PRACTICING ON THE VERGE: NURSE PRACTITIONER CAPABILITY
DEVELOPMENT IN THE CARE OF INDIVIDUALS WITH OPIOID USE DISORDER

by

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Abstract

Nurse practitioner treatment of opioid use disorder in North America has been made possible by changes to prescriptive authority over the past decade and necessitated by the ongoing opioid overdose and poisoning epidemic. As advanced practice nurses, nurse practitioners have traditionally been evaluated using competency-based models. While competency-based education delineates measurable activities and skills, capability has the potential to describe advanced practice nursing within complex clinical settings, especially because the term is inclusive of variation in practice environment. For this thesis I aimed to clarify how capability is described in the global literature about advanced practice nursing and education (Phase 1), and to explore how nurse practitioners experienced capability development in the context of treatment of opioid use disorder (including safe supply) in primary care settings (Phase 2). I conducted a scoping review using the JBI methodology, followed by a phenomenographic study with a purposive sample of 21 nurse practitioners treating opioid use disorder in Canada and the United States. Finally, I synthesized findings from the phenomenographic study in the context of the scoping review results (Phase 3). Nurse practitioners experienced capability development as a process of knowledge acquisition, knowledge integration, evolving practice perspectives, practice adaption, and becoming expert. Although capability is described variously, there was congruence between what is written in the literature and results of the phenomenographic study, including the ability of nurse practitioners to critically evaluate clinical scenarios, identify knowledge gaps, and provide creative leadership to address care needs. Understanding capability in the context of opioid use disorder treatment has the potential to provide greater self-understanding for nurse practitioners and a clearer framework for articulating nurse practitioner contributions to the opioid overdose crisis to regulators, policy makers, and the public.
Co-Authorship

This thesis is the work of Martha M. Whitfield in collaboration with:

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- Jovina Concepcion, PhD Student, Queen’s University (co-author, scoping review)
Dedication

For FEW & KCO
Acknowledgments

I express my heartfelt appreciation to all those individuals and organizations who provided support, advice, time, and contributions to help me complete this research.

I am deeply grateful to my supervisor, Dr. Rosemary Wilson, for her enthusiasm, collaboration, care, and guidance over the past four years. I thank my committee members Dr. Danielle Macdonald, Dr. Tracy Klein, and Dr. Mike Mimirinis for their generous mentorship, insightful feedback, and methodological expertise. Thanks to my examiners Dr. Erna Snelgrove-Clarke, Dr. Katie Goldie, Dr. Heather Braund, Dr. Leigh Chapman, and Dr. Michael Tschakovsky for their time and effort in ensuring the quality of this research. Dr. Christina Godfrey and Amanda Ross-White provided invaluable expertise and guidance throughout the development of the scoping review. The faculty and staff at Queen’s University School of Nursing and the Bracken Health Sciences Library were tirelessly helpful, and provided community, scholarship, and joy in work, even during the COVID-19 pandemic.

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Epigraph

Poppies

Mary Oliver

The poppies send up their orange flares; swaying in the wind, their congregations are a levitation of bright dust, of thin and lacy leaves. There isn’t a place in this world that doesn’t sooner or later drown in the indigos of darkness, but now, for a while, the roughage shines like a miracle as it floats above everything with its yellow hair. Of course nothing stops the cold, black, curved blade from hooking forward— of course loss is the great lesson.

But I also say this: that light is an invitation to happiness, and that happiness, when it’s done right, is a kind of holiness, palpable and redemptive. Inside the bright fields, touched by their rough and spongy gold, I am washed and washed in the river of earthly delight— and what are you going to do— what can you do about it— deep, blue night?

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List of Abbreviations and Definition of Terms

There is a plethora of terms denoting nurses and other providers who have some form of advanced scope of practice. In the United States the term *advanced practice provider* (APP) is used to denote any *advanced practice registered nurse* (APRN) or *physician’s assistant* (PA). Some authors use *advanced practitioner* or *advanced practice nurse* to refer to a practitioner who is operating at an advanced level within their scope. As far as possible I used terms specific to provider certification – for example *nurse practitioner* (NP). I used the term advanced practice provider to refer to those providers with an advanced scope of clinical practice, to include nurse practitioners (NPs), physician assistants (PAs), *certified registered nurse anesthetists* (CRNAs) or *certified nurse midwives* (CNMs). When referencing the literature, I adopted the terms used by the authors of specific studies. I have chosen to use the term MOUD – or medication for opioid use disorder to encompass any prescribed medication for individuals with opioid use disorder, including the prescription of safe supply medications.

APN: *Advanced Practice Nurse*. In Canada there are two recognized APN roles – nurse practitioner (NP) and clinical nurse specialist (CNS). APN is also used to designate the field of advanced practice nursing.

APRN: *Advanced Practice Registered Nurse*. In the United States APRNs include nurse practitioners (NP), certified nurse midwives (CNM), certified registered nurse anesthetists (CRNA), and some clinical nurse specialists (CNS).

ANP: *Advanced Nursing Practice*. Advanced nursing practice is sometimes used interchangeably with APN. However, ANP is often used to refer to the advancement of the field of nursing rather than being specifically focused on APN roles.
ANP: Advanced Nurse Practitioner. In the United Kingdom the term advanced nurse practitioner is sometimes used to describe nurses who have completed more advanced training. Nurse practitioner is not a protected role in the United Kingdom, and therefore a variety of nurses with some advanced scope may call themselves an NP.

COVID-19: Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)

Harm Reduction: Any approach to care or public health measures that aim to limit or reduce harm (in this case from drugs) rather than eliminating drug use itself, which is generally acknowledged to be inevitable and complex and is considered within the context of social inequities and the social determinants of health. Harm reduction approaches place a strong focus on the value, expertise and contributions of people who use drugs, and on non-judgmental and value-neutral care.

MAT: Medication Assisted Treatment. Treatment of opioid use disorder with medication in addition to counseling and other recovery services. The use of the term MAT is largely being superseded by MOUD in the United States.

MOUD: Medication for Opioid Use Disorder. Treatment of opioid use disorder with medication such as buprenorphine, extended-release naltrexone, or methadone. In Canada MOUD may also include safe supply medications (see safe supply below).

NP: Nurse Practitioner. In North America, a registered nurse with additional training, a graduate degree, and a varying scope of practice and prescriptive authority depending on the state, province, or territory in which the NP is licensed. In the United States and Canada NP is a designation by certification. Internationally, definitions vary by country.

OAT: Opioid Agonist Therapy: Treatment for opioid use disorder with medication that partially or fully attaches to opioid receptors in the brain, reducing cravings and preventing
withdrawal symptoms. Partial agonist therapy is with buprenorphine, often combined with the antagonist naloxone. Full agonist therapy is with methadone.

**Opioid Antagonist Therapy.** Treatment for opioid use disorder with medication that blocks opioid receptors in the brain, usually extended-release naltrexone.

**OUD: Opioid Use Disorder.** While the American Society of Addiction Medicine (ASAM) prefers the term “addiction involving opioids” (American Society of Addiction Medicine, 2020), given the more general use of opioid use disorder, I have used the abbreviation OUD throughout this thesis.

**PWUD: People who use drugs.** I use the term PWUD to refer to individuals with lived experience of drug use, as opposed to using the words patient or client, except where interview participants are directly quoted.

**RAM or RAAM:** Rapid Access to MOUD; Rapid Access to Medication; Rapid Access to Addiction Medication. Designation for programs designed to provide MOUD or safe supply initiation on demand, without a waiting period.

**Safe or Safer Supply:** Prescribed medications to replace drugs acquired through the illicit market (usually fentanyl). Safe supply is prescribed by some nurse practitioners in Canada. Drugs used include slow-release oral morphine (brand name Kadian™), methadone, and short acting hydromorphone (brand name Dilaudid™).
Chapter One
Introduction

The Opioid Overdose Crisis in North America

The opioid epidemic or opioid overdose crisis in North America is often conceptualized as having three waves: an initial wave following increases in opioid prescriptions for pain during the 1990s and 2000s; a second wave, starting around 2010, when cheap heroin started to replace prescription opioids for those already experiencing addiction; and a third wave in 2014 and beyond with the addition of street fentanyl and other synthetic opioids, and a commensurate exponential increase in overdose deaths (Donroe et al., 2018; Humphreys et al., 2022). In Canada, systematic tracking of opioid-related harms and deaths dates to around 2016, however the beginnings of the crisis can be traced back to increasing prescriptions in the 1990s (Belzak & Halverson, 2018). Initial increases in opioid prescriptions can be attributed in large part to aggressive marketing on the part of pharmaceutical companies, notably Purdue Pharma’s marketing of OxyContin (a long-acting formulation of the prescription opioid oxycodone), for chronic pain in both Canada and the United States (Humphreys et al., 2022). In fact, Humphreys et al. (2022) proposed that the start of the opioid crisis be delineated by the U.S. Food and Drug Administration’s approval of OxyContin in 1995. The long-term effects of Purdue Pharma’s marketing of OxyContin continue to play out, with higher injection drug use complications, even decades later, linked to high levels of initial marketing (Dennett & Gonsalves, 2023).

Changes to the way in which pain was approached and treated by healthcare providers, including the introduction of the “pain as fifth vital sign” campaign (Max et al., 1995) in the United States also prompted more frequent prescriptions for opioid medications. However, by 2018, several influential U.S. medical organizations had withdrawn support for the “pain as a
fifth vital sign” campaign in acknowledgement of the harms this created (Levy et al., 2018). Across North America, deaths increased dramatically with the introduction of high potency synthetic opioids (non-pharmaceutical fentanyl and fentanyl analogs) into the drug supply (Humphreys et al., 2022). Opioid-related harms have also been exacerbated by the COVID-19 pandemic, which resulted in decreased access to treatment and an increased unpredictability in the street drug supply (Canadian Centre on Substance Use and Addiction, 2020, 2022; Khatri & Perrone, 2020; Volkow, 2020).

Canada and the United States are not only physically proximate; they are also first and second globally for per-capita opioid prescriptions (Donroe et al., 2018; Humphreys et al., 2022), and rank poorly compared to other high-income countries for access to addiction treatment (Baugartner et al., 2022). Canada was the first country outside the United States to experience a dramatic increase in rates of opioid prescribing, with an accompanying rise in opioid-related harms (Donroe et al., 2018; Humphreys, 2017; Humphreys et al., 2022). As awareness of opioid-related harms has risen, overall prescription rates have started to decrease; sometimes prompting individuals to transition to heroin (Humphreys et al., 2022). Despite a decrease in prescribing, deaths from opioid overdoses have continued to rise with the introduction of fentanyl and other synthetics in the street drug supply (Centers for Disease Control and Prevention, 2021).

Mortality attributed to opioid use can be difficult to calculate, due to several factors including underreporting. However, data for overdose deaths can be considered relatively reliable and a useful proxy for other drug related harms (Humphreys et al., 2022, p.7). Opioids are often not used in isolation but may be combined with other drugs including stimulants or hypnotics, with increased risk for overdose, and potential impact on mortality data (Centers for Disease Control and Prevention, 2022; Federal provincial and territorial Special Advisory
Committee on the Epidemic of Opioid Overdoses, 2023). Additionally, the impacts of drug use include nonfatal overdoses as well other harms including hospitalizations, infections and higher rates of HIV and Hepatitis C infection arising from injection drug use (Donroe et al., 2018).

According to the National Survey of Drug Use and Health (NSDUH), 3.3% of the U.S. population aged 12 and older (9.2 million) misused opioids (including prescription drugs, heroin, and fentanyl) in 2021 (Substance Abuse and Mental Health Administration, 2021). 81% of 2021 overdose deaths in the United States involved at least one opioid, and only 6% of people who died of an overdose were currently receiving treatment for a substance use disorder (Centers for Disease Control and Prevention, 2022; National Vital Statistics System, 2023). For the 12 months preceding December 2022, 79,770 drug overdose deaths were reported for all opioids in the United States. However, due to incomplete reporting, the true number of drug overdose deaths for the same period estimated to be 82,998 (Centers for Disease Control and Prevention, 2022; National Vital Statistics System, 2023).

In Canada, there were 8,006 apparent opioid toxicity deaths in 2021 (Federal provincial and territorial Special Advisory Committee on the Epidemic of Opioid Overdoses, 2023). The 2021 Canadian Alcohol and Drugs Survey (CADS), a biennial survey reporting on use and problematic use of pharmaceutical opioids and heroin, reported problematic or non-medical use of opioid pain relievers by 6% (269,000) of the 14% of Canadians who used opioid pain relievers in 2019 (Government of Canada, 2019). There were no reported observations for heroin use in the 2019 data, however fentanyl and fentanyl analogs were not included in the survey. Data on the unregulated drug supply in Canada is not comprehensive (Canadian Centre on Substance Use and Addiction, 2022) and harms from opioids in Canada are likely significantly underreported. Data in Canada has primarily been available through prescription reporting, and opioid-related
toxicity deaths (Fischer et al., 2018). Other data sources include information from drug seizures, wastewater monitoring, treatment reporting, and hospitalization and emergency department visits (Canadian Centre on Substance Use and Addiction, 2022). Difficulties in calculating the rates of opioid misuse and use disorders were discussed by Fischer et al. (2018), who estimated misuse or use disorders related to prescription opioids as 3.1% (1.9, 4.3 uncertainty interval) and 1.2% (0.6, 1.8 uncertainty interval) of the population respectively.

The Stanford-Lancet Commission on the North American Opioid Crisis (the Commission) was convened in 2019 and brought together U.S. and Canadian experts to address the opioid crisis. The Commission proposed that the healthcare system must be ready to respond, not only to challenges related to opioids, but to future challenges related to use of addictive substances, and made recommendations across seven domains, of which Domain Three, concerned with building and improving treatment infrastructure is most relevant to this study (Humphreys et al., 2022). The Commission noted that the siloing of federal resources in the United States has resulted in a system for substance use treatment that is often challenging for patients to access, can perpetuate stigma related to treatment, and may discourage healthcare providers from specializing in substance use disorder treatment (Humphreys et al., 2022). Authors of the Commission’s 2022 report proposed that funding for substance use disorders be integrated with existing healthcare funding, including full access to care through the public health insurance programs Medicaid and Medicare in the United States (Humphreys et al., 2022). The Commission does not specifically mention advanced practice providers or NPs, but rather references “generalist health professionals”. The Commission report’s authors advocated for investment in addiction for both specialists and generalists. Further they proposed that healthcare workers “unify under the well-established and deservedly respected label of public health” (p.26)
in creating systems of care that are responsive to the diverse needs of those with substance use disorders (Humphreys et al., 2022). Education in substance use treatment has historically been spotty at best and the Commission recommended mandatory training as part of physician, nursing, dentistry, and pharmacy education training programs (Humphreys et al., 2022). In the United States, regulatory changes including the elimination of the so called “X Waiver”, and the institution of mandatory addiction training for those prescribers of controlled substances registered by the Drug Enforcement Administration (DEA) go some way to address the Commission’s recommendation for integration of substance use treatment.

In Canada, opioid overdose deaths began to rise in 2016 (Health Canada & Canadian Centre on Substance Use and Addiction, 2017). An Opioid Summit held that same year generated a Joint Statement of Action to Address the Opioid Crisis, with multiple partners, including both governmental and non-governmental organizations (Health Canada & Canadian Centre on Substance Use and Addiction, 2017). The Canadian Drugs and Substances Strategy has four aims: prevention, treatment, harm reduction, and enforcement (Health Canada & Canadian Centre on Substance Use and Addiction, 2017). A report from the Ministerial Roundtable on the Opioid Crisis in 2017 (HealthCareCAN, 2017) outlined strategies around harm reduction, prevention and surveillance, and treatment, and placed a priority on harm reduction. The report outlined challenges including the difficulty of implementing harm reduction strategies in all geographic areas, ongoing stigma for PWUD, and lack of a coordinated system of care for opioid use disorder (OUD) services, as well as the specific needs of Indigenous individuals (HealthCareCAN, 2017).

The intersection of the opioid overdose epidemic and the COVID-19 pandemic made clear that the healthcare supports for patients with OUD are fragile (Alexander et al., 2020).
Patients with OUD risked further isolation or marginalization and were sometimes unwilling to engage with services and treatments due to fear of stigmatization (Alexander et al., 2020; Frederique & Kim, 2020). Hesitation on the part of patients around seeking treatment coincided with a diversion of healthcare resources to address COVID-19 (Khatri & Perrone, 2020). The convergence of the opioid and COVID-19 crises were seen as a critical moment, which also brought the potential for an overhaul of outdated regulations, and the development of new technology to improve patient access to OUD treatment (Alexander et al., 2020).

U.S. regulatory changes in response to COVID-19 included the temporary lifting of training requirements for buprenorphine prescribing, although a notice of intent to prescribe was still required (United States Department of Health and Human Services, 2021; Spetz et al., 2022), as well as permissions for providers to use telehealth visits for the initiation and continuation of treatment for OUD (Drug Enforcement Administration, 2020). In Canada, a practice change in British Columbia authorized registered nurses and registered psychiatric nurses to diagnose, treat, and refer for substance-related disorders (Henry, 2020). The British Columbia practice change was driven both by the dual emergencies of the COVID-19 pandemic and the increasing contamination of the drug supply with synthetic opioids with a resultant increase in mortality and overdoses. However, drug-related deaths continued to increase during COVID-19, leading the Vancouver City Council voted to fully decriminalize possession of small amounts of illegal drugs (Maynard & Jozaghi, 2021), and Health Canada granted the province a temporary exemption from the Controlled Drugs and Substances Act (Federal Minister of Mental Health and Addictions & Associate Minister of Health, 2022).

Access to Care for Opioid Use Disorder

There are effective and life-saving medications for OUD. Authors of a retrospective
comparative effectiveness study compared claim data for 40,885 individuals with OUD on one of six treatment pathways (no treatment; non-intensive behavioral health; intensive outpatient behavioral health or partial hospitalization; inpatient detoxification or residential services; medication for OUD (MOUD) with either buprenorphine or methadone; or MOUD with naltrexone) (Wakeman et al., 2020). Patients were assigned to the treatment group corresponding with the initial treatment received. Treatment duration varied – with a mean treatment duration for buprenorphine or methadone of 149.65 days. Longer treatment duration was associated with a decreased risk of overdose or opioid-related acute care use, with a significant decrease seen in those receiving treatment for greater than 181 days. Use of buprenorphine or methadone was shown to be associated with decrease in risk for overdose at both the three- and 12-month mark, with up to a 59% decrease in risk of overdose over the course of year (Wakeman et al., 2020). The Wakeman study could not account for those who had an unreported overdose or serious opioid-related event that was not documented in insurance claims data. In addition to MOUD with medications such as buprenorphine and methadone, safe or safer supply is also emerging as an approach to OUD in Canada (Centre for Addiction and Mental Health, 2021).

A variety of barriers including stigma, regulations, and logistical issues contribute to limiting initiation of OUD treatment (Hall et al., 2021) and many individuals who have OUD living in the United States and Canada do not receive evidence-based treatment in the form of MOUD (Baugartner et al., 2022; Jones et al., 2023; Nosyk et al., 2022; Sigmon, 2019). People with OUD may have difficulty with accessing basic primary care services or experience high levels of attrition from those services (Spithoff et al., 2022). Additionally, individuals have experienced increased levels of stress due to the COVID-19 pandemic, with a confluence of factors affecting those with OUD (Substance Abuse and Mental Health Administration,
Opioid use continues to increase, even as harm reduction services may be harder to access (Wilkinson et al., 2020). Lack of access to MOUD has significant implications for mortality and morbidity. For example, individuals with OUD who experienced gaps in treatment were shown to be 2.89 times as likely to overdose during a treatment gap, as well as incurring higher overall health care costs (Gibbons et al., 2022). Nurse practitioners (NPs) represent a growing segment of MOUD prescribers (Banka-Cullen et al., 2023), with potential to continue to increase access to MOUD to ensure that all PWUD who need and want this care can receive it.

**Nurse Practitioners**

The International Council of Nurses (International Council of Nurses: NP/APN Network, 2001-2020) defines an advanced practice nurse (APN) as a “registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice,” and recommends a master’s degree as an entry level requirement for practice (International Council of Nurses: NP/APN Network, 2001-2020 para. 2). The ICN Guidelines on Advanced Practice Nursing (International Council of Nurses, 2020b) delineate APN roles from those of generalized and specialist registered nurses (RNs). Specifically, the guideline authors described the APN role as encompassing a wider scope and greater autonomy when compared to the scope of an RN (International Council of Nurses, 2020b). However, the proliferation of advanced practice roles and titles, now established or being explored in over 70 countries (International Council of Nurses, 2020a), has meant that the designation of APN covers a broad range of practice (Gardner et al., 2016).
NPs are APNs who have completed advanced education, have an expanded scope of practice, and possess clinical competencies as determined by the country they practice in (International Council of Nurses, 2020). NPs “integrate[s] clinical skills associated with nursing and medicine in order to assess, diagnose and manage patients in primary healthcare and acute care populations as well as ongoing care for populations with chronic illness” (International Council of Nurses, 2020b, p. 6) The NP is one of the most recognized APN roles globally (International Council of Nurses, 2020b), comprising the largest subset of APNs in both Canada and the United States, with continued rapid growth (American Association of Nurse Practitioners, 2021; Auerbach et al., 2020; Canadian Institute for Health Information, 2022a; Canadian Nurses, 2019; United States Bureau of Labor Statistics, 2022). As of 2022, there were over 355,000 licensed NPs in the United States (American Association of Nurse Practitioners, 2022), and there were 7,400 NPs in Canada as of 2021 (Canadian Institute for Health Information, 2022b). APNs, including NPs, work in generalist and specialist roles, with acknowledged potential to increase the supply of primary care and public health services, especially considering the current COVID-19 pandemic (Rosa et al., 2020; World Health Organization, 2021).

In the United States and Canada, the scope of NP practice is determined at the state or provincial level. NPs with a full scope of practice are autonomous practitioners, and can evaluate patients, order and interpret diagnostic tests, and decide on and manage treatment plans. NPs fill a role that blends biomedical and nursing models, often with a strong orientation towards social justice and the advancement of public health (Browne & Tarlier, 2008; Thorne, 2014). As such they are well-positioned to incorporate harm reduction models, including MOUD and safe supply into their practice.
**Nursing’s Social Contract and the Opioid Crisis**

One could argue that treatment of substance use disorders falls within the remit of nursing’s social contract and the *provision for the public’s health* as discussed in the American Nurses Association Social Policy Statement (2010). The Canadian *Code of Ethics for Registered Nurses* (Canadian Nurses Association, 2017a) distinguishes between regulated practice and ethical practice. While social justice is not a regulated responsibility, nurses’ ethical responsibilities require them to adopt a social-justice oriented view in considering issues that affect the social determinants of health. NPs can and should continue to advocate for policies that reduce harm and use their position of privilege to ensure that PWUD are at the table when decisions are being made that affect them (Canadian Nurses Association, 2017b).

The American Nurses Association (ANA) *Code of Ethics* emphasizes respect of human dignity and respect for all individuals (American Nurses Association, 2015). Authors of the ANA *Code of Ethics* stated that nurses must respect patient decisions and that “when patient choices are risky or self-destructive, nurses have an obligation to address the behavior and to offer opportunities and resources to modify the behavior or to eradicate the risk” (Provision 1). The obligation for nurses to seek to modify behavior could be seen as at odds with the right of patients to self-determination, and one could argue that behavior modification should only happen as part of a shared plan of care. Safe supply proponents have stressed the need to change the way in which drug use is portrayed, and to focus on respect for the individual agency by PWUD (Canadian Association of People Who Use Drugs, 2019). Nonetheless, nurses can offer treatment and other harm reduction-focused interventions to those who need and want them.

**Nurse Practitioner Treatment of Opioid Use Disorder**

Many NPs in Canada and the United States provide treatment for OUD, a development
enabled by legislative changes to NP prescriptive authority (United States 114th Congress, 2016; United States 115th Congress, 2019; "Controlled drugs and substances act: New classes of practitioners regulations," 2012; Government of Canada, 2018). In North America, NP prescribing is further regulated at the state, provincial, and territorial level, thus prescriptive authority may vary based on jurisdiction. NPs in Canada are also able to prescribe so called safe supply – intended to replace illicit street opioids (and other drugs) with prescription alternatives. NPs are an underutilized resource in addressing the opioid crisis, although in many areas they are starting to fill the treatment gap: NPs and physician assistants provided MOUD access in 56 U.S. counties that had no physician provider in 2017 (Andrilla et al., 2019). However, even with recent growth in NP prescribing of MOUD/safe supply, there is still significant room for expansion (Andrilla et al., 2020). Increasing OUD treatment/safe supply prescribing by NPs has continued potential as a highly impactful harm reduction strategy in the care of people with this complex health challenge.

**Capability within Complex Practice Environments**

NPs, including those who provide treatment/safe supply for OUD, practice within complex and changing environments (Szekely & Mason, 2019, p. 676), and must constantly adapt their practice to stay up to date with changing contexts and research findings (Fraser & Greenhalgh, 2001). NPs must also apply clinical judgement, a process that calls for a multilayer set of reasoning skills. The very definition of expertise in practice is changing, and is no longer dependent on retention of specific facts. The “modern expert”, as described by Fraser and Greenhalgh (2001), is someone who can make connections between different competencies, who knows how to seek out additional resources and knowledge, see connections, and formulate understanding and judgment. Over-reliance on competencies has been identified as a weakness
in non-medical prescriber and nurse practitioner education (Banning, 2012; Wilson, Godfrey, Ross-White, et al., 2015). No one set of NP practice competencies could be considered complete, given ever-changing best practice guidelines and the exponential growth of research. The need to balance consistency in basic NP education with shifting NP practice environments has been identified as an ongoing challenge for the profession (Baker et al., 2020). The argument for a capability-focused approach to NP education and practice is supported by the change and complexity inherent in the NP role as described by Fraser and Greenhalgh (2001).

