policymakers, and NP education and continuing education programs, to address areas of concern brought forward by practicing NPs in primary care clinical settings.

3.10 Chapter Summary

This chapter was a review of the current literature available regarding the nurse practitioners prescribing patterns and practices. The countries represented in this scoping review are from Australia, United States, and New Zealand. The five themes noted identified from the literature were: preparing to practice, prescribing patterns, regulating prescriptive practice, fearing reprisal, and avoiding addiction. As no Canadian research was found for the scoping review, it is uncertain if NPs in Canada will have similar experiences. With the sparse Canadian literature available there is a gap within the literature and therefore this research study contributes to the development of knowledge for NP practice.

Table 3.1 - Literature Articles Reviewed (order by date)

Author, Country & Year	Purpose	Sample	Design	Results	Implications
1) Fong, Cashin & Buckley. Australia, 2020	Explore the Rx practice of current Australian NPs Models of Rx: autonomous RX; Rx under supervision; or RX via a structured Rx arrangement	Online invitation sent to N = 957 members of the Australian College of Nurse Practitioners. 328 responded to the survey (70 incomplete responses) n = 252 participants in final analysis	Online survey-adapted from previous survey in 2009	1) Autonomous RX was most reported in Primary care & ER. However, NPs in ICU/Critical care and specialty NPs are the lowest autonomous Rxers. 2)Rx practices: less than half initiate new Rx Decreasing doses in only 16% of NPs and More time is spent with Rx new vs old Rx due to education. Rx med: over ½ (57%) reported Rx a Schedule 4 (Rx only) followed by Schedule 2 (pharmacy medicine) at slightly less than ¼ (20%) and the schedule 8 (controlled meds) was (19%)	-provide an understanding of the different modes of Rx in Australia -obtain an understanding to the breath & diversity of Rx meds

<p>2) Craig-Rodriguez, Gordon, Kaplan & Grubbs. USA, 2017</p>	<p>Assess whether there is a perceived knowledge gap and prescribing limitations for the Florida ARNP (assessment, Treatment & monitoring of Pts w/ CD&S) & would they benefit from additional education</p>	<p>N-13 956 NPs (licensed & employed in Florida, unrestricted, active with a verifiable public e-mail) n - 1511 responded (10.8%)</p>	<p>Descriptive study 17 item questionnaires (five domains: knowledge of regulatory guidelines; opioid classes & doses; risk assessment; monitoring; and confidently dealing with challenges)</p>	<p>Comparable to the Washington State study - Gap b/w knowledge and confidence for NPs with NO previous training (ed or DEA registrations) Florida: last state to grant Rx privileges to NP (2016)</p>	<p>Strong need to educate and offer continued support during the transition to Rx CD&S for months to years</p>
<p>3) Poot, Zonneveld, Nelson & Weatherall. New Zealand, 2017</p>	<p>To describe the NPs who prescribe community-dispensed medicines, the patients and identifies the most frequently prescribed medications.</p>	<p>In 2015 145 registered, 129 wrote one or more Rx. N = 129</p>	<p>Retrospective observational study of the ministry of health pharmaceutical collection from 2013-2015</p>	<p>NP: Majority of NPs write one or more Rx (145 registered in 2015 129 write Rx) NP is primary care represent the largest group writing Rx. Primary care NPs saw the most clients. Patients: NP scope of practice corresponded with age of clients (Neonate-child-youth [mean age 9.3]; older adult [82.8]; ER-acute care [34.3]; addiction-mental health [61.3]; and primary care [39.1]) In each of the six areas of practice the</p>	<p>Largest number of NPs work in primary care and serve those with the Limited study as it provides insight into the types and numbers of RX written by NPs</p>

				majority of clients were in the more deprived areas. RX: 603 unique medications prescribed. -primary care Rx median of 198 unique meds. Most frequent overall the groups of NPs were paracetamol (Tylenol) with 26% of all Rx being analgesics	
4) Fong, Buckley, Cashin & Pont. Australia, 2016	To examine the extent, range and nature of research with regards to NPs practicing in the Australian Health care system and to identify any gaps in the existing literature	Australia NPs	Scoping review - comprehensive literature review	Key themes: -Barriers to Rx: *almost one third of NPs report they are waiting for the authority to Rx, and struggle with the ability to obtain provider numbers. * re-imburement through PBS (Pharmaceutical Benefits Scheme) -attitudes to NP Rx: *lack of knowledge amongst the public	NP prescribing is still in its infancy in Australia. *lack of knowledge of the increase role of the NP by the public and some of their colleagues

				<p>about NPs Rx capacity * other health care works have reservations about NPs Rx, mainly GPs and pharmacist -frequency of Rx: *All NPs in PICU/NICU and most in ER Rx daily, while other reported less than half (reported data was from prior to NPs obtaining PBS prescribing access) -types of meds Rx: ER NPs prescribe a wide array of meds verses those NPs in specific specialities *NPs in acute pain management clinics report safe and effective Rx practices with improved patient access to both opioid and non-opioid treatment options. *ER patients found decreased time to analgesia with NP assessing and Rx</p>	
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				<p>treatments -Rx practice behaviours and confidence: * just under half of all NPs refer to the Australian Monthly Index of Medicine: while less than half (40%) used the Australian Medicines Handbook and 30% use therapeutic guidelines' * greater years of experience was correlated with increased confidence</p>	
<p>5) Fong, Buckley, & Cashin. Australia, 2015</p>	<p>Review and compare international literature as it relates to NPs RX in USA, Canada, Europe, Australia and New Zealand</p>	<p>International: USA, Canada, Europe, Australia, New Zealand</p>	<p>Literature review</p> <p>USA: NP protected title. Must have master's to practice.</p> <p>Europe NP NOT protected title (prescribing is under the banner of 'independent nurse prescribing' prescribe from the British</p>	<p>USA: RN Rx 1960 and NP granted Rx privileges in 1969. 2005, 13 states and District of Columbia (DOC)-independently Rx & controlled drugs with a collaborative practice agreement. 21 states at time of article 2015 can Rx without a practice agreement. 2004 AANP National NP Sample Survey</p>	<p>Few research articles re NP list of Rx medications internationally (USA, Canada & NZ – critical care and UK in ER commonly Rx analgesic, antihypertensives and ABX while Australia mainly Rx analgesic and anti-infective agents)</p> <p>Barriers</p>

		<p>National Formulary</p> <p>Education: Standalone course of 26 days of theory and 12 days of mentored practice</p> <p>Canada: Protected title Masters</p> <p>New Zealand: Min of 4 years' experience in a specific area of practice and completion of a masters Every 3 years provide evidence to maintain competencies.</p> <p>Australia: RN's 20 hours of continued professional development (CPD) and NPs additional 10 hours of CPD relevant to practice. New South Wales 2012 approved a</p>	<p>reported NPs in all 50 states a& the DOC Rx</p> <p>EUROPE: Mainland European countries some nurses have Rx authority (Sweden since 1994) (Netherlands and Spain. Finland proposed a limited right to Rx meds) Initially began 1990s. Education is completion of a recognized Nursing and Midwifery Council accredited prescribing course through ta university and register with the NMC. They now have full access to the formulary.</p> <p>CANADA: Late 1960 introduction of NPs with education programs graduated NP in the 1970s. in the 1980 NP faded due to oversupply of MDs however in the</p>	<p>UK limited RX of Controlled drugs as in Canada</p> <p>Australia is legislative and policy barriers. Not evented in USA due to years of NP rx there</p> <p>Confidence in Rx Evident in Australia (most confident with education of Rx and least with altering other practitioners Rx), Canadian (importance of collaborative relationships) and UK literature (collaborative relations facilitated relationships and encourages continuous learning)</p> <p>Australian no theme identified yet.</p> <p>USA focused on comparative outcomes between NPs and PA with</p>
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			<p>formulary for NP in public service to Rx from Private practice NP must submit a separate formulary related to their practice for approval by the Chief Nursing and Midwifery Officer in NSW and a majority of other states in Australia</p>	<p>1990s Health care shifted to increase focus and awareness of Primary health care and this led to the renewal of the NP 2005 11 provinces and territories had NP legislation and regulations in place. 2012 Federal government changed the Controlled drugs and substance act to allow NP to Rx – still needed provincial regulation to do so. limited research but in 2007 Kassalainen et al noted NPs in a long-term care facility were able to Rx opioids from a defined formulary. NEW ZEALAND: 1999 development and implementation of NP role with Rx privileges. Prior to 2014 NP could Rx from a set formulary for up to 3/7 in an emergency only. NPs</p>	<p>MDs and UK, NZ, and Canadian lit was focused on safe RX with clinical appropriateness</p>
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				could also be registered as RX or Non-Rx Two studies with GPs not expressed concerns of NPs encroaching on traditional medical functions. AUSTRALIA: introduced in 1998 with Rx authority is some jurisdictions in 2001(pathway One completed Board approved master's degree- pathway two completed equivalent master's education)	
6) Buckley, Cashin, Stuart, Browne & Dunn. Australia, 2013	To explore prescribing practices and most frequently prescribed medications by Australian NPs.	N= 209 (83% response rate for survey. Those < 50% completed were not used). All, 251 endorsed NP members of the Australian College of NP[ACNP] received invite to the survey. ACNP represented 50% of all endorsed NPs, at time of survey.	Descriptive electronic study. Available online for 6 weeks with two emailed reminders in final week. Survey designed to identify prescribing practices. Three specific questions related to outcome variables of study: 1) "The percentage of	Of the 209 NPs, 90% practiced in the public sector with the remaining 10% practicing in private sector. The distribution of practicing NPs for urban, rural and remote was 72%, 23% and 5% respectively. Education preparation for practice reported	This study demonstrates the importance of NPs being capable of prescribing a variety of medications for the clients they are caring for. This study provides NP educators with insight into current prescribing trends to inform continuing educational programs

			<p>my usual practice that involves prescribing is approximately” –</p> <p>2) “In my practice I prescribe medication”</p> <p>3) “Please consider your prescribing pattern over the last month a list in order of frequency the top 10 medicines you have prescribed”</p>	<p>57% with Master of Nursing NP, 13% with a master’s degree of other and 30% of study participants with a graduate diploma.</p> <p>Frequency of prescribing: among the 209 NPs, 78% reported prescribing as part of their practice with the remaining 23% of NPs never prescribe. Of the 78% who prescribe, 78 % (162) reported prescribing at least once daily. NPs who prescribe were further categorized into specialty areas: pediatric/neonatal care 100% (n = 12), emergency care 98.5% (n = 65), primary care/general practice 75% (n = 15), sexual health/women’s health 71% (n= 10),</p>	and current curricula.
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				<p>acute care 62% (n = 18), mental health 62% (n = 8), chronic care 62% (n = 19) and aged care and palliative care were below 50%.</p> <p>Medication prescribed: in total the 209 NPs prescribed 234 separate medications with anti-infectives totaling 29.37% and analgesic second at 16.06%. Opioids were prescribed more frequently by the emergency care NPs followed by the primary care/general practice NPs.</p>	
7) Kaplan, Brown & Donahue. USA, 2010	The purpose of this study was to understand prescribing practices with no JPA and the relationship between prescribing and the NPs sense of autonomy.	Washington N= 1488 (2864 licensed NPs in Washington, Oregon, and Idaho. Returned 1803 with 117 rejected)	An exploratory descriptive study design was utilized. Study instrument was the Washington State 2006 ARNP Survey. The survey instrument included 50 items with 9	-Highest level of education master's degree (86% n = 1282). - With educational preparation reported at almost 25 % at each level from	-Elimination of the JPA increased the number of NPs prescribing, reflecting the need for collegial practice and collaboration among colleagues.

			<p>questions related to prescribing practices and two questions regarding autonomy.</p>	<p>extremely well; moderately well; somewhat well to poorly prepared</p> <p>-Main areas of practice adult health (35%), family practice (29%), obs/gyne (21%), mental health (16%), and peds (13%).</p> <p>-Prescriptive authority held by 99% and 98% were aware of independent prescriptive authority of Schedule II-IV. Prescribing controlled substances was part of clinical practice for 90% of NPs, yet over half (57%) report prescribing a moderate amount, over one third (40%) don't want to prescribe and 38% developed a practice to not include Schedule II-IV medications.</p>	<p>-Implications for educators were noted with 22% reporting poor educational preparation.</p> <p>-Obtaining prescriptive authority allowed for NPs to a fully autonomous practice and complete comprehensive care for patients.</p>
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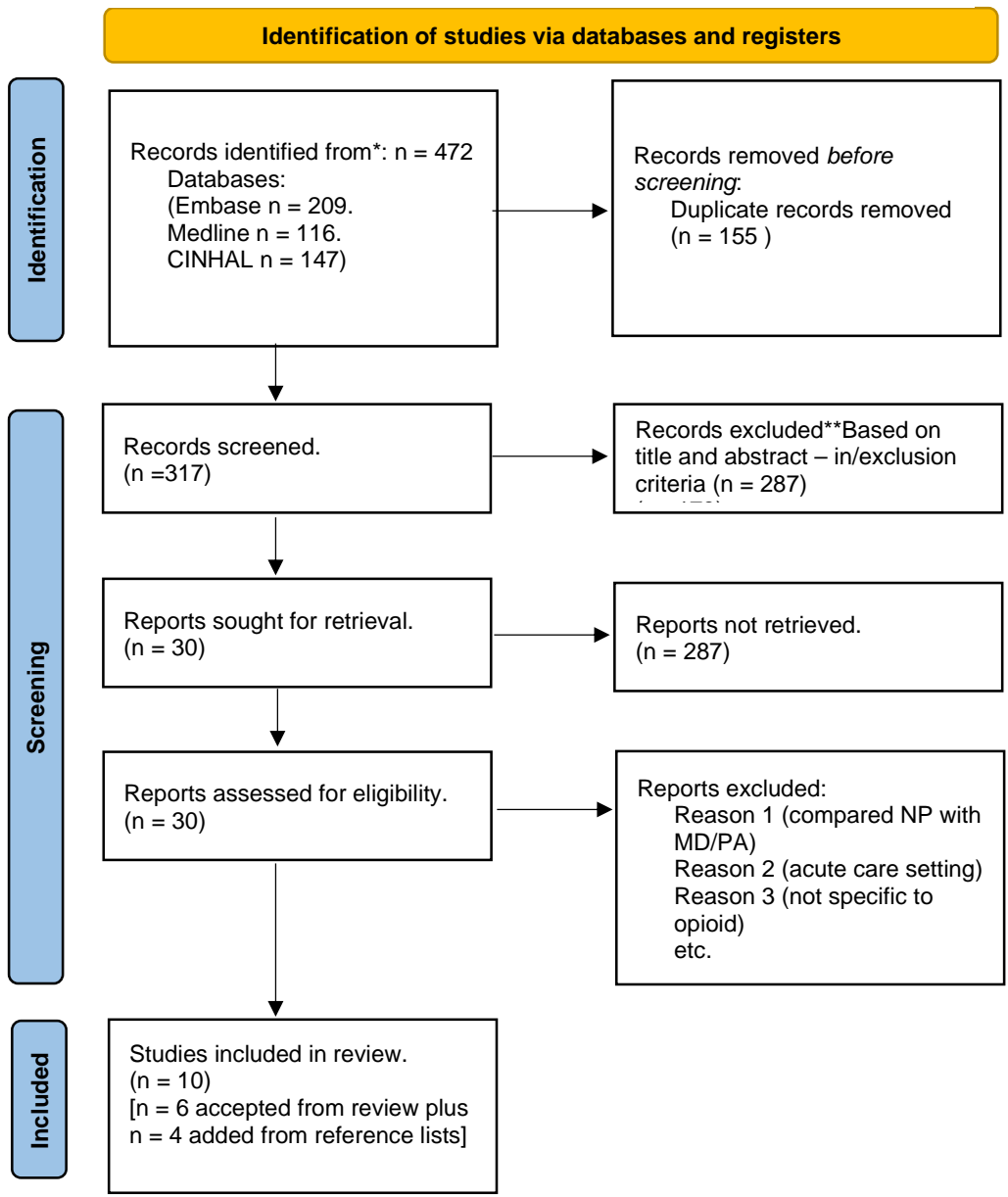
				<p>Joint partnership agreement (JPA) 'formality only.'</p> <p>-Over half (57%) reported greater sense of autonomy with the new prescribing authority, and 83% felt fully autonomous. The NPs who didn't report a sense of autonomy reported this due to external barriers and internal barriers.</p>	
8) Kaplan & Brown USA, 2007	The purpose of this study was to understand whether or not NPs obtained prescriptive authority for controlled substances. To understand NPs experiences with prescribing controlled substances and the NPs relationship between autonomy and prescriptive authority of CS.	Washington NPs N = 88	Focus groups (12) with a purposive sample recruited using invitation flyers distribution to NPs attending a continuing education conference. Method: grounded theory. The 12 groups were - 30 to 60 mins and due to saturation obtained only two individual interviews	Three major dimensions of transition were noted: Resisting change, Ambivalence about change, and Embracing change. The transition stemmed from NPs responses to the new law for prescriptive authority of controlled substances. Bridges transition theory was the conceptual foundation of the study and three	The implications of this study note the importance of understand legislative changes and professional practice. Identifies the professional transitions as they relate to legislative changes.