Capability in nursing has been defined as the ability to accommodate unanticipated variation in practice environment and skills, while competence may imply ability to perform anticipated skills only (Gardner et al., 2008; O'Connell et al., 2014; Wilson, Godfrey, Sears, et al., 2015). Attributes of capability have been variously identified to include knowing how to learn and having a high level of self-efficacy (Gardner et al., 2008); being able to adapt to or manage change (Fraser & Greenhalgh, 2001; O'Connell et al., 2014); and having the ability to apply known knowledge and skills to new situations or to develop new knowledge (Fraser & Greenhalgh, 2001). The International Council of Nurses references capability in the context of advanced practice nursing (APN) as the ability to “manage full episodes of care and complex healthcare problems including hard to reach, vulnerable and at-risk populations” (International Council of Nurses, 2020b, p. 10). Capability thus does not preclude competence, rather it can imply the ability to integrate competencies and to practice at a higher level of clinical judgement and ability in unfamiliar situations. Capability has also been conceived as a bridge between competencies and competency-based learning and complex practice settings (Hartviksen et al., 2017; O'Connell et al., 2014).
Problem Statement

NPs in North America can now provide MOUD and/or safe supply (Canada) in primary care settings (United States 114th Congress, 2016; United States 115th Congress, 2019; "Controlled drugs and substances act: New classes of practitioners regulations," 2012; Government of Canada, 2018). As such, NPs are an important resource for increasing access to MOUD to reduce the treatment access gap for OUD. There is a need to educate NPs beyond the competencies that are necessary for safe entry to practice, to adequately prepare them to care for complex patient groups, and to work and collaborate within complex practice environments, including those related to treatment of OUD. A deeper clarification of the concept of capability has potential to describe and imply a level of NP practice that is inclusive, expert, and flexible; attributes that are essential to the provision of MOUD. An adequate exploration of the ways in which NPs develop capability in the provision of MOUD, and how they experience this work within primary care settings is not present in published literature.

Research Questions

In my thesis work, I have constructed a scoping review of the literature on capability and a phenomenographic study to address the following two questions:

1. What is known in the literature about the concept of capability as applied to advanced practice nursing and education? and,

2. How do NPs experience, and understand the development of capability in the context of treatment of opioid use disorder (OUD) in primary care?

Sub questions for both the scoping review and phenomenographic study were focused on education, evaluation, and perceptions of learning. The scoping review of the literature provided context for how capability in APN practice and education has been discussed from a global
perspective. I then looked at a specific area of NP practice, considering how NPs who provide MOUD in primary care conceptualize and experience their capability development. Finally, I considered how NPs’ conceptualizations of capability development in the treatment of OUD compared to what is reported in the literature about capability in advanced practice nursing.

**Format and Structure of the Thesis**

I have adopted a hybrid structure for this thesis, incorporating both traditional chapters and two manuscripts. My work considers the intersection of capability in advanced practice nursing generally and the development of capability as experienced by NPs providing treatment for opioid use disorder. More broadly, my work is framed both by the current opioid overdose and poisoning crisis in North America, and (due to the timeframe of data collection for the qualitative study) by the COVID-19 global pandemic.

In Chapter 2, I outline the literature around OUD, harm reduction, the scope of NP practice in providing MOUD and safe supply, and barriers and facilitators to NP provision of MOUD and safe supply. Chapter 3 is a scoping review looking at the concept of capability in advanced practice nursing. The scoping review manuscript has been submitted and is currently under revision:


The protocol outlining methods for the scoping review in Chapter 3 has been published in *JBI Evidence Synthesis,* and can be found in Appendix B:

scoping review protocol. *JBI Evidence Synthesis*, 20(8), 2079-2086.
https://doi.org/10.11124/JBIES-21-00443

In Chapter 4, I provide a brief overview of my philosophical assumptions based on a phenomenographic approach, followed by a methodological manuscript, published in *Global Qualitative Nursing Research*:

https://doi.org/10.1177/23333936231212281

In Chapter 5, I describe the methods used for a phenomenographic study of nurse practitioner experiences of capability development in treatment of OUD in primary care, and Chapter 6 details the results of that study. In Chapter 7, I consider the results of the phenomenographic study in the context of findings from the scoping review.

Numbering of tables and figures in the included manuscripts has been modified to conform to the requirements of thesis formatting.

**Researcher Positionality and Reflexivity**

In the section that follows, I aim to provide the reader with some insight into some of the professional and personal influences that have been instrumental in my development as a researcher, and my conception of this thesis. I also consider how my thinking evolved during this research journey through critical conversation. My research is situated within the discipline of nursing, and the context of my professional practice as an NP, primary care provider, and nurse researcher. As an NP, I was aware that my insider role as NP was juxtaposed with my role as researcher. I have engaged in ongoing reflection both on my personal professional identity as an NP and on the broader role of the NP within the healthcare landscape. I also drew on my prior
work in education, and my role as a clinical nursing instructor and preceptor consistent with Thorne’s (2016) assertion that qualitative researchers must acknowledge the importance of self-awareness as well as provide a clear articulation of assumptions and prior disciplinary knowledge.

My research lens and my choice to explore treatment of OUD for this study were influenced by my clinical work as a primary-care NP who integrates treatment for substance use disorders into care for patients at a rural Federally Qualified Health Center in the United States. I have aimed to include relevant literature and to explore perspectives related to both Canada and the United States, and recruited participants for my qualitative study from both countries. This PhD was completed at a Canadian University. As part of my program of study, I also completed a PhD level methodology course through the University of Gothenburg in Sweden and was fortunate to present my work at events organized by the Society for the Study of Addiction in the United Kingdom. These opportunities have enriched and expanded my perspective. However, I acknowledge the influence of my training and practice as an NP within the U.S. system of care on my approach to this work.

While my role as NP insider served to facilitate communication and understanding between me and my research participants, I attempted not to allow my experience as a clinician to cloud data collection or analysis. I aimed to listen to participants’ descriptions of prescribing patterns and approaches to care for PWUD without making comparisons to my own decision-making process. However, this was not always possible; it was difficult to set aside my approach to clinical reasoning, and participant descriptions of clinical encounters sometimes felt like an invitation to me to reflect on similarities and differences between their experiences and my own. In paying attention to my insider/outsider role I aimed to maintain an awareness of my
relationship to study participants as recommended by Mitchell et al. (2018). I was cognizant of any overlay between my experience as a NP and the experiences of my study participants, recognizing that this had the potential for my making invalid assumptions about the experiences of others as the insider role has been implicated by Pillow (2003) in the blurring of boundaries between researcher and participant.

It was not possible for me to fully separate my experience of the phenomenon of interest – in this case NP capability in treatment of OUD – from the research and my experience as a researcher. As a nurse and nurse researcher I am interested in reflecting on the ways in which I operationalize my own capability and competencies, and on the intersections between the work of nursing and how that work manifests in practice. Through the process of aligning and connecting information and perspectives from diverse sources I aimed to engage in the complex coalescence of information that also enables nurses to treat patients holistically.

Phenomenographic data is necessarily presented in relationship to the researcher, and influenced by the researcher’s own experience (Åkerlind, 2012; Kullberg & Ingerman, 2022), consistent with a second-order perspective that assumes that what we can describe is our experience of a phenomenon, rather than the phenomenon itself. In my case, it was impossible to fully separate the data I gathered in this study from my own experience of capability development in clinical practice as an NP. Although bracketing of the researcher’s prior experience and knowledge has been proposed by some in phenomenography as a way of focusing the research inquiry on the experiences of the participants (Ashworth & Lucas, 2000; Marton & Booth, 1997), interpretive awareness and researcher reflexivity are preferred by others (Akelind, 2005). Throughout my interviews with other NPs, I aimed to listen deeply and attentively, and avoid being “tempt[ed]…away from careful listening” (Ashworth & Lucas,
While I could not entirely put my own experience to one side, I worked to be present and open to hearing the experiences of others, allowing the interview conversations to evolve, and to remain open to new perspectives.

My worldview is a product of my lived experience, both within healthcare and more broadly. I acknowledge that I have been shaped by the advantages afforded to me as a white, cis-gender, straight female with educational and socioeconomic privilege. My experience differs significantly from many of my patients who may experience generational poverty, lack of educational opportunity, and substance use. The patients I work with are my teachers regarding their own experiences that are not part of my personal journey. The importance of recognizing any inherent researcher privilege was stressed by Mitchell et al. (2018). As I have developed my practice as a nurse, NP, and researcher, I continue to seek out ways to learn more about equity and access, and to ask questions about my own practice and motivations.

Learning to be uncomfortable is part of the process of becoming a capable practitioner, which may require spending time in the theoretical liminal space between comfortable competence and unworkable chaos. I remain committed to inhabiting this in-between space and to cultivating my own practice of reflexivity as an ongoing endeavor, which has been proposed as especially important work for qualitative researchers given the iterative and emergent nature of the research process and design (Jacobson & Mustafa, 2019).

I agree with Gemignani (2017) that the process of reflexive thinking itself should be subject to scrutiny and ongoing inquiry by the researcher as a way of constructing knowledge. Completing a social identity map (Jacobson & Mustafa, 2019) was helpful in identifying ways in which others may not share my experience and confirmed my often-underacknowledged privilege (Kohl & McCutcheon, 2014). (See Appendix A). However, it is possible for this type
of activity to become what Kohl and McCutcheon (2014) described as completion of a “laundry list” rather than a deep dive into the complexity of the researcher-participant relationship. I drew on the work of Kohl and McCutcheon (2014) in aiming for a thoughtful approach to considering which narratives or participant stories I may inadvertently give more attention to and which I need to amplify further. Discussions with my supervisor, committee members, and with critical friends in a small community of practice comprised of PhD student peers was foundational to my ongoing reflexivity and the development of my thinking over the course of this study.

Incorporating critical friends and communities of practice into the research process is proposed as a way to benefit from the collective effort of thinking critically with others about a research problem and to reflect on positionality (Blanco & Rossman, 2022; Kohl & McCutcheon, 2014; Whitfield et al., 2022). Thinking together with peers and with my committee members helped me to reflect more deeply on this study, and my reasons for undertaking it. For example, there were occasions when I found myself feeling uneasy with interview participant responses. Talking and thinking about why certain responses made me uncomfortable helped me to listen as deeply as I could to what are valuable portions of my data.
Chapter One References


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Chapter Two

Literature Review

The literature presented in this chapter is intended to situate my study within the historical and current practice landscape, and to inform the reader about some of the contextual factors which contributed to my thinking. I drew on the approach to the literature that Braun and Clarke (2022) describe as “making an argument,” setting the scene within which my study and research questions exist. I have organized this chapter to move from the more general to specific, in order to help the reader understand the overarching context of my study, as well as factors affecting the specific practice of NP provision of medication for opioid use disorder (MOUD) in primary care. I discuss addiction, opioids, and opioid use disorder (OUD), briefly consider approaches to addiction, and outline the tenets of harm reduction to frame the context within which nurse practitioners (NPs) provide MOUD. I review the literature around treatment of OUD by NPs, including consideration of barriers and facilitators for NPs providing this care. Given my focus on the clinical practice experience of NPs, I include only a brief summary of opioid pharmacology; an in-depth discussion of opioid mechanisms of action at the cellular level is beyond the scope of this thesis. Likewise, I have opted not to discuss medication dosing protocols in detail here, but refer the reader to the relevant guideline documents, where dosing is addressed in detail. To better understand capability as a concept, and to provide context for my exploration of capability development by NPs providing MOUD, I also completed a comprehensive scoping review of the literature on the topic of capability in advanced practice nursing (APN) which is presented in Chapter Three.
Addiction

Addiction can be defined as simply as a “problematic use of a substance” (Center for Addiction and Mental Health, 2023), and more broadly as “a treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment, and an individual’s life experiences” (American Society of Addiction Medicine, 2019). By definition, people with addiction are assumed to continue to use whatever substance they are addicted to, despite potential or actual negative consequences (American Society of Addiction Medicine, 2019; National Institute on Drug Abuse, 2020). The biopsychosocial model of addiction proposes that factors influencing or contributing to addiction are varied, and include genetics and epigenetics, the environment, social determinants of health, and learned behaviors (American Society of Addiction Medicine, 2020; Volkow et al., 2019). From a neurobiological standpoint, addiction is often conceptualized as a cycle with three stages: the binge or intoxication stage, in which dopamine is released, positively impacting the brain’s reward circuits; the withdrawal stage, in which lack of a substance results in uncomfortable withdrawal symptoms; and the preoccupation or anticipation stage, in which a person will experience cravings with a resulting decrease in executive function (Herron & Brennan, 2019). It is important to note that not all individuals who use drugs will develop addiction (Volkow et al., 2019).

In the United States, criminalization of some drugs was solidified with the passage of the Harrison Act of 1914 ("Harrison Narcotics Act," 1914), which levied a tax on opiates and coca products. Physicians were prevented from prescribing opiates to people considered to be addicted, thus limiting supply, and contributing to the black market for drugs (Renner, 2018). Since then, addiction has been portrayed in a variety of ways including as an immoral or criminal act, as choice, as a chronic disease, as a mental illness, as a socially constructed issue, and as a
learning disorder (Szalavitz, 2017). The notion of “addiction” itself has been framed as morally divisive (Frank & Nagel, 2017). The role of psychosocial factors in addiction represents a development of the view of addiction as a brain disorder, which was seen by some as implying that people who use drugs lack control over the disease or its progression. It has also been argued that the continued focus on addiction as a “brain disease” perpetuates and promotes racialized approaches to drug use that do not take the social determinants of health into account, and that promote any drug use as inherently harmful (Hart, 2017, 2020). For example, Hart (2020) took issue with the model of addiction as a chronic brain disease and what he perceived as a characterization of addiction as inevitable. While Hart did not reject treatment options, he stressed that they should be reserved for those who need and desire them. One can appreciate that the portrayal of addiction as a chronic disease can imply that people with addiction are in some way sick and/or that a cure is needed, and that this should be imposed externally by the medical establishment.

**Opioids**

*Opium* is a naturally occurring substance obtained from the sap of the opium poppy (*Papaver somniferum*). *Opiates* are alkaloids found in raw opium and include morphine, codeine and thebaine. Opioids are either *endogenous* – those that occur within the body – or *exogenous*. Exogenous opioids can be further subdivided into *semisynthetic* or *synthetic*. Semisynthetic opioids are derived from opiates and include buprenorphine, heroin (also known as diamorphine or diacetylmorphine), and oxycodone (Pathan & Williams, 2012). Fully synthetic opioids include fentanyl, methadone, and others. For the purposes of this thesis, I refer to all opiates and opioids collectively as opioids, given terminology generally adopted to describe the “opioid crisis”.

Opioids have a long history of use as drugs to treat pain or cough, as well as illicit use for their
euphoric effects. Despite the effectiveness of opioids for treating pain in the short term, there is a lack of strong evidence for the use of opioids to treat chronic pain, although they continue to be prescribed clinically for this indication (Pathan & Williams, 2012). It is important to note that opioids have both beneficial and harmful potential; any discussion of their use needs to balance these concerns.

Opioids act primarily by binding to G-protein coupled receptors at mu (MOP) opioid receptors, and to a lesser extent at delta (DOP) and kappa (KOP) receptors within the central nervous system, as well as in peripheral tissues (Pathan & Williams, 2012). The mechanism by which opioids act at receptors determines their further classification as agonists, partial agonists, and antagonists (Pathan & Williams, 2012). Binding of opioid agonists at mu receptors produces pain relieving and rewarding effects including analgesia, sedation, and euphoria, as well as side effects including bradycardia, respiratory depression, nausea, and constipation (Pathan & Williams, 2012). Overdose can result in respiratory depression because of decreased sensitivity to carbon dioxide levels, with potentially fatal consequences. The euphoric effects of opioids are largely due to their action on dopamine signaling in the nucleus accumbens, where they trigger dopamine release (Volkow et al., 2019). Continued use of opioids over time results in the development of tolerance and physical dependence. A decrease in dopamine release with repeated use has been theorized to result in a desire to use additional opioids to attain previously experienced euphoria (Volkow et al., 2019). Opioid overdose can be reversed with the antagonist naloxone, which displaces opioids from opioid receptors.

**Opioid Use Disorder**

OUD can occur in the context of prescription drug use, or use of illicitly obtained opioids including heroin, fentanyl, and fentanyl analogs (Centre for Addiction and Mental Health, 2021).
The Diagnostic and Statistical Manual Fifth Edition (DSM-5) criteria for substance use disorders encompass impaired control over substance use, social impairment, risky use, and the pharmacologic criteria of tolerance and withdrawal (Diagnostic and statistical manual of mental disorders : DSM-5-TR, 2022). The DSM-5 criteria for OUD requires a pattern of opioid use that leads to “clinically significant impairment or distress” with at least two adverse consequences of drug use (physical, psychological, or social) ("Substance-related and addictive disorders," 2022). OUD is classified as mild, moderate, or severe based on how many DSM-5 criteria are met and further delineated by the degree of remission (if present) as early or sustained, and account for whether an individual is on maintenance therapy or in a “controlled environment” without access to opioids. It is important to note that other substances are often used together with opioids, and that OUD is unlikely to occur in isolation (Bhalla et al., 2017; Compton et al., 2021).

**Approaches to the Overdose Crisis**

Approaches to the opioid overdose crisis can be conceptualized as primary, secondary, and tertiary prevention (Cerdá et al., 2023). Primary prevention measures include policies aimed at preventing opioid misuse including safer opioid prescribing, development of prescribing guidelines and regulations, and institution of prescription drug monitoring programs. Secondary prevention is aimed at identifying individuals who would benefit from prescribed medication for opioid use disorder (MOUD), expanding access to MOUD programs, and reducing barriers to accessing treatment including using telehealth, and through increased “take home” doses of medication. Tertiary prevention is aimed at overdose reduction and recognizes that abstinence cannot be a universal expectation of PWUD. Tertiary prevention measures include distribution of naloxone for overdose reversal, increasing access to drug-testing supplies so that PWUD can
check their supply for contaminants such as fentanyl, supervised consumption sites, and safe supply prescribing (Cerdá et al., 2023).

**Harm Reduction**

What we might now term harm reduction approaches were used as far back as the early 1900s when opioid maintenance clinics provided treatment for those addicted to opium (Renner, 2018). Some harm reduction practices which were developed amongst communities of people who use drugs (PWUD) have gradually become more formalized and integrated into policy and clinical care (Stancliff et al., 2019). Principles aimed at preventing the spread of HIV and hepatitis are now being applied within the context of drug use and have the potential for application to many health-related behaviors (Hawk et al., 2017).

While harm reduction definitions, policies, and programs vary, a set of guiding principles is often presented as a tool for those developing policy or working with PWUD (Harm Reduction Coalition, 2020; Harm Reduction International, n.d.; Hawk et al., 2017). While the literature has focused primarily on benefits at an individual and program level (Denis-Lalonde et al., 2019), harm reduction is also applicable in larger socioeconomic arenas, as expressed in the United Nations (2023) position statement. Key harm reduction concepts tend to fall into several categories: a) Drug use is generally acknowledged to be inevitable and complex and is considered within the context of social inequities and the social determinants of health; b) the approach to care is non-judgmental and value neutral; c) potential harms that can occur due to drug use are recognized and there is a focus on efforts to minimize harms through pragmatic and evidence-based policy and program development; and d) there is a strong focus on the value, expertise, and contributions of PWUD (Harm Reduction Coalition, 2020; Harm Reduction International, n.d.; Hawk et al., 2017).
Jourdan (2009) felt that harm reduction needed to be considered as a philosophy of care, arguing that without this general philosophy of care we may feel compelled to examine the merits of any new proposed intervention from a moral standpoint. Accepting harm reduction as philosophically sound allows us to judge proposed interventions based on the evidence of their efficacy and effectiveness (Jourdan, 2009). When harm reduction is seen as “complementary” to prevention, treatment, and enforcement, then the potential exists for conflict between differing approaches (Jourdan, 2009). However, if harm reduction is seen as an overarching philosophy, then all other responses must be examined with a harm reduction lens, even though this may reveal conflicts. The resulting tensions can stem from how we perceive PWUD and drug use, and the extent to which we consider harms to be related to drug use directly or to occur because of social conditions that exacerbate the potential for those harms (Jiao, 2019).

While proponents of harm reduction approaches may focus on social justice and seek to address structural violence at a policy level, they must be vigilant to ensure that one form of discrimination is not replaced with another (Harm Reduction International, 2020; Hart, 2017, 2020). For example, while the authors of many harm reduction frameworks referenced MOUD as best practice, authors of an exploratory descriptive qualitative study interviewed 12 individuals on methadone maintenance treatment in Ontario, and found that treatment requirements, including daily dosing and urine drug testing, were oppressive (O’Byrne & Jeske Pearson, 2019). The sample size for O’Byrne and Jeske Pearson’s study was small, and individuals were recruited using convenience sampling; the authors cautioned that their results should be considered preliminary. However, the authors raised the question of whether MOUD crosses the line from treatment to a form of “social regulation.”

Many harm-reduction strategies hinge on increasing or ensuring access and decreasing
barriers so that patients who desire treatment can obtain it without undue impact on their ability to lead productive lives. As Sigmon (2014) noted, balancing patient goals and optimal clinical practice while ensuring that treatment also does not overburden providers can be challenging. During the COVID-19 pandemic, alternative approaches to traditional office visits and frequent dosing of medications have been especially relevant. Authors of a rapid review of global harm reduction approaches sought to identify the most effective use of harm reduction interventions for people who use drugs during a pandemic-type event and found evidence for designating harm reduction services as essential (Wilkinson et al., 2020). Wilkinson et al. identified 121 sources of evidence, of which 60 were included in the review; most were non-peer reviewed, pre-publication, or expert opinion; most originated from North America (n=26) and the United Kingdom (n=14). Based on their review findings Wilkinson et al. (2020) advocated for flexibility around visit frequencies and prescriptions and discussed innovative approaches to providing injection supplies including via mail and home delivery. The use of mobile technology for patient monitoring and extended-release buprenorphine formulations also have been proposed as holding potential for reducing patient burden while ensuring safety (Sigmon, 2014, 2019; Sigmon & Bigelow, 2017).

Medication for Treatment of Opioid Use Disorder

Treatment with medication for opioid use disorder (MOUD) is considered best clinical practice, reduces mortality, and is generally accepted as a harm reduction strategy (Donroe & Tetrault, 2018; National Academies of Sciences Engineering and Medicine, 2019; Sordo et al., 2017; Wakeman et al., 2020). While MOUD is effective and safe, most individuals in North America and globally with OUD do not receive treatment (National Academies of Sciences Engineering and Medicine, 2019; Wakeman et al., 2020; World Health Organization, 2023)
MOUD encompasses a range of prescription medications. Opioid agonist therapy is considered first-line treatment for OUD (Centre for Addiction and Mental Health, 2021; Wakeman et al., 2020), and involves replacing illicit opioids with prescriptions, often for the partial opioid agonist buprenorphine, or the full agonist methadone. In the United States, patients may receive buprenorphine (either on its own or in combination with naltrexone), methadone, or extended-release naltrexone. U.S. based NPs and primary care providers cannot prescribe methadone for OUD, although it can be used in specialty addiction settings, as well as for pain. In Canada, in addition to the above medications, NPs and other providers can use methadone for MOUD, including within non-specialty settings. Canadian providers can also prescribe slow-release oral morphine, as well as other full agonist medications (see discussion of safe supply below). Medication and other service choices should be made in consultation with the patient and taking patient circumstances into account (Bruneau et al., 2018; Taha, 2019; Yarborough et al., 2016).

In Canada, opioid agonist therapy or MOUD is regulated at the provincial and territorial level. A national Canadian guideline was published by Bruneau et al. (2018), and the Canadian Centre for Addiction and Mental Health (CAMH) published a unified guideline document for opioid agonist treatment (Centre for Addiction and Mental Health, 2021), drawing on other Canadian clinical guidelines. The CAMH Guideline is accompanied by a prescriber’s guide to medication (Selby et al., 2022). Together the CAMH Guideline and Prescriber’s Guide are comprehensive, and cover choice of medication and dosing, as well as discussion of other supports for PWUD, and specific practice settings – for example treatment provided in rural settings or via telehealth, and the impact of the social determinants of health on OUD. Within the U.S. context, the American Society of Addiction Medicine (ASAM) guidelines also outline
assessment, diagnosis, and treatment options including medication dosing, and like the CAMH documents, discusses considerations for clinicians working with specific populations, including adolescents, pregnant persons, and criminal justice involved individuals (American Society of Addiction Medicine, 2020).

MOUD best practices encompass comprehensive services including prompt access to harm reduction services and medication, provision of naloxone for overdose reversal, as well as access to vaccinations, screening for infectious diseases such as HIV and viral hepatitis, pre-and post-exposure prophylaxis for HIV, and connection to social supports, all of which should be provided in the context of trauma informed and culturally relevant care (American Society of Addiction Medicine, 2015; Centre for Addiction and Mental Health, 2021). Treatment should not be delayed while a comprehensive assessment is completed (American Society of Addiction Medicine, 2015; Centre for Addiction and Mental Health, 2021). The CAMH guideline also encourages clinicians to weigh risks versus benefit in general for MOUD. For example, although methadone and some street drugs can cause life-threatening prolongation of the cardiac QTc interval, CAMH reminds providers that the risk of death from QTc prolongation may be less than from overdose (Centre for Addiction and Mental Health, 2021). Similarly, the ASAM guideline does not consider use of benzodiazepines as a contraindication to initiation of MOUD, even though the combination increases risk (American Society of Addiction Medicine, 2015). MOUD is strongly preferred over withdrawal management alone (British Columbia Centre on Substance Use et al., 2022; Bruneau et al., 2018; Centre for Addiction and Mental Health, 2021; Wakeman et al., 2020).

In a study that focused on the effectiveness of MOUD with non-pharmacologic treatment, authors did a comparative effectiveness analysis, using database of individuals covered by both
Medicare Advantage and commercial insurance (Wakeman et al., 2020). The authors examined the data of 40,885 individuals with OUD for outcomes that included overdose or other serious opioid-related events such as a visit to the emergency department. Overdose in the Wakeman et al. study was less likely in people who received MOUD (buprenorphine or methadone) than in those who were treated with non-pharmacologic treatment only. Over a 12-month period people treated with methadone or buprenorphine had a 59% reduction in overdose. Risk of an acute episode of care related to opioid use was also reduced in those receiving buprenorphine or methadone. Despite these benefits, and the association of longer duration of treatment with lower overdose risk, individuals were often not treated for extended periods of time.