				stages of the process noted: ending (letting go), neutral zone, and beginning again. Autonomy the basis of the profession	
9) Kaplan, Brown, Andrilla and Hart. USA, 2006	If Rx without direct MD involvement eliminated barriers: did the law created barriers and compare NP practice before and after the law had changed for Rx by NPs	N - 1843 NPs responded no indication as to how many did not respond	Two surveys to NPs working in Washington state (one prior to and one after the implementation of the prescribing laws in 2000)	NP without Schedule II-IV authority was because not a priority and don't wasn't to prescribe these drugs. NP with Prescriptive authority however the most significant barrier was concern of dealing with drug seeking behaviour	Internal and external barriers still remain for NPs. Confidence and competence with prescribing is paramount as is enhancing knowledge, building skills esp. in dealing with seekers.
10) Kaplan & Brown. USA, 2004	Examine issues surrounding the removal of barriers to practice with regards to Rx	Included one study of APNs in South Carolina and a study of psychiatric/mental health APNs in Minnesota identified barriers to Rx. Review of the Washington State NPs (only group who spoke to control substances) Mailed surveys to 3146 licensed ARNPs in Washington, n = 1241 respondents.	Prescribing Practices Survey was distributed to collect data regarding the NP workforce and barriers to prescribing	97% (946) of NPs have prescriptive authority. Almost a quarter of the NPs (231) did not realize this included Schedule V medication and only two thirds (n = 646) actually had a DEA number necessary to prescribe the schedule V drugs. 50% of the NPs reported not having the authority to prescribe Schedule	Legal liability (Vicarious liability) is based upon relationship rather than conduct, Positive note the once hierarchical relationship is now more collegial. Increase time to consult with MD re: schedule II – IV meds

				<p>V drugs even though they had both Rx authority and a DEA number. Reasons for not having a DEA number was cost; not needed for their practice and the application process for applying for a number. Barriers to prescribing identified by NP most frequently were: MD concerns with liability, MD choosing different options than selected by NP and MD reluctance to Rx drugs selected by NP.</p> <p>Community based NP had reported a greater number of barriers than those NP that were hospital based. Years of practiced had some effect on Rx as NPs with less than 2 years and those with greater than 8 years were likely to</p>	
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				<p>report feeling uncomfortable/competent with Rx.</p> <p>All NPs need a JPA with a MD. The presence of a MD affected NP rx practices: The more the MD was present the fewer barriers to RX were reported and the greater consultations occurred. The less the MD was around the greater the reliance to 'legend drugs' were Rx</p>	
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Figure 3.1 -PRISMA Diagram



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. <https://doi:10.1136/bmj.n71>

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4.0 Manuscript Two

Prescribing Opioids in Primary Care: Experiences of Nurse Practitioners

Prepared for submission to Journal of Nurse Practitioners

4.1 Relationship of Manuscript Two to the Dissertation

The scoping review of the literature in manuscript one explored the state of the knowledge on NP prescribing of opioids. Findings of the literature review identified that knowledge about the opioid prescribing practices of Canadian NPs was limited. Manuscript two presents the findings from interviews with NPs about their experiences with the prescription of opioids in clinical practice in community-based primary care settings. This study contributes to building nursing knowledge that aims to fill a gap in NP opioid prescribing practices in Canada. The research question that guided the current study was: *What are the experiences of NPs who prescribe opioids in primary care settings?* Data analysis led to the construction of themes focusing on the experiences when prescribing opioids: Learning to prescribe, Gaining competence and confidence, and Experiencing concerns for personal safety.

4.2 Abstract

Nurse Practitioners (NPs) in Canada have the legislated authority to prescribe opioids in clinical practice. However, the literature on the opioid prescribing practices of Canadian NPs is limited. This study aimed to explore the experiences of NPs who prescribe opioids to clients in primary care clinical settings within a western Canadian prairie province. Using the method of interpretive description, 21 participants were recruited for an interview. The data collected was transcribed verbatim and uploaded into NVivo 12. Line-by-line coding; and keywords and phrases, were selected using a technique borrowed from grounded theory. Constant comparative analysis of the data informed the development of themes that inform the participants' experiences when prescribing opioids: Learning to prescribe, Gaining competence and confidence, and Experiencing concerns for personal safety. The findings from this study indicate that NPs are healthcare providers that can be accessed by clients requiring pain management, monitoring for the development of dependence, and support for opioid agonist therapy in relation to opioid addiction. As the opioid crisis continues to be a concern across the country, it is vital to ensure that NPs practicing in primary care clinics have the support needed when prescribing opioids. This study recommendations suggest a need to include additional educational support for new graduates and continuing education for NP opioid prescribers.

Keywords: nurse practitioner, opioids, prescribing, nurse practitioner education

4.3 Introduction

Canadian nurse practitioners (NPs) provide comprehensive, accessible care to Canadians (Almost, 2021). Across Canada, NP education is standardized at a graduate or post-graduate master's degree in nursing (Almost, 2021). The educational outcomes indicate that programs assist students in developing the ability to independently perform advanced nursing health and physical assessments of client medical concerns, order and interpret the diagnostic test, prescribe required medications and therapies, and contribute to and manage interprofessional collaboration: with the aim of integrated, holistic health care services for clients. An additional educational requirement was added in 2012 with the legislative change that granted prescriptive authority for controlled drugs and substances (Government of Canada, 2012a). This manuscript will present on the study findings addressing the research question: *What are the experiences of NPs who prescribe opioids in primary care settings?*

4.4 Background

The NP scope of practice varies across Canadian provinces and territories (Canadian Institute for Health Information, 2020). The Government of Canada (2012a) has restricted all NPs from prescribing opium, coca leaves, anabolic steroids, and testosterone. Otherwise, NPs can prescribe most medications in their provincial drug formulary.

The authority to prescribe opioids in clinical practice has expanded the care NPs can provide patients with pain management concerns. NPs are employed in various clinical settings in Canada, such as hospitals, community clinics, home care, and long-term care (Canadian Institute for Health Information, 2022). NPs are also employed in respite, palliative care, rheumatology, and other specialized care services.

The privilege of providing opioid medication for acute and chronic pain management has

contributed to greater access to care for Canadians in a timely matter (Almost, 2021). Few studies have explored the experiences of NPs when prescribing opioids in practice (Fong et al., 2015; Fong et al., 2020). In Canada, little is known about the prescription of opioids by NPs. Education about opioid prescribing has been included in NP education programs following the change of legislation by the Government of Canada (2012a) to include NPs. Following this change of legislation, the Canadian Association of Schools of Nursing (2016) provided guidelines for curricula in teaching opioid prescribing. Even with the current formalized education curricula, little is known about the prescribing practices of the graduate NP when the legislation was changed, as well as the NPs that have been in practice and have yet to receive this initial education. Additionally, NPs might receive little exposure to patient concerns that involve opioid prescribing during an education program, which limits the ability to solidify knowledge and application in clinical practicum experiences. Some of these limitations may include the clinical practice setting from their education practicums, the demographic of the clinic's community, and the preceptors' comfort.

Prescribing of opioids came into effect, in 2014, for Saskatchewan NPs (Saskatchewan Registered Nurses' Association, 2017). Some clinics made decisions about which clinicians, physicians and or NPs, will be involved in prescribing of opioids to clients that present to the clinic for treatment (Fong et al., 2020; Kaplan & Brown, 2004; Kaplan et al., 2010). Some of these decisions may influence the experience needed by NPs when they need to care for clients with urgent pain management needs and to develop and apply opioid prescribing knowledge in practice.

Within the past few years, the number of overdoses and deaths from opioid use has increased in Canada. In 2019, an estimated 14.2% of Canadians reported using an opioid

prescription for either medical or non-medical reasons. Of the individuals included in this 14.2 %, they were reported using their opioid prescription for non-medical purposes (Canadian Center on Substance Abuse and Addiction, 2022). Opioid ingestion has been linked to many accidental and intentionally (suicide) deaths (Hatt, 2022). Hatt (2022) reported that between 2017 and 2020, there has been a yearly decrease of intentional related opioid toxicity deaths. However, the accidental opioid toxicity death rate continues to climb. Health Canada (2019) reported 94% of all opioid-related deaths to be accidental with the fastest growing population observed in youth aged 15 to 24 years.

The Special Advisory Committee on the Epidemic of Opioid Overdoses (2022) reported, from January 2016 to September 2021, approximately 26,700 deaths related to opioid use. From January to September 2021, approximately 5,400 deaths occurred due to opioid use: approximately 20 deaths per day. Prior to the COVID-19 pandemic, the approximate daily death rate from opioid use was 7 in 2016 and 12 in 2017 (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2022). Within the first half year of 2021, almost 85% of the opioid related deaths in Canada occurred in British Columbia, Alberta, and Ontario (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2022).

The number of deaths related to opioid toxicity in the province of Saskatchewan is steadily rising. The Saskatchewan Coroners Service Division reported only 95 deaths were related to accidental opioid use in 2017, which increased to 139 in 2018 and further increased to 154 deaths in 2019. Within the year 2020, the first year of the COVID-19 pandemic, the number of accidental opioid related deaths rose to 285 cases (Government of Saskatchewan Coroners Service, 2021, p. 1) where females and males in the aged group of 30 to 39 years recorded the highest number of opioid related deaths (females = 21 deaths and males = 49 deaths)

(Government of Saskatchewan Coroners Service, 2021, p. 8). These statistics have a profound economic impact on healthcare funding increases and dwindling health human resources.

Therefore, understanding the impact of loss of life and the health care resources mobilized to address the opioid crisis must be concerning to all healthcare professionals when prescribing opioid medications.

NPs in Saskatchewan are primarily employed in rural and remote communities (Canadian Institute of Health Information, 2022). Rural and remote nursing practice has been characterized as involving professional and geographical isolation, which may limit their ability to collaborate with other professionals when prescribing controlled drugs and substances. Exploration of the experiences of NPs when prescribing opioids is needed to assess the professionals' understanding when prescribing opioids and how they assess the associated benefits and risks.

4.4.1 Nurse Practitioner Education

NPs in Canada today graduate with a master's level education. Each province has at least one graduate-level NP program (Baker et al., 2020). The Canadian Association of Schools of Nursing (2016) developed a guiding document, the Nurse Practitioner Education Competencies for Prescribing Controlled Drugs and Substances. The document aimed to ensure consistency in providing educational requirements implementing of controlled drugs and substances prescribing across Canada. While prescribing is not a new role for the NP, prescribing controlled drugs is complex and associated with a higher level of accountability (Canadian Association of Schools of Nursing, 2016).

4.4.2 Opioid Crisis

Canada is the second-highest consumer of opioid drugs per capita globally (Canadian Institute of Health Information, 2017). Pain is the most common reason Canadians seek medical

attention and receive a prescription for opioids, with one out of every five adults diagnosed with chronic pain (Schopflocher et al., 2011). In 2018, approximately 1 in 8 adults were prescribed opioids (Canadian Institute of Health Information, 2019). When opioids are taken as prescribed, they are very effective in reducing and managing pain. Opioids become misused when an individual begins to enjoy the sense of euphoria or ‘high’ that opioid drugs provide and becomes dependent on the drug outside of the need to treat pain (Canadian Institute of Health Information, 2019). Opioid-related abuse has led to increased resources for emergency medical services, including ambulance and emergency room visits, hospitalizations, and opioid-related resuscitation (Canadian Institute of Health Information, 2018b).

4.5 Purpose

This study aimed to explore the experiences of NPs who prescribe opioids in primary care clinics in a western Canadian province. The aim was to enhance the current understanding of opioid prescribing, concerns about prescribing with education, confidence with prescribing, and experiences with opioid misuse, abuse, and diversion.

4.6 Methods

4.6.1 Design and Setting

The qualitative methodology used for this study was interpretive description. Interpretive description focuses on a practice question of interest, to identify tangible results for the practitioner (Thorne, 2016). Interpretive description was chosen to gain insight into the experiences of NPs as they prescribe opioids in primary care clinical settings. The study was conducted in a Canadian prairie province.

4.6.2 Sample

Participants were recruited from the population of registered NPs in a prairie province

holding an active registration. Purposive sampling techniques were used, including a recruitment survey distributed to all registered NPs agreeable to receiving email research requests from the provincial regulatory body. The respondents to the recruitment survey (n = 65) were requested to indicate their willingness to participate in an interview about their experiences with prescribing opioids in their clinical practice (n = 21).

4.6.3 Data Collection

The recruitment survey was distributed using 'Survey MonkeyTM' software. A modified Dillman approach was implemented to ensure the highest rate of return (Dillman et al., 2014) with reminder emails at two- and four-week intervals post-initial email. The survey was sent to 183 potential participants yielding 65 respondents. Three incomplete surveys were removed from data extrapolation. From the remaining 62 respondents, 57 reported prescribing opioids in their practice; 35 volunteered for an interview although only 21 responded to the email invitation and participated in an interview.

Each interview began by reviewing the purpose of the research study, obtaining informed consent, and agreement with audio-taped recording of the interview. A semi-structured interview guide was used to initiate the conversation with the aid of open-ended questions. Each interview lasted between 30 – 60 mins. The audio-recordings from each interview were transcribed verbatim and listened to while viewing the transcript to ensure accuracy. This process allowed the researcher to be immersed in the data and minimized misunderstanding and bias (Thorne, 2016).

4.6.4 Data Analysis

Transcribed interviews, and the researchers reflective journaling and field notes created throughout the interview process, were uploaded as data into a qualitative software NVivo 12. A

borrowed technique from grounded theory, known as ‘constant comparative analyzes’ (Glaser & Strauss, 2006; Thorne, 2008, 2016) was utilized. This technique allowed the researcher to analyze the data line-by-line and pull words, thoughts, and phrases to create open codes. The back and forth between and among the codes were explored looking for connections and relationships and organizing into broad categories prior to construction of themes.

4.6.5 Ethical Considerations

Ethics approval was obtained from the University of Saskatchewan Advisory Committee on Behavioral Research Ethics Board (Appendix A). Ethics approval and a letter of support were obtained from the provincial regulatory body (Appendix B). Participation in this research was strictly voluntary. Participants were made aware that the researcher was unable to eliminate all risks or harms that may occur through completing the survey and participation in the interview: and the rights to withdrawal without repercussion at any time. The confidentiality of the participants was protected by using code names (Participant 1, Participant 2, etc.).

4.7 Results

Twenty-one participants volunteered and completed an interview. Most of the participants were female (n = 18) versus male (n = 3). The 31 – 40 years of age grouping represented the largest number of participants (n = 7), while both age groups 41 – 50 years of age and 51 – 60 years of age were slightly lower (n = 4 and n = 5 respectively). All 21 participants prescribed opioids in a primary care clinical practice.

The location of practice was approximately even for urban (n = 8) and rural (n = 9) participants. The number of years in practice as a NP of the participants were approximately equivalent with those between 0 – 5 years of practice (n = 6), 6 – 10 years of practice (n = 5), and those with 11 – 15 years of practice (n = 7). Eighteen of the participants identified as

practicing in a primary care setting, while three of the participants identified they were a community-based speciality clinic with a primary care focus. Table 4. 1 represents the participant's demographics.

Table 4.1 - Participant Demographics

Demographics	N = 21	Demographics	N = 21
Gender	n	Prescribe opioids in practice	
Female	18	Yes	21
Male	3	No	0
Age group		Location of Practice	
20 – 30 years	1	Urban	8
31 – 40 years	7	Rural	9
41 – 50 years	4	Northern/Remote	4
51 – 60 years	5		
61 plus years	4		
Years of practice		Practice Setting	
0 – 5 years	6	Primary Care	18
6 – 10 years	5	Acute Care	0
11 – 15 years	7	Long Term Care	0
16 – 20 years	2	Other:	3
20 plus years	1		

Three themes were constructed from the analysis of the data: 1) Learning to prescribe; 2) Gaining competence and confidence, and 3) Experiencing concerns for personal safety.

4.7.1 Theme One: Learning to Prescribe

Prescribing of medication is an element of NP practice. Education about prescribing practices begins on entry to a NP education program. Most of the more experienced participants expressed that they graduated from an NP program prior to the new regulation allowing NPs to

prescribe opioids (prior to 2012). This cohort reported that their education for prescribing opioids involved a regulatory required attendance at a workshop to become knowledgeable about and prepared them for the prescribing of control drugs and substances, including opioids. This group of experienced participants also reported having to successfully complete an online exam to maintain registration as an NP in the province. The less experience group of participants that graduated following the implementation of the legislation (post 2012) received their education for the prescribing of control drugs and substances within their NP education program.

4.7.1.1 Contextualizing Education. Findings from the study suggested an advantage for the less experience participants who were provided education on the prescribing of control drugs and substances within their education program. One participant mentioned that there were no previous habits to change because this information was new learning for practice as a NP. *“The day we walked out of school, we would be prescribing. I think that was helpful because what you learn first you hold onto, and you do not have to kick something else out to learn the new bright shiny things”* (Participant 19).

Not all the participants with less experience felt the same about the privilege to prescribe control drugs and substances and the education provided. Participant 13 expressed, *“like there was a lot, too much time spent within our schooling about the opioid prescribing like a ridiculous amount of time, and it almost creates this fear around it, that it is just easier not to do it instead... I am like, if I just don’t start it, I don’t have to deal with it because... that would be easier.”*

4.7.1.2 Continuing Education. The desire for, and experience with, continuing education with opioid prescribing overall was positive. A few participants felt areas in their education on opioids were lacking specifically regarding initiating and tapering of opioid medications. Participant 18 mentioned seeking additional and ongoing at education was *“one of*

your duties to the profession.” Another less experienced participant commented, “I was not 100% comfortable initiating it, like finding the correct dosage, just because it was so new to me... I do not feel confident that I was competent enough to initiate where to start the opioids. It was scary, to begin with” (Participant 1).

A few other participants felt that the education programs could involve more hands-on practice with opioid initiation and tapering of opioids because of the risks associated with such an addictive class of medications.

You learn lots in school, which is great, but when you applied in vivo, it can be it can often be so different, especially when you are in a complex population. I do not think it prepared me very well at all. However, I think that my clinical portion probably did, so thanks to my preceptor (Participant 12).

Another more experienced participant commented on the delivery of education in the classroom versus increasing the number of hours of program clinical to expand the opportunities for experiences with clients who require the prescribing opioids, stating, “*we need to step up our clinical knowledge and probably on the practicum piece, the hours in clinical*” (Participant 9).

Some participants felt their desire for continuing education was a function of the types of clients in the population accessing their practice. Participant four stated, “*I think I could certainly do more learning if I was more involved in prescribing it. I would want to do more and I’m sure there is a lot more information out there that I could seek to understand it better.*”

Many participants identified gaps in their learning when reflecting on their concerns around initiating opioids and sought out additional education. “*I am going to work with the physician. I am going to talk to her when I return like, can I try a couple with you kind of watching over me? I am sure she will say yes*” (Participant 1). Self-learning modules from the

University of Athabasca, the Pallium's Learning Essential Approaches to Palliative Care (LEAP) and mentoring with physicians and other NP colleagues were additional education resources accessed by participants. Participant eight mentioned, *"I feel just with the experiences, I feel more comfortable with it. So, I think it is a combination though of education and experience."*

4.7.2 Theme Two: Gaining Competence and Confidence

The participants with more years of experience suggested that even though prescribing of opioids was included as an element of their practice, they described using a systematic approach to client care, where incremental supportive care approach to pain management was initiated prior to the use of opioid prescriptions (i.e., over the counter analgesic, physiotherapy, acupuncture, or massage therapy). A few of the participants with more years of experience mentioned having experiences with clients requesting opioids stating that nothing else works to control their pain:

I've been around the block a bit, so I don't feed into that. I mean we all know the downfalls of opioids and if you have a client that absolutely needs one and is not an abuser, a drug seeker, or whatever and you know that a short term of opioids would be the best choice of treatment and you're denying that person, I think you're being a bit negligent myself. I think the medical people have created as issue, but its flexible, just stop prescribing willy-nilly (Participant 11).

All of the participants mentioned experience with the administration of opioids in their past practice as a registered nurse in acute care, prior to becoming an NP. Some participants who identified as having experience practicing in critical care units (i.e., intensive care units, the emergency departments) and reported been exposed to dosages of opioids ranging from small to high, including infusions of opioids. Some participants that had also worked in the less acute

healthcare units, or in community settings such as home care, also expressed previous exposure to administering administering opioids and that this experience had provided them some confidence when beginning to prescribe opioids. *“I’m quite comfortable with controlled medications because of where I worked before. I had a lot of drug seekers and then... you know you ... inherit this panel of patients that, maybe, hasn’t been prescribed them appropriately”* (Participant 8).

4.7.2.1 Experiencing Mentorship. After graduating from an NP program, the participants with fewer years of experience as an NP reflected that they initially thought they had a good grasp on prescribing opioids. On retrospection, they suggested that this quickly changed once they graduated and began independent practice where their confidence seemed to fade. These participants reported that they felt under prepared for initiating and tapering this class of medications with the risk for addiction. *“I was just plopped out there and left a fend for myself in a busy practice. It was tough, and I think I made a lot of mistakes. I think it was just an experience, and I needed the support”* (Participant 1).

Some of the participants realized that a team approach to care for patients with pain management concerns was the most significant learning opportunity for new graduates with benefits for building confidence through collaboration:

I think stand-alone NPs are... I do not know how they do it sometimes. Because you do not have the other person to bounce ideas off of or get some support from, whether it is physical support, emotional, or mental. I do not know how they do it. That would not be for me. I am a team player (Participant 7).

One participant with more years of experience as a NP summed up how mentorship helped their practice stating:

I’m really thankful I started up in a (town) in a physician group... like they didn’t have

that kind of trepidations around opioid prescribing, but they really taught me how to and supported me in being able to have those hard conversations around, we're not going to start it now. That physician group was really good at helping me talk to people about it. So, I'm not so scared of saying no to somebody, or no not yet, or we need to start this reduction (Participant 12).

4.7.2.2 Experiencing Reluctance to Prescribe. Concerns about the ongoing opioid crisis created the perception of a reluctance to prescribe opioids. Conversations with the participants who began their practice prior to the 2012 regulatory approval for prescription of controlled drugs and substances, revealed that there was a sense of comfort in being able to defer the client to the physician for pain management that involved the prescription of opioids. Being able to defer the client allowed the NP to remove themselves from getting involved in any potential ramifications of opioid abuse, misuse, and diversion. These participants expressed concerns with opioid prescriptive authority regarding a fear that the prescriptions they provided to clients may end up being abused or possibly be sold illegally and harm other individuals with an addiction.

Participant 8 provided the following concern. *“It is historical... I think a lot of people were prescribed opioids kind of just to get them going...there was a lot of chronic pain, but...like, you are so young, let us figure this out, please.”* Historical prescribing patterns were suggested to be challenging to address with colleagues, and participant 6 contributed that *“it comes down to communication, a lost art, especially when it comes to these kinds of patients, people just throw up their hands, get frustrated, and do not try very hard.”*

The participants expressed concern about how they perceived that the opioid crisis gained momentum. *“A few people who are prescribing the opioids, they do it just because it is easiest and it causes a whole bunch of grief with, you know, seeing the three providers in the last*

however long for renewals” (Participant 2). Participants explained that there are clients who present in clinic, *“using a mixed buffet of chemicals”* (Participant 18). As all the participants prescribe opioids in their practice, extreme caution was indicated in the approach to each prescription for opioids that they provide to a client. Most participants stated that they only prescribed opioids after the client has not received effective pain management using other treatment modalities.

A few participants expressed a feeling a sense of professional responsibility to aid the client when they presented with pain management concerns and felt guilty if they did not prescribe an opioid medication.

I would say it is my personal preference would be to not prescribe them ever. But that’s not the reality of my profession. And this I think for me sometimes it’s a moral thing. The way I was raised, the things you know, your community... you help your community members, you’re there for people when they need it. So, then you get those really troubled addicts and it’s like I find it so hard... if I don’t see them, who’s going to (Participant 7).

4.7.3 Theme Three: Experiencing Concerns for Personal Safety

Many of the participants expressed a sense of uneasiness when providing care to clients involving the prescription of opioids. This was more commonly seen in the participants who lived and worked in small rural and remote communities.

4.7.3.1 Limited Anonymity. A small number of participants described themselves as members of the communities where they lived and worked. One participant explained that nurses became known within the community as either an opioid or a non-opioid prescriber. After hours care for clients is a common occurrence in small rural and remote communities. Participants

reported that when on-call during evening, nights and weekends often involved requests by community members to obtain care for acute or chronic pain management concerns. *“I mean, it is a small town, right? Everybody knows my number”* (Participant 21).

Another participant shared an experience where she was unable to provide pain medication to a client because of safety concerns. The patient had chronic pain and mobility issues that affected their ability to obtain medication from the pharmacy, and the participant would deliver the medication to the patient’s home. *“I was taking his meds to him, but then one day... some gang members were there... I took the police with me. And we just had the conversation that I cannot bring his meds [to his house] anymore”* (Participant 12).

4.7.3.2 Unsafe Work Events. A few participants, especially those in rural and remote locations, identified disparaging situations when dealing with individuals from their community. Participants described that some situations in the work environment challenged the development of good interprofessional team communication when clients with drug-seeking behaviours would demand to see a specific health care practitioner, because they knew that practitioner would provide them with a prescription for opioids. If participants challenged a client’s need for an opioid for pain management, in rare, but troubling occurrences, *“like people will slam doors and throw chairs when they could not get an opioid prescription”* (Participant 21).

Another participant spoke about being bullied by a client. *“There’s a lot of bullying as well of healthcare professionals.*

There’s a lot of bullying of... like patients who come... and I don’t mean like your usual typical belligerent patients. But if you don’t give me this, I’m going to buy it on the street. I do tell them I’m obligated to answer for my actions, and I need clinical evidence to prove that what I have done was prudent (Participant 18).

Witnessing the of diversion of opioids was also mentioned by participants. One

participant described an experience of watching a client receiving their medications at the pharmacy, and then was observed to return to the waiting room and sell their pills to other clients. Participant 4 shared that the misuse and diversion of opioids was a major concern, and feared prescribing opioids given the potential for diversion and harm related to the prescription of medication contributing to an accidental overdose.

4.8 Discussion

Nurse practitioners in Canada have been granted the authority to prescribe opioids since 2012 (Government of Canada, 2012a). Additionally, each province and territory were then required to integrate the legislation into provincial legislation and bylaws regulations by nursing regulatory bodies. Legislation and regulatory changes in Saskatchewan for NP prescribing were completed in 2014 and became effective on January 13, 2015 (Saskatchewan Registered Nurses' Association, 2015). Therefore, NPs in this province have been integrating the prescribing of controlled drugs and substances into their practice over the past nine years.

There is a scant amount of global literature addressing the experiences of NPs who prescribe opioids in clinical settings (Fong et al., 2020; Craig-Rodriquez et al., 2017; Kaplan & Brown 2007; Kaplan et al., 2006; Kaplan et al., 2010). Little research has been published that addresses or explores the effect of controlled drugs and substances prescriptive authority on the practice of NPs broadly across Canada, and no research from a provincial perspective. Therefore, the focus of this study on the experiences of NPs who prescribe opioids in primary care settings assists to begin to bridge a gap in nursing knowledge in this focus area of advanced practice.

Prescribing is not a new skill for the participants in this study. NPs across the country can prescribe a wide range of medications from their provincial drug formulary. However, with the prescriptive authority to prescribe controlled drugs and substances, in 2012, NPs were required

to obtain additional education before exercising this new prescriptive authority (Saskatchewan Registered Nurses' Association, 2017). Since 2012, participants who had graduated from NP education programs were fortunate to acquire this knowledge as part of their educational programs, which is supported through exposure to prescribing practices during the clinical practicum experiences (Saskatchewan Registered Nurses' Association, 2019). Many of the participants with less than nine years of experience as an NP expressed feeling comfortable with this new skill after graduation. However, for participants with more than nine years of experience as an NP, there is a need for additional resources to assist NPs in developing competence prescribing this class of medication. Participants also commonly identified the tapering of opioids as an area of need for continuing education and a frequent topic requiring consultation with colleagues. A study from the United Kingdom suggested similar findings where advanced clinical practitioners demonstrated a lack of preparedness and benefited from additional practicum experiences and mentorship following graduation (Dover et al., 2019).

Analysis of the data suggests that the participants in this study had varying degrees of comfort with opioid prescribing. These findings were similar to the studies by Craig-Rodriguez et al. (2017) and Kaplan et al. (2010). The examples of encounters recalled by participants with clients with drug-seeking behaviours or colleagues with more liberal prescribing practices provided the participants with opportunities to reflect on the breadth of learning required for prescribing opioids. Hence, the finding from this study stresses the importance of guiding all participants, regardless of years of practice, to utilize prudent collaborative team approaches to the prescription of medication to clients with pain management needs (Craig-Rodriguez et al., 2017; Fong et al., 2015). Reluctance to prescribe was a similar finding found in the study by Kaplan and Brown (2007) regarding not wanting to prescribe and therefore looking for a

‘scapegoat’ response to not prescribing to potential drug addicts.