One sobering finding in the study by Wakeman et al. was that only 12.5% of those with OUD in the study sample started treatment with MOUD. Although there is strong evidence for the benefits of MOUD as a public health strategy and Wakeman et al. (2020) and others have called for health systems and insurance companies to prioritize MOUD, uptake is still low (National Academies of Sciences Engineering and Medicine, 2019). Of note, treatment with extended-release naltrexone was not found to be associated with the same positive benefits that treatment with buprenorphine and methadone confers (American Society of Addiction Medicine, 2015; Wakeman et al., 2020).

Initially short treatment time frames for MOUD were the norm, yet evidence supports the continuation of therapy for as long as it is beneficial (American Society of Addiction Medicine, 2015; National Academies of Sciences Engineering and Medicine, 2019; Wakeman et al., 2020). A systematic review and meta-analysis looking at mortality risk during and after opioid substitution treatment found a statistically significant reduction in risk for all cause and overdose mortality with continuation on methadone (Sordo et al., 2017). Mortality risk was higher
immediately following discontinuation of either treatment, suggesting that providers should weigh the risks and benefits of discontinuation carefully (Sordo et al., 2017).

**Safe Supply**

Supplying PWUD with safe prescription alternatives to purchasing drugs on the street has been a goal of advocacy organizations, especially in Canada. The idea of safe (or safer) supply as a harm reduction strategy was initially outlined by the Canadian Association of People Who Use Drugs (Canadian Association of People Who Use Drugs, 2019). Safe supply is described as “a legal and regulated supply of drugs with mind/body altering properties that traditionally have been accessible only through the illicit drug market” (Canadian Association of People Who Use Drugs, 2019, p. 4). In North America, safe supply is largely confined to Canada, although there are calls for U.S. regulators to consider policies to allow safe supply prescribing and encourage associated research (Cerdá et al., 2023; Ivsins et al., 2020). In Canada, safe supply is categorized as an “emerging harm reduction strategy” and, while safe supply is not yet considered a standard of care, organizations and individuals continue to advocate for its consideration, based on clinical assessment (Centre for Addiction and Mental Health, 2021).

While safe supply can be conceptualized as a harm reduction strategy, authors of the Safe Supply Concept Document (Canadian Association of People Who Use Drugs, 2019) argued that the need for harm reduction interventions would be reduced if PWUD had access to a legal drug supply, with current harm reduction services reconceptualized as “basic health care” (p. 6). The Canadian Association of People Who Use Drugs (2019) advocated for safe supply as a human right and category of drug policy along with treatment and harm reduction. Increased calls for safe supply were prompted by the recognition that the toxicity of the street drug supply was a
large contributor to deaths from opioids, however safe supply is not limited to opioids (Canadian Association of People Who Use Drugs, 2019).

MOUD is recognized as first line for OUD, and there has been an increase in provision of treatment, especially with buprenorphine in the United States (Cerdá et al., 2023). However, MOUD programs do not meet the needs of all PWUD and have not been successful in adequately keeping pace with increasing opioid overdose deaths (Cerdá et al., 2023; Ivsins et al., 2020). Additionally, MOUD programs can have poor retention rates (Cerdá et al., 2023; Ivsins et al., 2020), as well as contributing to stigma and trauma for participants (Cerdá et al., 2023; Henderson, 2022). Not all PWUD are interested in participating in traditional MOUD programs (Ivsins et al., 2020). Harm reduction strategies such as naloxone distribution and supervised consumption sites have been helpful but have not been sufficient in addressing the toxicity of the drug supply (Ivsins et al., 2020). Additionally, COVID-19 limited access to a reliable drug supply for PWUD, potentially contributing to withdrawal symptoms and increased risk of overdose. Deaths attributed to opioids continue to be attributed in large part to contaminants in the drug supply, often non-prescription fentanyl, and to combinations of multiple substances including stimulants such as cocaine or methamphetamine (Federal provincial and territorial Special Advisory Committee on the Epidemic of Opioid Overdoses, 2023).

Reducing the risks associated with exposure to fentanyl and related analogs is paramount in the effort to reduce opioid-related deaths (Ivsins et al., 2020). Safe or safer supply programs provide PWUD with prescribed alternatives to the illicit drug supply (British Columbia Centre on Substance Use et al., 2022), sometimes known as “risk mitigation prescriptions”. In one study, safe supply with injectable diacetylmorphine was shown to increase retention in treatment when compared to opioid agonist therapy (MOUD) with methadone (Oviedo-Joekes et al.,
One way in which safer supply can be operationalized involves prescriptions issued by a medical provider, who can be an NP. Prescriptions usually include a long-acting opioid combined with a shorter acting opioid such as hydromorphone (brand name Dilaudid™) taken for cravings.

Haines and O'Byrne (2023) conducted a qualitative study focused on the experiences of 30 safe supply program participants in Ottawa, Ontario and McNeil et al. (2022) interviewed 40 safe supply participants in British Columbia. Participants in the Haines and O’Byrne study were prescribed opioids, although some individuals were also participants in a safer stimulant supply program. Participants in the McNeil et al. study received a combination of prescription opioids and stimulants. Findings from both studies supported the argument that while use of safe or safer supply does not require or equal abstinence from illicit drug use, it is often associated with a decrease in use of illicit drugs (Haines & O'Byrne, 2023; McNeil et al., 2022). Specifically, participants in the Haines and O'Byrne (2023) study reported benefits of safe supply including a decrease in overdoses, better mental health, and reduction in illicit drug use. A sense of increased control over drug use was cited by participants in the McNeil et al. (2022) study, and some participants reported reductions in overall drug use, while others reported supplementing their safe supply prescriptions with illicit drugs to achieve euphoria. Even with access to safe supply, PWUD in both studies described challenges including the need for higher doses of prescribed medications to offset withdrawal and craving symptoms triggered by use of illicit fentanyl as well as restrictive policies and guideline limitations (Haines & O'Byrne, 2023; McNeil et al., 2022). While participants in the study by Haines and O'Byrne (2023) talked about the risks of medication diversion, no participants referenced diversion to opioid naïve individuals, and diversion was also perceived as having some harm reduction benefits.
No significant increase or decrease in opioid-related deaths has occurred since the formal institution of safe supply programs in Canada (Federal provincial and territorial Special Advisory Committee on the Epidemic of Opioid Overdoses, 2023). Data for 2023 are preliminary and contingent on the completion of death investigations; caution is therefore recommended when interpreting early results (Federal provincial and territorial Special Advisory Committee on the Epidemic of Opioid Overdoses, 2023).

**Nurse Practitioner Prescribing for Opioid Use Disorder**

Nurse practitioners in both the United States and Canada began to prescribe MOUD as regulatory changes provided them with prescriptive authority for medications used to treat OUD. In the United States, passage of the CARA (United States 114th Congress, 2016) and SUPPORT (United States 115th Congress, 2019) acts respectively, enabled NPs to prescribe buprenorphine within outpatient settings, if they completed requisite training, and obtained a waiver from the Drug Enforcement Administration (DEA). The addition of NPs (and other advanced practice registered nurses) to physicians as prescribers of buprenorphine in outpatient settings increased access to MOUD from primary care providers. In 2017 only 1.7% of United States NPs held DEA waivers enabling them to prescribe buprenorphine (Andrilla et al., 2019). While low, this number reflected an analysis just one year following the CARA act, which made it possible for NPs to acquire an initial DEA waiver. This was in contrast with physician numbers which remained low at 3.7% in Andrilla et al.’s 2019 analysis, even though physicians had been able to procure DEA waivers for buprenorphine since the passage of the DATA 2000 Act, 17 years earlier ("Drug Addiction Treatment Act," 2000). By 2019, the number of NPs with waivers had risen; state percentages of NPs with waivers from the DEA ranged from 0.0% to 14.0% (Dieperink & DePaepe, 2019) and by 2021 there were 22,005 NPs holding DEA waivers
(American Association of Nurse Practitioners, 2021). The DEA waiver was designed in theory to ensure safety for patients, yet it presented perceived or real barriers to providers and patients (Duncan et al., 2020; Frank et al., 2018), an example of harms perpetuated by the enforcement of a policy designed to reduce them. With the passage of the Consolidated Appropriations Act, 2023 (United States Congress, 2022), the DEA waiver was discontinued, meaning that NPs and other providers in the United States could provide buprenorphine treatment without additional monitoring or regulatory requirements.

In Canada, changes to prescribing regulations for controlled substances more generally enabled NPs to prescribe buprenorphine and methadone, as well as to use full opioid agonists such as hydromorphone for treatment of OUD ("Controlled drugs and substances act: New classes of practitioners regulations," 2012). The Canadian Narcotic Control Regulations were amended in 2018 to reduce regulatory barriers for NPs prescribing methadone and diacetylmorphine (Government of Canada, 2018). Although there were changes to prescribing regulations for controlled substances in Canada, discussion of NP prescribing trends for OUD in Canada was lacking in the literature. The differences in the available literature may relate to the specificity of legislation around buprenorphine as one singular medication for OUD in the United States, as opposed to the general focus on controlled substances in Canada. The significantly larger numbers of NPs in the US may also have contributed to the discrepancy between the US and Canadian literature. References to NPs as safe supply prescribers were slim in the literature. A few authors referenced NPs (Haines & O'Byrne, 2023; Henderson, 2022; Young et al., 2022), however in general, while NPs were noted to be prescribers, authors did not explore their experiences. For example, McNeil et al. (2022) and Haines and O'Byrne (2023) briefly reference NPs as potential prescribers for safe supply, while Selfridge et al. (2022)
endorse NPs as potential members of the clinical team. Henderson (2022) references NPs, however her study is focused on the experience of PWUD rather than on NP providers.

Authors of most studies on OUD prescribing focused on regulatory changes; fewer studies considered barriers and facilitators for NP prescribing or the NP student experience in either Canada or the United States. Several studies discussed the implications of the expansion of the Drug Enforcement Administration waiver (DEA waiver) in the United States to include NPs and PAs and the resulting increase in access to OUD treatment in rural areas, with authors noting the potential positive contributions of NPs practicing in rural locations. Buprenorphine-naloxone (brand name Suboxone) was considered to have advantages over methadone or extended-release naltrexone for patients in rural settings in the United States, given that daily visits are not needed, and it can be prescribed in primary care settings (Speight et al., 2023).

Barriers and Facilitators to Nurse Practitioner Prescribing of Medication for Opioid Use Disorder

Studies looking at barriers and facilitators to NP prescribing of medication for OUD included a qualitative study published just prior to the removal of the U.S. waiver for buprenorphine (Speight et al., 2023); a qualitative study looking at facilitators and barriers for NPs providing methadone treatment in Canada (Bates & Martin-Misener, 2022); and a mixed methods US study considering barriers and facilitators to advanced practice registered nurse (APRN) prescribing of buprenorphine (Spetz et al., 2021). Of note, authors of the study by Speight et al. (2023) were only able to recruit two NPs who had a DEA waiver and were prescribing, thus providing only limited data from NPs with experience of treating OUD, while none of the NPs interviewed by Bates and Martin-Misener (2022) were methadone prescribers at the time of the study.
While barriers to providing treatment for OUD were found to resemble those identified in prior studies of physician prescribers, barriers were potentially more burdensome for NPs (Bates & Martin-Misener, 2022; Speight et al., 2023). Thematic analyses by Bates and Martin-Misener (2022) and Speight et al. (2023) described barriers to NP treatment of OUD including stigma; regulations and care context; NPs self-described knowledge; education and practice supports; role clarity; and the need to navigate physician networks. NP practice could be impacted by educational requirements for NPs (24 hours for NPs versus eight hours for physicians at the time of the study), and other regulations governing NP scope of practice, including the requirement, where present, for NPs to practice with a collaborating physician (Speight et al., 2023). In U.S. states where physician oversight of buprenorphine was required by scope of practice regulations, this may have contributed to waiver uptake by NPs (Spetz et al., 2021). Stigma was not only noted by NP participants; authors of one study noted that NPs themselves used stigmatizing language during the interviews, and expressed beliefs buprenorphine treatment was essentially swapping one drug for another, with NPs describing buprenorphine as being used to achieve a “high” (Speight et al., 2023, p. 115). Fear of medication diversion and misuse was also identified as a barrier to buprenorphine prescribing (Andrilla, Jones, et al., 2020).

Facilitators of NP prescribing for OUD included a person-centered approach, prescriber skills, and access to resources for prescribing (Speight et al., 2023). For example, supports for providers participating in a pilot program described by Sorrell et al. included community of practice group meetings where reimbursement barriers were addressed, as well as partnerships with community organizations increased including local police, jails, emergency departments and hospital discharge planners (Sorrell et al., 2020). A quality improvement project aimed at increasing the number of patients receiving treatment for OUD through implementation of a
nurse-led weekly buprenorphine clinic resulted in increases in both buprenorphine treatment visits and unique patients over the course of the pilot (Carroll, 2022). While Carroll (2022) and Sorrell et al. (2020) both demonstrated that APRNs are well-placed to provide treatment for OUD, both studies were small, making generalization difficult.

Educational interventions and their impact on NP attitudes and knowledge in U.S. graduate nursing programs were explored through a survey of NP programs (Kameg et al., 2021); qualitative studies (Barcelona et al., 2022; Kameg et al., 2018); and in quality improvement projects (Jones et al., 2020; Wright et al., 2022). Barriers to making curricula modifications in academic programs included lack of time, faculty expertise, and stigma (Kameg et al., 2021), while facilitators identified included the presence of faculty champions, access to external educational resources, student interest, and financial incentives (Kameg et al., 2021). Pre and post-test survey assessments showed increased APRN student knowledge and a high degree of interest in working with people with OUD (Kameg et al., 2018) as well as attitudinal changes related to work with patients with substance use disorders (Wright et al., 2022). Thus, while requirements for additional education may be considered an organizational barrier, NP student interest was not lacking. The decision to include training in substance use/OUD in the curriculum was prompted by COVID-19 and the resultant worsening in the opioid overdose crisis, as well as by student interest (Barcelona et al., 2022), and by the desire to increase access to treatment (Jones et al., 2020).

**Effects of Regulatory Changes**

Several authors described changes in regulation and their effect on NP prescribing for treatment of OUD. Authors of a scoping review of 11 articles examining the impact of NP scope of practice on treatment for chronic pain and OUD in North America (Nikpour & Broome, 2021)
found a focus on regulatory barriers which influenced the NPs ability to treat OUD and identified multiple policy documents calling for regulatory changes to include NPs as treatment providers. While Nikpour and Broome’s 2021 review of the literature showed a strong interest by NPs in prescribing buprenorphine, they also noted a relationship between NP scope of practice laws and OUD treatment prescribing. The authors discussed scoping review results in relationship to three themes: NP practice authority and chronic pain prescribing; NP practice authority and OUD treatment; and changes in comprehensive education about chronic pain and OUD. There was evidence of increased NP education on opioid prescribing and on the treatment of chronic pain, although a need for more education in this and for OUD treatment and addiction treatment was also identified (Nikpour & Broome, 2021).

In the United States, authors commented on the changes in regulations governing buprenorphine prescribing and the impact of those changes on NP prescribing for OUD (Klein, Geddes, et al., 2022; Klein, Hartung, et al., 2022). In the immediate few years following passage of the CARA Act (United States Congress, 2016) and the SUPPORT Act (United States 115th Congress, 2018) permitting NPs to obtain DEA waivers, several authors focused on the impact of this expansion on the prescriber supply, including prescribing trends for buprenorphine and patient access, as well as the impact of scope of practice regulation on waiver uptake (Andrilla, Jones, et al., 2020; Andrilla et al., 2019; Auty et al., 2020; Dieperink & DePaepe, 2019; Gardenier et al., 2020; Ghertner, 2019; Spetz et al., 2021; Varghese et al., 2019). For example, Andrilla et al. (2019) looked at the number of providers with DEA waivers to provide buprenorphine treatment and noted that NPs and PAs had added availability for treatment of OUD in 56 counties where treatment was unavailable prior to the passage of the CARA Act. Uptake of DEA waivers in rural counties was higher in states without physician oversight
requirements (Spetz et al., 2021), with higher uptake in states that already had higher rates of waived physicians (Auty et al., 2020).

NPs significantly impacted the prescribing of treatment for OUD in very rural or frontier areas (Klein, Geddes, et al., 2022), although disparities were noted to persist between rural and urban areas even after the passage of the CARA Act (Andrilla, Jones, et al., 2020). NPs were perceived as an important addition to the OUD healthcare workforce (Sorrell et al., 2020). However, authors of a mixed methods study of barriers and facilitators to APRN prescribing for buprenorphine treatment of OUD concluded that waiver uptake may have been impeded in states where physician oversight of buprenorphine was required by scope of practice regulations (Spetz et al., 2021). Projected increases in buprenorphine prescribing for OUD by APPs in the US were considered to have potential to reduce disparities in the access to OUD treatment in the US, by significantly increasing access to treatment in rural areas, which had historically lacked access to treatment due to a lack of physician providers with buprenorphine waivers, in comparison to more urban areas (Andrilla, Patterson, et al., 2020). Although Andrilla, Patterson, et al. (2020) concluded that APPs had the potential to increase access, they also noted that relatively few APPs had obtained a buprenorphine waiver, one year following passage of the CARA Act. Therefore, projections for how much NPs and PAs might increase access were estimated to require time to achieve. Of note, the more recent removal of the DEA waiver may make it more difficult to track buprenorphine prescribing for OUD as researchers will no longer be able to rely on the DEA waiver list but will need to consider prescribing data. Based on studies looking at NP uptake of DEA waivers it seems reasonable to expect that buprenorphine prescribing by NPs may continue to be affected by scope of practice regulations following the recent removal of the X waiver requirement.
Several U.S. states implemented legislation related to prescribing of buprenorphine that exceeded state scope of practice laws generally (Andraka-Christou et al., 2022). By the summer of 2021, Tennessee was the only state to prohibit prescribing of buprenorphine by advanced practice providers (including NPs) outright, while Ohio, Virginia and Louisiana required NPs prescribing to be supervised by a physician with a waiver (Andraka-Christou et al., 2022). Tennessee has subsequently lifted requirements preventing NPs from prescribing buprenorphine (Tennessee Department of Mental Health and Substance Abuse Services, 2023). Authors of a study looking at U.S. Medicaid prescribing data from the year following the passage of the CARA Act from July 2017 – June 2018, found that APPs comprised approximately one fifth of all prescribers for buprenorphine, with an increase of almost 80% in the number of NP prescribers from the first to the last quarter of the study year (Varghese et al., 2019).

In a study looking at buprenorphine prescribing practices of U.S.-based NPs and physician assistants, Andrilla, Jones et al. (2020) surveyed all rural NPs and physician assistants holding a buprenorphine waiver (n=1,057) and a random sample of urban NPs and physician assistants (n=500) holding waivers to prescribe buprenorphine, with a survey response rate of 46.3% (n=614). Most of the APPs who responded were prescribing buprenorphine (80%) and accepting new patients for MOUD (71.1%); however, a minority of those with a 30 patient waiver were approaching the maximum number of allowed patients (17.5%) (Andrilla, Jones, et al., 2020). Of note, the questionnaire employed by Andrilla, Jones, et al. (2020) was an adapted/expanded version of one used by this group of authors earlier to survey physicians (Andrilla et al., 2018) which meant that comparisons could be drawn between the two groups of providers – the authors concluded that APPs faced many of the same barriers as their physician colleagues. Barriers were somewhat determined by rurality with rural providers reporting
concerns about difficulty accessing specialty and mental health services, confidence in their prescribing abilities, as well as more resistance from practice colleagues. Andrilla, Jones, et al. (2020) found that waived APPs were more likely to be taking new patients and treated more patients for OUD compared with physicians surveyed in 2016, while noting that further research will be needed to determine whether these trends will continue over time.

Klein, Geddes, et al. (2022) considered how changes in how prescriptions for the treatment of OUD were geographically distributed in Oregon, after passage of the CARA Act in 2017, which expanded prescribing authority for MOUD to nurse practitioners. This was a study involving interrupted time series analysis with linear regression – looking at prescriptions for medication treatment of OUD in the Oregon Prescription Drug Monitoring Database. The study sample included all buprenorphine prescriptions for OUD dispensed in 2016-2018. The authors found that passage of the CARA Act positively impacted supply and geographic distribution of OUD treatment in Oregon. By December 18, NP prescriptions comprised 17% (rural areas) and 12% (urban areas) of all prescriptions for OUD. In so called “frontier” or very rural areas, NP prescriptions accounted for 36% of all prescriptions written for OUD by December 2018. Also looking at Oregon, Klein, Hartung, et al. (2022) compared how NP characteristics differed between those that obtained a waiver and those who did not, with the aim to “evaluate changes in non-buprenorphine controlled substance prescribing following CARA implementation between waived and non-waivered NPs” (Klein, Hartung, et al., 2022, p. 2). Klein, Hartung, et al. compared the impact of the 16 hours of additional training mandated by the CARA Act in the US for NPs (as opposed to physicians) and considered how the training requirement impacted waiver uptake and prescribing. The study by Klein, Hartung et al. used data gathered through the 2016-2018 Oregon Prescription Drug Monitoring Program and NP licensure data. NPs with a waiver
were more likely to have a psychiatric certification and to prescribe more controlled substances (non-buprenorphine) than those who were not waivered. Limitations of the study included the inability to consider patient characteristics, external factors such as insurance and clinic policies, as well as the geographic limitations, given that the study was limited to NPs prescribing in Oregon. The authors recommended training for NP education, even though educational requirements for buprenorphine prescribing were rescinded in 2021 (Klein, Hartung, et al., 2022).

Conclusions

In this chapter I have provided an overview of the various contexts for my study, situating my inquiry within the history of addiction generally within North America, outlining the history of NP provision of MOUD, and considering literature on NPs as MOUD providers. Chapter 3 is a scoping review in which I and my co-authors map the global literature on capability in advanced practice nursing. In considering the intersection of these areas, my thesis work reflects the realities of clinical practice and education – where treatment of chronic issues such as substance use disorder is always intertwined with the social determinants of health, and the sociopolitical and economic realities within with patient and provider must function. There is a dearth of literature that considers the NP experience of providing MOUD in North America. I was not able to locate any qualitative studies focused on NP provision of MOUD in primary care settings. More research is also warranted that focuses on the NP experience of developing capability.
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Chapter Three

Capability as a Concept in Advanced Practice Nursing and Education: A Scoping Review

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Abstract

Objective: The objective of this review was to map the literature about the concept of capability in the context of advanced practice nursing education and practice to achieve greater clarity of the concept and its application.

Design: A scoping review of the literature using JBI methodology.

Introduction: Advanced practice nursing roles are a growing segment of the global nursing workforce. Capability has been proposed as an overarching description of the attributes of advanced practice nursing roles within complex workplace environments. Capability includes knowing how to learn, and the ability to creatively integrate prior knowledge, skills, judgement, and experience in both new and familiar situations.

Inclusion criteria: This review looks at the literature about capability applied to advanced practice nursing in any setting globally. We were guided by the International Council of Nurses’ definition of advanced practice nursing, which includes nurses with both graduate education and an expanded scope of practice. We used a working definition of capability as a combination of knowledge, skills, experience, and competencies that enables advanced practice nurses to provide appropriate care for patients in both familiar and unfamiliar clinical settings. We included literature about individual capability as a concept in any setting related to advanced practice nursing and education.

Methods: We searched 18 electronic databases and included qualitative, quantitative, and mixed methods study design methodologies, reviews, and reports. The grey literature search included policy and practice documents from the World Health Organization, the International Council of Nursing, and websites of 48 nursing and health organizations. Two reviewers independently completed title and abstract screening prior to full text review and data extraction. Conflicts were
resolved in discussion or with a third reviewer. Extraction was completed by two reviewers using a piloted extraction tool. Sources published in English from 1975 to the present were included. Sources in other languages were not included in the review due to difficulties accurately translating the concept of capability.

Results: 35 sources were included in the review with publication dates from 2000 to 2023. Most sources originated from Australia, the United Kingdom, and the United States of America. Sources included frameworks and clinical guidelines, peer reviewed articles, and grey literature. Capability was discussed in a range of settings, including specialized clinical roles. Applications of capability in educational settings included the use of capability frameworks to guide nurse practitioner education, nursing practice doctorates, and postgraduate nurse practitioner training. Definitions of capability, where provided, were relatively consistent. Capability was proposed as a distinguishing characteristic of advanced practice nursing, as a descriptor of clinical proficiency that moved beyond competency, and as a framework that accounted for complexity in healthcare settings.

Conclusions: Capability was used as a framework to describe advanced practice nursing within complex practice environments that necessitate flexible approaches. Capability frameworks were applied holistically and to specific areas of practice or education, including to pre- and postgraduate advanced practice nursing education. Strategies for teaching and learning capability focused on flexibility, student-directed learning, and development of flexible learning pathways.
Introduction

Advanced practice nursing (APN) roles existed in 78 countries as of 2020 (World Health Organization, 2020). The International Council of Nurses (ICN) guidelines for APN practice (International Council of Nurses, 2020) define an advanced practice nurse (APN) as:

a generalist or specialized nurse who has acquired, through additional graduate education…the expert knowledge base, complex decision-making skills and clinical competencies for advanced nursing practice, the characteristics of which are shaped by the context in which they are credentialed to practice. (p.6)

Historical challenges exist in reaching consensus on role terminology, scope, education, and purpose regarding the APN (Bryant-Lukosius et al., 2014; Mantzoukas & Watkinson, 2007; Stasa et al., 2014; Thompson & McNamara, 2022). Inconsistencies have also been noted within specific APN role types, such as Nurse Practitioner (NP) (Carrey et al., 2007b; Masso & Thompson, 2017) and Clinical Nurse Specialist (CNS) (Goudreau et al., 2007), and when distinguishing between APN roles (Pearson & Peels, 2002). The ICN recommends a master’s degree as the minimum educational preparation for APNs while acknowledging country-specific variations in regulation (International Council of Nurses, 2020). However, in the United States, the Doctor of Nursing Practice or DNP degree is becoming the accepted entry level for APNs (American Association of Colleges of Nursing, 2015).