There are many elements involved in learning about the benefits and challenges associated with prescribing opioids, understanding dosages, side effects, drug interactions, assessment of pain and the effectiveness of the treatment prescribed, tapering patients off medications, screening for potential dependence and misdirection of this addictive medication (Buckley et al., 2013; Fong et al., 2016). However, the addition of this prescriptive authority for NPs was beneficial to increase the participation of NPs in areas with known pain management client care needs, such as palliative and cancer care.

The study participants identified a need for continuing education for opioid prescribing and many did seek out additional educational opportunities. Controlled drugs and substances education is now integrated into all NP education programs in Canada and several universities have developed online education programs to address continuing education for NPs. Certainly, for the participants who may not prescribe opioids frequently or have access to colleagues for support, accessing continuing education will assist in the development of competence and confidence in their prescribing practices (Buckley et al., 2013; Craig-Rodriguez et al., 2017).

There may be some benefit for mentoring new graduates by experienced NPs, one-on-one or in a peer support group, to share experiences and learn from each other. Bringing together NPs employed in isolated rural and remote communities and connecting online with a networking group to discuss elements of opioid prescribing is supported in the literature (Buckley et al., 2013; Craig-Rodriguez et al., 2017). Mentoring is one areas where education and experience combine with the aim of increasing knowledge and support. Perumal and Singh (2022) recently published a scoping review on mentorship in nursing in Canada and suggested mentorship aids in engaging, strengthening the practice, and building confidence in skills and competencies of the

novice nurse.

Other studies noted that setting boundaries for patient opioid prescribing may involve cultural perceptions on pain (Fong et al., 2016; Kaplan et al., 2010). There are cultures where the understanding of painful experiences may differ from that of the health care provider.

Additionally, pain is individually experienced. Although this topic did not arise in the participant interview, it is important that opioid prescribing education include information about various cultural beliefs on pain, pain management and treatment plans.

Some of the participants that resided in small rural communities reported feeling vulnerable in relation to their ability to prescribe opioids. There is a need for additional awareness and policies surrounding safety concerns for prescribers and for the employer to support and protect healthcare providers that live and work in smaller communities (Kaplan et al., 2006).

4.8.1 Implications for Practice

Across Canada, NPs need to be supported to work to their full scope of practice. The autonomy of practice allows clients to access NPs when medical attention is needed for pain management, commonly involving the prescription of medications, such as opioids. However, challenges that NPs may be confronted with include concerns about the opioid crisis, and the prescription of opioids creating potential conflicts between NPs and their clients, diversion of opioids in the community, and the occurrence of overdose and deaths (Kaplan & Brown, 2004; Kaplan et al., 2010). Conversely, education is also needed to address miscommunication, misinformation, and misconceptions about opioid use for healthcare providers and the public.

There is an ongoing need for access to continuing education on advocacy for harm reduction programs (Canadian Institute for Health Information, 2019; Craig-Rodriquez et al.,

2017). Nursing regulatory bodies and provincial nursing associations should encourage their membership to participate in continuing education events, especially in instances where NPs change their practice setting and the care needs of the new client population include increasing levels of acute, chronic, and palliative pain management concerns. In the United States, NPs play a crucial role in harm reduction with positions in substance use disorder prevention clinics. Understanding the process is a commitment to offering care to the client with counselling and support (Moore, 2019). In Canada, The Atlantic Mentorship Network on Pain and Addiction (n.d.) as well as the University of Toronto (n.d.) are offering programs for safe opioid prescribing and addressing opioid use disorders.

Even though NP educational programs provide knowledge about prescribing opioids, there appeared to be some difficulty in transferring knowledge into clinical practice. Supporting students, the opportunity for practicum experiences where client care includes prescribing opioids is essential for every student, as is exposure to experiences where they can develop the skill for discussions with clients about their needs for safe practice boundaries (Dover, 2019; Perumal & Singh, 2022).

4.8.2 Recommendations for Future Research

Additional research is needed across the country to assess the experiences of NPs when prescribing opioids in all clinical settings. This study was limited to primary care settings, and therefore caution needs to be utilized when applying these findings to other settings. Research is needed to identify and inform educational curricula about how variations on prescriptive requirements may need to be addressed in different practice settings (e.g., acute, community and palliative care). Additional research is also required to explore how NPs understand harm reduction and the willingness to prescribe medications for Opioid Use-Disorders. The findings

from this study were gathered pre COVID-19 pandemic; however, given the pandemic has inflated the opioid crisis (Gomes et al., 2021; Linas et al., 2021; Moore, 2019), a comparison study is warranted.

4.8.3 Limitations

Interpretive description is a method that has borrowed techniques from other qualitative methods (Thorne, 2016). Although sometimes referred to as '*method slurring*' in the qualitative research community, interpretive description is a practical and adaptable method to address research questions with a clinical focus. In applied nursing research, the aim is to uncover practical answers to clinical concerns through an exploration of the concern with those who have experience with the area of clinical concern (Thorne, 2016).

One of the limitations of this study is the transferability of the study findings. The findings from this study are specific to the population sampled, and therefore transferability of the results may not be possible across the country. For example, in the province of British Columbia, a harm reduction approach may be a more prominent theme compared to other provinces in relation to their more extensive experiences with the opioid crisis and the prevalence of overdoses.

Another limitation of this study was the sample group available to the researcher. In the province of Saskatchewan in 2017, the regulatory body had 231 NPs registered to practice; nonetheless, given the choice by the regulatory body, in the registration process for the members to decide if they wished to receive research invitations limited the total population from which a sample could be recruited contained only 183 potential participants (Saskatchewan Registered Nurses' Association, 2017). This limitation may have excluded participants who prescribe opioids regularly in their practice or working with vulnerable populations from participating in

the study and sharing their experiences.

4.9 Conclusions

The findings of this study suggest that many participants felt comfortable with prescribing opioids in their practice. However, greater attention needs to be placed on the aspects related to continuing education to address the initiation and tapering of opioids and mentorship of new NP graduates. Continuing education and a peer support network were also suggested as a means to support NPs in relation to their concerns about opioid abuse, misuse, and diversion. Continued highlighting of controlled drug and substances knowledge development opportunities are important continuing education opportunities that should be made available. Additionally, for NPs working alone in smaller and remote communities, safety practices need to be explored and implemented.

4.10 Chapter Summary

From the scoping review the themes identified were: preparing to practice; prescribing patterns; regulating prescriptive practice; fearing reprisal; and avoiding addiction. From the study, the three themes identified were: learning to prescribe, gaining competence and confidence; and experiencing concerns for personal safety. These themes indicate some consistency of what has been presented thus far in the literature. These comparisons do indicate experiences are common for NPs across various countries as they prescribe opioids in practice, especially in primary care.

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5.0 Manuscript Three

Nurse Practitioner Opioid Prescribing: Decision-making and Integration into Practice

Prepared for submission to Canadian Journal of Nursing Research

5.1 Relationship of Manuscript Three to the Dissertation

This manuscript presents a focused analysis of the elements that influence decision-making by nurse practitioners who prescribe opioids in primary care clinical settings. Decision-making is a combination of knowledge, experience, and skill. Several resources are available to nurse practitioners to support their interactions with clients that require pain management concerns. Analysis of the interview data identified the following themes: negotiating practice autonomy boundaries, clinical practice guidelines, and retribution from authorities.

5.2 Abstract

Nurse practitioner (NP) clinical decision-making involves a combination of experience, knowledge, and skill. NPs make critical decisions daily to assist clients with their healthcare needs related to pain management and the prescription of opioids. Although some nursing and allied health theories exist to describe nurses' decision-making process, few have explored the decision-making practices of advanced practice nurses with opioid prescribing authority.

This study used the qualitative interpretive description approach to explore what elements influence decision-making when prescribing opioids to clients. The sample for this study was drawn from the population of NPs within a western Canadian prairie province. Twenty-one NPs consented to participate in telephone interviews. The interviews followed a semi-structured format. The data obtained was uploaded into the qualitative software program NVivo 12 to perform a constant comparative analysis of the data to identify themes and a thematic analysis of the findings.

The themes developed from the data were: negotiating practice autonomy boundaries, clinical practice guidelines, and retribution from authorities. The paper concludes with recommendations for further research on utilizing opioid prescription contracts, applying contracts to health records, and employing NPs in harm reduction clinics.

Keywords: Opioid crisis, nurse practitioner, decision-making, clinical practice guidelines, prescription review program

5.3 Introduction

Nurse Practitioners (NPs) are valued members of the healthcare team and contribute to increasing the access of Canadians to primary care services in their communities. The practice of NPs has become well integrated into rural and remote communities and, to a lesser extent, in urban healthcare facilities. Clinical practices with interdisciplinary collaborative teams composed of physicians, nurses, NPs, and other healthcare professionals are reported to be the best model of care, yielding better patient outcomes and management of illness, injury, and disease processes (Canadian Institute of Health Information, 2021).

In 2012, the Government of Canada amended the Controlled Drugs and Substance Act, allowing the NP prescriptive authority for drugs included in this legislation. According to the New Classes of Practitioners Regulations, NPs are authorized to prescribe all controlled drugs in Canada except for opium, coca leaves, anabolic steroids, and testosterone (Government of Canada, 2012a). To date, all provinces and territories have amended their provincial legislation and nursing regulations to reflect the inclusion of prescribing authority for controlled drugs and substances by NPs (Staples et al., 2020).

Canadian NPs have been able to prescribe controlled drugs and substances for up to 12 years. However, the literature about NPs who prescribe controlled drugs and substances remains limited from a national and an international perspective. One concern that supports the need for growth in this body of literature is an exploration to understand of the decision-making process used by NPs as they prescribe opioids to balance pain management considering the opioid crisis and the possibility for abuse, misuse, and diversion of this class of medication.

Nursing literature provides limited information or studies on the decision-making process used by NPs when prescribing opioids. An understanding of the decision-making processes used

to guide prescribing practices of NPs is needed to discover the quality of prescribing practices and accountability of the profession. This paper will present the findings from a research study exploring the experiences of NPs who prescribe opioids in primary care clinical settings. The data analysis provides a thematic insight into decision-making in prescribing opioids and concerns for the abuse, misuse, and diversion of opioids.

5.4 Background

The authority to prescribe opioids in clinical practice has expanded the clinical care that NPs can provide and assist in supporting clients with pain management concerns. Clients are better able to receive their care without seeing multiple practitioners and potentially delaying treatment. The flexibility of the schedule for time allotments with clients makes the NP a valuable member in a collaborative work environment allowing for increased practice options for palliative care, rheumatology, acute care surgical units etc.

However, the prescription of opioids involves concerns for associated risks. The increase in prescriptions of these drugs has contributed to the increased potential for addiction, overdose, and accidental death. Although opioid medications have an essential function in pain management, this class of medication has a high potential for addiction. In 2016, the number of opioid-related deaths, especially those related to the synthetic medication of fentanyl, initiated the announcement of a public health emergency in the province of British Columbia and declared an epidemic by the Public Health Agency of Canada (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2022).

Since the opioid crisis was declared, federal and provincial governments, and the associated health agencies, have been engaging with healthcare providers to meet the needs of patients with opioid addictions. One crucial approach has been the increased focus on the

awareness of evidence-based prescribing approaches, including the use of clinical practice guidelines and provider-client opioid prescription contracts (Busse et al., 2017).

Many elements influence healthcare providers' in decision-making prescribing of opioids in their clinical practice. The decision to prescribe or not prescribe opioids can be challenging for NPs. NPs need to recognize that decision-making when prescribing opioids is not a stagnate process. Instead, the process is supported by guidelines, mentorship, and continuing education (Cader et al., 2005).

Some clinics select which clinician, physician, or NP, will be involved in prescribing opioids to clients that present to the clinic for treatment (Parker-Tomlin et al., 2017). All or some of these limitations may affect the decision-making process needed by the NP to prescribe opioids (Cader et al., 2005). However, the NP has resources available to them, such as clinical practice guidelines, contracts, and the protection of the Prescription Review Program in Saskatchewan, which provides a responsibility for the client and the NP's licence associated with the prescription (Busse et al., 2017).

5.4.1 Canadian Opioid Crisis

During a global opioid crisis, Canada is the second-highest consumer behind the United States for opioid drug use per capita globally (Canadian Institute of Health Information, 2017). Pain is the most common reason Canadians seek medical attention with one out of every five adults diagnosed with chronic pain (Schopflocher et al., 2011). In 2019, approximately 14.2% of Canadians used opioids for medical and some non-medical reasons (Hatt, 2022). Less than half of these Canadians reported the use of opioids for non-medical reasons (Hatt, 2022).

Opioid-related deaths are recorded as either accidental toxicity or intentional (suicide) in Canada. Prior to the COVID – 19 pandemic, the approximate death rate due to opioids was 7 per

day. During the first nine months of the 2021 calendar year, the death rate due to opioids was approximately 20 per day (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2022, p. 5). Most (88%) of these deaths occurred in British Columbia, Alberta, and Ontario (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2022, p. 6). However, jurisdictions such as Saskatchewan and the Yukon are also seeing rates increase (Special Advisory Committee on the Epidemic of Opioid Overdoses, 2022, p.6).

Canadians obtain opioids legally by prescription or illegally from the street, which remains a significant concern (Hatt, 2022). Opioids, taken as prescribed, are adequate to reduce and manage pain. When opioids become misused for the sense of euphoria or ‘high’ drug dependency and addiction become a concern (Canadian Institute of Health Information, 2019, Hatt, 2022). Opioid-related abuse has led to a profound economic impact of financial resources and increased professional resources for emergency medical services, including ambulance and emergency room visits, hospitalizations, and opioid-related resuscitation (Canadian Institute of Health Information, 2018b; Hatt, 2022).

5.4.2 Decision-Making

Most theorists suggest clinical decision-making combines knowledge, skill, and experience (Brykczynski, 2009; Spross & Lawson, 2009). Decision-making concerning prescribing opioids is not perceived as a linear process since diversity in symptom presentations is unique to the individuals pain experience. Clinical decision-making by NPs is an element of every patient encounter. Clinical decision-making is a complex process that is required to be completed within the limited amount of time allocated to client-provider interactions and has been documented as sometimes occurring before all relevant information is obtained by the healthcare practitioner (Chinn & Kramer, 2008; Peate, 2006; Thompson & Dowding, 2009).

The Cognitive Continuum Theory is one approach to understanding how clinical decisions are made. The theory identifies the practitioner as constantly moving from stage to stage with their clients as the center of care (Hammond, 1980). Hammond's (1980) main philosophical claim for the Cognitive Continuum Theory is that learners are capable of analytical and intuitive cognition. This descriptive theory presents two significant concepts. First, analytic and intuitive thinking are not isolated and overlap. Second, there is a relationship between the degree of accuracy of the task, such as prescribing opioids, which requires a high degree of accuracy, and tasks are described as ranging from ill-structured to well-structured (Hammond, 1980).

Two studies from the United Kingdom have utilized this theory to examine clinical decision-making for prescribing by nurses with patient scenarios (Offredy et al., 2007) and in studies on general decision-making by nurses (Cader et al., 2005). These two studies used scenarios to examine a problem-based learning approach to increase the ability of nurses to use a framework for clinical decision-making. The Cognitive Continuum Theory contributed to understanding the decision-making processes for nursing in the clinical arena. However, neither study examined the decision-making process of NP prescribing practices.

5.4.3 Clinical Practice Guidelines

Canadian NP prescribing practices are informed by 'The 2017 Canadian Guideline for Opioids for Chronic Non-cancer Pain' (Busse et al., 2017). The guideline document contains recommendations for prescribing and tapering opioids and information on screening for a potential opioid addiction before prescribing opioids. The authors of the guidelines also encourage the consistent practice of urine drug screens, opioid prescription contracts, prescribing tamper-proof formulations, and medication patch exchanges for fentanyl. Co-prescribing

naloxone kits are also strongly encouraged.

In 2017, the clinical application of the guideline drastically reduced the maximum daily dosing of morphine from 200 morphine milligram equivalents (MME) to 90 morphine milligram equivalents. Although the guideline provides clear directions for tapering of opioids for chronic opioid users, tapering may result in addictive cravings and chronic opioid users may turn to secure their supply of opioids through illegal means to obtain one-time use drug levels of consumption (Busse et al., 2016).

One additional resource for practice is ‘The Opioid Manager’ tool. They were created to assist all experienced and inexperienced prescribers with a checklist for use before initiating therapy for opioid-naïve clients (Busse et al., 2017). Opioid naïve clients present unique challenges for prescribing opioids. Optimally, the practitioner should complete a full assessment of the opioid-naïve client and the area of pain and discomfort. The assessment should include a medical, surgical, social, and mental health history. History taking for the social and mental health component is made to identify potential contributing concerns such as alcohol use, depression, or self-harm. The assessment process should also ensure that all diagnostic testing has been initiated or completed with appropriate referrals to a specialist as indicated. Opioid naïve clients should be started at the lowest possible dosage and dispensed a minimal number of pills or patches. By prescribing the lowest dosage and dispensing the minimal amount, the practitioner maintains frequent follow-up appointments and continues to assess for the need to treat the client with opioids. This practice may also benefit clients with a potential or history of substance use and abuse.

5.4.4 Prescription Review Program

In Saskatchewan, in collaboration with the College of Physicians and Surgeons,

Saskatchewan College of Pharmacy Professionals, College of Dental Surgeons of Saskatchewan, and the College of Registered Nurses of Saskatchewan (formally the Saskatchewan Registered Nurses' Association), has established an educationally based program to monitor for inappropriate prescribing of all controlled drugs and substance by NPs in the province (SRNA, 2019, 2020). This program is not meant to be punitive, but rather to inform NPs about possible inappropriate prescribing practices, such as client double doctoring to obtain needed amounts of opioids to manage access to a consistent supply of opioids. Prescription monitoring programs are also found in British Columbia, Alberta, Manitoba, Newfoundland and Labrador, and Nova Scotia (Canadian Centre on Substance Use, 2015). The province of Ontario has implemented a Narcotics Monitoring System (NMS) where all pharmacies must submit information regarding dispensing opioid prescriptions that are handwritten versus electronically transferred prescriptions submitted through electronic medical record systems (Ontario Health, 2012).

5.5 Methods

This qualitative study used the methodology of interpretive description to understand the elements believed to influence the decision-making process of the NP when prescribing opioids in primary care settings. Interpretive description is a method of inquiry that can be used when little is known about the phenomena of study and fits in the exploration of applied clinical science problems (Thorne, 2016).

5.5.1 Setting

This study was based in the western Canadian province of Saskatchewan. The data was collected in 2019, prior to the COVID-19 pandemic. The clinical care setting chosen for this study was primary care community-based clinics, as this clinical practice area often encounters requests for opioid prescriptions for pain management.

5.5.2 Sample

The population of participants to obtain a sample for this study was accessed through the provincial regulatory body registered roster of NPs (n = 231) (Saskatchewan Registered Nurses' Association, 2017). The actual population from which the sample of participants was obtained was restricted to the 183 NPs who indicated on their annual registration that they would be willing to receive information regarding research studies. These 183 NPs were sent information regarding the study and a link to the participant recruitment survey.

A total of 65 responses were submitted from the survey. Three surveys were incomplete and removed from the data. Thirty-five respondents indicated in the survey that they would be open to participating in an interview and provided their email addresses for the researcher to contact them. Only 21 respondents replied to the email invitation to set up a time and date for a telephone interview.

5.5.3 Participant Recruitment

Following ethics approval, the participant recruitment survey was emailed to NPs from the regulatory body. A modified Dillman method was used as an approach to maximize the number of respondents (Dillman et al., 2014). Sixty-two complete surveys were returned. The recruitment survey was used to identify NPs who prescribe opioids and invite these NPs to participate in an interview about their experiences with prescribing opioids. Of the 62 respondents, 57 indicated they prescribe in their practice setting. Twenty-one participants responded to an email to set up a date and time for the interview.

5.5.4 Data Collection

All interviews began by reviewing the purpose of the research with the participants, obtaining informed consent to participate, and agreeing to an audio recording of the interview. A

semi-structured interview guide with open-ended questions initiating the conversation (Appendix H). Probing questions were asked of some participants for clarification of thoughts.

5.5.5 Data Analysis

Following each interview, an externally hired transcriptionist transcribed the audio-taped recording verbatim. The transcriptionist signed a confidentiality agreement prior to receiving any data (Appendix G). The researcher read each interview transcription while simultaneously listening to the audio-taped interview. This was done to fully immerse the researcher within the data and review the transcripts for any omissions. Interview data was uploaded in NVivo 12 software to assist with coding, sorting, and organizing data into categories. These categories were later grouped into themes. Field notes and reflective journaling commenced before, during, and after each interview and were also incorporated as data and analyzed.

Thorne (2016) suggests that in studies using interpretive description, the sample size represents the quality of the perceptions acquired to address the research question. In this study, data collection continued until the researcher noted no new variations within the collected interview data. Following the completion of the first eighteen interviews, an additional three participants were interviewed to ensure no new data or new information would arise, resulting in the need to continue participant recruitment.

All interview data were analyzed using the borrowed technique from a grounded theory known as constant comparison analysis (Glaser & Strauss, 2006; Thorne, 2016). In constant comparison analysis, all data is reviewed line by line to select words or thoughts to create open codes. The codes are then grouped into small, building large categories until themes are identified (Glaser & Strauss, 2006; Thorne, 2016). The researcher searches for relationships amongst the codes and themes, exploring a back-and-forth relationship between and within the

themes. When using the method of interpretive description, the researcher is constructing new data, not ‘giving voice’ to the participants but actively interpreting the participant’s experiences to construct new meaning and knowledge (Thorne, 2016).

5.5.6 Ethics

Ethics approval was obtained from the University of Saskatchewan Advisory Committee on Behavioral Research Ethics Board (Appendix A). The College of Registered Nurses of Saskatchewan (formally the Saskatchewan Registered Nurses’ Association), reviewed and approved ethics before to sending the emails to potential participants (Appendix B).

5.6 Findings

Most of the participants were female. The most common age group was between 31 to 60 years. The most significant number had practiced between 11-15 years, and all participants indicated they prescribed opioids in their practice. Almost half of the participants were in a rural setting; however, all participants practiced primary care.

Table 5.1 - Participant Demographics

Demographics	N = 21	Demographics	N = 21
Gender	n	Prescribe opioids in practice	n
Female	18	Yes	21
Male	3	No	0
Age group		Location of Practice	
20 – 30 years	1	Urban	8
31 – 40 years	7	Rural	9
41 – 50 years	4	Northern/Remote	4
51 – 60 years	5		
61 plus years	4		
Years of practice		Practice Setting	
0 – 5 years	6	Primary Care	18
6 – 10 years	5	Acute Care	0
11 – 15 years	7	Long Term Care	0
16 – 20 years	2	Other:	3
20 plus years	1		

Understanding the elements influencing the decision-making process was vital for participants when prescribing opioids for clients. Often the decision-making process was described to be focused on the decision being made to continue with pain management using opioids. In contrast, in other client interactions, the decision to prescribe opioids was complex and multifactorial if other health concerns were present that restricted opioid use. It is essential to recognize that the outcomes of past decisions influence provider future decisions. Most decisions made in the past that have either a positive or negative outcome are often used as learning that informs future decisions. Data analysis identified three themes influencing decision-making: negotiating practice autonomy boundaries, clinical practice guidelines, and retribution from authorities.

5.6.1 Theme One: Negotiating Practice Autonomy Boundaries

Most decisions made by the participants in the clinical practice were based on the client's individual needs. However, decision-making also included the participants' practice environment and time schedules allotted for client appointment. This theme describes the elements from the data associated with the legislated practice autonomy of NPs to prescribing opioids and the negotiating of boundaries for prescribing that influenced the decision-making process of the participants in their clinical practices.

5.6.1.1 Practice Environment. Participants were employed in urban, rural, or remote communities. Some of the participants worked within a multi-practitioner clinical practice. Some clinical settings, mainly urban and some larger remote centres, included multiple physicians, NPs, pharmacists, and additional support staff, such as lab technicians. However, many of the participants were employed in community-based settings with only one or two other colleagues in either the discipline of medicine or nursing. A few participants worked as a lone provider in a clinic with a visiting colleague, usually a physician, once or twice a week.

For participants employed in clinics with more than one other colleague, collaborative decision-making was completed to establish consistent prescribing boundaries within the practice when prescribing opioids. For some participants, it was decided that the physician would see all clients requesting opioids. In other practises, the physicians were happy to share the responsibility with the NPs or give it up completely. Others reported needing to negotiate their clinic responsibilities for opioid prescribing.

“It was an unwritten policy, and I cannot remember if it might have come to be written because of problems, but it was a mutual understanding among the providers that opioids and narcotics...any controlled substance would be managed by the primary provider and Nurse Practitioners. The other Nurse Practitioners they did have more patients that these were their patients, they would see so they would prescribe it more” (Participant 16).

One participant shared about foreign trained physicians that recently relocated to Saskatchewan, *“not Canadian trained and they seem to be extremely worried... they say I won’t see you but go see somebody else in the clinic, they just don’t see them at all”* (Participant 7).

Another participant mentioned, *“the physician and I work really well together so that if she sees a patient that I regularly see, she will come over to me and say ‘hey, what were you thinking with this?’ So, we have a really good relationship, and our patients can flow back and forth. It’s not a big deal to us”* (Participant 1).

5.6.1.2 Collaborative Decision-Making. Many participants were fortunate enough to work in collaborative healthcare settings where clients can see any of the available providers. One participant described the collaborative arrangement process.

We did a lot of talking. Where does this go, do we want to do this, is this... then ultimately, I think we work through our angst together and said you know well, here we got a program and we talked to one of our permanent physicians. We kind of said this is

the process and we made a process, and this is... when people come in, this is with a contract, this is what they're told, this is what they have to do so that everyone is consistent and then it takes, it makes it a lot easier (Participant 7).

A collaborative agreement for service to clients requiring opioid prescriptions is not meant to be rigid. However, these agreements set out standard guidance to providers and is a process for the providers to follow. For example, everyone receiving an opioid prescription is required to sign a contract agreeing to only obtain opioids from one provider and agreeing to random urine drug screens. These urine drug screens were one way to ensure that the client the prescription is written for is consuming the opioids.

For some participants, a mutual agreement was made indicating that within the clinic setting only one group of providers, physician, or NPs, were indicated as a client's sole prescriber. The sole practitioner route of a physician, mainly prescribing, worked best in remote settings or where clients were observed to not return to their primary practitioner. As one participant stated:

I can't do a um narcotic agreements with patients because they're not coming back to me as their primary prescriber, so do I do a urine drug screen, I do not...like who is going to follow up on these agreements. That's why we always send them to the physician so that they're consistently with only one or the other and if you make an agreement with Dr. A. or Dr. B. you go back to them (Participant 13).

5.6.1.3 Individual Decision-Making. Deciding to prescribe opioids in their primary care setting is the first step for many participants. There was a mixed reaction to the new authority, with some participants in favour, and others a bit guarded. The more experienced participants with years of clinical experiences, though prescribing was a valuable addition to their scope of practice. Experience was perceived as invaluable. These participants felt that making these

decisions with clients would be part of their practice. Most of the participants were aware that they could prescribe opioids in their clinical practice; however, some of the participants needed to balance the authority of writing prescriptions for opioids with a need to explore other options for pain control versus prescribing in this specific class of drugs. Although many participants mentioned some reluctance to prescribe, they were grateful to have the authority to practice to full scope. *“I think this is a big jump for NPs, and we can be well utilized in this role”* (Participant 5). *“I totally think that... to work to our full scope, it is essential to be able to write these prescriptions. I do not want to go to a physician in a subservient visit role and say, can I please have this for my patients?”* (Participant 21).

One participant mentioned that when deciding to prescribe opioids in practice, *being prepared to set clear boundaries and limits. That is the hardest bit, so once they walk out the door, I feel satisfied that I have given them that information, and they choose to do otherwise, I can't help that* (Participant 18).

Participants clarified that if the client were found to misuse or divert their medication to other people, they would no longer provide the patient with opioid prescriptions, and this information was provided to the client within the opioid prescription contract.

Most participants agreed, *“I make a contract for all of them, so they know the guidelines”* (Participant 3). The independence of some participants in practice did allow for a second chance. As described by the participants, many of the practice settings commented on a collaborative approach for prescribing opioids, to follow a similar process for all practitioners in the clinic. This allowed for consistency for the clients if they were to move between practitioners.

5.6.1.4 Time and Resources. Deciding to prescribe opioids takes time. These client interactions cannot be rushed. Following a full assessment, diagnostic testing and reviewing of results may be required. The client may need other therapies, such as physical or massage

therapy, over-the-counter medication trials, so the clinical encounter time frame for these concerns needs to be lengthened. With the increased time allotment for NP client visits, participant 12 noted, *“I think NPs are just perfectly positioned to do it because it takes a long time ... so you cannot be kind of driven by volume in your practice... you have got to be willing to spend the time and bring people back frequently.”* Some participants were employed on a casual basis or in a rural or remote region where they may work a two week ‘on and off’ rotation, *“I kind of given these issues to the doctor to try and create ... more consistency”* (Participant 13)

It is crucial to have honest, realistic expectations. The client-practitioner relationship centers around discussions which may be unpleasant. Participant 9 shared a conversation with a client about their chronic pain expectations.

We had a discussion about - you're never going to have zero pain. What are your expectations? This is chronic. Well, my expectation is to have no pain. Well, that's never going to happen, I'm sorry. And then there was discussions about the mental health component.

Pain affects the client in many ways, not just physical but also psychologically.

Participant 18 spoke of the support the client needs to journey through the experience of acute or chronic pain.

You need to walk the journey with them through the discomfort, be honest, warn them it is coming...plan some solutions around when it is happening. Tell them to come back sooner if they need to because you need the buy-in for it to be effective. You have got to go at their pace; you have got to know them; you must meet them halfway so that you are not compromised. And be prepared to up the dose again and try again later.

Many of the participants expressed that NPs were the right healthcare personnel for the task of prescribing opioids in practice. *“This is a big jump for NPs, and we can be well utilized for the role”* (Participant 5). Most of these participants made statements regarding the time and resources needed. Being systematic in their approach to every patient was considered essential to avoid omissions in the process. Even though many participants were willing to assist the client, time allotment of appointments created challenges for some other participants. A few participants were being scheduled for 15-minute appointments, making it challenging to address these concerns, do the screening, and the education related to opioid prescribing.

Most participants noted that opioids were not considered the first line of treatment for pain management. However, if an opioid prescription was to be initiated, some participants reported they prescribe with an exit plan to alleviate the suffering of pain by clients.

The study participants noted that prescribing practices between physicians and nursing resulted from the differences in the training models. Physicians are trained in the illness model. In comparison, NPs and nurses are trained in a holistic model where a person with chronic pain is considered to have an optimal state of wellness in relation to their pre-existing health problems.