APN roles and titles are protected in some jurisdictions; in others they represent a level of clinical practice more informally. Some role confusion exists around differentiating expert Registered Nurse (RN) versus APN practice. For example, the Australian College of Nursing (Australian College of Nursing, 2019) distinguishes between an APN who “functions at the full
extent of the registered nurse practice scope” and an NP who is practicing “beyond the registered nurse practice scope.” (p.16) NP roles in Australia, New Zealand, and the United States are generally considered to be at the highest level in terms of role designation. In the United Kingdom, the NP role is superseded by that of Nurse Consultant in terms of pay grade and perceived expertise (Currie et al., 2007). The U.K.’s Royal College of Nursing defines advanced nursing practice as a level of practice consistent with a master’s level of education, and the ability to act autonomously, rather than a role title (Royal College of Nursing, 2018). In the United States, Advanced Practice Registered Nurses (APRNs) include NPs, Clinical Nurse Midwives (CNMs), CNSs and Certified Registered Nurse Anesthetists (CRNAs), although NP roles vary by population focus (Chekijian et al., 2021). The advent of medication prescribing by RNs has been cited as an extension of their abilities, knowledge, and experience (Chater et al., 2019). However, not all nurses with prescriptive authority are APNs. In this review we use the terms adopted by authors in the literature (for example Nurse Practitioner). We use the abbreviation APN to indicate any advanced practice nurse and to refer to the field of advanced practice nursing. In general, we were guided by the ICN definition of APN, however we acknowledge we may have missed literature where roles were not clearly defined.

 Capability

The capabilities approach, developed by Sen (1979) and Nussbaum (2011), considers what an individual is capable of and how potential is realized (Robeyns & Fibieger Byskov, 2020). The concept of capability as we use it in this review also has roots in the United Kingdom, where it was proposed as a response to rapidly changing work environments in the context of globalization (Hase & Davis, 1999a, 1999b). Authors of a 1979 *Education for Capability Manifesto* proposed that students were not being adequately prepared to apply
knowledge to the workplace and focused on the integration of specialist skills and scientific knowledge outside academia (Education for capability: Details of the Royal Society of Arts recognition scheme, 1981; Stephenson & Weil, 1992). The concept of capability has been used within technical vocational education (Cairns, 1999); as a holistic description of the ability to engage in self-directed learning and creative problem solving (Stephenson & Weil, 1992); and to account for factors affecting individual agency within health promotion (Abel & Frohlich, 2012). Cairns and Stephenson (2009) defined capability as “a holistic concept which encompasses both current competence and future development through the application of potential” in which ability, self-efficacy, and values are integrated (Cairns & Stephenson, 2009, pp. 16-17) (pp.16-17).

Capable individuals have been described as poised to adapt to environments or workplaces characterized by change or ambiguity (Hase & Davis, 1999a, 1999b), and able to function effectively when presented with novel problems, or when working within new contexts (Cairns & Stephenson, 2009; Hase & Davis, 1999a). To be capable is to have an “all round capacity” (Hase, 2000), be adept at learning how to learn, be creative, have high self-efficacy, work well with others, and be able to apply knowledge in new as well as familiar situations (Hase & Davis, 1999a, 1999b), or to “quickly fathom the new environment” (Stephenson, 1998, p. 4). Capability has been described as both holistic and interdependent, and evolving over time (Woods, 2013), implying an ability to imagine the future and work towards it (Stephenson, 1998).

Capability in APN has been compared with competency or competencies (Chan et al., 2020; Pulcini et al., 2019; Wilson et al., 2015). Although competencies may refer to mastery of specific tasks, capability has been used to denote a broader overarching set of attributes
including the ability to apply competencies within both familiar and unfamiliar settings (Gardner et al., 2008; Sciacca & Reville, 2016a; Stephenson, 1998). Hase and Davis (Hase & Davis, 1999a) proposed that competencies, while important, are insufficient, with new pedagogical models for capability learning needed that encourage self-direction in learning and decision-making (Hase & Davis, 1999b; Phelps et al., 2005). Thus, capability implies an ability to adapt to change and to engage in continuous learning, attributes not usually assigned to competency (Phelps et al., 2005).

In nursing, capability has been used to describe advanced nursing skills of clinicians (Sciacca & Reville, 2016a) and educators (McAllister & Flynn, 2016), and as an approach that can inform how APN learning prepares them for healthcare complexity (O’Connell et al., 2014). Nursing capability can describe higher order skills including the ability to think critically, communicate with others, and assimilate knowledge, skills, experience, and judgement, (Bromley, 2018; O’Connell et al., 2014), including practice and interactions within new or changing contexts, and using both non-verbal and verbal communication (Bromley, 2018).

The objective of this scoping review was to identify and map how the concept of capability is described in the literature about APN education and practice (Whitfield et al., 2022). We chose to conduct a scoping review based on guidance in the literature (Colquhoun et al., 2014; Munn et al., 2018; Pollock et al., 2021). We determined that a scoping review was appropriate for systematically mapping the diversity of approaches and understanding of capability as a concept in APN; synthesizing the academic and gray literature on capability; and examining the extent and nature of how capability is defined and discussed. This scoping review could be used to develop a future targeted review or concept analysis. An understanding of capability as applied to APN education and practice may also help policy makers and educators
determine the scope and potential for APN in countries where the APN role is still in development.

A preliminary search of PROSPERO, MEDLINE (Ovid), the Cochrane Database of Systematic Reviews, Epistemonikos, the JBI EBP Database, and the Campbell Collaboration was conducted. We did not identify any comprehensive scoping review of capability as a concept in APN practice and education. In a mixed methods systematic review Hako et al. (2022) summarized and compared international literature on APN capabilities. Torabizadeh et al. (2019) explored professional capability in nursing, while Hartviksen et al. (2019) looked at capability in healthcare middle managers including nurses. Neither Torabizadeh et al. nor Hartviksen et al. focused on APN. In contrast to Hako et al. (2022), our review focuses on capability as a concept and is a scoping, rather than a mixed methods, systematic review. Other differences between our review and the review by Hako et al. (2022) include our decisions to: limit our review to sources whose authors name and discuss capability in APN; exclude sources where discussion is focused on organizational or structural capability, or where capability is only mentioned in passing; and to conduct a more extensive search of the published and grey literature. A hand-search of the studies included in the review by Hako et al. demonstrated that authors of some included sources did not explicitly name and discuss capability or focused their discussions on structural or environmental capabilities.

Review question

What is known about the concept of capability as applied to APN practice and education?

Sub-questions:

1. How is the concept of individual capability described in the context of APN and education?
2. How have definitions of capability changed or evolved in APN and education?
3. How is the concept of capability used in the evaluation of APN and education?

**Inclusion Criteria and Key Terms**

**Population**

Inclusion and exclusion criteria for this review are summarized in Table 1. The population is APNs who meet the ICN definition as outlined in the introduction (International Council of Nurses, 2020); who have completed graduate education; and who have an expanded scope of practice. Globally, there are multiple role titles for nurses who have an advanced scope of practice. For the purposes of this review, APNs were considered to include Nurse Practitioners (NPs), Certified Registered Nurse Anesthetists (CRNAs), Certified Nurse Midwives (CNMs), Clinical Nurse Leaders (CNLs), and Clinical Nurse Specialists (CNSs). While APNs in some countries hold licenses that specifically relate to their advanced practice roles, in countries where the role of APN is still evolving licensing regulations may not yet reflect an expanded scope, or role titles may not be protected. Therefore, we included nurses with some graduate education and an expanded scope of practice who work in settings where the APN role is not as clearly delineated if the characteristics of their role fit broadly within the ICN definition. For example, Hill et al. (2021), described the APN role as advanced, autonomous, and requiring “courageous and critical thinking,” (p. 6) and noted that not all advanced level practitioners in the UK have achieved the recommended educational level of a master’s degree, meaning that employers must determine whether nurses have achieved the relevant level of practice through experience and expertise. For jurisdictions without a well-developed and protected role title for APN we referred to the ICN definition of APN. Conversely, we excluded sources where the role title was that of an APN, but the description of the educational preparation and role tasks did not fit with the ICN
definition. We excluded sources with a focus on undergraduate or associate nursing, or on Physician or Physician Assistant practice or education.

The APN clinical role title may not always correlate with an individual’s registration title. For example, NPs working the United States are also APRNs, while NPs working in the United Kingdom may be RNs or ANPs. Additionally, while beyond the scope of this review, not all NPs work within roles that are congruent with their certification, such as Family Nurse Practitioners who work in acute care settings. APNs are also sometimes included within broader designations of providers with an advanced scope. For example, in the United States the term Advanced Practice Provider (APP) is also used to denote any APRN or Physician Assistant (PA), while the U.K. designation of Advanced Clinical Practitioner includes nurses as well as other providers.
**Midwives and Nurse Midwives.** We initially included midwives in our search, based on the U.S. model in which Certified Nurse Midwives (but not Professional Midwives) are also APNs. However, in some countries, including the United Kingdom and Australia, nursing and midwifery exist as separate professions, although options exist for nurses to add a midwifery qualification. For example, in the United Kingdom, nursing and midwifery training are separate, although dual certification is an option (Nursing and Midwifery Council, 2022). Additionally, some midwifery education is at the baccalaureate level. Lay or professional midwives may not have the same formal academic qualifications as Certified Nurse Midwives. Therefore, we made the decisions to exclude midwives, unless they were Nurse-Midwives who also met criteria as APNs.

**Advanced Clinical Practitioners.** In the United Kingdom advanced practice roles are determined by level of practice, rather than by role title (Henderson, 2021; Lawler et al., 2020; Morley et al., 2022; Woodman & Spencer, 2023). Advanced clinical practitioners in the United Kingdom include individuals from nursing, physiotherapy, pharmacology, and other fields, whose autonomous practice is guided by the four pillars of advanced practice: clinical practice; leadership and management; education; and research (Health Education England, 2017). Literature that discussed advanced clinical practitioners was included in the review only if findings were discussed specifically in relation to APNs. However, a brief discussion of capability and the advanced clinical practitioner is included in the discussion section.

**Concept**

The concept of interest for this review is capability as an individual attribute or set of attributes. In developing a working definition of individual capability and defining our search terms, we drew on prior definitions of capability (Cairns, 1999; Fraser & Greenhalgh, 2001;
Hase, 2000; Hase & Davis, 1999a, 1999b; O'Connell et al., 2014). Based on the literature, we used a working definition of capability in advanced practice nursing as the *ability to combine and build on prior knowledge, skills, experience, and competencies and apply them to provide appropriate care for patients in both familiar and unfamiliar clinical settings or scenarios.* We used search terms including self-efficacy, graduateness, autonomy, and higher order thinking skills, as synonyms for the ability to move beyond competency and apply knowledge creatively.

Sources that considered individual capability in the context of APN were included. We included sources in which the authors discussed or proposed appraisal tools for the evaluation of APN capability, or where APN capability was a key component of a theoretical or conceptual framework. Given the extent of the literature on APN practice, we opted to limit sources to those that referenced capability explicitly. We also excluded sources at the full text stage that used the term capability in passing, but did not discuss it as a concept, provide a definition, or expand upon its meaning.

We distinguished between discussion of APN capabilities when this term was used synonymously with competencies or skills, and the use of the term capability as a description of a more comprehensive set of skills or expertise. Sources in which authors referenced capabilities as singular tasks or skills without discussion or implication of a more inclusive conceptual description were excluded. We excluded sources in which the authors focused on organizational, rather than individual capability.

**Context**

We considered capability in any clinical and educational setting related to the development of individual attributes in APN practice and education, to include all dimensions of
the APN role as defined by the ICN (International Council of Nurses, 2020). Sources in which
the authors considered capability at an organizational or logistical level only were excluded.

*Types of sources*

We considered all types of quantitative, qualitative, and mixed methods studies, reviews, and reports. A search of the grey literature included expert opinions, clinical guidelines, dissertations and theses, editorials, articles, and reports regarding policies and strategies in use by professional bodies or organizations. Scoping or systematic review sources that included relevant meta-analysis were included in our final review. Reviews of included articles were excluded.

*Table 1*

*Inclusion and exclusion criteria*

<table>
<thead>
<tr>
<th>PCC Component</th>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Advanced practice nurses, as defined by the ICN</td>
<td>Midwives, unless meeting criteria as advanced practice nurses;</td>
</tr>
<tr>
<td>Concept</td>
<td>Capability discussed as a concept, term, or individual quality, including capability as component of a theoretical or conceptual framework</td>
<td>Midwives, unless meeting criteria as advanced practice nurses. Undergraduate or associate nurses Physicians or physician assistants</td>
</tr>
<tr>
<td>Context</td>
<td>Any setting related to APN education or practice. Studies from 1975 to the present. Studies in English</td>
<td>Date prior to 1975 Focus on regulation of APN roles.</td>
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*Methods*

This scoping review was undertaken in accordance with the JBI methodology (Peters et al., 2020), and reported in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018). The review
was conducted in accordance with an a priori protocol (Whitfield et al., 2022), and is registered with Open Science Framework at: https://doi.org/10.17605/OSF.IO/4Y9ZT.

**Search Strategy**

In our search strategy, we aimed to locate both published and unpublished studies, including reviews and reports, as well as text and opinion articles that referenced capability in the context of APN practice or education. An initial limited search of MEDLINE (Ovid), CINAHL (EBSCO), PsycInfo (Ovid) and Education Source (EBSCO) identified articles on the topic. A full search strategy was developed using words contained in the titles and abstracts of relevant articles, and the article index terms. Boolean operators (OR, AND), including adjacencies and truncations were used to combine appropriate keywords and related terms. We adapted the search strategy for each included database or information source, including identified keywords and index terms. The full list of search strategies for each source are included in Appendix C-I.

We included sources published from 1975 to the present, based on initial discussions of capability in the literature by Sen (Sen, 1979) in the late 1970s, and the beginnings of discussion of expertise development in nursing by Benner in the early 1980s (Benner, 1982, 2001). We included literature published in English and other languages in the initial search, and used Google Translate® and DeepL Translate® to review non-English abstracts for relevance. However, we decided to eliminate articles in other languages at the full-text stage, given difficulties with accurately translating the concept of capability. In accordance with JBI guidance, no critical appraisal was completed (Peters et al., 2020).

We developed the review search strategy in collaboration with the academic librarian scientist on our research team. The systematic search was conducted in March-April 2022, and
the searches were re-run before the final analysis in February 2023. Duplicates were removed in Endnote20 (Clarivate Analytics, PA, USA), and the compiled results were imported to Covidence (Veritas Health Information, Melbourne, Australia).

Sources of Evidence Selection

We searched the following databases for published, unpublished, and gray literature:
CINAHL, ERIC, Education Source (all via EBSCO); MEDLINE, EMBASE, PsycInfo, JBI EBP (all via Ovid); Web of Science Core Collection including SciELO; OMNI (Central Discovery Index); Applied Social Sciences Index and Abstracts (ASSIA); ProQuest Health and Medical Complete (including Canadian Business and Current Affairs: Health and Medicine, Nursing and Allied Health Premium, ProQuest Dissertations and Theses Global: Health and Medicine, Published International Literature On Traumatic Stress (PTSDpubs), Sports Medicine and Education Index); Social Science Research Network (SSRN); and Google Scholar (first 100 results only). In addition, we conducted a hand search for reports, policy, and practice documents from professional nursing practice, education, membership, and regulatory organizations. We began our hand search with documents and policy briefings from the ICN and the World Health Organization, and then searched websites of 48 professional organizations, identified as resources by the ICN, and including country and regional/state boards of nursing, and membership organizations. Details of this portion of the search are included in Appendix C-II. Systematic and scoping reviews were included if they contributed new information based on synthesis by the review authors. The overlap of studies included in included systematic or scoping reviews was checked against the studies included in our review. Protocols were included only if the relevant study had not been published. We included one case study protocol (Gardner et al., 2016) as we did not identify the corresponding full study. We screened the reference lists
of all included sources of evidence, and of identified scoping and systematic reviews.

Following a pilot test, titles and abstracts were screened by two independent reviewers for assessment against the inclusion criteria for the review. Potentially relevant sources were retrieved in full and were assessed in detail against the inclusion criteria by two or more independent reviewers. Any disagreements that arose between the reviewers at each stage of the selection process were resolved through discussion, or with an additional reviewer(s). We discussed questions regarding inclusion for 17 sources. Almost all questions centered around whether to include sources where APNs were included but were not distinguished from other health professionals. We made the decision as a team not to include sources where APNs were included with other health professionals without any discussion related to APNs only. One author was contacted regarding an article in press, which was ultimately included in the review. The results of the search, the study inclusion process, and the reasons for exclusion of full text sources of evidence that did not meet the inclusion criteria were recorded and are presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) flow diagram (Tricco et al., 2018), (Figure 1).

**Deviation From the Original Protocol**

We adjusted the a priori protocol as follows:

1. We reworded the two review sub-questions for clarity.

2. A search of the JBI EBP Database was added to ensure that we captured relevant studies. In consultation with the librarian scientist on our team we did not search the Cochrane Database separately since it is covered within MEDLINE.

3. Non-English abstracts were reviewed using DeepL in addition to Google Translate. We made the decision to exclude non-English sources given the difficulty of accurately
translating capability as a concept.

4. After discussion, we decided to use a spreadsheet to manage and review the extracted data and citations, rather than the JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI; JBI, Adelaide, Australia) as specified in the protocol.

**Data Extraction**

Two independent reviewers extracted data from documents included in the scoping review using a data extraction tool developed and piloted by the reviewers. The full review team met to pilot the extraction form as presented in the study protocol (Whitfield et al., 2022). Following this meeting the extraction form was adjusted in several ways: drop down menus were included in the extraction form where possible to standardize how information was extracted and presented; the type of capability discussed was included as a data extraction point; and a way to capture illustrations was included. Extracted data included bibliographic information, type of paper, stated aims of the paper, details of participants, concept, context, study methods and key findings relevant to the review questions, including definitions and any study recommendations. Following extraction of data for each included document by two team members, the extracted data was collated into a final spreadsheet by the first author and reviewed by the full team. Because this scoping review is about how the concept of capability is understood in the literature, we extracted definitions of capability as described by authors of the included sources, including direct quotes, as well as references by authors of included sources to other existing definitions (see Appendix C-VII) No significant disagreements arose between the reviewers at this stage. The data extraction tool is included in Appendix C-III
Data Analysis and Presentation

Extracted data from the included sources are presented in tabular form in Appendices C-VI and C-VII. Appendix C-VIII indicates which sources contributed to each review question. A data extraction spreadsheet was used to capture information related to the central concept of capability, and its use in APN practice and education. As specified in our protocol (Whitfield et al., 2022), a descriptive approach was used to outline publication type, author, year of publication, and topic as aligned with the review objectives. Initial analysis focused on describing the number, type, geographical location, methodological approach, aim, and context of the included sources. We also identified APN role titles used by authors of the included sources. We adopted an inductive, iterative approach to developing categories and subcategories related to the review questions, based on the extracted data. Initial categories were proposed by the first author, followed by discussion with all authors to finalize categories. While we did not conduct formal coding, our approach had similarities to the inductive coding approach described by Elo and Kyngäs (2008), where open coding is used to generate categories, which are then abstracted to broader headings. A narrative summary describes how the results relate to the review objective and questions.

Results

Source Inclusion

We identified 9,053 records through our search strategy, for which we screened the titles and abstracts for relevance. An additional 51 records were identified through handsearching. We screened the full texts of 533 documents, of which 498 were excluded. The main reasons for exclusion were a lack of explicit reference to capability or a passing reference only (n=419), and the wrong population (not nursing, or not specific to APNs) (n=49). Citations for all included
sources are listed in Appendix C-IV. Excluded sources and exclusion reasons are listed in a supplementary appendix (C-X).

Sources in Other Languages. We identified 17 sources in other languages, which are listed in Appendix C-V. Sources were identified in: Chinese (n=3); French (n=3); German (n=1); Japanese (n=2); Norwegian (n=1); Portuguese (n=4); Spanish (n=2); and Swedish (n=1). Given that capability as a specific concept that may not always translate consistently into other languages, we decided not to include sources for which translations were not publicly available.
Figure 1

Search results, source selection, inclusion process

- Records identified from electronic search of 14 databases: 12,067
- Records removed before screening: Duplicates 3,014
- Records screened: 9,053
- Records excluded: 8,561
- Records sought for retrieval: 492
- Records not retrieved: 10
- Records assessed for eligibility: 482
- Total screened at full text 533
- Records excluded: 498
- Total records included in review: 35

Exclusion Reasons at Full Text

- 419 No explicit reference to capability or passing reference only
- 47 Wrong population: Not specific to APRNs (physicians, physician assistants, advanced clinical practitioners, midwives who are not APRNs, and RNs or associate level nurses or nursing students)
- 17 Language other than English
- 6 Scoping or Systematic Review
- 4 Focus on organizational rather than individual capability
- 3 Review of an included study
- 2 Dated prior to 1975
Characteristics of included sources

35 sources were included in the final review. A full list of included sources and their characteristics is included in Appendix C-VI. Although capability is discussed generally in the literature starting in the late 1970s, our search showed that capability as a concept in APN appeared later in the literature; dates of publication for the included sources ranged from 2000 to 2023 (see Figure 2).

Figure 2

Publication dates for included sources

Geographical Origin of the Included Sources. The geographical location of included sources is detailed in Figure 3, and included: 11 from Australia, eight from the United Kingdom; and five from the United States. The remaining sources comprised two each from Canada, Ireland, Australia and New Zealand, Australia and the United Kingdom; one from Finland; and two from the ICN (which has a base in Switzerland but a global scope and mission).
Type and Methodology of Included Sources. The included sources (n=35) comprised six guideline, standards, or framework documents (Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland, 2017; Chief Nursing and Midwifery Officers Australia, 2021; Gardner et al., 2019; Health Education England et al., 2020; International Council of Nurses, 2020; Nursing and Midwifery Board of Australia, 2021). Also included were four theses or dissertations (McCrea, 2019; Monk, 2021; Raleigh, 2015; Speight, 2020); one non-published report (International Council of Nurses NP/APRN Network, 2019); and six commentary or discussion papers (Carryer et al., 2007a; Cornforth & Ashurst, 2007; Hill et al., 2021; Lakeman, 2000; O'Connell et al., 2014).

Five mixed or multi-methods studies were included (Cashin, Buckley, et al., 2015; Gardner, Carryer, et al., 2006; Gardner, Dunn, et al., 2006; Searby et al., 2023; Wolf et al.,
Qualitative studies included three case studies (Kilgore, 2019; Raleigh, 2015; Raleigh & Allan, 2017; Ryder et al., 2023); one case study protocol (Gardner et al., 2016); one secondary deductive analysis of interview data (Gardner et al., 2008); one study using cultural domain analysis and semi-structured interviews (McDermott et al., 2021); one study using hermeneutic phenomenology (Monk, 2021); and three general qualitative studies (Lamb et al., 2018; Schoenwald et al., 2022; Speight, 2020). One quantitative study included a descriptive analysis of survey data (McCrea, 2019).

The sources included three general reviews of the literature (Anderson et al., 2009; Cashin, Green, et al., 2015; Sciacca & Reville, 2016a), two scoping reviews (Cashin et al., 2017; Wilson et al., 2015), and one systematic mixed methods review (Hako et al., 2022). Given the inclusion of reviews, some potential exists for overlap with our review. We concluded that the inclusion of reviews was justified, based on differences in identified sources, search strategies, and review foci. The greatest degree of overlap is with a mixed methods systematic review by Hako et al. (2023). Hako et al. limited their search to three databases (CINAHL, PubMed, and Scopus), which yielded 11 articles, of which five overlap with our review (Gardner et al., 2008; Gardner, Dunn, et al., 2006; Lamb et al., 2018; Raleigh & Allan, 2017; Wolf et al., 2017). Based on their analysis, Hako et al. proposed a new element of capability; therefore, we felt it important to include their work. In a scoping review focused on conceptual and theoretical frameworks for nurse practitioner education, Wilson et al. (2015) identified 12 articles, of which one (Gardner et al., 2008) is included both in our review, and in the review by Hako et al (2023). In a scoping review looking at nursing doctorates, Cashin et al. (2017) identified eight studies. Although a list of included studies was not provided by Cashin et al. (2017), the authors mentioned one study that is included in our review (Cashin, Buckley, et al., 2015). In other literature reviews
Anderson et al. (2009) aimed to integrate findings from the literature on competence and capability with literature on e-portfolios as an assessment strategy; Sciacca and Reville (2016b) looked at NPs enrolled in fellowship and residency programs as one subset of APNs in the geographic context of the United States; and Cashin, Green, et al. (2015) referenced a search of the literature related to the development of mental health capabilities in NP curricula which did not identify any published studies.

**Aim and Context of Included Sources.** Sources considering capability in APN from a global perspective included the mixed methods review exploring the international literature on capability and capabilities in APN (Hako et al., 2022), and a scoping review of theoretical frameworks for NP graduate education (Wilson et al., 2015). The ICN Guidelines on Advanced Practice Nursing were aimed at providing overarching guidance for APN practice globally. (International Council of Nurses, 2020) Authors from the ICN (International Council of Nurses NP/APRN Network, 2019) also mapped APN practice across 19 countries. The countries included in the ICN mapping project were those that were able to make data available to project authors and were not inclusive of all countries with APN roles; capability was only discussed in relation to Australia. All countries represented by the sources included in our review were also included in the ICN mapping project.

The development and application of country-specific frameworks and guidelines were discussed in the context of APN in Ireland (Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland, 2017; Ryder et al., 2023); the United Kingdom (Health Education England et al., 2020); Australia (Cashin, Buckley, et al., 2015; Chief Nursing and Midwifery Officers Australia, 2021; Gardner et al., 2019; Nursing and Midwifery Board of Australia, 2021; O'Connell et al., 2014); and Australia and New Zealand (Gardner, Dunn, et al.,
2006). Capability was also considered within broader frameworks, for example in the Skills for Health Framework (Hill et al., 2021) and the Theoretical Domains COM-B framework (Speight, 2020); as well as the use of a leadership capabilities framework in the context of APN practice in Canada (Lamb et al., 2018).