One of the significant challenges of the NP role is to assist the client with self-reflection to identify and manage some aspects of their care. A client’s self-reflection may include exercise and dietary changes to assist with weight loss. Attending self-help groups, such as Alcoholics Anonymous or Al-Alon, to become aware of addictive personality traits is another example, as well as being open to mental health counselling to deal with past or present trauma anxieties. A prescription of any medication category always includes additional input from the client. Participant 12 stated, *“it just takes time and many kinds of creative ability, maybe, to make a*

good plan for somebody around all this stuff...so I think Nurse Practitioners, this is their jam.”

5.6.2 Theme Two: Clinical Practice Guidelines

Many participants frequently utilized the resources from their NP education programs for developing opioid contracts and help with initiating and adjusting dosages. Participant 16 stated:

I like the Rx Files as a guide. They're more useful to me now that I know the background knowledge, right and you're knowing what to look for. I'm thinking as a new grad and I loved them as a resource. I find the McMasters is really good for chronic pain and I feel there's like that non-cancer pain, there's lots of guidelines out there about prescribing.

Participant 1 responded, “*Every time I do an opioid, I check the PIP because I don't want multiple prescribers.*” While Participant 18 mentioned concerning contracts, “*I did the whole opioid contract with them so that they realized that we weren't just talking. That it was a commitment on both of our parts to be helpful.*” Another participant stated, “*yes, everybody gets a contract; they have to get a contract*” (Participant 7).

Many participants utilized guidelines, mentioning the McMasters Guidelines and those from the Rx Files. The less experienced participants stated they always refer to the guidelines, but still need help initiating and tapering. Participant 8 noted, “*feel just with the experience, I feel more comfortable with it. I think it is a combination though of education and experience. Like I said, I have really good support.*” Some more experienced participants felt very much like novices when prescribing opioids, “*I still consult with the pharmacist and doctors about what the dosages and what I should be doing*” (Participant 20).

This experienced participant mentioned that guidelines are just guidelines, and the population a NP looks after may dictate where to start with pain management therapies.

I am going to admit; I probably get to opioids a lot quicker because other therapies are

just too risky. In my population, NSAIDS is not an option because of their poor kidneys, and they have already got thin GI mucosa, so are you going to risk GI bleed...I do not really have any concerns because as long as I am applying evidence basis and, you know, considering the guidelines...the guidelines are not a cookbook. They are not; they are a guideline; working with this population, you gotta get used to living in the grey

(Participant 9).

5.6.2.1 Learning to Use Prescribing Contracts. Many experienced participants felt comfortable setting boundaries upon the first couple of visits with clients in the primary care setting. An opioid contract is reviewed with the client. These contracts are a signed agreement between the client and the prescriber. The contract informs the client of the amount of medication that will be dispensed at one time, how often the client may be able to pick up refills, and who in the clinical setting would be refilling this prescription.

Some opioid contracts additionally state the pharmacy where the prescriptions will be filled. Opioid contracts serve as a safety net for the client as well as the practitioner who signs the prescription. Contracts should be explained and signed following the first visit and reviewed at every visit thereafter to ensure it remains up to date.

Many of the participants expressed following the explanation and signing of a contract if the client is considered to be well informed that when the contract is broken, participants may or may not support a second chance with an extension to the original contract or an additional contract. With a supportive group of colleagues surrounding the participants, they suggested that they were able to successfully coach clients as to why opioids may not be the right choice for them. Participants noted that communication was vital with individuals requesting opioids for pain management, especially those who may be seeking opioids. Participant 7 stated, *“and we are going to have talks, lots of talks. I think communication is the number one thing.”* The more

information given to the patient, the easier it was to choose which route to take. Communication was communicated to be important for the patient and the providers involved in their care. One participant (19) commented,

I think being firm in your beliefs in your prescribing practices. It isn't easy all of the time because some of the people that are using our narcotics are not the kindest people in offices or they're manipulative. Its sometimes easier to just give them the script they're asking for. That is not how I like to prescribe them, and I think being consistent and fair and truthful, is probably what served me the best in prescribing them.

Communication is critical, and primarily when a medication reduction is implemented. A medication reduction is implemented to reduce the dose and the frequency of opioids the client uses. Reduction of medication is a slow process for the tapering of opioid use, especially if the client is a chronic user or has a previous addiction history. The reduction of opioid use can precipitate unpleasant opioid withdrawal symptoms. Participant 18 noted,

Okay, so you made it through 3 days, and you are okay, and just you know, walk that journey with them through the discomfort, warn them it is' coming...plan some solutions around when it is happening, tell them to come back sooner if they need to because you need the buy-in for it to be effective, right? ... You have gotta go at their pace, know them, meet them halfway in some way where you are not compromised. Furthermore, be prepared to increase the dose and try again later.

NPs noted that when the communication is clear and expectations or boundaries are understood, a patient-practitioner relationship is established. For this to occur, “*I expect you to be truthful to me, and I expect me to be truthful to you*” (Participant 19).

Many participants mentioned using contracts more for chronic opioid prescribing than

acute prescriptions. One participant noted their physician colleague would discuss the contract with a client prior to starting them on an opioid, but stated, *“that is for like after the episodic pain management, if she is going to continue with the opioids then she will implement the contract”* (Participant 1). Another participant mentioned they do not make contracts as many of their clients are very episodic. *“I can’t do an uhm narcotic agreement with patients because they’re not coming back. to me as their primary prescribe. So do I do a urine drug screen not...like who will follow up on that agreement”* (Participant 13). For some, the lab services to process urine drug screens are a significant challenge, *“The only way to do a urine test here is if I book somebody between the hours of 08:30 am and 2:00 pm on Tuesday, Wednesday, or Thursday. Well, nobody’s life is that specific”* (Participant 21).

Another challenge noted by many rural and remote participants at both ends of the practice spectrum was finally implementing the electronic health record and access to the provincial Prescription Information Program. *“So now it is pretty easy for me to see what’s happening. I mean, when we were paper charts, it took me quite a while to push to get PIP even so that I could prescribe other things for people. To me, you can’t always take a person’s word on something”* (Participant 21). The province of Saskatchewan has yet to implement an electronic record that will be universal across the province. However, Saskatchewan Health has an eHealth Record Viewer that houses some records for everyone with a valid health card but missing from the medication tab of this electronic record, and the PIP program, is a spot to upload an opioid contract.

The borders of Saskatchewan are open, and clients will come and go freely across borders, sometimes looking for opioids. *“So, if it’s somebody from X Province, uhm, and they’re you know insisting, I will say well where did you last get your prescription filled? I will straight*

up phone the pharmacy and say here's the deal" (Participant 21). This more experienced participant also noted, *"the other thing I've had with PIP, and I have informed them on a number of occasions, it would be nice to have reciprocal agreements along the border. Hence, I peak in the X Province system,"* calling is time-consuming and *"even just to help people access to care"* (Participant 21) was noted to be a challenge with living close to provincial borders.

5.6.3 Theme Three: Retribution from Authorities

All participants agreed that retribution for mismanaged prescribing practices was top of mind. Fear of retribution concerns included the perception of poor prescribing practices from the local police or the licensing body.

5.6.3.1 Local Policing Authorities. Some participants reported a sense of nervousness and a feeling of being anxious due to an unexpected visit from the local police and authorities. Participant 18 said, *"it is tricky business, it makes you nervous, and it does... there are ramifications to it. You know, with the RCMP show up with four bottles of pills with your name on them. It influences the way you deal with the patient next time."*

5.6.3.2 Monitoring Prescribing. Many participants saw the provincial prescription review program as a favourable safety net. Some participants did initially fear correspondence from the prescription review program as a reprimand for their decision-making for a client, but also realized the benefit for the prescriber.

It was scary off the hop when you get the letter from, you know, somebody saying like you've been involved in multiple prescribing situations. Can you explain why? But as I work more, I have learned those are not always bad. They are just safety things that are in place, and if you can explain yourself, they're really not... they are not a bad thing" (Participant 19).

One experienced participant noted that the newer physicians also have very different

prescribing habits. *“And so now the new group of doctors, they really tighten the prescribing of opioids and really following, you know, guidelines as to who should be on them”* (Participant 13). An experienced participant shared that working with, *“not Canadian trained physicians, they seem to be extremely worried about doing anything with narcotics that might get them in any trouble. So, then they say I won’t see you but go see somebody else in the clinic, they don’t see them at all”* (Participant 7).

Decision-making is influenced by the fear of retribution from the licensing body.

Participant 1 summed it up, stating, *“it is frustrating because I want to help them [clients], but I don’t want to put myself in a bad position where my license is on the line...”*

5.7 Discussion

Decision-making in client care is a complex process. Decision-making is a combination of knowledge, experience, and skill. Understanding how decisions are made when prescribing opioids in clinical practice has not been well researched (Cader et al., 2005). Therefore, this study was performed to contribute to nursing knowledge by exploring the experiences of NPs who prescribe opioids in primary care settings: where the themes constructed from the data analysis around the participants’ experiences prescribing opioids and decision-making when prescribing opioids. Both major themes involved concerns regarding use, misuse and diversion related to the opioid crisis.

The participants of this study brought forward the need to identify and set clinical boundaries when prescribing opioids in their clinical settings. For the participants employed in collaborative interprofessional environments, developing practice standards for opioid prescribing within the clinic ensured consistency among providers and patient information provided (Fong et al., 2020).

The findings from this study are very similar to studies about NPs practice boundaries performed in Washington State (Kaplan & Brown, 2004 & Kaplan et al., 2010). The ability to work in a collaborative environment was found to have supportive experiences when prescribing opioids and reported benefits for both the practitioner and clients. Kaplan et al. (2010) identified that communicating the processes of opioid prescription writing was beneficial. When clients were informed about the rationale for the processes involved in opioid prescribing, clients understood how the collaboration among the group of providers within a clinic would assist them to address their pain management needs. Communication about opioid contracts enabled the patients to access care within guidelines that supported and monitored prescriptions within negotiated boundaries.

NPs are known to work in communities with vulnerable populations and integrate a large amount of health promotion and prevention education and programming into their clinical practice. However, not all NPs are comfortable caring for client concerns related to addiction and withdrawal. A team approach to care provides support and mentorship to support NPs in working with these populations. According to Parker-Tomlin et al. (2017), the best outcome for the client is to have a team approach to care by skilled healthcare professionals in a ‘shared care environment.’ Parker-Tomlin et al. (2017) stressed the importance of a supportive work environment. These researchers recommended that all decision-making in health care be supported with a team approach to improved care quality. Many participants from their study suggested utilizing available resources such as physicians, NP, and pharmacist colleagues during the decision-making process (Offredy et al., 2007; Parker-Tomlin et al., 2017).

In the current study, all participants identified that clinical decision-making is a combination of knowledge, experience, and skill, especially when prescribing opioids in clinical

practice. Many participants with more practice experience with clinical decision-making, had the advantage of more decision-making knowledge that was transferable to prescribing controlled drugs and substances. Research supports this advantage for more experienced providers and additionally suggests that experience assists in the development of pattern recognition, which may also be beneficial when making decisions concerning opioid prescribing (Cader et al., 2005, SRNA, 2019).

NPs need to demonstrate evidence-based prescribing practices, including the use of opioid prescription contracts for the management of acute and chronic pain (Busse et al., 2017; Fong et al., 2020). Many of the participants from the study reported ‘always’ checking the electronic health record and the Pharmacy Information Program before to prescribing any medication, which is best practice.

Confidence and competence are paramount in the decision-making process when prescribing a class of medications that have addictive properties (Craig-Rodriguez et al., 2017; Fong et al., 2016). Fong et al. (2020) reported that NPs are more confident prescribing opioids when a known diagnosis is available, evident in the level of comfort when providing medication refills. However, initiating opioid prescriptions or managing a client with addiction was suggested as more of a challenge (Fong et al., 2020; Kaplan et al., 2006; Linas et al., 2021). This may be more prominent when dealing with individuals with drug seeking behaviours or addictions. When making decisions that impact harm reduction, there is a need to be flexible in the decision-making process.

A few participants practiced in border communities where clients from both provinces may access primary care clinics to address their healthcare needs. Obtaining health information about clients in these communities was difficult, as medical records might not be complete or

contain information about opioid use or prescription contracts (Busse et al., 2017; Moore, 2019). There is a need for cross border sharing of health records and uploading opioid contracts on both provincial Pharmacy Information Programs to avoid the potential for obtaining opioid prescriptions from more than one provider.

An advantage for many participants was the ability to organize longer appointments and discuss resources for clients struggling with addiction. Health promotion and disease prevention education is the foundation of primary care services and NP practice. A few of the participants mentioned the need to offer clients with addiction to opioids additional attempts when the prescribing contract was broken by obtaining opioids from other providers. Additional attempts were offered to guard against the client seeking illegal and possibly dangerous opioids. The ability to offer harm reduction programming as an element of care was supported by the participants in this study (Moore et al., 2019; Parker-Tomlin et al., 2017).

Participants expressed that the fear of retribution was an element in the decision to prescribe opioids. The study participants stated that all healthcare providers with authority to prescribe controlled drugs and substances are monitored through the Prescription Review Program in Saskatchewan. The participants reported that every encounter for prescribing opioids is open to an inquiry by the Prescription Review Program and that with each prescription written, there was an opportunity to assess provider opioid prescribing practices (Saskatchewan Registered Nurses' Association, 2019, 2020). Although some participants acknowledged receiving correspondence from the review program as a negative experience, several participants perceived the experiences as a positive learning opportunity that informed their prescribing practices (Kaplan et al., 2010; Linas et al., 2021; Moore, 2019).

Fear of retribution was reported in other studies about NP prescription of opioids (Fong et

al., 2016; Kaplan & Brown, 2004, 2007; Kaplan et al., 2010). The findings from the studies by Kaplan et al. (2006) and Kaplan and Brown (2007) suggested that NPs may fear the regulatory bodies and the local drug enforcement agencies perceiving their prescribing practices as improper. Some of the participants from the American study (Kaplan & Brown, 2007) reported that NPs might utilize the ‘scapegoat’ response, indicating they do not prescribe opioids, to avoid writing prescriptions for opioids. This response to protect against regulatory retribution or contributing to opioid addiction and accidental death.

5.8 Implications for Practice

Findings from this study identified the need for clinical practice support to assist new NPs with developing their decision-making when prescribing opioids. Mentorship programs within the clinic environment are known to support NPs in applying opioid prescribing contracts. Other recommendations include advocating for e-health records to support sharing of opioid contracts with other providers and the development of harm reduction clinics that can be staffed with NPs.

The need for nursing schools to explore learning experiences where there might be more opportunities for mentorship in opioid prescribing practice was seen as beneficial. Clinical practice in a clinic environment that advocates and integrates harm reduction approaches, working with pain management specialists, and interactions with consult access programs (Saskatchewan System Flow Center) were perceived as important to support learning to prescribe opioids.

It is important to address the need to advocate for the consistent use of electronic medical records to store opioid prescribing contracts and a means for the contract to be easily located in the system. Electronic record systems should also be used to forward prescriptions to pharmacies

to avoid prescriptions that might not be entered into the system or prescription review programs, especially in border communities.

5.9 Conclusion

NPs encountered challenges in the exploring of the decision-making processes used when prescribing opioids in primary care clinical practice. Decision-making in practice was described as a non-linear process involving increasing experience and application of clinical guidelines to gain competence and confidence. Necessary supports for new NPs included collaborative practices with other NPs and physicians, and available consult services for NPs who work in solo or isolated practises. Educational programs should also explore potential practicum placements that expose students to clients with addictions, the use of opioid prescribing contracts and harm reduction programs.