Authors of some sources explored or defined capability within a particular practice setting or role, including NP practice in the emergency room setting in the United States (McCrea, 2019; Wolf et al., 2017); the Alcohol and Other Drug (AOD) NP workforce in Australia (Searby et al., 2023); acute care pediatric NP practice (McDermott et al., 2021); practice experiences of emergency NPs in the United Kingdom (Monk, 2021); use of physical assessment skills by community-based advanced NPs in the United Kingdom (Gardner et al., 2016; Raleigh, 2015); and the provision of telephone-based advice within prison health in Australia (Schoenwald et al., 2022).

Capability was discussed in reference to the evaluation of NPs in educational settings including in postgraduate fellowship programs in the USA (Sciaccia & Reville, 2016a); e-portfolios in NP education (Anderson et al., 2009); NP curriculum and capabilities related to addressing mental health care (Cashin, Green, et al., 2015); a case study of a training program for an NP in the UK (Kilgore, 2019); and practice doctorates (Cashin et al., 2017). Use of a capability framework was proposed to guide advanced clinical learning and teaching in NP education in Australia and New Zealand (Gardner et al., 2016). Discussion articles included a debate about the inclusion of academic capability in APN (Cornforth & Ashurst, 2007) and an editorial on the evolution of APN (Lakeman, 2000).

Role Titles. APN role titles used in the included sources were Nurse Practitioner/NP (Anderson et al., 2009; Carryer et al., 2007a; Cashin, Buckley, et al., 2015; Cashin et al., 2017;
Cashin, Green, et al., 2015; Chief Nursing and Midwifery Officers Australia, 2021; Gardner et al., 2016; Gardner et al., 2019; Gardner et al., 2008; Gardner, Carryer, et al., 2006; Gardner, Dunn, et al., 2006; McCrea, 2019; McDermott et al., 2021; Monk, 2021; Nursing and Midwifery Board of Australia, 2021; Ryder et al., 2023; Schoenwald et al., 2022; Sciacca & Reville, 2016a; Searby et al., 2023; Speight, 2020; Wilson et al., 2015) Advanced Practice Registered Nurse/APRN (Wolf et al., 2017); Advanced Nurse Practitioner/ANP (Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland, 2017; Kilgore, 2019; Raleigh, 2015; Raleigh & Allan, 2017); Clinical Nurse Specialist/CNS (Lamb et al., 2018; Wolf et al., 2017); Community Nurse Practitioner (Raleigh, 2015); Advanced Clinical Practice Nurse (Health Education England et al., 2020); and Advanced Practice Nurse (Cashin et al., 2017; Chief Nursing and Midwifery Officers Australia, 2021; Cornforth & Ashurst, 2007; Hako et al., 2022; Hill et al., 2021; International Council of Nurses, 2020; International Council of Nurses NP/APRN Network, 2019; Lakeman, 2000; Lamb et al., 2018; O'Connell et al., 2014) which could also include the designation of CNS or NP. Sub-specialty roles referenced in the included sources were Emergency Nurse Practitioner (Monk, 2021); Acute Care Pediatric Nurse Practitioner (McDermott et al., 2021); and Alcohol and Other Drug Nurse Practitioner (Searby et al., 2023). While there was some overlap among role titles, it was clear that capability was most frequently used in reference to the NP role, although this may be a correlation with NPs as the largest subset of APNs.

Review findings

In the sections that follow we describe how authors of the sources included in this review contextualized, discussed, and described capability as a concept within APN. Definitions of capability ranged from the general to a focus on a specific area of APN practice, such as
leadership or clinical practice. Authors described capability as an overarching trait or combination of traits, as a distinguishing characteristic of APN, and as a way of moving beyond competency. We describe definitions and applications of capability, discuss how these definitions have evolved over time, and consider capability in the contexts of education and evaluation of APN and education. Key findings for each included source are included in Appendix C-VII.

**Definitions and Descriptions of Capability**

Authors of the included sources drew on a variety of prior definitions of capability, including the work of Hase and Davis (1999b), Hase (2000), Cairns and Stephenson (2009), and later work by Gardner and colleagues (Gardner, Dunn, et al., 2006; O’Connell et al., 2014). Definitions of capability were largely based on elements identified by Hase and Davis (1999b), who described capability as a holistic trait that includes self-efficacy, creativity, community skills and teamwork, knowledge of how to learn, and the ability to apply competencies in new and familiar situations. In a scoping review Hako et al. (2022) identified all five dimensions of Hase and Davis’ framework and proposed an additional dimension – the ability to recognize factors affecting the scope of practice for APNs. In general, authors did not elevate one element of capability above others. While most authors conceived of capability as an inclusive or overarching concept, Monk (2021) linked capability with role identity, competency, and confidence, under the broader umbrella of proficiency which they proposed as moving beyond both competence and capability.

For some authors the definition of capability was implied or assumed (Cashin et al., 2017; Cashin, Green, et al., 2015; Chief Nursing and Midwifery Officers Australia, 2021; Hill et al., 2021; International Council of Nurses, 2020). For example, Australia’s Chief Nursing and
Midwifery Officers (2021) suggested that employers ask themselves how “capability will be reviewed and enabled,” (p.15) but did not describe how this might occur, although they did reference a framework for NP practice. The U.K.’s Core Capabilities Framework was contextualized by Hill et al. (2021), who noted APNs must show capability that meets the specifications of the Framework; however, they did not offer a definition of capability.

A visual representation of capability as a concept was created from extracted data (see Figure 4). Verbatim definitions of capability from all included sources where definitions were provided were uploaded to Word Cloud Generator (Jason Davies) to create the word cloud image.

**Figure 4**

*Visual representation of capability*

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**Capability as a distinguishing characteristic of APN.** Capability was proposed a useful model to describe advanced level attributes (Gardner et al., 2008) including as an overarching trait (Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland,
2017), and as a continuum along which APNs progressed (Cashin, Buckley, et al., 2015). APN practice was characterized by higher levels of capability (Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland, 2017) which distinguished it as “qualitatively different” from other levels of nursing practice (Gardner, Carryer, et al., 2006). For example, the ability to effectively problem solve and act within unfamiliar settings or situations was described as “the essence of the nursing profession and a core characteristic of the NP role” (Sciacca & Reville, 2016a, p. e279). However, some authors acknowledged that further investigation will be needed to determine how well capability aligns with NP standards (Gardner, Carryer, et al., 2006). The International Council of Nurses (2020) described APN as a broad and inclusive role with levels of capability beyond that of a generalist nurse including the ability “manage full episodes of care and complex healthcare problems” (p.10).

Capability as a model was viewed as orienting the evaluation of NP practice to complexity, non-linear reasoning, creativity, and non-standard solutions to providing care (Gardner, Carryer, et al., 2006). Flexibility and the ability to apply skills in new or unfamiliar situations were seen as interconnected with capability, and as imperative, given the increasing complexity of clinical learning and practice environments (Carryer et al., 2007a; Gardner, Dunn, et al., 2006; McCrea, 2019). For example, Gardner, Dunn, et al. (2006) saw capability as emphasizing “the role of complexity in influencing the learning context whereby dynamic systems provide the environment for non-linear and unpredictable events” (p.13). McCrea (2019) found that NP training and onboarding in the emergency room setting helped to move NPs into the zone of complexity and capability and concluded that learning took place best in this zone “near the edge of chaos” (p.134). The purpose of NP education and practice was also conceived as moving individuals towards a “zone of proficiency” (Monk, 2021, p. v). Authors of one study
considered RN perceptions of NP capability, with NPs described as capable, knowledgeable, able to manage complex clinical issues, and skilled in communication and collaboration (Schoenwald et al., 2022). Carryer et al. (2007a) discussed concerns that prescriptive protocols for NP practice might limit the ability of NPs to put this flexibility and responsiveness into practice, and thus curtail their ability to practice with capability.

**Clinical capability: Moving Beyond Competency.** Capability was referred to as a high level of clinical skill, which either moved beyond competency (Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland, 2017; Carryer et al., 2007a; Gardner et al., 2019; Health Education England et al., 2020; O'Connell et al., 2014) or was complementary to competency (Gardner et al., 2008). Several authors focused on the application of capability in clinical settings (Carryer et al., 2007a; Cashin et al., 2017; Cashin, Green, et al., 2015; Gardner et al., 2019; Gardner, Dunn, et al., 2006; Ryder et al., 2023), often within a holistic approach to defining capability (Cashin et al., 2017; Gardner et al., 2019; Gardner, Dunn, et al., 2006). In some cases, capability was focused on particular clinical settings, including mental health (Cashin, Green, et al., 2015) and emergency care (McCrea, 2019; Monk, 2021; Wolf et al., 2017). Ryder et al. (2023) focused on clinical capability as a level of practice, and as a trait that allows individuals to manage change within clinical settings and moves them beyond competency (p.2). Students in Ryder et al’s (2023) study participated in a clinical practicum designed with capability in mind and identified the process of transition from competence to capability. Wolf et al. (2017) described both soft (communication and organization) and hard (clinical direct care) skills used by APRNs, with an “expanded capability” replacing competence. Clinical capability was also described in the context of advanced physical assessment skills (Raleigh, 2015; Raleigh & Allan, 2017), which were seen as improving overall
competence, capability, and performance in NP roles.

Gardner et al. (2008) proposed that both competency and capability be considered on a continuum as a structure for NP education, evaluation, and licensing (p.257). This proposed continuum is reflected in the Australian Nurse Practitioner Standards for Practice which include diagnostic capability as one of four clinical standards across education, research, and leadership, thus placing diagnostic capability in the clinical setting as central to other activities (Cashin, Buckley, et al., 2015; Nursing and Midwifery Board of Australia, 2021).

**Leadership capability.** Several authors referenced leadership capability (Bord Altranais agus Cnaimhseachais na hÉireann Nursing and Midwifery Board of Ireland, 2017; Lamb et al., 2018; McDermott et al., 2021), including as part of the APN Leadership Capabilities model (Lamb et al., 2018) which distinguished between capability domains and associated individual leadership capabilities. While the APN Leadership Capabilities model (Lamb et al., 2018) divides leadership capability domains into patient-focused and organizational and system-focused categories, both categories include capabilities that can be addressed at the individual (rather than organizational) level. McDermott et al. (2021) suggested that individual leadership capability and organizational leadership capacity should ideally exist in balance with one another. Categories in the APN Leadership Capabilities model (Lamb et al., 2018) differed in some respects from the elements of capability identified by Hase and Davis (1999b) For example, patient-focused leadership capability domains included patient care-related activities such as patient-centered care, coaching and educating, advocating, and initiating meaningful conversation (Lamb et al., 2018). Organization and system-focused leadership capability domains included “being an expert clinician” and providing leadership on committees – activities that were still actionable at the individual level (Lamb et al., 2018).
**Capability in Advanced Practice Nursing Education**

Capability as a distinguishing factor of APN practice extended to consideration of how capability can be learned and taught. New educational preparation and assessment strategies were sought that matched the APN or APN student’s capability development (O’Connell et al., 2014; Ryder et al., 2023; Sciacca & Reville, 2016a). For example, Gardner, Dunn, et al. (2006) stated that “becoming capable requires different learning experiences from becoming competent.” (p. 13) Learning strategies proposed as appropriate for capability development included experiential or problem-based learning, situated learning, self-assessment, and flexible learning pathways (Anderson et al., 2009; Gardner, Dunn, et al., 2006; Sciacca & Reville, 2016a).

Andragogical methods, that consider the adult learner specifically, were proposed as appropriate to capability-based learning for NPs (Anderson et al., 2009; Wilson et al., 2015). Heutagogical or self-designed approaches to learning were proposed by McCrea (2019) to describe how “capable people consistently develop innovative approaches to learning.” (p.132) The ability to self-design learning, and to respond to individual learning needs was also seen as important by Gardner, Dunn, et al. (2006) who proposed that a reliance on structured approaches to learning would not be sufficient for NP education. Searby et al. (2023) proposed a range of interventions to improve psychological and physical capability, including recommendations to clearly delineate the NP role as one with an expanded scope, and a holistic approach. At the organizational level Searby et al. (2023) saw a need to support NPs in their efforts to advance their education. The role of mentorship was considered important for helping community NPs learn to perform physical assessment skills (Raleigh, 2015; Raleigh & Allan, 2017).

Some authors discussed learning related to specific areas of capability development
including mental health and treatment assessment (Cashin, Green, et al., 2015), and diagnostic capability (Chief Nursing and Midwifery Officers Australia, 2021), with diagnostic capability presented as underlying all other areas of practice by the authors of the Australian Advanced Practice Nursing Guidelines (Chief Nursing and Midwifery Officers Australia, 2021). Authors of the Australian Nurse Practitioner Clinical Learning and Teaching Framework (Gardner et al., 2019) proposed clinical practice standards to guide learning and teaching to “support the development of high levels of clinical capability” for NPs, (p.4) citing elements from Hase and Davis’ (1999b) framework. Leadership capability was seen as critical for NPs across a range of clinical, educational, and administrative areas (Lamb et al., 2018), and as an element of capability that could be developed through NP training and the transition to practice period (McDermott et al., 2021).

Academic capability as a requirement for advanced level nursing practice was debated by Cornforth and Ashurst (2007), who considered academic capability, including the ability to synthesize information by using skills such as conducting literature reviews, critically appraising evidence, and bringing theoretical knowledge into practice. Cornforth and Ashurst (2007) debated whether academic capability was required for advanced practice, and whether a focus on academic capability might prevent older experienced nurses from advancing or widen the gap between academic and clinical practice.

**Capability in the Evaluation of Advanced Practice Nursing and Education**

The evaluation of APN and APN education was addressed within practice frameworks, explored in the context of pre- and post-graduate training programs, in the evaluation of practice, and in relation to specific assessment modalities. NP training and the transition to practice period were seen as opportune times for leadership capability development that could then continue
throughout an NP’s career (McDermott et al., 2021). Lakeman (2000) proposed that while education can help to “facilitate” capability, it is not a guarantee that an APN will apply it in practice, and noted that expertise must be applied in practice, rather than simply held by the practitioner.

The Core Capabilities and Framework (Health Education England et al., 2020) referenced building and assessing a portfolio of triangulated evidence of capability that can be validated by clinical supervisors of advanced clinical practice nurses in the United Kingdom. Authors of the Core Capabilities Framework (Health Education England et al., 2020) recognized that advanced clinical practitioner primary care nurses work autonomously, use evidence-based skills and knowledge, and are flexible in their approach. (p.13) Key capability areas are identified in the Core Capabilities Framework across four domains (personal-centered collaborative working; assessment, investigations, and diagnosis; condition management, treatment, and prevention; leadership and management, education and research) (Health Education England et al., 2020).

Ryder et al. (2023) used an a priori coding framework based on determinants of capability outlined by Cairns and Stephenson (2009) to evaluate a clinical practicum module for NP students, with a capability focus that allowed for a flexible approach to learning which “harnesses creativity associated with capable practitioners” (Ryder et al., 2023, p. 10). Kilgore (2019) described a “capability-based training program” for one trainee Advanced Nurse Practitioner (ANP) in the United Kingdom and concluded that a capability approach could help to ensure excellence in ANP practice. In developing a training program Kilgore (2019) aimed to develop critical thinking skills as well as the ability to provide autonomous care, and to educate others and assume professional leadership. Anderson et al. (2009) proposed that e-portfolios, in which NP candidates collect examples of their work, are an appropriate and flexible tool for
showcasing capability, and proposed specific portfolio structures best suited to this task. While capability was not explicitly included in the e-portfolio literature, Anderson et al. (2009) found traits that fit with capability definitions. A process of learning to develop capability through completion of modules focused on leadership, research, and reflective practice was seen as critical to positioning the practice doctorate as equivalent to the research-focused PhD in terms of rigor and depth (Cashin et al., 2017). Student capability was described as the outcome of the doctorate, moving beyond “individual episodes of care” to a more inclusive vision (Cashin et al., 2017).

Capability theory was also proposed as a potential component of post-graduate education (O'Connell et al., 2014). Sciacca and Reville (2016a) looked at postgraduate NPs enrolled in residency and fellowship programs in the United States and described capability measures as a “more flexible framework to capture what an NP does and how professional skills are strengthening” (p.279). Sciacca and Reville (2016a) proposed that competencies be “translated into a capability language” and placed on a continuum that reflects Benner’s developmental stages of expertise development (p.278), to create a capability framework for evaluation.

NP perceptions of their own capability were explored by McCrea (2019) in a study that considered how factors including prior education, and pathway to the RN role might affect NP perceptions of capability and competence in emergency room settings. Self-perception of the degree of capability increased with years of experience, but there was no statistical difference based on the NPs initial educational pathway to nursing (McCrea, 2019).

**Capability Frameworks**

There were several framework and guideline documents included or referenced by authors of sources included in this review (Bord Altranais agus Cnaimhseachais na hEireann
Nursing and Midwifery Board of Ireland, 2017; Chief Nursing and Midwifery Officers Australia, 2021; Gardner et al., 2019; Health Education England et al., 2020; Nursing and Midwifery Board of Australia, 2021). Capability as a framework was described as a good fit for NP practice as a complex and dynamic discipline within changing healthcare contexts (O'Connell et al., 2014). Wilson et al. (2015) proposed that NP education frameworks should build both competency and capability elements and stressed the importance of self-directed learning (p.148), while Gardner et al. (2016) identified a need for postgraduate educational models and frameworks based on capability, both for nursing and for other health disciplines.

Most of the included framework and guideline documents included capability as one aspect of practice. However, some authors described or proposed capability-based frameworks to guide curriculum development and education. For example, Gardner, Dunn, et al. (2006) proposed that a capability framework guide curriculum development and assessment for NPs, to include both student-directed and contextual learning (p.12). The Irish Nursing and Midwifery board described capability and capability frameworks as a necessary part of the leadership content for APN education (Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland, 2017). In a case study protocol Gardner et al. (2016) proposed to determine how use of a capability framework affects learning outcomes for NP students, with the goal of expanding knowledge about capability and capability learning. The authors of the case study protocol also contributed to a Clinical Learning and Teaching Framework (Gardner et al., 2019), aimed at guiding clinical learning and teaching to develop clinical capability.

Several authors referenced the COM-B Behavior Change Framework developed by Michie and West (Michie & West, 2013). For example, Searby et al. (2023) used the COM-B Framework to describe capability in terms of both psychological capability or knowledge, and
physical capability or skills for NPs working as Alcohol and Other Drug (AOD) Nurse Practitioners and considered whether nurses felt they were able to progress to the NP role, as well as whether AOD NPs felt that they had the advanced skill set to work autonomously. Searby et al. (2023) provided recommendations in both the psychological and physical capability areas, including guidelines and education requirements that “reinforce holistic nature of the AOD nurse practitioner role” (p. 13). Speight (2020) also used the COM-B Framework to consider barriers and facilitators around buprenorphine prescribing by NPs.

Hako et al. (2022) proposed a draft APN capability framework based on the work of Hase and Davis (1999b) with the addition of a sixth dimension of capability – characterized as an ability to identify factors affecting scope of practice by APNs. The additional dimension proposed by Hako et al. included personal and experiential factors, external barriers, and external facilitators to practicing to the full extent of an APN’s scope.

Authors of review sources used a variety of visual framework representations. Most visual models showed the relationship of capability to other elements of APN. For example, Gardner, Dunn, et al. (2006) depicted capability learning and capability informed assessment as linked to one another, with capability informed assessment strategies informing a competency framework that included dynamic practice, professional efficacy, and clinical leadership (p.13). The Irish Advanced Practice Nursing Model (Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland, 2017) depicted capability as spanning domains related to quality, evidenced based safe practice, and person-centered care, while the Nurse Practitioners Standards Framework from Australia (Nursing and Midwifery Board of Australia, 2021) showed capability as a distinct standard, cutting vertically across education, research, leadership. Schoenwald et al. (2022) included value and capability as one of three major themes in an
illustration of findings from their study of NP capability (p.307). Unlike other visual models, the descriptive visual depiction of capabilities as a wheel by Hako et al. (2022) broke capability down into component parts, with APN capabilities in the center, surrounded by elements of capability, and specific competencies, responsibilities, and characteristics of capabilities in an outer circle (p.15).

Capability frameworks and definitions referenced by authors of each included review source are listed in Appendix C-VII. A sample of graphic representations of capability and capability frameworks are included in Appendix C-IX.

**Discussion**

Most sources included in this review originated from Australia or the United Kingdom, where capability was more frequently referenced as a guiding framework or distinguishing feature of APN. In the United Kingdom, the use of capability extended to advanced clinical practitioners, a role level that includes NPs. The included sources were published over a 23-year period (2000-2023). Over the 23-year timeframe there were few significant developments in descriptions of capability as a concept. Authors drew on the capability framework outlined by Hase and Davis (1999b) and the work of others writing in the context of healthcare and complexity including Fraser and Greenhalgh (2001), Hase (2000), Cairns (1999), and Cairns and Stephenson (2009), as well as on subsequent discussions of capability within nursing, including the work of Gardner, Dunn, et al. (2006) and O’Connell et al. (O’Connell et al., 2014). The elements of capability identified by Hase and Davis (1999b) were seen as having continued relevance in terms of defining capability, even by authors of more recent sources, including Hako et al. (2022).

The term capability is used in a variety of ways in the literature. For the purposes of this
review, we focused on capability as a concept used to describe individual practice in APN. Capability was used to describe a level of practice that moved beyond competency and that was characterized by elements identified by Hase and Davis (1999b) including self-efficacy, creativity, community skills and teamwork, knowledge of how to learn, and the ability to apply competencies and skills in both familiar and unfamiliar situations. As such, capability was seen as especially relevant to APN both as defining the advanced practice role, and as descriptive of an advanced level of practice.

While many authors drew on broad frameworks based on the definition proposed by Hase and Davis (1999b), some used the COM-B Behavior Change Framework (Michie & West, 2013), while others proposed or expanded capability frameworks specific to APN (Hako et al., 2022; Health Education England et al., 2020). The Australian Nurse Practitioner Standards for Practice (Nursing and Midwifery Board of Australia, 2021) included diagnostic capability as a key element that spanned education, research, and leadership, but did not extend the term capability to the other standards outlined including care planning, implementation of therapeutic interventions, or support of health systems. Several authors recommended the use or adoption of a capability framework, or a framework guided by capability, without offering a specific reference for the framework itself.

Hako et al. (2022) proposed an additional dimension of capability focused on factors affecting scope of practice. While the ability to identify factors affecting practice scope may influence an APN’s ability to put capability into practice, we would argue that this ability might also be assumed to exist within other previously defined dimensions of capability. For example, the self-efficacy, and creativity dimensions identified by Hase and Davis (1999b) could be assumed to include the ability to identify and respond to factors affecting scope of practice. It
might be possible to broaden Hako et al.’s sixth dimension of capability to include the ability to determine salient information in any setting, including determining the lack of such information. Thus, the ability to discern factors that identify the scope of practice could be re-defined as the ability to assess familiar and unfamiliar situations as part of the process of determining appropriate actions and application of skills and knowledge.

**Implications for Advanced Practice Nursing and Education**

Capable APN practice was seen as different from other roles and levels of nursing practice (Gardner, Carryer, et al., 2006), and capability was suggested as a framework to guide pre- and post-graduate APN education. Because capability often implies lifelong learning in some form, it is challenging to separate implications for practice from those for education. Some authors saw capability frameworks as encompassing all aspects of APN practice, while others focused on specific areas of practice. A continuum of competencies and capability was proposed as a broad underpinning for all aspects of NP practice including education, evaluation, and licensing (Gardner et al., 2008). Flexibility in practice was seen as critical to enabling the APN to respond to rapid shifts within complex clinical environments, allowing them to exercise professional judgement and practice autonomously (Carryer et al., 2007a; Health Education England et al., 2020; Hill et al., 2021). Capability-based learning was also seen as allowing APNs to “flourish as expert practitioners” within their practice environments; to extending learning beyond the classroom (Kilgore, 2019) and to helping NPs to practice within the zones of “complexity” (McCrea, 2019) and “proficiency” (Monk, 2021).

Overall strategies for accessing and teaching or learning capability focused on flexibility, with student-led learning, situated learning, and experiential opportunities for learning identified as key (Anderson et al., 2009; Gardner, Dunn, et al., 2006). The results suggest that curricula and
Educational opportunities for APNs should be constructed with capability in mind, and with a focus on self-directed learning opportunities. Andragogical and heutagogical approaches to guide learning for capability may include experiential or problem-based learning, situated learning, flexible learning pathways and student-directed learning approaches (Anderson et al., 2009; Gardner, Dunn, et al., 2006; Wilson et al., 2015). We did not set out to compare education for competency with education for capability, however both were seen as important aspects of APN, while Gardner, Dunn, et al. (2006) explicitly distinguished between learning experiences for the acquisition of competency and capability. The ability of a capable individual to educate others was not included in capability criteria outlined by Hase and Davis (1999a) but was referenced as part of the Four Pillars of Advanced Practice in the United Kingdom (Health Education England et al., 2020) and by Kilgore (2019) and Lamb et al. (2018).

**Capability and Advanced Clinical Practice Roles**

While we did not search for articles focused on capability in advanced clinical practitioners generally, (see for example Henderson (2021), Kindness et al. (2019), Woodman and Spencer (2023) and Morley et al. (2022)), we offer a brief discussion of overarching approaches to capability development in all advanced clinical practitioners, based on our reading of the literature. Current guidelines for U.K.-based advanced clinical practitioners use capability to describe dispositions and approaches common to all advanced practice roles. Capability in the context of advanced clinical practice was described as the “ability to make complex and holistic decisions with a high level of autonomy” (Morley et al., 2022, p. 2), as “a continuum within which practitioners continue to learn and improve in an innovative and intuitive way,” (Woodman & Spencer, 2023, p. 31) and to describe high-level practice across clinical disciplines (Health Education England, 2017; Henderson, 2021; Morley et al., 2022). The Multi-
Professional Framework for Advanced Clinical Practice in England (Health Education England, 2017) distinguishes capability from competence and describes capability as the ability to determine what competence is needed in clinical situations, apply competence, recognize one’s own limits, and develop the “ability to extend these limits when required and flexibly adapt to unfamiliar professional environments.” (p. 15) In discussing capability in advanced clinical practitioners generally, Kindness et al. (2019) referenced a Triangle of Capability describing the components of “clinical role development” and consists of academic preparation, clinical competence, and effective supervision (p. 25-26). While Spencer and Woodman’s Framework is specific to one clinical area, the elements of the Taxonomy of Achievement included in a Capability Framework Assessment for Advanced Clinical Practitioners are more general and refer to overarching skills including the ability to act autonomously, apply in-depth clinical and theoretical skills, and initiate innovative practice (Spencer & Woodman, 2020).