5.10 Chapter Summary

In this chapter, findings from the data analysis on the decision-making process involved in opioid prescribing were presented. The findings describe how NPs construct knowledge that assists in influencing their approach to opioid prescribing. Based on these findings, recommendations were identified that can be advocated for within the primary care system. The need for future research NPs prescribing opioids in primary care practice settings to explore the challenges of opioid prescribing during the pandemic and the development of NP involvement in harm reduction programs and addiction services.

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6.0 Discussion and Conclusion

This study was guided by the research question: *What are the experiences of NPs who prescribe opioids to clients within the western Canadian Province of Saskatchewan?* This chapter comprises a discussion of the findings from the three manuscripts, the method of interpretive description, study strengths and limitations, recommendations of areas for further research, and a conclusion, followed by a reflection of the researcher.

6.1 Interpretive Description

The methodological approach used in this study was qualitative and the method was interpretive description. Interpretive description is a method that guides the researcher in the constructing of knowledge that has a practical application for clinical use (Thorne, 2016). The sharing of experiences from participants of this study allowed the researcher to assume an active role with the participants, who are key informants. This allows the researcher to interpret and co-construct a thematic interpretation of the current state of knowledge on NP prescribing opioids in primary care settings (Thorne, 2016). New knowledge was created by describing and interpreting the realities shared by participants in an exploratory manner. Exploration of the experiences was socially constructed by the participants sharing their realities and the researcher's interpretation of the phenomena (Thorne, 2016). Understanding the realities is always changing.

Scaffolding is the first process of the interpretive description study design (Thorne, 2016). The scaffolding process assisted the researcher in building knowledge while researching in the field of nursing. A literature review was completed to understand the current state of knowledge, identify gaps in the literature, and contribute to the development of new nursing knowledge. Few international or Canadian articles were found in the peer-reviewed literature about NP prescribing of opioids in primary care. Scaffolding also involved a self-reflection

process where researchers explore and become aware of their biases that may constrain the co-construction of knowledge about opioid prescribing with the study participants.

6.2 Scoping Review of the Literature

The literature review and the current study findings found similar themes surrounding NPs' experiences (prescribing practices, fear of reprisal, and preparing to prescribe). The literature review documented that the educational preparation of NPs, across the three countries represented was at a master's degree level. Practitioners who are writing prescriptions for opioids must have an advanced knowledge base of the potentially harmful implications of this class of medications (Fong et al., 2015; Buckley et al., 2013).

Most authors of the literature presented in the scoping review reported that the NP participants in their studies wrote opioid prescriptions within their practice and described the confidence level with prescribing varied among NPs (Fong et al., 2020; Fong et al., 2016; Kaplan & Brown, 2007). All authors reported that newer NP graduates perceived a lack of confidence in initiating opioids and tapering clients off these medications (Fong et al., 2020; Craig-Rodriguez et al., 2017).

Fearing reprisal, the potential for opioid addiction, and concerns about the opioid crisis were concepts found in the articles from the scoping review and reported to be significant concerns in practice (Fong et al., 2015; Buckley et al., 2013; Kaplan et al., 2010). Some of the study participants were also documented as avoiding the prescribing of opioids in their practices until other pain control modalities were exhausted. This finding is consistent with the findings in the current study.

Limitations from the scoping review relate to the focus on a search of three healthcare databases containing nursing literature, which only found ten articles that met the criteria for the

review. The countries of origin in the studies included the United States, Australia, and New Zealand. Literature from the United Kingdom and England were excluded because articles mentioned 'nurse prescriber' and not NPs. Another limitation could be the exclusion of articles that compared NPs to physicians or physician assistants. The exclusion criteria may have eliminated research articles that might have contributed additional information; however, the primary focus of the study was on NPs and the practice of prescribing opioids in primary care. Recommendations from the authors of the scoping review articles indicated a need for additional research examining the prescribing practices of NPs with this classification of medications.

6.3 Manuscript Two

The second manuscript in this dissertation presented findings related to the experiences of prescribing opioids in primary care settings by NPs. The findings identified similarities with the themes found in the literature from the scoping review: learning to prescribe, gaining competence and confidence, and experiencing concerns for personal safety.

The analysis of the interview data indicated that NPs were provided with education to prescribe opioids either as part of their regular educational program or from a mandatory workshop held by the provincial regulatory body. Many of the participants felt their initial education was sufficient. However, a few participants sought additional training on opioid prescribing processes to increase their knowledge base when caring for clients who have been prescribed opioids and learning to taper or discontinue this medication.

The literature review and the current study identified the need for continuing education for practicing NPs (Buckley et al., 2013; Craig-Rodriguez et al., 2017; Fong et al., 2020; Kaplan et al., 2010; Poot et al., 2017). Continuing education is essential for all practitioners. Assessment, diagnostic investigation, and planning care for clients are based on evidence informed

approaches to care. Clinical guidelines are updated regularly, and providers should stay current and appraised of changing policies and practice guidelines, including potential changes or additions to the drug formulary.

A significant finding expressed by the study participants was the need for ongoing support from colleagues when the participants entered the workforce. Many participants felt the NP educational programs provided knowledge about opioid prescribing. However, practicum experiences offered limited opportunities to apply opioid prescribing knowledge. NPs are not allowed to prescribe independently until after registration as an NP. Although clinical preceptors supervise the NP student client encounters, discussions around prescribing opioids that inform the student application of knowledge might occur sporadically throughout their clinical learning experiences.

Kaplan and Brown (2004) reported that the barriers to mentoring support were more significant for community-based NPs, like the rural and remote participants in the current study. Some participants who practiced as sole providers in a clinical practice voiced a need for accessible mentorship support. For the participants who perceived their work environment as collaborative, their colleagues supported mentorship with prescription writing.

The development of education or mentorship programs for opioid prescribing should involve collaboration among regulatory bodies, educational institutions, and provincial prescription review programs (Dover et al., 2019). Participants supported the development of mentorship programs for NPs, both experienced and less experienced, to learn more about initiating and the tapering of opioids (Perumal & Singh, 2022). Mentorship was also aligned with the goal of continuous improvements to their knowledge, skill, and ability to provide the best level of care for their clients.

6.4 Manuscript Three

Manuscript three findings identified elements of concern that influence decision-making: 1) negotiating practice autonomy boundaries, 2) clinical practice guidelines, and 3) retribution from authorities. An essential part of prescribing opioids in the primary care setting for many of the participants involved negotiating the boundaries of practice among the client care team members. Boundary negotiation discussions were used to initiate a formal process and procedure for prescribing opioids in the practice setting and ensure consistency amongst the members. Many participants perceived this as a benefit to protect against mismanagement in prescribing opioids. However, in studies on opioid prescribing, NPs were reported to have struggled with enacting their autonomy in prescribing opioids, as this element of practice was often restricted to physicians in some clinical settings (Kaplan & Brown, 2004; Kaplan et al., 2010).

The findings of this study suggested that all NPs may need to work to the full scope of practice within the province. Although the participants in the study were prescribing opioids in their practice, some participants reported that they knew of a few employers who restricted this practice by NPs. Scheduling, especially for NPs in contract or part time positions, was one of the main reasons participants may not be prescribing opioids in practice. Variable work schedules could interfere with consistent client-provider follow-up and ongoing pain management care.

Decision-making is a large part of the assessment process for clients with pain management concerns. The participants in this study suggested that *'this is their jam.'* This statement referred to the ability of NPs to set aside an appropriate length of time for assessing of the client on opioids with pain management concerns. Similar to the way NPs approach clients in the management of chronic diseases, clients requesting assistance with pain management and opioid monitoring needs are best be managed by practitioners that are willing to spend the time

needed to deliver appropriate care for these clients. NPs are salaried versus fee-for-service health care practitioners. This employment structure enables the option to book longer appointments, which contributes to opportunities for more wholesome discussion with clients about medications that are being prescribed and their individual plan of care. Participants describe that the length of their appointments, and their focus on health promotion and disease prevention, suggested that clinical encounters well served the care of clients with pain management and addiction concerns with NPs.

One new finding in the current study was how the participants approached care to clients addicted to opioids that used to belong to other practitioners. Some participants felt '*dumped on*' when other practitioners may not have been diligent when prescribing opioids. These clients were reported to present challenging concerns for the number of opioids requested and concerns about the potential for addiction. However, the study participants indicated that the harm that could arise to the client, their families and communities from opioid medications outweighed the challenges. They acknowledged a professional responsibility to engage in care with these clients.

In light of the current opioid crisis, many of the participants wanted to ensure they were doing no harm. Hatt (2022) suggested that NPs worry about doing harm when they prescribe opioids. Opioids are a class of drugs with a high potential for addiction. The development of an addiction to opioids often occurs when prescription dose and frequency is not consistently managed using prescribing contracts and adequate, regularly scheduled client follow up. When opioids are used for a client with acute pain, the mu receptors work to diminish the painful stimuli: however, if the client is not in acute pain, the mu receptors contribute to a cycle of drug liking, tolerance building and potentiate the advancement to the development of opioid addiction.

Decision-making for prescribing opioids in Saskatchewan practice settings are supported

through access to clinical practice guidelines and a prescription review program. These are resources that when used in practice, provide a safety net for the client and the prescriber. Clinical practice guidelines for the prescription of opioids assist the healthcare provider to identify safe pathways for initiating and titrating dosages for clients with acute and chronic pain managed with opioids (Busse et al., 2017). Some of the participants in this study identified using guidelines in their practice, however the guidelines were not reported to be consistently used by the participants; especially in the care of acute, self-limiting pain presentations (i.e., dental abscess, fractured limb). This finding was also reported in the literature, where clients who experience chronic pain were managed with contracts more regularly than clients experiencing acute pain with an observable source for the pain (Kaplan et al. 2006).

Many challenges that were reported in the literature surrounded the initiation of opioid contracts, tapering drug dosages, and follow-up coinciding with opioid prescription refills (Busse et al., 2016). Online electronic health records and access to the provincial Prescription Information Program allows NPs to check a clients prescription profile, which outlines the client's current list of prescribed medications and the prescribing practitioner. These information sources contribute to safer practices for the client and the NP. The provincial prescription review program also supports the management of clients experiencing pain by alerting NPs to occurrences of client encounters where the client has obtained opioid medication from multiple providers.

Fear of retribution was identified to be more prominent in the literature reviewed than in the current study. This may be due to the discipline process followed in other countries for potential investigations improper prescribing (Kaplan et al., 2010; Kaplan & Brown, 2007). The participants in this study suggested receiving a letter from the prescription review program a

form of reprimand for inappropriate prescribing. However, when participants increased their understanding about the purpose of the prescription review program, they began to view these letters as a learning tool to support opioid prescribing practices.

6.5 Strengths and Limitations of the Study

The method of interpretive description was seen as a study strength as this method was developed within the nursing domain to generate knowledge within the applied health sciences. Interpretive description is a method of inquiry to address clinical problems in a clinical setting and contributes to knowledge in the field (Thorne, 2016). Using a descriptive lens to present the experiences of the participants, the researcher was able to co-construct meaning from the participant, key informant, lived experiences (Thorne, 2016). They were understanding that not all can be known on this subject and additional research should continue to be explored to deepen the understanding on the topic.

Once published, the three manuscripts in this dissertation, will add to the nursing knowledge on Canadian NP opioid prescribing practices. New knowledge will inform NPs who prescribe opioids in primary care settings, and increase their understanding of the challenges, benefits, and decision-making needed to prescribe opioids in primary care settings.

All the participants in the study had the authority to prescribe opioids in their practice setting. In the initial recruitment survey, a few participants mentioned they did not prescribe in their clinical setting; however, they also chose not to be interviewed. These NPs may have contributed an additional information about their reasons not to prescribe or potential barriers in practice. Understanding these barriers may highlight opportunities for change and future adaptation in practice.

A limitation of the study was the focus on primary care settings. Therefore, caution must

be used when extrapolating the findings to other practice settings. Another limitation involved the use of the regulatory body database for recruitment. In 2017, there were 231 NPs registered in the province. However, in the registration process, nurses and NPs can indicate their willingness to receive information about participating in research. Therefore, the recruitment survey was only emailed to the 183 NPs. From this population, approximately one-third of NPs responded to the survey, which limits generalizability to all NPs in the province.

6.6 Recommendations for Further Research

This is the first study in the province of Saskatchewan known to explore the experiences of NPs' who prescribe opioids in primary care settings. Data collection for this study occurred prior to the COVID-19 pandemic. The opioid crisis was magnified during the pandemic with restrictions placed by government and healthcare officials to control the spread of the virus. The aftermath of the initial lockdown created a situation where healthcare providers in community settings needed to be mindful of how social isolation might have affected individuals dealing with chronic pain concerns and risks for opioid abuse. Data from the current study may be used as a comparison for a study on prescribing practices during and post-pandemic.

The present study identified significant areas for further research. There is a need for longitudinal studies on NPs who graduated after the passing of legislation granting authority to prescribe controlled drugs and substances. A study of this nature may assess the adequacy of the current educational curriculum being taught, practicum experiences obtained within the education programs, and the continuing education responsibility of NPs.

Another recommendation for additional research is addressing a pan-Canadian exploration of experiences for NPs who prescribe opioids in their practice. The current study focused on a small cohort of NPs who practice in primary care settings. A more extensive study

across practice settings may highlight the differences and similarities of the knowledge, skill and abilities needed for opioid prescribing in different practice settings.

Since this study was conducted prior to the COVID-19 pandemic, which has been reported to coincide with an escalation of the opioid crisis (Gomes et al., 2021; Moore, 2019), understanding how the decision-making processes in the care of clients with addictions may have changed during the pandemic may advance the knowledge needed for clinical practice guidelines updates and integration of new harm reduction approaches.

6.7 Conclusion

This study contributes to the literature exploring the experiences and elements that influence the decision-making process, of NPs who prescribe opioids in a primary care setting in the province of Saskatchewan. NPs in Canada acquired the federal authority to prescribe controlled drugs and substances in 2012 (Health Canada, 2012a). In 2014, the Saskatchewan government changed the provincial legislation to allow this new authority into the NP scope of practice. As prescribing opioids is a relatively new addition to NP practice in Canada, it was essential to explore. Although registered NPs have always had the authority to prescribe numerous other medications with the potential for adverse effects, opioids have a significant potential for addiction and harm to individuals, families, communities, and society. With the opioid crisis in the background, it was essential to understand how this would impact the NPs as they accept this privilege to prescribe in their clinical setting.

Finding a methodology that supported this clinician and researcher to study a clinical problem was essential. The qualitative method of interpretive description was designed to engage researchers in a practical approach to clinical research that is responsive to clinical concerns. The scoping review of the literature and the philosophical framework for the method of interpretive

description guided the present study. It allowed an opportunity to understand the NPs stories of prescribing opioids in primary care settings. Canadian literature on NPs' prescribing opioids is sparse; therefore, this study is an important addition to the understanding of the experiences of NPs when prescribing opioids in clinical practice. Knowledge informed by this study will assist NPs when making clinical decisions regarding pain management that is often multifactorial.

Recommendations for NP practice presented in this dissertation suggest that clinical practice guidelines, prescribing contracts, and continuing education are necessary for safe, competent client care. Prescribing contracts need to be consistently used for all opioid prescriptions, both acute and chronic presentations. Policy change is needed to develop a means to communicate client prescription profiles across provincial borders to help mitigate any potential for access to multiple prescriptions, increasing opportunities for abuse, misuse, and diversion of opioids.

Recommendations for further research include assessing the NP educational program content about controlled drugs and substances and the associated application of knowledge in clinical practicum experiences. Initiating and tapering of these highly addictive medications were identified by the participants to be a high priority area for continuing education and mentoring programs.

6.8 Reflections of the Researcher

With the completion of my dissertation as partial fulfillment of the requirements for the degree of Doctor of Philosophy at the University of Saskatchewan, the opportunity for personal reflection indicates the end of one experience and the beginning of another. This current research experience allowed me to gain new skills, learn more about the research in applied health sciences that assists in creating knowledge for the domain of nursing: allowing me the

opportunity to explore my strengths and interests and providing me with the motivation for further study and pursuit of knowledge in my field.

Before to this research project, I needed more understanding about the method interpretive description and how beneficial this method can be for clinical research in applied health sciences. Interpretive description is a flexible and practical method for applied health science research. Using this method has allowed me to better understand my colleagues experiences in primary care clinical settings, as they assess, diagnoses, and more importantly, treat clients who present with acute, chronic, or palliative pain management-related concerns. Through interpretive description, I learned how to scaffold a research project, appreciate the available knowledge, and identify gaps and the need to create new knowledge. The scaffolding process in interpretive description allowed for self-reflection on my knowledge of the subject to be studied and how to become aware of my biases and not let my perspectives lead the co-construction of knowledge about opioid prescribing.

Utilizing interpretive description as a researcher provided an opportunity to be an instrument within the study. Understanding that as a researcher, there is a need to be open to acquiring and co-creating new knowledge and understandings from the participants shared experiences. Moving forward, I will always have a connection to these participants from chronicling and interpreting their experiences and constructing a thematic understanding.

In closing, working on this research project has drawn me towards asking ‘what we should be doing’ not ‘what are we doing’ to navigate care for clients with pain management needs amid the current opioid crisis: illuminating the concerns of society, not being complacent with the status quo, and providing knowledge for the benefit of the nursing profession. In reflecting on how I can build on these experiences and my personal goal of combining NP

practice and education, I aim to gain additional skills in research with NP practice applications.

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Appendix A – Ethics Approval



Behavioural Research Ethics Board (Beh-REB) 28-Feb-2019

Certificate of Approval

Application ID: 630

Principal Investigator: Mary Ellen Labrecque

Department: College of Nursing

Locations Where Research

Activities are Conducted: Province of Saskatchewan, Canada

Student(s): Irene Ostapowich

Funder(s):

Sponsor:

Title: Exploring the Experiences of Nurse Practitioners Prescribing Opioids in the Western Prairie Province of Saskatchewan

Approved On: 28/02/2019

Expiry Date: 27/02/2020

Approval Of: Behavioural Ethics Application; Cover page; Appendix B: Letter of Invitation; Appendix C: Participant Interview Consent Form; Appendix D: Recruitment Survey; Appendix E: Questions Semi-Structured Interview Guide; Handout RxSurvey; Confidentiality Agreement

Acknowledgment Of:

Review Type: Delegated Review

CERTIFICATION

The University of Saskatchewan Behavioural Research Ethics Board (Beh-REB) is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2 2014). The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this project, and for ensuring that the authorized project is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

ONGOING REVIEW REQUIREMENTS

In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month prior to the current expiry date each year the project remains open, and upon project completion. Please refer to the following website for further instructions: <https://vpresearch.usask.ca/researchers/forms.php>.

*Digitally Approved by Stephanie Martin, Vice-Chair
Behavioural Research Ethics Board
University of Saskatchewan*

Appendix B – SRNA Letter of Support

SRNA letter of Support

March 6, 2019

Ms. Irene Ostapowich RN(NP), PhD(c)

By Email: iam320@usask.ca

Dear Ms. Ostapowich,

I am pleased to provide a letter of support for the research project, “*Exploring the Experiences of Nurse Practitioners Prescribing Opioids in the Western Prairie Province of Saskatchewan*” developed by yourself and Dr. Mary Ellen Labrecque RN(NP), PhD.

As the Executive Director of the Saskatchewan Registered Nurses Association (SRNA), I am aware of the important and growing need for research to better understand the extent and context of prescribing opioids among Saskatchewan nurse practitioners. I am pleased to support the partnership between the research team and the SRNA with the aim of supporting safe opioid care for the people of Saskatchewan. The support the SRNA will provide is to assist in the dissemination of information to all RN(NP)s in the province.

One of the SRNA’s strategic goals is for RNs and RN(NP)s to practice safe, competent, ethical, and culturally appropriate individual and family-centered care. The findings of this research will be utilized to advance this goal. I anticipate the study findings will also inform SRNA strategies to advance the policies on nurse practitioners prescribing opioids across Saskatchewan, which is an established standard of RN(NP) practice.

I look forward to supporting the research team in this project!

Sincerely,
(Original signed)

Cindy Smith, RN, BScN, MN
Executive Director
Saskatchewan Registered Nurses Association

Appendix C - Letter of Invitation

September 21, 2018

Research Project entitled: *Exploring the Experiences of Nurse Practitioners Prescribing Opioids in the Western Prairie Province of Saskatchewan.*

Dear Colleagues,

My name is Irene Ostapowich. I am a registered nurse practitioner and a PhD candidate with the College of Nursing, University of Saskatchewan. The focus of my dissertation research is *Exploring the Experiences of NPs Prescribing Opioids in Western Prairie Province of Saskatchewan*. As very little published information exists specific to Canadian NPs prescribing opioids in health care settings, the results of this research project will provide valuable information regarding this aspect of NP practice. The goal of the research is to explore the experiences and perceptions about the prescribing opioids across a range of health care settings. Results of this study may suggest recommendations for NP educational curricula as well as government and health care policy in relation to addictions to opioids in Canada.

The intent of my research project is to interview NPs about prescribing opioids for clients in health care settings. All NPs registered with the prairie province of Saskatchewan are invited to participate. I am interested in knowing if you prescribe opioids in your clinical practice. If you are a non-prescriber, please indicate the reasons this is not a part of your practice responsibilities, needed in the care of your client population or related to internal or external barriers?

I am also interested in the experiences of the NPs prescribing opioids in their clinical settings and how clinical decisions about prescribing opioids are developed in practice. In light of the ongoing opioid crisis in Canada, we need some understanding as to how NPs are prescribing.

Participation in this study is completely voluntary; you are under no obligation to

participate. It is expected that the online recruitment survey will take no longer than 10 mins to complete. While completing the survey you may withdraw at any point by closing your internet browser but once you submit your survey your data will be aggregated and cannot be withdrawn. As the Principal Investigator (PI), I will have access to the raw, aggregated data but no data will be linked to your name or email address. Your confidentiality will be maintained as you will be assigned a code number and only the principal investigator will know your identity.

You will be given the opportunity to participate in a phone interview. Individuals who self-identify as non-prescribers are also encouraged to participate in the interview process to obtain an understanding of the experience's as to why the non-prescribing options was chosen. Direct quotations from the interview by way of the open-ended questions may also be incorporated into the final report. The PI will make every effort to maintain confidentiality (i.e., names and places of work will not be associated with any quotations).

Through the SRNA a notice of the final report will be made available to all participants upon completion. If you have any questions or concerns regarding participation in this study, please contact:

Irene Ostapowich RN(NP), PhD (c)
College of Nursing, University of Saskatchewan
E: irene.ostapowich@usask.ca

This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free 1 (888) 966-2975.

By completing and submitting the recruitment survey, **YOUR FREE AND INFORMED CONSENT IS IMPLIED** and indications that you understand the above conditions of participation in this research study.

Appendix D - Handout for Rx Survey

"Exploring the Experiences of Nurse Practitioners Prescribing Opioids in the Western Prairie Province of Saskatchewan"



You are invited to participate in a research project about NP prescribing of opioids. Please find below a link to a short 10-minute survey. If you are willing to participate in an interview about your experiences prescribing controlled drugs and substances, please contact Ms. Irene Ostapowich at the number below. All interviews will be confidential.

Thank you for considering participation in this study that will contribute important information about NP prescribing of opioids in Canada.

Survey Link: [www.***](http://www.*****)
**Irene Ostapowich RN(NP), PhD (c)
College of Nursing, University of Saskatchewan
E: irene.ostapowich@usask.ca
Phone: 1-306-230-1201****

Appendix E - Recruitment Survey

Prescriber of Opioids?

1). Do you to prescribe opioids in your practice as a NP?

- a) yes
- b) no

If yes – continue to question 2a.

If no – continue to question 2b.

2a). If you prescribe opioids in your practice, please explain what is it about your practice that requires you to prescribe this class of drugs? (e.g., patient population, area of practice, practice setting or pain specialty).

2b). If you do not prescribe opioids in your practice, please explain what is it about your practice that does not require you to prescribe this class of drugs? (e.g., patient population, area of practice or practice restriction assigned by employer).

3). What geographical location do you mainly practice in?

- a) Urban
- b) Rural
- c) Remote/northern

4). What type of practice setting do you mainly work in?

- a) Acute Care (Hospital)
- b) Primary Care (community)
- c) Long-term Care or Nursing Home
- d) other. Please describe.

5). How long have you been employed as an NP?

- a) 0-5 yrs
- b) 6-10 yrs
- c) 11- 15 yrs
- d) 16-20 yrs
- e) 21 + years.

6). What is your age:

- a) 20-30 years
- b) 31-40 years
- c) 41-50 years
- d) 51-60 years
- e) 61-70 years

f) 71 years or more

7). Would you be interested in participating in an interview to assist in building an understanding of NPs who prescribe opioids in their practice?

- a) Yes
- b) No

If agreeable to participating in an interview, please leave your name and email address below:

Thank you for completing the survey. If you have additional questions or comments, please contact:

Irene Ostapowich RN/NP at 306-230-1201 or by email at irene.ostapowich@mail.usask.ca

Appendix F - Participant Interview Consent Form

You are cordially invited to participate in a research project entitled *Exploring the Experiences of Nurse Practitioners Prescribing Opioids in Western Prairie Province of Saskatchewan*. Please read the participant interview consent form carefully and feel free to ask any questions that you may have.

Research Title: Exploring the Experiences of Nurse Practitioners Prescribing Opioids in Western Prairie Province of Saskatchewan

Researcher: Irene Ostapowich, RN(NP), PhD c,
College of Nursing, University of Saskatchewan.

Email: irene.ostapowich@mail.usask.ca

Phone contact: (306) 230-1201

Supervisor: Dr. Mary Ellen Labrecque RN(NP) PhD

College of Nursing, University of Saskatchewan

Email: me.labrecque@usask.ca

Phone Contact: (306) 966-8523

The purpose of this study is to understand the experiences of nurse practitioners prescribing opioids in the Western prairie province of Saskatchewan. The study will be conducted using a qualitative research method and consists of audio-recorded interviews by telephone. All registered NPs with the SRNA, who practice in a health care setting, are invited to participate in this study.

The interview will be scheduled at an agreed upon time and will take place where the participant feels most comfortable and safe. The interview should take approximately thirty minutes. The study results will be analyzed and a summary of all the pooled data will be presented as themes arising from the interview process. It is anticipated the interview data collection process should be completed in six months.

Ethics approval for the study has been granted by the University of Saskatchewan Advisory Committee on Behavioral Research and the SRNA ethics board. There are no known or anticipated risks to you for participating in this study. The overall benefit of

participation is to begin to fill the gap in Canadian literature about NPs and the prescription of opioids in the health care settings and to advance nursing knowledge at a national and international level, while enhancing safe practices for both the client and the prescriber.

Storage of all data, in accordance with University policy, will be kept for a period of five years in a locked cabinet in the researcher's supervisor's office. All data will be destroyed (confidential shredding bin) after the five-year period allowing for completion of the research project.

The researcher will respect your right to withdrawal from the study at any time. Your participation is voluntary, and you are only to answer the questions you feel comfortable answering. Please note, your right to withdrawal may only apply until the data is pooled. It is possible that some research dissemination of the data may have occurred, therefore making it impossible to withdrawal your data. Again, there are no known or anticipated risks to you and your practice as well there is no guarantee that you may or will benefit personally or professional for participating in this study. I wish to reassure you that all information provided, with regards to this study, will be held in the strictest of confidence and will only be discussed with my immediate supervisor once all identities have been removed.

If you have any concerns or questions about this study, please contact the researcher or supervisor listed at the top of the consent form. The research project has been approved by the ethics committee from the University of Saskatchewan Research Ethics Board. If you any questions or concerns regarding your rights as a research participant, you may contact the Research Ethics Office at ethics.office@usask.ca or by phone (306) 966-2975. Out of town participants please call toll free (888) 966-2975.

I want to thank you for considering participation in this research project: Understanding the Experiences of Nurse Practitioners Prescribing Opioids in Western Canada. As a researcher, I promise to represent the participants and data with upmost respect and accuracy. All study participants will be provided with a summary of the results of the study.

Consent:

Appendix G - Confidentiality Agreement

Purpose: The purpose of this Confidentiality Agreement is to protect the identity and privacy of the participants and their interview data. As the transcriptionist of this study, you may (will) encounter personal and sensitive information about the participants, their practice (including clients) and work environment. Therefore, it is very important to refrain from disclosing any information to third parties about the participants or any part of their interview within the study to avoid causing them harm.

Confidential Information: All confidential participant information shall never be discussed in the presence of any third parties. Any audio recordings, files and or documents containing confidential information shall never be shared or released to third parties. Confidential information includes:

1. Identifying information about the participant, including name, address, or phone number.
2. Information relating to the participants place of employment.
3. Information regarding any clinical situation or client discussed during the interview.
4. Any other information that would identify the participant or potentially place the participant and or their clients at risk.

Terms: By signing the Confidentiality Agreement, I the undersigned agree to the highest ethical standards and to abide by the following provisions:

1. All communications between the researcher and myself will be kept confidential.
2. The transcriptionist shall not disclose confidential information to a third party without the written consent of the participant.
3. I understand that as the only transcriptionist of this study, I have a duty to keep participant information confidential throughout my involvement with this study as well as after my services to this study have ended.
4. I understand that my failure to abide by the terms of this Confidentiality Agreement may result in the termination of my participation as the transcriptions for this study.

5. I understand that my failure to abide by the terms of this Confidentiality Agreement may result in disciplinary actions by the Ethics board at the University of Saskatchewan.

I, _____ (print name), have read the above Confidentiality Agreement and understand its terms and my responsibilities as the transcriptionist of this study.

Signature of Transcriptionist

Signature of Researcher

Date signed: _____

Date

signed: _____

Appendix H - Interview Questions

Semi-Structured Interview Guide

Establish consent for the interview:

I will start with a script to inform the participant with her/his ethical rights, confidentiality, and obtain the informed consent. Participants will be provided the interview consent form by email prior to the date scheduled for the interview.

The Interview.

I am interested in learning about your experiences with prescribing opioids in your practice as a NP. I have a few questions to get our discussion started.

Questions

1. Where do you work? And can you share with me what a typical day in your practice may look like?
2. Can you share what types of patients you encounter in your practice that may present with health concerns involving the need for treatment with opioids?
3. How do you decide which clients need opioids?
4. What concerns do you have about prescribing opioids?
5. What strategies do you use to implement in your practice to address your concerns about prescribing opioids?
6. How did your NP education program prepare you to understand the process for the prescription of opioids?

Ending the interview:

Closure:

Is there anything else you would like to share about your experiences with prescribing of opioids for clients in your health care setting?

I thank you for your time and for sharing your expertise to assist with this study. If you have any concerns or further comments, please contact myself or my supervisor (contact information is found at the bottom of your interview consent form).