Implications of the Findings for Research

Further research might explore links between capability in APN and complexity in healthcare practice. For example, research could explore whether students who have participated in capability-based learning or who have completed programs guided by a capability approach are more able to successfully navigate complex healthcare practice environments. Additionally, research could explore whether scope of APN impacts capability across roles and varying geographic contexts, and further explore capability as an overarching description of all advanced clinical roles, whether in nursing or other disciplines. Further review of the literature across advanced practice roles, both in the United Kingdom and elsewhere, might help determine whether capability as a concept could be used to define advanced practice and advanced practice
providers more globally, or to distinguish between an advanced level of practice and role-specific competencies.

**Conclusions**

The objective of this scoping review was to map the concept of capability as it is described in the literature about APN and APN education. Additionally, we considered how capability has developed and informs the evaluation of APN and APN education. The review was limited to English language interpretations of capability as a concept.

In this scoping review we have described how capability as a concept is used in the literature pertaining to APN practice and education. Our review of the literature found general agreement around a definition of capability as a holistic trait or combination of attributes. However, some authors focused on specific capability traits, such as clinical or leadership capability. Most authors of literature on APNs and capability referred to a relatively narrow set of prior definitions, which centered around the definition of capability as an overarching and inclusive term that assumes an ability to synthesize skills, knowledge, judgement, and experience in both familiar and new situations. While there is some diversity in the approach to capability in APN, there was general congruence between the academic and grey literature regarding the definition of capability within the context of APN. There was less agreement around capability frameworks, with room for further work to define and test frameworks within APN and education. The definition of capability has not evolved significantly since it first began to appear in the literature around the year 2000, although Hako et al. (2022) proposed an expanded definition to include the ability to discern factors affecting scope of practice. Future studies may consider whether this expanded definition should be adopted.

Competence has been widely adopted as a standard by which APN practice and education
is measured. However, in healthcare settings where change and complexity are routine, APNs must be able to adapt and to apply existing competencies and experience in new settings. Therefore, we propose that capability has utility as an overarching and transferrable descriptor of advanced practice. We refer the reader specifically to discussion of Advanced Clinical Practitioners in the United Kingdom – where capability has been used to outline attributes of advanced practice across multiple disciplines. A similar approach might use the basic tenets of capability to describe attributes common to all APNs, regardless of role title, scope, or practice settings. Capability may be especially useful as a framework for integrated advanced healthcare practitioner programs, such as those emerging in the United Kingdom (Williamson et al., 2006). However, although several guideline and framework documents were included in this review, there is not one approach to the use of capability for evaluation of APN and education. More studies are needed to determine how best capability can be both evaluated and used as an evaluation tool.

Authors of the JBI Model of Evidence-Based Healthcare (Jordan et al., 2019) stated that evidence should be feasible, appropriate, meaningful, and effective. We have proposed that capability as a concept can be meaningfully applied to describe APN especially within the context of current complex healthcare environments and practice. Capability appropriately captures the complexity of APN practice and can be used to describe key qualities of the APN. The feasibility of using capability as a descriptive term for APN has been demonstrated in some settings, including to effectively delineate the core elements of advanced practice across disciplines in the United Kingdom. In Australia, capability is established within the lexicon of APN and the adoption of capability as a term is evidenced by the larger number of sources from Australia included in this review. However, the relatively small number of sources from the
that reference capability as a concept suggests that operationalizing the use of capability may prove more challenging within the U.S. context, and this is not an insignificant hurdle, given the large number of APNs and APN education programs in the United States, and the strong focus on competencies. Additionally, given that this a scoping review, we cannot draw conclusions generally regarding the feasibility and effectiveness of using capability to evaluate or describe APN and education.

Limitations

Despite general agreement in the literature about capability in the context of APN, capability as a concept is open to interpretation. We chose to limit our source selection to those authors who discussed the concept of capability explicitly, and to those sources where discussion of APN was distinguished from the practice of other healthcare professionals. The inclusion of sources where elements of capability were discussed but not named would have significantly expanded the scope of this review. We also excluded discussion of “capacities” where these were used synonymously with competencies, without any discussion of a more inclusive concept. We excluded 47 sources where authors focused on other healthcare professions, or where APN was only discussed within a larger group of healthcare professions. Some authors referenced APNs but did not separate them from other advanced practitioners or physicians. This is a limitation of our review, as we did not include these sources in our discussion. Expanding our search to include other healthcare professions would likely have yielded additional results. As outlined above, non-English sources were not included, given the difficulty of translating our working definition of capability into a commensurate term in other languages. The choices we made around the inclusion criteria for the concept of this review may have limited our results.
The relatively small number of sources in which capability was explicitly explored is also a limitation for our findings.

**Glossary of Acronyms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>APN</td>
<td>Advanced practice nursing / advanced practice nurse</td>
</tr>
<tr>
<td>NP</td>
<td>Nurse practitioner</td>
</tr>
<tr>
<td>CNS</td>
<td>Clinical nurse specialist</td>
</tr>
<tr>
<td>CNL</td>
<td>Clinical nurse leader</td>
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<tr>
<td>DNP</td>
<td>Doctor of nursing practice</td>
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<tr>
<td>RN</td>
<td>Registered nurse</td>
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<tr>
<td>APRN</td>
<td>Advanced practice registered nurse</td>
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<tr>
<td>CRNA</td>
<td>Certified registered nurse anesthetist</td>
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<tr>
<td>CNM</td>
<td>Certified nurse midwife</td>
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<tr>
<td>APP</td>
<td>Advanced practice provider</td>
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<tr>
<td>PA</td>
<td>Physician assistant</td>
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<tr>
<td>ACP</td>
<td>Advanced clinical practitioner</td>
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<td>ANP</td>
<td>Advanced nurse practitioner</td>
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<td>ICN</td>
<td>International Council of Nurses</td>
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<td>WHO</td>
<td>World Health Organization</td>
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We gratefully acknowledge the contributions of Dr. Christina Godfrey.
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Chapter Four

Research Methodology

In this chapter I describe phenomenography as a methodological approach. I begin with an overview of philosophical assumptions. I then present a manuscript exploring the use of phenomenography as a methodological approach in research by nurses and about nursing. The methods for the study looking at capability development by nurse practitioners (NP) treating opioid use disorder (OUD) in primary care are presented in Chapter Four.

Philosophical Assumptions

I was interested in describing the ways in which NPs experienced the development of capability in providing medication for OUD (MOUD) in primary care. Capability development in this area may be experienced in different contexts, and by NPs with a variety of prior experience, skills, and knowledge. Phenomenography, with its focus on variation in experience, seemed a suitable methodological choice. Although I explored what other authors have written about capability (see Chapter Three), I was more interested in exploring qualitatively different ways in which NPs experienced the development of capability in their MOUD practice, than in defining capability itself. I was not developing a theory of capability development or of MOUD practice for which I might have employed grounded theory. I was also not studying the culture of NPs providing MOUD, although comparing this culture in different practice contexts could contribute to a discussion about how to increase uptake of MOUD among NPs.

Consistent with my choice of phenomenography as the framework and methodology for my qualitative study I accept certain philosophical assumptions. A central assumption is the existence of variations in how any given phenomenon is experienced. To understand how people interpret and respond to situations in different ways, we also must understand that they
experience them differently. I accept that meaning is created through the experience of phenomena by individuals. Marton and Booth (1997) have described this experience of phenomena as neither a purely social construction nor entirely determined by the individual but defined by the *relationship* between a phenomenon and the individual’s experience. Marton and Booth’s definition allows for multiple experiences related to similar phenomena. The focus on variation extended to my use of a scoping review, through which I aimed to comprehensively map the various ways that capability as a concept is discussed in the literature about APN. While phenomenography generally accepts descriptions of experience expressed by participants as truth (Richardson, 1999), and while individual experiences may vary infinitely, phenomenography is based on the proposition that their experiences can be grouped into a limited number of qualitatively different ways of describing a phenomenon of interest (Marton & Booth, 1997).

Epistemologically, I accept that we can learn by considering the qualitatively different ways of experiencing phenomena. I am concerned with both concepts and experience and, as a phenomenographic researcher, I further developed my understanding of capability by looking at and categorizing the variations in experienced relationships of nurse practitioners with capability.

Ontologically, I assume that experience varies between individuals. I adopted a second order perspective, that is a focus on people’s experience or perceptions of reality rather than on reality itself. Ontology (reality) in phenomenography assumes a non-dualistic approach in which there is no division assumed between the internal world we experience as individuals and the external world (Marton, 1981; Sjöström & Dahlgren, 2002; Trigwell, 2006). As a phenomenographic researcher, I describe this experienced world, since in phenomenographic terms it is only possible to describe what is experienced (Marton & Booth, 1997, p. 113).
Phenomenographic Approaches in Research About Nursing

Citation:


https://doi.org/10.1177/23333936231212281
Abstract

We propose that phenomenography is well-suited to research about nursing, given its focus on identifying variation in individuals’ experiences, and inclusion of diverse voices and perspectives. Phenomenography explores qualitatively different ways in which a group of people experience a phenomenon, often using semi-structured interviews. The use of phenomenography is especially relevant in research about nursing which provides accounts of the experiences of nurses and patients within complex practice settings. We consider the tenets of phenomenography and examine phenomenography’s relationship to and differences from phenomenology. We review literature published about phenomenographic research in nursing and reflect on the potential benefits of phenomenographic research about nursing. This paper adds to knowledge about use of phenomenography in research about nursing.

Keywords: Phenomenography; qualitative research methodologies; nursing research
Phenomenographic Approaches in Research About Nursing

Phenomenography has been proposed as a viable qualitative methodological approach for exploring a wide range of issues in healthcare settings and as an appropriate choice for building healthcare knowledge, including within nursing (Barnard et al., 1999; Röing et al., 2018; Röing & Sanner, 2015). While healthcare researchers have used phenomenography in a variety of settings, there is relatively little recent writing about the implications of choosing to conduct phenomenographic research within nursing.

Sjöström and Dahlgren (2002) provided a helpful overview of the application of phenomenography in nursing, which they proposed is especially suited to developing understanding about nursing, given the potential focus on variation in patient experiences as well as student conceptions. Phenomenography has also been proposed as an approach for research about clinical decision making (Baker, 1997) and nursing education (Barry et al., 2017; McClenny, 2020). Twenty years after publication of Sjöström and Dalgren’s paper, nurses’ work has become increasingly complex and occurs in rapidly changing environments. The continued growth of advanced practice nursing globally sees nurses working in roles with extended scopes of practice, requiring higher order decision-making skills. Understanding nurse and patient experiences continues to be important for nursing as a discipline, and for optimizing patient care.

Phenomenographic studies, and those in which researchers use a “phenomenographic approach” are proliferating. A recent search of Medline and CINAHL for “phenomenography” and “nursing” yielded almost 200 published studies since 2002. However, relatively few authors have written about the use of phenomenography as a methodological approach to research about nursing or by nurses. Aside from Sjöström & Dahlgren (2002), we identified an overview of phenomenography for nursing researchers (Jobin & Turale, 2019), literature reviews focused on
research in nursing education and learning by nursing students (Barry et al., 2017; McClenny, 2020), and a critique of phenomenographic approaches to research in nursing (Friberg et al., 2000).

Here we reflect on the use of phenomenographic approaches in research done by nurses and about nursing. We begin by outlining the foundations of phenomenography, and briefly discuss its relationship to phenomenology. We then describe the basic tenets of phenomenographic studies and discuss the relevance of phenomenographic research in healthcare with a focus on nursing. We discuss ways in which rigor and trustworthiness are conceived and accounted for in phenomenographic research, as well as the implications for these criteria in research about nursing.

While phenomenography was initially used in educational settings, and much discussion of phenomenography has occurred in the context of education (Marton & Booth, 1997; Cibangu & Hepworth, 2016), phenomenography has a history of broad application, including in healthcare (Barnard et al., 1999). Since many researchers in nursing and healthcare are choosing a phenomenographic approach, it is important to continue to discuss phenomenography as a choice of methodology within these settings. This paper contributes to knowledge about the use of phenomenography in research by nurses and about nursing and articulates the potential of phenomenography as a research approach for authors looking at clinical decision-making, student nursing and learning, patient experiences, and advanced practice nursing.

**Background**

**Premises of Phenomenography**

Phenomenography’s development as a qualitative research approach originated from the work of Ference Marton and other educational researchers working at the University of
Phenomenography has been described as a research approach rather than a research method (Marton & Booth, 1997; Tight, 2015), although the literature refers variously to phenomenography as a methodology, method, and approach. For example, McClenny (2020) uses the terms method and methodology interchangeably in an overview of phenomenography in nursing education research.

Phenomenographic research focuses on the qualitatively different ways of experiencing a phenomenon. Researchers explore people’s relationship or experience with phenomena (Marton, 1986), examining variation in how participants think about and conceive their experiences (Marton & Booth, 1997; Sjöström & Dahlgren, 2002). Conceptions are expressed in a set of categories of description (Barnard et al., 1999; Trigwell, 2006). A focus on the collective, rather than the individual experience is used to identify variation in how a phenomenon is experienced by, and within, a group (Beaulieu, 2017; Sjöström & Dahlgren, 2002; Trigwell, 2006), and iterative analysis is used to reveal qualitative differences within a group of individuals experiencing the same phenomenon (Beaulieu, 2017; Trigwell, 2006). The focus of phenomenography on variation or differences within the collective experience of a group of participants distinguishes it from other approaches.

Phenomenography assumes a second-order, relational perspective, describing people’s relationship with phenomena, rather than observing or describing a phenomenon directly (Marton, 1986). Ontologically, phenomenography proposes a non-dualistic approach which assumes there is no division between the internal world we experience as individuals and the external world (Marton, 1981; Marton & Booth, 1997; Sjöström & Dahlgren, 2002; Trigwell, 2006). The unit of phenomenographic research comprises an examination of the internal relationship between what is experienced (the phenomenon) and the person(s) who are
experiencing it. This internal relationship is a central tenet of phenomenography as described by Marton and Booth (1997) where reality is neither “constructed by the learner, nor…imposed upon her; it is constituted as an internal relation between them” (p.13). Researchers do not seek the essence of an external reality or truth; rather participants live within the world that they experience, without a separation between internal and external realities (Marton & Booth, 1997). While objects exist outside of experience, it is assumed that it is only possible for them to be described in terms of what is experienced (Marton & Booth, 1997). Thus, a research program should seek to discern the ways in which people think about and interpret the world by understanding their experiences (Marton, 1981). Since individuals experience reality differently, phenomenographic research is aimed at examining variation in experiences (Linder & Marshall, 2003; Sjöström & Dahlgren, 2002), including how variation in “aspects” of a phenomenon contributes to its definition (Marton & Booth, 1997).

In a phenomenographic study, categories of description depict the qualitatively different ways in which a phenomenon is understood; the logical and structural relationship between these categories constitutes the outcome space of the phenomenon (Marton, 1986; Mimirinis et al., in press). Within the outcome space the more advanced categories at the top of the hierarchy include elements of those at lower levels, but not the reverse. Thus, researchers consider not only variation in understanding, but also the structure within which variation can be understood (Åkerlind, 2023).

**Developments in Phenomenography – Towards Variation Theory**

Phenomenography has developed as a methodological approach since its inception in 1970s, and researchers continue to explore new avenues (Rovio-Johansson & Ingerman, 2016). Variation theory represents a shift in the focus of inquiry from qualitative differences in
understanding of a phenomenon to explorations of what makes learning possible (Wright & Osman, 2018). In variation theory, phenomena are considered in contrast to or variation with others, or against an invariant background (Marton, 2015; Åkerlind, 2023). Learning occurs in the context of the ability to discern difference (Marton, 2015; Rovio-Johansson & Ingerman, 2016). Phenomenography and variation theory are closely entwined but have distinct applications; together, their value has been proposed as a pedagogical framework with potential for transformation in higher education (Wright & Osman, 2018). Learning studies apply variation theory within learning environments in a cyclical format, to study and refine teaching practice (Rovio-Johansson & Ingerman, 2016). An explanation of the articulated differences between phenomenography, variation theory, and learning studies was offered by Rovio-Johansson and Ingerman (2016):

Phenomenography explores the qualitatively different ways in which people potentially ‘experience’ certain phenomena they meet in their worlds, variation theory offers a framework for understanding what it takes to experience something in a certain way (or learn about it), and learning studies make use of that framework to design teaching for good learning results. (p.261)

In phenomenography, the focus is on variation within the group experience of a constant phenomenon; in variation theory the focus is on the “object of learning,” or what should be learned, and the ways in which this is perceived or understood. The “critical aspects” of an object of learning are those aspects which a learner must be able to discern to master the object of learning (Rovio-Johansson & Ingerman, 2016). The object of learning itself is not always static, but rather may have dynamic properties in the context of teaching and learning (Rovio-Johansson & Ingerman, 2016). Variation may apply to the object of learning as a whole, and to
individual critical aspects. In phenomenography critical aspects can be used to define elements of the outcome space to indicate qualitatively different perceptions of a phenomenon; in variation theory critical aspects are the dimensions of variation which can be focused upon by learners; while in learning studies, critical aspects are seen as essential to the learner’s ability to fully discern the object of learning (Pang & Ki, 2016).

**Relationship to and Differences from Phenomenology**

As qualitative methodologies, phenomenography and phenomenology share several features. Marton (1981) acknowledged phenomenography’s debt to the long history of phenomenology and pointed to phenomenology for the historical development of phenomenography, describing relational, experiential, contextual, and qualitative features that are shared between the two approaches (Marton, 1986). However, while the origins of phenomenography can be traced to phenomenology, and some see phenomenography as a phenomenological “subset” (Cibangu & Hepworth, 2016), Marton (1986) clarified that he did not conceive of phenomenography as derived directly from phenomenology, but rather as a pragmatic approach to inquiry about teaching and learning. Thus, phenomenography is separate from phenomenology (Barnard et al., 1999).

For phenomenographic researchers, phenomena are generally experienced in a relatively limited number of ways (Marton, 1981). The “essence” of a phenomenon is central to phenomenology; in phenomenography, researchers are not concerned with determining the essence of a concept or phenomenon. While phenomenologists are concerned with commonalities, or with those aspects that define a phenomenon, phenomenographers seek to consider the variation in how individuals conceive or experience their relationship with a phenomenon (Marton, 1986; Trigwell, 2006). Thus, a phenomenographic exploration of nursing
could encompass variation in any aspect of how nursing is conceptualized or experienced. Of course, such a broad remit for phenomenography means that variation may extend to the practice of phenomenography itself (Åkerlind, 2012).

An interesting approach to debating phenomenology versus phenomenography was taken in a study where both phenomenographic and phenomenological analyses were applied to the same interview data focused on how anesthesiologists conceive their work (Larsson & Holmström, 2009). Larsson and Holmström (2009) used each methodological approach in turn to analyze their interview data, implying that the data itself could serve both analytical approaches. However, differences between phenomenology and phenomenography became apparent in both the focus of the research question and the results of the analysis (Larsson & Holmström, 2009). Taking a phenomenographic approach, rather than asking “what is anesthesiology?,” Larsson and Holmström (2009) asked “what do experienced anesthesiologists think about what anesthesiology is?” (Larsson & Holmström, 2009, p. 57). The results of the Larsson and Holmström (2009) study illustrated this shift in focus: the phenomenographic analysis resulted in four categories, labeled metaphorically, and focused on varying aspects of role perception, while the phenomenological analysis described the anesthesiology role and profession itself.

**Phenomenography in Research about Nursing and by Nurses**

A key challenge in healthcare is the requirement to respond to diverse patient needs (Sjöström & Dahlgren, 2002). For example, because patients and clinicians can understand and interpret medical diagnoses, treatments, and care plans in different ways, a phenomenographic approach can be helpful in teasing out and better understanding these differences and their clinical implications (Stenfors-Hayes et al., 2013). It is important for nurses and other clinicians to take such variations between patients into account in their clinical work (Sjöström &
Dahlgren, 2002). Phenomenographic study of patient experiences may help us discern the critical aspects of learning about chronic conditions such as diabetes, where a patient’s understanding of their illness and approach to self-care may significantly impact outcomes. Authors of previous phenomenographic studies have explored healthcare research generally (Barnard et al., 1999); the patient experience (Frank et al., 2009; Röing & Sanner, 2015); medical education (Fyrenius et al., 2007; Stenfors-Hayes et al., 2013); and issues in nursing (Sjöström & Dahlgren, 2002).

Understanding the thinking a nurse applies as they conceptualize patient care is an important step in determining how clinical decision-making is learned and applied. The ability to gain insight into the nurse’s conceptions of patient care with a focus on the development of how nurses evolve as clinical decision makers has been proposed to be a good fit for phenomenography over other qualitative methods in research about nursing (Baker, 1997). A more complete understanding of patient conceptions can help clinicians think about the patient experience and how best to provide information and education to patients (Sjöström & Dahlgren, 2002; Stenfors-Hayes et al., 2013).

Phenomenography’s roots in the field of education make it an appropriate methodological approach for exploring the perspectives of nurse educators or for considering how novice nursing students or health professionals move towards more expert conceptual understanding (Han & Ellis, 2019; Sjöström & Dahlgren, 2002). Phenomenography has also been proposed as helpful in uncovering variations in student nurses’ understanding of their learning, and to consider the effectiveness of teaching methods when addressing challenging concepts in nursing (Barry et al., 2017). Research about how nurses conceptualize and develop their clinical decision-making skills, and assist clinical educators with teaching strategies (Baker, 1997; Sjöström & Dahlgren, 2002; Stenfors-Hayes et al., 2013). For example, Fyrenius et al. (2007) explored how
understanding is achieved in higher education generally and considered aspects of learning and understanding specific to medical contexts and problem-based learning.

Research about patient learning and education is also important for nursing. While we may make assumptions about what patients learn when given education about their health, patient learning can depend on several factors (Frank et al., 2009; Larsson et al., 2019). Just as a phenomenographic researcher attempts to understand what the students are doing in their learning (Trigwell, 2006) so nurses may find it useful to understand what patients or clients are experiencing or taking away from their learning. For example, Frank et al. (2009) used open-ended interviews, so that patients could identify which aspects of how they experienced participation in their own care they wanted to discuss. Given that the patient experience may not correlate with the experience of the nurse or other healthcare provider, an openness of questioning seems key – in other words patients should be able to talk about what they find important – which may not be what is initially deemed most important from a nursing or medical perspective.

Phenomenographic researchers have explored the conceptions and experiences of nurses with advanced education and roles, including doctoral students (Arvidsson & Franke, 2013), nursing researchers and academics (Dupin et al., 2015; Forbes, 2011; Letterstål et al., 2022), and clinical supervisors or nurse managers (Dyar et al., 2021; Hyrkäs et al., 2003). However, we located few phenomenographic studies published in English where the participants were advanced practice nurses (APNs) or had an advanced scope. Some researchers considered the experiences of registered nurse anesthetists, (Knudsen et al., 2022; Mauleon & Ekman, 2002; Nordström & Wihlborg, 2019; Tracy, 2017), while authors of one study addressed the nurse practitioner experience (Lin et al., 2021). Understanding and describing conceptions about what
constitutes advanced practice is important given continued momentum towards adoption of APN roles in a range of settings and contexts globally (World Health Organization, 2020). Many APNs practice autonomously, and most jurisdictions provide for their ability to prescribe medication. Phenomenography therefore has potential as an approach for exploring and articulating the diversity and complexity of APN practice.

**Data Collection**

Semi-structured interviews are the most used method of data collection in phenomenographic research, although other data collection methods can be used (Baker, 1997; Bruce, 1994). While Bruce (1994) proposed that certain features distinguish a phenomenographic interview from other qualitative interviewing techniques, phenomenographic interviews are similar in many respects to those conducted in other qualitative methodologies, including phenomenology (Barnard et al., 1999). The participant’s conceptions may include what makes up the phenomenon and how various aspects of the phenomenon are related, sometimes called the internal horizon; and a broader understanding of how the phenomenon exists and is discerned as being within but separate from its surrounding context, sometimes called the external horizon (Linder & Marshall, 2003; Marton & Booth, 1997). The phenomenographic interviewer’s intent is to determine a participant’s internal and external horizon regarding the structure of the phenomenon being explored, while maintaining a focus on seeking variation in the ways in which a phenomenon is conceptualized.

Consistent with a second-order perspective, the interview focus is on the participant’s relational experience of a phenomenon and interview questions focus on how the phenomenon is experienced, understood, or perceived (Bruce, 1994). Interview questions in phenomenography are generative, and can focus on “why”—for example “why do you say that, or why is it so”—
and “what” – for example “what does that mean to you?” (Säljö, 1979). Sjöström and Dahlgren (2002) proposed that the interview guide comprise a few opening questions with the remainder of the interview devoted to follow-up of the answers elicited. For example, Andersson et al. (2015) began all interviews with the question “Please tell me what caring means to you in your clinical work as a nurse?” (p.3), while (Lin et al., 2021) asked nurse practitioners “what was work like today?” (p. 211).

Booth (1997) described interviews as both “open” and “deep” – meaning that the discussion may diverge from any predetermined plan to include new avenues, and the conversation is continued until both participant and the interviewer feel that it has been fully explored. The interviewer can encourage participants to reflect on their answers by pausing to consider and potentially question their responses (Sjöström & Dahlgren, 2002). Interview questions are aimed at revealing the participant experience of the phenomenon by providing as much freedom as possible for participants to share and reflect deeply on their experiences, meanings, and understandings (Pang & Ki, 2016). However, as in other qualitative interviews, the researcher should keep the phenomenon under investigation central to their thinking, demonstrate curiosity, and use probing questions to circle back to the central question or phenomenon during the interview as needed. The interview can be conceived as a central question around which the conversation orbits. If the conversational orbit grows larger or wobbles, the interviewer’s role is to gently nudge it back as close to the central question as possible. Asking participants to think back to a clinical scenario may allow them to reflect on their actions, for example by asking participants to think back to an early encounter with a patient, to describe it, and to reflect on their learning and things that might have changed.
The “open” and “deep” phenomenographic interview process (Booth, 1997) has parallels to the clinical history-taking interview, especially as conducted by an advanced practice nurse or physician. In a clinical interview, a nurse or other healthcare provider may focus on getting a patient history relevant to the central question at hand (abdominal pain for example) but must be open to unanticipated answers that reveal new clinical information. However, within the time limits of a patient visit in the clinic setting, the clinical interviewer must necessarily learn to make quick decisions about what aspects are most relevant or require further exploration. Unlike the phenomenographic interviewer, the interviewer in a clinical setting may not have the luxury of pursuing the discussion to its fullest extent. In addition, phenomenographic researchers aim to set aside their own theories and to focus on how interview participants understand a phenomenon. This differs from the clinical interview, in which the nurse not only listens attentively to the patient’s experience but must simultaneously be engaged in considering the potential cause of what the patient is reporting.

The interviewer working within nursing or healthcare may require some content expertise, including being cognizant of relevant vocabulary (Stenfors-Hayes et al., 2013). For example, an interviewer may need to be conversant with current regulations, pharmaceutical formularies, medical and nursing guidelines, and specialist vocabulary. It may be necessary to adapt interview techniques depending on the interview participants. Researchers may need to vary the language used, depending on whether participants are patients, healthcare providers, family members, or support staff, with consideration of literacy and education levels.

Data Analysis

As part of the phenomenographic analysis, researchers complete iterative readings of the collated interview transcripts. Meaningful utterances, that is those parts of the transcripts that tell
the researcher something about the structure of the conceptions of the phenomenon under investigation, are selected and together make up a *pool of meanings* (Marton, 1986). Based on similarities and differences, the researcher groups and re-groups these meaningful utterances until they form a set of categories of understanding about the phenomenon. Tentative categories of description are re-compared to the pool of meaningful utterances, and categories adjusted until a limited set of logically, internally, and hierarchically related categories of description have been defined (Mimirinis, 2019; Mimirinis & Ahlberg, 2021). These categories should stand in “clear relation to the phenomenon” and each should tell us something unique or “distinct” about one way of experiencing the phenomenon (Marton & Booth, 1997, p. 125).

The process of data analysis is iterative as the researcher(s) move(s) back and forth between preliminary categories and the pool of meanings, adjusting as needed. As noted, categories of description are hierarchically structured, and are inclusive; thus, categories higher in the hierarchy incorporate elements of preceding categories. Conceptions within the categories may have both referential aspects, which consider meaning and are relational to the larger context; and structural aspects, which concern the elements and structure of the conception. Dimensions of variation may be present across the categories of description but can change within each category (Mimirinis, 2019).

A higher level of understanding within the categories of description may be correlated with increasing expertise or capability in practice. For example, Knudsen et al. (2022) found three ways of understanding airway management algorithms amongst registered nurse anesthetists, where the third category was correlated with practice at an expert level, and the ability to apply algorithms flexibly, taking the clinical scenario into account. In a metasynthesis of phenomenographic studies looking at the understanding of work by health professionals,
Röing et al. (2018) identified five qualitatively different categories of understanding. The understanding of work ranged from a focus on the individual healthcare provider and the challenges of providing care to patients, to a more nuanced and holistic understanding of patient care within the larger healthcare system (Röing et al., 2018). In nursing, the patient-nurse relationship is both central and essential. By adopting a second-order perspective researchers can explore the qualitatively different experiences of patients, with implications for nurses and others who assume professional roles in healthcare. For example, patient perceptions of self-determination within the context of care were explored by Nordgren and Fridlund (2001), who found that patients perceived nurses as having potential to support them in more active involvement in their own care.

**Ensuring Rigor and Trustworthiness**

Ensuring quality and rigor from the outset in phenomenographic research (Sim, 2010) starts with determining the fit of phenomenography for a research question and continues to the final analysis. Given nursing’s focus on applicability, nursing researchers may find it helpful to refer to the components of quality in qualitative research outlined by Tracy (2010): worthy topic, rich rigor, sincerity, credibility, resonance, significant contribution, ethics, and meaningful coherence. Thorne (2016) discussed ensuring trustworthiness through attention to disciplinary relevance, pragmatic obligation, contextual awareness, and probable truth. Purposive sampling is used for phenomenographic studies to try to ensure as much variation among participants as is feasible (Mimirinis, 2022). However, it can be difficult to accurately determine differences between participants prior to the interviews (Stenfors-Hayes et al., 2013). In healthcare research generally, additional ethical considerations may exist, for example, when interview participants are also patients, when sensitive health information is being discussed, or when participants may
not be able to give full informed consent (Coleman, 2019). Moreover, only participants who experienced a phenomenon can be selected and meaningfully engaged with the process of a phenomenographic interview.

The trustworthiness of a phenomenographic interview can be established through the clarity and explicitness of the interview questions (Sjöström & Dahlgren, 2002). Asking participants to reflect on what they mean by interview statements can help clarify their intentions (Sim, 2010). If the interviewer holds a similar nursing or clinical role to interview participants, participants may assume understanding by the researcher. However, it may be necessary to ask probing or clarifying questions even in this instance. The interviewer may ask for details or information that they might be assumed to know in other settings.

Being a clinical “insider” as well as a researcher can legitimize the researcher for participants, with assumed collegiality contributing positively to the interview. However, it is also critical to maintain an awareness of the researcher role, to ensure that an interview does not devolve into a conversation between peers, and to avoid making assumptions about meaning. While Säljö (1997) describes data collection as collecting information about what people say, it is important to distinguish the interview from conversation so as not to interject personal responses as a researcher. Yet, as in most qualitative interviews, the interviewer does steer the conversation, not only by asking questions, but by choosing what points to ask clarifying questions about, or where to probe more deeply.

Bracketing, or striving to set aside one’s assumptions about the research data to maintain as much objectivity as possible, can be problematic in research about nursing which assumes that nurses practice according to an ethical code (Thorne et al., 2016). Bracketing of the researcher’s own experience and conceptions is not a focus for those working in phenomenography (Marton,
Rather than bracketing their responses to the data, the researcher focuses on the empirical data – their analysis is concerned with the findings in the data, rather than with interpretation of that data. Thus, a phenomenon cannot be described as separate from the person experiencing or describing it (Marton & Booth, 1997). In phenomenography the researcher is not looking to interpret the data, but to find similarities and differences within it, to uncover critical aspects of the experience of a phenomenon as it is described by the interview participants. Therefore, the tendency to editorialize or interpret must be resisted. However, as nurse researchers, one cannot be fully separated from the data. It can be difficult to separate the experience of a phenomenon as described by a participant, from the experience of being asked to describe this as part of an interview (Dortins, 2002). Researchers must maintain an “interpretive awareness”, adopting a critical approach to considering their own subjectivities and interpretations (Åkerlind, 2012, 2022).

Interpretation or application follows the empirical findings, meaning that phenomenography could be suited to asking just the type of questions that Thorne et al. (2016) proposed, for example considering how knowledge about diversity of experience can provide insight to nurses as they interact with patients. Similar questions have been proposed as ideally answered by phenomenography – where researchers seek to understand the ways in which individuals experience the real-life situations in which they find themselves, and problems they are grappling with (Marton & Booth, 1997). Like interpretive description (Thorne et al., 2016; Thorne, 2016), phenomenography is proposed as an approach to tackling questions about teaching and learning that are situated within a specific context (Marton & Booth, 1997).

Having just one researcher complete the interviews has been proposed as key to maximizing consistency in how the data itself is obtained for phenomenography (Green &
Bowden, 2009). However, reliability may be enhanced by having more than one researcher involved in the analysis of the transcripts so that idiosyncratic interpretations of the data are avoided (Trigwell, 2006). Researchers can analyze the data independently and compare results with another researcher or can come to consensus through discussion (dialogic reliability) (Åkerlind, 2012). Categories of description should be replicable given the same data set but would be expected to vary with different data or a different set of interviews. As with all qualitative methodologies the researcher should be able to defend their choices for categories based on the data. Pilot interviews can be used to test whether the interview questions elicit meaningful and relevant responses and to review interview techniques (Andersson et al., 2015).

Even while attempting to maintain impartiality, what the interviewer does and does not say will shape the interview, including what elements of the interviewee’s description they pick up on and how they ask participants further clarify or expand on their responses. Dortins (2002) describes this process as a “negotiation” and as “collaborative endeavors” (p.209). Trying not to read anything into the transcripts that is not stated can be challenging, as one reads more deeply and repetitively.

In the case of a conceptual topic, where participants may have spent years thinking about and reflecting on their work, interviews can generate a large amount of data. Sorting through the data requires decisions about what to include or exclude, and as researchers we may play a role in shaping what is presented. For example, Dortins (2002, p. 208) talked about editing herself “out of” the interviews as she transcribed them. Despite our best efforts to keep personal interpretation out of the interview and analysis process, as interviewers we are bound to influence participant responses and their analysis.
Ethical Considerations

Kvale and Brinkman (2009) addressed some of the ethical issues in interviewing in the health sciences in their seminal work on qualitative interviewing – largely in reference to the influences of the movement for evidence based practice and in discussion of the use of ethical review boards as a practice that grew out of biomedical research; however they do not offer guidelines for researchers conducting interviews with individuals who work in healthcare, or discuss phenomenography specifically. Interviews with patients, or where participants discuss interactions with patients may entail the sharing of sensitive information. Therefore, transcripts should be de-identified, including removing any references that might situate a participant in a particular clinic, as well as any patient identifiers. Nurses are generally well-aware of the need for confidentiality related to patient information, and comfortable with sharing de-identified cases as part of their participation in case reviews, communities of practice, or in discussion with mentors. Nonetheless, patient and nurse confidentiality must always be preserved. Ethical considerations may also arise in instances where the researcher and participants have an established relationship, especially when a power differential is present. For this reason, Mauleon and Ekman (2002) made the choice to use open-ended written questions rather than interviews with newly graduated nurse anesthetists, in recognition of inherent power imbalances in the student-teacher relationship.

Discussion

Considering the Use of Phenomenography in Research about Nursing

Research about nursing encompasses a broad range of topics and foci, reflecting the breadth of nursing as a discipline. Several factors influence qualitative nursing research design, including nursing knowledge (both general and particular); the dynamism and complexity of
current healthcare environments; and nursing’s “moral mandate and action imperative” (Thorne et al., 2016, p. 451). Thorne et al. (2016) proposed that a “nursing disciplinary epistemology” – yet still evolving – be used in designing qualitative research about nursing (p. 455), and further that nursing itself contains the elements required to create a “credible frame” for applied qualitative research (Thorne et al., 2016, p. 458). Moulton et al. (2019) argued that a central question for nursing would provide a rationale and validation for research about nursing, and proposed that this central question might be “how can the well-being of a person, family, community, or population be improved?” (p.1). To understand how nursing and nurses might answer this question, the experience of both nurse and patient must be considered within a larger environmental context.

What defines nursing itself may differ depending on the nursing context, the patient, the level of nursing education, and authorization granted to the nurse in policy and law. Nursing assumes a relationship between the nurse and the patient, where the patient may be an individual, family, or community. The nurse-patient relationship is often structured around a particular focus of care, with a resulting a triad of nurse, patient, and care. While Moulton et al. (2019) acknowledged that well-being and improvement have multiple potential interpretations, they suggested that this is not an issue in proposing a central question for nursing; it is up to nursing researchers to clarify the specifics of their inquiry.

It is important that nursing research knowledge be applicable to the practice of nursing (Thorne et al., 2016). Thorne et al. (2016) identified areas of disconnect or disciplinary tension between nursing knowledge and traditional qualitative methodologies, as well as outlining the historical reluctance on the part of nursing researchers to adopt applied methodologies that might open them up to criticism about the rigor and trustworthiness of their work (Thorne et al., 2016).
As a situated practice, nursing bridges both the natural and human sciences, since nursing knowledge is “developed for practice” (Moulton et al., 2019, p. 4) and is used for the benefit of improving the health of individuals or groups (Thorne et al., 2016). In considering phenomenography as a useful methodology for examining nursing, we must consider what methodologies should be used to develop nursing knowledge (Moulton et al., 2019) and how those methodologies should be used within applied disciplines such as nursing (Thorne et al., 2016).

Commenting on the challenges of applying qualitative methodologies to nursing, Thorne et al. (2016) noted that while phenomenology can provide researchers with a way of examining facets of how healthcare and illness are experienced, its use may also result in a potential lack of appreciation of the “intricate variation” and “human diversity” experienced by nurses in the course of their work (p. 453). Like phenomenology, phenomenography shines a research focus on the subjective experiences of health. However, phenomenography also allows researchers to place variation in experiences among nurses and patients at the center of their explorations (Sjöström & Dahlgren, 2002). There is no inherent judgment about the quality of analysis or findings, rather the nursing researcher must consider what questions they want to ask, and to what end when making a methodological choice.

In critically assessing phenomenography, some have pointed out that researchers can only categorize variation in the descriptions of experience since they lack access to the experience itself (Richardson, 1999; Säljö, 1997). Although phenomenography is generally understood to be concerned with experience, Säljö (1997) proposed that phenomenography explores the discourses related to what people say rather than what they experience, an observation that could also be applied to other methodological approaches. When looking for meaningful utterances,
however we may also ask ourselves whether it is possible to separate the language and expression of the interview subject from that of the interviewer? Säljö (1997) noted that meaningful utterances are considered as indicative of ways of experiencing but questioned whether in fact these utterances might be better understood as ways of talking about a phenomenon, or even ways of responding to a question out of a sense of obligation. Thus, qualitatively different ways of experiencing may in fact be qualitatively different ways of talking about a phenomenon (Säljö, 1997). Säljö (1997) described phenomenography as one approach (among many) to describe thinking in a way that does not separate an external reality from a person’s internal thoughts about that external reality, by adopting a non-dualist approach. Some have also expressed concerns about difficulties reconciling phenomenographic conceptions within their broader contexts in nursing and other “caring research” given the inherent complexity of this area of enquiry (Friberg et al., 2000).

**Implications and Conclusions**

We propose that a thoughtful and pragmatic application of existing methodologies, including phenomenography, can allow nursing researchers to benefit from the richness of existing research approaches. With its empirical focus on identifying variation, phenomenography can help nursing researchers explore how both nursing practice and care are conceptualized. Phenomenographic researchers intentionally encourage the inclusion of diverse voices and worldviews, often elicited through in-depth interviews. The incorporation of diverse perspectives can help to ensure that those whose experience might otherwise be marginalized are included. Additionally, phenomenography’s use as a broad methodological approach allows for its application to diverse research questions, including exploration of both teaching and learning in nursing (Barry et al., 2017).
Understanding the variation in how participants experience a phenomenon is especially relevant in nursing, where nurses, patients, and other healthcare staff interact within settings that are inherently complex and often unpredictable. Phenomenography can be a useful approach to the discipline of nursing broadly, and in developing knowledge that can be applied to practice whether from the perspective of practice, education, or research, and encompassing a broad range of nursing roles including that of clinician, student, teacher, educator, or leader. A more complete understanding of patient conceptions can help clinicians think about the patient experience and how best to provide information and education to patients. Likewise, clinician conceptions of key issues in nursing are important in understanding the experiences of nurses within the workforce. A phenomenographic approach can also reveal gaps in understanding, which may be helpful to policy makers and educators, including those concerned with workforce retention and development. Thus, the focus on variation in experience that underpins phenomenography makes it an especially apt methodology for the exploration of how nursing practice accommodates and incorporates variation in clinical scenarios and the practice environment.


Chapter Four References


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Chapter Five

Methods

In this chapter I outline the methods and results for the study of capability development around providing medication/safe supply (MOUD) for opioid use disorder (OUD) by nurse practitioners (NPs). The background and context for the study, as well as discussion of phenomenography as a methodological approach, are outlined in detail in the preceding chapters.

A study reporting checklist is contained in Appendix D, per the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines (Tong et al., 2007).

Aim and Research Question

The study was aimed at exploring how NPs experience and understand their capability development in the context of providing MOUD for individuals with OUD in primary care settings. The research question was: How do NPs experience and understand the development of capability in the context of treatment of opioid use disorder in primary care? I was interested in exploring how nurse practitioners (NPs) conceive and experience the development of capability providing MOUD within primary care practice environments. Two sub-questions on formal and informal educational activities and self-directed learning informed my investigation:

1. What are the informal or formal learning conditions that contribute to the development of capability in treating OUD?

2. What are the various ways in which nurse practitioners treating opioid use disorder in primary care experience learning activities that support the development of capability in clinical practice?

Adopting a phenomenographic approach placed a focus on variation in the conceptions that NPs have of capability development in this area – this is important because capability development is
conceptually broad, and there are multiple paths to its development and acquisition.

**Setting and Access**

The setting for the study was primary care treatment settings where NPs routinely treat patients with medication for OUD in the province of Ontario, Canada, and the six U.S. New England states (Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont). New England and Ontario are relatively contiguous geographically. NPs also provide treatment for OUD in all New England states and Ontario. The selected states/province provided a large enough population of NPs and practice settings to ensure variation of experience and practice context. Since some medications used to treat OUD are categorized as controlled substances, jurisdictions that allow NP prescribing of controlled substances were included. Medication treatment for opioid use disorder (MOUD) was defined as including opioid agonist or antagonist therapy, as well as safe/safer supply and rapid access to medication (RAM/RAAM) treatment where these services were provided within a primary care setting.

The definition of primary care is generally focused on addressing healthcare needs within the community at the earliest opportunity, and is concerned with the whole person, rather than being disease-specific (American Academy of Family Physicians, 2021; World Health Organization, 2021). Primary care is defined as integrated, meeting most basic healthcare needs, and including a longitudinal relationship between patient and healthcare provider (World Health Organization, 2021; World Health Organization & United Nations Children’s Fund (UNICEF), 2020). While specialty clinics may meet some of these criteria, for purposes of this study I recruited NP participants who were providing treatment for OUD within generalist rather than specialist settings. In cases where it was unclear whether the treatment setting constituted primary care, I relied on discussion with participants, and on their own definition of their
practice as primary care. NPs working in settings that were exclusively treating addiction, whether in-person or via telehealth, and where there were no additional primary care services available to patients, were excluded.

**Population**

I adopted a practical approach to defining the study population to include NPs who were licensed and practicing in Ontario, Canada, and in the six U.S. New England states who treat OUD in patients aged 18 and older in primary care settings. In both the United States and Canada, prescriptive authority is regulated at the state, provincial or territorial level, therefore jurisdictions that allow NP prescribing of controlled substances were included. Non-NP providers such as physicians, physician assistants, or nurses who were not NPs were excluded. While patients under the age of 18 may receive treatment for OUD, a practice that was exclusively focused on adolescents might differ significantly from one focused on treatment of adults. While variation is valued in phenomenographic studies, the treatment of OUD in adolescents may be more likely to take place within specialty settings. Therefore, the study was limited to NPs who were treating at least one adult patient for OUD. Because OUD treatment is a relatively new area of practice for all NPs in North America, my assumption was that NPs would be able to recall and describe their capability development in this area.

NPs included in the study could hold certification in any population focus that allowed them to provide the above care. NPs who did not include treatment for OUD in their primary care services and providers other than NPs (for example physician assistants, physicians, registered nurses) were not eligible for participation.

**Recruitment and Sample**

Sampling in phenomenographic studies is often purposive and should be selected to
ensure maximum variation in the range of experiences of participants (Mimirinis, 2022). Sample sizes of a minimum of 15 participants have been suggested to ensure adequate variation (Kullberg & Ingerman, 2022; Larsson & Holmström, 2009; Mimirinis & Ahlberg, 2021). I proposed a sample size of 20 participants, divided between Canada and the United States, and ultimately recruited 21 NPs to the study. I used a combination of purposive and network sampling to invite NP participants who met the inclusion criteria, and who varied by type of NP education program completed, number of years of practice, and number of years incorporating addiction treatment into their practice. My goal was to invite NPs from a variety of clinic settings including both rural and urban settings, NP-run clinics, community health centers, hospital-based primary care practices, and street-based clinics where addiction treatment is incorporated with primary care.

The recruitment strategy included word of mouth using addiction treatment networks, direct outreach to NPs through membership and addiction-based organizations in New England and Ontario. META:PHI (metaphi.ca), the Northern New England Society of Addiction Medicine (nnesam.org), and the Nurse Practitioner Association of Ontario (NPAO) disseminated study recruitment information to their membership. I conducted outreach to an RN working within safe supply in Canada, and to members of my personal network, who connected me to NPs doing this work. I also participated in the Data Collection Program at the 2022 American Association of Nurse Practitioner (AANP) conference. Participating in the AANP Data Collection Program allowed me to engage with and potentially recruit individuals to my study from attendees at one of the largest global professional gatherings of NPs. While the AANP Data Collection Program only yielded one study participant directly, it provided me with opportunity to discuss my study with NPs from across the United States, and I successfully used network
sampling following the conference. Individuals who did not meet criteria were practicing in specialist addiction or pain clinics, working for an online addiction treatment service, or not actively providing treatment. Three individuals who completed the recruitment process in full ultimately did not complete interviews. See Table 2 for a recruitment summary.

Table 2

Recruitment summary

<table>
<thead>
<tr>
<th>Sample Details</th>
<th>Canada</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals identified</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Did not meet criteria</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Withdrew/did not respond</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Interviews completed</td>
<td>12</td>
<td>9</td>
</tr>
</tbody>
</table>

Sample Demographics

My intention was to include NPs who were practicing across a diversity of practice settings, given that phenomenographic approaches are focused on maximizing variation within the collective experience. Variation in the sample was increased by:

- Using a variety of channels for recruitment, including through a U.S. NP conference, a provincial NP association in Ontario, addiction-focused member organizations in both the United States and Canada, and through network sampling;
- Selecting NPs from both the Canadian and United States contexts, where care is funded and provided through very different models;
- Including NPs practicing in six separate jurisdictions – including one Canadian province, and five U.S. states;
• Including a range of MOUD treatments including more “traditional” opioid agonist treatment with buprenorphine and methadone, as well as “safe supply”; and,

• Selecting NPs working in diverse outpatient primary care practice settings.

NP participants were asked to complete a short Qualtrics™ survey as a way of demonstrating variation in the sample (See Table 3 for a list of participants). To preserve confidentiality, age, gender identity, practice location, and practice type were not identified with any specific interview participant but are shown in Table 4. The sample included NPs in their first year of practice, as well as those with decades of experience. Study participants had been treating or working with patients with opioid use disorder for between three months and eight years, although at the time of the study, four years was the longest time that NPs could have had prescriptive authority for MOUD. All participants were working as NPs, and prescribing MOUD. Very few of the NPs had received training in treatment of opioid use disorder as part of their initial nurse practitioner education. 20 of the 21 study participants identified as female, however this imbalance is reflected in the NP workforce more generally.

Given that working as an NP requires a graduate degree, and that NPs have often worked for several years as a registered nurse before completing their NP training, the age range of 28-64 is representative of working NPs. NPs had varying degrees of experience treating OUD. Some NPs treated only a few individuals, while others provided MOUD to more than 100 individuals. (see Table 3). The range of practice location types is shown in Table 4. Eleven NPs worked in some form of community health center or federally qualified health center; however, the sample included a variety of other practice locations.
### Table 3

**Participant list**

<table>
<thead>
<tr>
<th>Participant ID</th>
<th>Country</th>
<th>Years working as NP (Years treating OUD)</th>
<th>Training in addition during NP education</th>
<th>Number of PWUD treated for OUD</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-01</td>
<td>Canada</td>
<td>15 (4)</td>
<td>No</td>
<td>11-30</td>
</tr>
<tr>
<td>P-02</td>
<td>Canada</td>
<td>1 (1)</td>
<td>No</td>
<td>11-30</td>
</tr>
<tr>
<td>P-03</td>
<td>Canada</td>
<td>9 (3)</td>
<td>No</td>
<td>11-30</td>
</tr>
<tr>
<td>P-04</td>
<td>Canada</td>
<td>4 (2)</td>
<td>No</td>
<td>100 or more</td>
</tr>
<tr>
<td>P-05</td>
<td>Canada</td>
<td>1.5 (1.5)</td>
<td>No</td>
<td>6-10</td>
</tr>
<tr>
<td>P-06</td>
<td>Canada</td>
<td>5 (4)</td>
<td>No</td>
<td>31-99</td>
</tr>
<tr>
<td>P-07</td>
<td>Canada</td>
<td>24 (5)</td>
<td>No</td>
<td>11-30</td>
</tr>
<tr>
<td>P-08</td>
<td>Canada</td>
<td>7 (1.5)</td>
<td>No</td>
<td>31-99</td>
</tr>
<tr>
<td>P-09</td>
<td>Canada</td>
<td>4 (2.5)</td>
<td>Yes</td>
<td>31-99</td>
</tr>
<tr>
<td>P-10</td>
<td>Canada</td>
<td>15 (1.5)</td>
<td>No</td>
<td>31-99</td>
</tr>
<tr>
<td>P-11</td>
<td>Canada</td>
<td>5 (2)</td>
<td>No</td>
<td>31-99</td>
</tr>
<tr>
<td>P-12</td>
<td>Canada</td>
<td>13 (2.5)</td>
<td>Yes</td>
<td>11-30</td>
</tr>
<tr>
<td>P-13</td>
<td>United States</td>
<td>17 (4)</td>
<td>No</td>
<td>11-30</td>
</tr>
<tr>
<td>P-14</td>
<td>United States</td>
<td>13 (8)</td>
<td>No</td>
<td>100 or more</td>
</tr>
<tr>
<td>P-15</td>
<td>United States</td>
<td>2.5 (2.5)</td>
<td>Yes</td>
<td>11-30</td>
</tr>
<tr>
<td>P-16</td>
<td>United States</td>
<td>37 (6)</td>
<td>No</td>
<td>100 or more</td>
</tr>
<tr>
<td>P-17</td>
<td>United States</td>
<td>2 (2)</td>
<td>No</td>
<td>11 - 30</td>
</tr>
<tr>
<td>P-18</td>
<td>United States</td>
<td>3 (3)</td>
<td>No</td>
<td>11-30</td>
</tr>
<tr>
<td>P-19</td>
<td>United States</td>
<td>4 (4)</td>
<td>No</td>
<td>6-10</td>
</tr>
<tr>
<td>P-20</td>
<td>United States</td>
<td>20 (5)</td>
<td>No</td>
<td>11-30</td>
</tr>
<tr>
<td>P-21</td>
<td>United States</td>
<td>12 (1)</td>
<td>No</td>
<td>1-5</td>
</tr>
</tbody>
</table>

NPs in the United States are only authorized to prescribe buprenorphine, buprenorphine-naloxone, and extended-release naltrexone, while those NPs practicing in Canada can prescribe methadone as well as safe supply medications. Overall, 18 participants reported prescribing buprenorphine. All nine U.S.-based NPs prescribed buprenorphine, per current United States regulations. In Canada, NPs prescribed a mix of buprenorphine, methadone, and other full opioid agonists, with six NPs providing safe supply. See Table 5 for a summary of medications prescribed by NP study participants.
### Table 4

*Age, gender identity, practice location*

<table>
<thead>
<tr>
<th>Participant characteristic</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Under 30</td>
<td>1</td>
</tr>
<tr>
<td>30-39</td>
<td>7</td>
</tr>
<tr>
<td>40-49</td>
<td>4</td>
</tr>
<tr>
<td>50-59</td>
<td>3</td>
</tr>
<tr>
<td>60 and above</td>
<td>5</td>
</tr>
<tr>
<td>Did not disclose</td>
<td>1</td>
</tr>
<tr>
<td>Gender Identity</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
</tr>
<tr>
<td>Practice Location</td>
<td></td>
</tr>
<tr>
<td>Ontario</td>
<td>12</td>
</tr>
<tr>
<td>Connecticut</td>
<td>1</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>2</td>
</tr>
<tr>
<td>Maine</td>
<td>3</td>
</tr>
<tr>
<td>New Hampshire/Vermont</td>
<td>1</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>0</td>
</tr>
<tr>
<td>Vermont</td>
<td>2</td>
</tr>
<tr>
<td>Practice Type</td>
<td></td>
</tr>
<tr>
<td>FQHC/community health</td>
<td>11</td>
</tr>
<tr>
<td>NP-led clinic</td>
<td>2</td>
</tr>
<tr>
<td>Hospital-affiliated primary care</td>
<td>2</td>
</tr>
<tr>
<td>Mobile clinic</td>
<td>2</td>
</tr>
<tr>
<td>Private primary care</td>
<td>3</td>
</tr>
<tr>
<td>Family health team</td>
<td>1</td>
</tr>
<tr>
<td>Corrections/carceral system</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note.* While NPs can lead clinics in full practice states in the United States, the designation of “NP-led clinic” is specific to Canada. Federally Qualified Health Center (FQHC) is a U.S. designation.

**Interviews**

Semi-structured interviews lasting between 60 and 90 minutes were completed with each
of the 21 participants. Due to COVID-19 restrictions, and to distances between participant locations, interviews were conducted using Zoom. There were relatively few technical challenges – one interview was briefly interrupted by a storm, and in one case the interview started online, but was concluded on a phone due to connectivity issues. In general, video interviewing proved convenient for both researcher and interview participants. The interview participants themselves were in various locations including their homes and clinic-based work locations. There were occasional brief interruptions which may have distracted the participants; it is unclear whether those interruptions would have been minimized if the interviews were conducted in person.

**Table 5**

*Medications prescribed*

<table>
<thead>
<tr>
<th>Medications Prescribed</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buprenorphine (in any form)</td>
<td>19</td>
</tr>
<tr>
<td>Methadone</td>
<td>7</td>
</tr>
<tr>
<td>Extended-release naltrexone</td>
<td>5</td>
</tr>
<tr>
<td>Safe supply, including long-acting morphine, hydromorphone, and others. (Canada only)</td>
<td>7</td>
</tr>
</tbody>
</table>

Although there is little discussion of interview location in the nursing literature, it has been proposed that reflecting on location can be an important aspect of understanding how context affects the interview process (Gagnon et al., 2014). Physical and virtual interview spaces may also have implications for confidentiality, especially within the context of healthcare settings. Gagnon et al. (2014) commented on the implications of a variety of interview locations and recommended that nursing researchers include reflections on space and place in their
research, however their article predates the advent of ubiquitous online videoconferencing. A more recent study surveyed nurses about their experiences being interviewed using videoconferencing (Archibald et al., 2019). Most participants in Archibald et al.’s study reported a preference for Zoom® over other interviewing methods and reported that the use of Zoom® was helpful for “forming and maintaining rapport with the researcher” (p.4). However, the use of online interviewing does raise the possibility that contextual factors may be missed, given that the interviewer is not present in person with the interview participants.

**Pilot Interviews**

To determine that the questions were appropriate and elicited rich responses, two initial interviews were designated as pilots. However, since both interviews yielded useful data, these interviews were kept as part of the data set. The use of pilot interviews is suggested by some authors in the phenomenographic literature (Mitchell, 2015; Zou, 2019). Follow up or probing questions were an integral part of the interview design, and I made some adjustments to the interview guide as I became more experienced conducting the interviews.

**Interview Questions**

Although some researchers stipulate minimal reliance on prepared interview questions (Ashworth & Lucas, 2000), I used an interview guide as suggested by Han and Ellis (2019) (see Appendix E). Interview questions were open ended, with probing questions inviting participants to further explore issues that came up during their initial responses. In keeping with an arc of questioning that moves from concrete to conceptual (Stenfors-Hayes et al., 2013), I started each interview with a general question that asked participants about how they got started treating patients with opioid use disorder, and then asked them to recall and describe an initial patient encounter.
In describing the study to potential participants, I used a working definition of capability. However, since the concept of capability is not widely used, and I wanted to avoid teaching participants about the concept, in the interviews I used the terms “effective” as well as “capable, expert, and competent”. My goal was to encourage participants to talk about the ways in which they developed the ability to use their knowledge and skills in new situations or when dealing with uncertainty. I used interview questions focused not only on how NPs learn from their formal education, but also on learning acquired through more informal mentorship and collaboration opportunities, and from interactions with patients. My personal knowledge of the field gave me confidence asking participants probing questions about medication dosing, perceived risks, and clinical judgement. I was also aware of my potential advantages as an “insider” with personal experience as an NP, and the need to balance this with a clear focus on my role as researcher, working to remain neutral and open to whatever participants said during interviews.

Maintaining impartiality extends to the interview analysis process. As an NP interviewing other NPs, I was aware both of how I represent the profession, and of how the data and subsequent analysis might impact others’ perceptions of the profession. I reflected on my reactions to and choices around the data in written memos and in conversation with my committee members and PhD student colleagues. I aimed to maintain as much objectivity as possible about which utterances were ultimately included in the data set. For example, several participants expressed views or used language that I did not agree with, including referring to nurse practitioners as “mid-level providers,” a term that I prefer not to use. Utterances should be judged on whether they contribute to an understanding of the phenomenon under investigation and that researchers avoid making judgments regarding the validity of what is said.

**Ensuring Rigor and Trustworthiness**

To ensure rigor and trustworthiness, I attended to the design of the research question and the study itself, to ensure a) that there was a good fit with a phenomenographic approach, and b) ensure the best potential to obtain meaningful data. My goal was to ensure that the study results and their potential relevance were as strong as possible (Collier-Reed et al., 2009). I chose phenomenography as an approach that embraces the diversity of prior experiences, competencies, knowledge, and judgement that any group of NPs may bring to their practice. Thorne (2016) observed that health research is always conducted within the context of healthcare’s “social mandate”, which translates into an imperative for qualitative researchers to consider the possibility that their work will be applied in the clinical setting. Especially when discussing a topic such as OUD, where patients (and sometimes providers) may be marginalized, the research must be justifiable by its usefulness, what Thorne (2016) termed moral defensibility, and by its resonance and contribution to the field (Tracy, 2010).

As described elsewhere in this thesis, my choice of topic has relevance within the context both of an enduring opioid overdose and poisoning crisis in North America, and in the potential of NPs to increase access to MOUD. Additionally, the COVID-19 pandemic not only exacerbated elements of the opioid crisis, but propelled NPs to consider new care and treatment models. While competencies in treating OUD are necessary, NPs were also ideally placed to consider their understanding of capability and capability development, given the coincidence of the opioid epidemic and the COVID-19 pandemic.

**Interview Techniques**

During the interviews, I used probing and follow up questions to attempt to obtain rich responses that captured the full range of NP conceptions. I aimed to follow the lead of NP participants while remaining mindful of the parameters of the study questions. My knowledge of
OUD treatment gave me confidence in asking participants probing questions about medication dosing, perceived risks, and clinical judgement. I also had potential advantages as an “insider” with personal experience as an NP. I aimed to balance my own practice knowledge with a clear focus on my role as researcher, working to remain neutral and open to whatever participants said during interviews. I engaged in ongoing reflection on my various roles as NP, researcher, and NP colleague throughout the study. Every effort was made to ensure thick descriptive analysis by spending adequate time on the interviews, and to achieve rich rigor through application of the methodological framework of phenomenography. Maximizing variation was achieved through multiple interviews across varying sites, and maximum variation sampling. Study participants spanned a wide age range (28-64 years) and experience as NPs (1-24 years). Years of experience providing MOUD were less varied (0.25-4 years), due to the newness of this treatment within the NP scope. Treatment settings ranged from traditional community clinics and primary care practices to more innovative models including NP-led and mobile clinics. The incorporation of standard opioid agonist treatments and safe supply guaranteed a range of treatment approaches and medication options.

Memos and Field Notes

While I did not use formal field notes, I took brief notes following each interview, in order to process and keep track of any challenges and observations not captured in the interview transcripts. Once I began the analysis, I used memoing as a tool to help me track and clarify my thinking.

Communicative Validity

Communicative validity has been described as the ability to argue for and defend the interpretation arrived at by a researcher, while pragmatic validity considers the extent to which
the outcomes are useful or might add (in this case) to knowledge about nurses and nursing (Åkerlind, 2012; Collier-Reed et al., 2009). As a researcher conducting a study on capability development, I am contributing to knowledge about the phenomenon of capability and its development in NPs by proposing a set of categories of understanding based on study data. Attention to the domains of researcher, collective results, and the individual participants is important (Collier-Reed et al., 2009). To ensure credibility, I engaged actively both with a community of phenomenographic researchers, and with leaders in the advanced practice nursing community throughout this study.

While completing this study, I participated in several professional development activities either directly or indirectly related to this research. I was able to discuss my research within contexts in which the focus was phenomenography, addiction, and/or the nurse practitioner role and practice. I participated in extensive discussions with a member of my committee who has methodological expertise in phenomenography, presented my study design and preliminary results at an international conference on phenomenography and variation theory, and completed a specialist course in phenomenography and variation theory.

Course work in phenomenography helped me to ground this study more fully in the phenomenographic and variation theory literature and allowed me to experience how other researchers were framing their studies. Discussions with a committee member who is also a phenomenographic researcher were critical to my thinking. Together we engaged in an iterative dialog about the findings and how findings were supported by the data. I was fortunate to be able to present my work at a phenomenographic conference at a point when I had completed recruitment for the study and was in the process of conducting interviews. My discussions with other conference participants focused on the nuances of how to frame capability versus
capability development, and on my observations that NPs were often reluctant to focus on their own outcomes or process, but rather framed their thinking in terms of outcomes for PWUD. It was helpful to present this study about nursing to non-nursing audiences at phenomenography and addiction meetings, and to consider how to communicate the essence of my thinking to those outside my discipline.

In addition to reflecting on my own clinical work as a NP who provides treatment of OUD in a primary care setting, I served as a member of the American Association of Nurse Practitioners’ Education Enhancement and Sustainment Committee, presented my work at international nursing and addiction conferences, and discussed my work with the three NPs on my thesis committee. These activities grounded my thinking within the discipline of nursing and the NP role. While participating in the AANP Data Collection Program did not yield study participants directly, it provided me with opportunity to discuss my study with NPs from across the United States, and I successfully used network sampling following the conference. Many primary-care NPs I talked with during the AANP conference did not provide treatment for OUD or perceived it as a specialty field, which contrasted with the views expressed by several study participants who see treatment as an essential element of primary care.

I have also shared preliminary findings with NP colleagues who treat OUD and engaged in ongoing discussions about how to encourage NPs to incorporate treatment of OUD into their primary care practice. Discussions have focused on the uncertainty expressed by NPs who do not yet prescribe, the perception that medication cannot be offered without psychosocial supports (even though the evidence does not support this view), and the belief that extra support is required for PWUD receiving OUD. However, I recognize that my own interactions with NPs as part of my clinical practice may not be representative of the profession. Engaging in a dialogue
about the study findings with two committee members who are NPs in Canada and the United
States, and who themselves research the NP role has helped me situate this research within the
NP role and the discipline of nursing, without over reliance on my own experience.

**Data Transcription and Management**

I used an artificial intelligence automated transcription service (Otter.ai) which created a
transcript in close to real time. I manually reviewed all these initial transcripts against the
interview audio for accuracy and meaning. This process helped me to learn about interviewing as
advocated by Kvale and Brinkman (2009), even though I started the process with an
automatically generated transcript.

**Ethics and Data Security**

This study was approved by the Health Sciences Research Ethics Board, at Queen’s
University [NURS-542-22] (Appendix F). Participants were assigned a unique identification
code, and all data collected were associated only with that code. The only people with access to
the master participant list were myself and my supervisor. All data, including transcripts and
interview video files, were stored on a secure Queen’s University server, and password
protected. During the interview transcription process, all identifying references were removed.
Participants were provided with a detailed letter of information about the study, including any
potential risks or benefits (Appendix G). Verbal informed consent was obtained during
recruitment and was re-obtained prior to the interviews (Appendix H).

To avoid ethical conflicts, I did not recruit any participants I was currently working with.
I had met three of the 21 interview participants in person prior to the study. These prior meetings
varied in length – from a brief discussion at a conference where the participant was recruited for
the study, to my learning from and collaborating briefly with two participants in the past. Even
though these prior researcher-participant connections were not necessarily robust, the responses from the three participants were still recognizable to me within the pooled outcome data during the first few rounds of analysis. It is possible that the in-person connection and/or past interactions, made participant responses more indelibly recognizable to me, even though I made no conscious difference in how the interviews were conducted or transcribed. In-person interactions, even though brief, may also contribute to rapport-building between interviewer and interview participants. Conducting interviews in person might have erased these differences.

Study participants were alerted to the fact that I am mandated by U.S. law to report any concerns for the safety of children or vulnerable adults, should these be disclosed. Participants were provided with a detailed letter of information about the study, including any potential risks or benefits. Verbal informed consent was obtained during recruitment and was re-obtained prior to the interviews. The interviews completed for our study of NPs deal with nursing knowledge and practice, and are focused on the experience of the NP, rather than on the patient.

**Data Analysis**

The analysis of the interview data was aimed at uncovering categories of description related to how nurse practitioners experienced capability and its development, and to identifying the dimensions of variation in experience and conceptions across the sample group. I referenced methods outlined by Mimirinis (2019), Åkerlind (2012), Stenfors-Hayes et al. (2013) and Sjöström and Dahlgren (2002). While the elements of analysis are often represented as steps or stages, there is agreement in the literature that analysis should be an iterative process, by which meaningful utterances or relevant quotations are identified within the transcripts, and then combined to be considered as a pool of meanings. The exact number of analytic steps varies in the literature, however there is general consistency regarding how categories of description are
identified within the pool of meanings, named, and described, and finally combined to form the outcome space. My analysis consisted of the stages detailed below. I returned to prior steps and to the original transcripts as well as revisiting and revising provisional categories of description multiple times during my analysis of the data.

**Stage 1: Reading all Interview Transcripts**

I read all interview transcripts, while simultaneously listening to the audio files and checking transcripts for completeness and accuracy. Any inaccuracies were corrected manually. Notes taken during the interview were also reviewed at this stage. All transcripts were read at least twice, and “meaningful utterances,” or those portions of each transcript which might contribute to aspects of the participants’ experiences of capability, were identified. This process served to familiarize me with the data.

**Stage 2: Condensing the Data**

The aim of condensing the data was to clarify which portions of the transcript were relevant. Each meaningful utterance was examined for completeness, and to determine whether it should be included in the pool of meanings. Meaningful utterances were considered in the context of the participants’ experience of capability development. I initially looked for aspects of capability and capability development including the ability to adapt to change, engage in continuous performance improvement, know how to learn, apply skills and knowledge in new and familiar situations, work in collaboration, think creatively, generate new knowledge, demonstrate self-efficacy, and work within complex environments, while preserving an openness to the data. Those meaningful utterances which were determined to be potentially relevant were consolidated into a Word document, and then transferred to an Excel spreadsheet for further analysis. Using Excel allowed me to focus on the pool of meanings as a set, as recommended by
Åkerlind (2012). I then re-read all the selected extracts several times, and those that were not determined to be relevant on this further review were removed and were not considered further (this included approximately 18% of the initially included utterances). The remaining extracts were compiled as the pool of meanings.

**Stage 3: Iterative Readings of all Extracts in the Pool of Meanings**

Preliminary descriptions of how participants experienced aspects of capability were drafted and annotations were added to the extracts. In this stage, extracts were moved from one category to another within the pool of meanings as potential categories of description became more apparent. Provisional categories of description were assessed for their reach across multiple aspects of capability development. During this stage, I returned to the original interview transcript and/or audio files only where necessary for clarification.

**Stage 4: Re-readings of all Extracts in Relationship to Provisional Categories of Description**

All extracts were re-read while considering their relationship to provisional categories of description and looking for similarities and differences between individual aspects. Extracts were grouped into final categories, which were named, described, and compared. Provisional dimensions of variation, that is aspects of experience, which inform the categories of description were also identified.

**Stage 5: Determining Final Categories of Description and Dimensions of Variation**

Provisional categories of description and dimensions of variation were compared to the pool of meanings by me and by my supervisor with experience in phenomenographic research. This stage was also iterative as I and my committee reviewed findings to determine how they related logically to one another and to the phenomenon of capability to develop a hierarchically structured outcome space where later categories were also inclusive of those lower down on the
hierarchy (Mimirinis et al., 2023). Marton and Booth (1997) provided reference criteria for the
categories of description, where: each category should be distinctive, and be clearly related to the
phenomenon under investigation; categories should be logically related to one another; and the
categories should be “parsimonious”, with as few categories as possible used to describe
variation in the data (p.125). Additional conversations with my supervisor, who is also an NP
served to provide communicative validity – ensuring that the categories of description resonated
with her knowledge of NP practice and her experience as an NP educator. The steps of the
analysis are outlined in Figure 5, with a dotted line indicating the iterative nature of this process.
Finally, categories of description and dimensions of variation were arranged to constitute the
outcome space (Chapter Six, Table 6).

Figure 5

Analytic process
Notes on Language

I use the term *categories of description* for the study findings, described in Swedish as *uppfattning*. DeepL (DeepL SE) provides a translation of *uppfattning* as perception, with alternative translations of opinion, view, and understanding. It is possible that some nuance of what “categories of description” represent in Swedish is lost in translation. However, I have conceived of categories as key aspects of capability development, as experienced by interview participants. I also considered the categories as somewhat circular in nature, where practicing with capability could require a return to the process of learning, evolving thinking, and adoption of new practices to maintain the process of becoming expert.

Interview participants referred to individuals variously as patients and clients. In most cases, people with lived experience were the recipient of services from the NP. However, NPs did also occasionally describe their own lived experience with drug use. I made the decision to use the term “people who use drugs” as an inclusive and non-judgmental term for anyone with lived experience of drug use. I have chosen to use either generic or brand names for drugs, based on how interview participants referred to them – for example the generic buprenorphine-naloxone versus brand name Suboxone.
Chapter Five References

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Chapter Six

Findings

In a phenomenographic study, conceptions of a particular phenomenon are represented as categories of description, and analyzed in reference to how they contribute to the formation of an outcome space. Within the outcome space, referential and structural aspects of conceptions of the phenomenon being investigated are detailed. The referential aspect refers to the overall meaning attributed to a phenomenon, while the structural aspect accounts for the features of the conception, or how it is constructed by participants (Marton & Pong, 2005; Mimirinis & Ahlberg, 2021). Individual nurse practitioner (NP) participants in this study of capability development around treatment of opioid use disorder (OUD) often expressed more than one conception in terms of their understanding: of their capability development. Articulating more than one conception is a common finding in phenomenographic studies (Marton & Pong, 2005). Dimensions of variation contribute to the structural aspects of the categories of description and are identified in the outcome space. The NP experience of learning and learning conditions that made learning possible are discussed in the context of the categories of description and dimensions of variation. The intersections of the categories of description and dimensions of variation within the outcome space are shown in Table 6.

Categories of Description

Five hierarchical and inclusive categories of description were identified through the data analysis. The development of capability in treating OUD was experienced by NPs as a process of:

(A) Acquiring foundational practice knowledge around substance use and treatment through both formal and informal learning, including becoming familiar with guidelines


and protocols;

**B) Integrating knowledge** as NPs reflected on similarities to other areas of work, and incorporated foundational knowledge about OUD treatment with their existing knowledge;

**C) Evolving practice perspectives** as NPs applied a critical and exploratory lens to their knowledge and practice treating OUD;

**D) Adapting practice** by adopting new treatment approaches or adapting treatment approaches to new contexts, including thoughtful deviation from established guidelines, when indicated, adoption of new treatment approaches, or adaptation of treatment approaches to new contexts; and

**E) Becoming expert** as a responsive process in which expertise was demonstrated through communication of foundational knowledge and practice adaptations to others, engaging in practice and other activities with increasing expertise, acting as a mentor, and gaining a sense of legitimacy.

Categories of description are both hierarchical and inclusive, meaning that they increase in complexity and nuance, moving from the more concrete (acquisition of foundational practice knowledge) to the more conceptual (becoming expert). Dimensions of variation across aspects of the NP experience serve to further define the structural relationship between the categories of description and to outline the relationships between referential (meaning) and structural aspects of NP experiences of capability development. Variation in NP experiences focused on the role of self as NP, relationality with PWUD, collaboration and confidence. The outcome space is shown in Table 6. The categories of description and dimensions of variation are listed with example extracts from the interviews in Tables 7 and 8 and are further described below. Appendix I
contains additional supporting quotes for the categories of description.
Table 6

**Outcome Space**

<table>
<thead>
<tr>
<th>The Referential Aspect (Overall meaning of the conception)</th>
<th>The Structural Aspect (How meaning is constructed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of self as NP</td>
<td>Relationality with people who use drugs (PWUD)</td>
</tr>
<tr>
<td>A: Developing foundational practice knowledge</td>
<td>Novice practitioner (in treating OUD). Learner.</td>
</tr>
<tr>
<td>B: As A, and integrating knowledge</td>
<td>Developing practitioner, seeing OUD in context of other practice areas.</td>
</tr>
<tr>
<td>C: As B, and evolving practice perspectives</td>
<td>Reflective/questioning practitioner.</td>
</tr>
<tr>
<td>D: As C, and adapting practice</td>
<td>Flexible practitioner; trailblazer.</td>
</tr>
<tr>
<td>E: As D, and becoming expert</td>
<td>Experienced practitioner, responsive expert, having mastery.</td>
</tr>
</tbody>
</table>
Category A: Developing Foundational Practice Knowledge

NPs engaged in a process of developing a knowledge base around substance use and treatment for OUD by seeking out resources and learning opportunities. NPs expressed initial feelings of not knowing, being unsure, or feeling unprepared. As NPs built their knowledge base, they engaged in an ongoing process of learning, including identifying knowledge gaps both for themselves and others, seeking out learning opportunities, connecting with mentors and colleagues, and engaging in self-reflection. Learning was often self-directed even when not explicitly described as such. Some learning opportunities were more formal, such as participation in a course. Informal learning based on their evolving practice experience included learning from patients, developing competency in medication management, and participation in what several participants termed “communities of practice” with other individuals doing similar work. NPs in the initial stages of acquiring practice knowledge sought clear practice guidance, and placed importance on guidelines and practice protocols. Almost all study participants reported little to no formal education in substance use during their initial NP education, and experienced this lack of training as a barrier, with many describing what they perceived to be missing from their initial education. At this point learning was sometimes planned, but also could be undertaken as opportunities arose:

I didn't have any formal education about substance use. At all, anywhere, to be honest. I basically everything I learned, either learned from mentors or, you know, took sort of optional courses because I wanted, you know I could see the issues affecting my patients, and I wanted to be able to be knowledgeable about that. [P-07]

However, not all participants felt that the differences between OUD and other areas of practice were as clear cut: “in every other area we’re expected to grow our competencies and to
learn new medications all the time to prescribe” [P-09]. NPs also expressed a desire to be able to “treat the whole person” [P-16], instead of having to send them to another provider for medication for OUD (MOUD). Although they sometimes lacked training in MOUD, NPs were clear that treating OUD is “not a specialty. It’s primary care” [P-12]. There was an acknowledgment that foundational training in treating OUD “normalizes [it as] a primary health care need” [P-16].

NPs experienced an awareness of knowledge gaps, which could include “having self-awareness of where your learning needs are…being able to like know what you can offer and then seek out what you can’t” [P-08]. Learning took place after entering practice: “I had nothing to remember because I never learned it” [P-07]. There was frequently a realization that information would have to be sought out independently. There was also a recognition of the need to have learning processes for newly arising practice questions or scenarios. Having a process in place meant being more comfortable with the unfamiliar. Nurse practitioners learned from reflecting on their own practice and from discussions with other clinicians.

I liked presenting cases. I mean, it's daunting to know you're, you've got like 30 or more people listening, and you know, five or six faculty ready to critique and give, give guidance, but I learned a lot in the cases I presented and felt very supported. [P-20]

It's like really been the steepest learning curve of like career and I after 24 years of being a nurse practitioner and 35 with being a nurse. I in May, I was a novice again… I knew like I felt like I, I knew nothing. Which is not true. But so I…But the great advantage of having been a later adopter is that there is now a national community of practice. And so in Canada, safer supply prescribers have really created…I think that people are heavily
invested in the notion of bringing other folks on board and supporting other people to learn how to do this. And so I'm the beneficiary of, of that. And so there is a national safer supply prescriber consultation line, that if you have, you know, again, like everything else in health care, what you've learned in a program, every real world interaction is like “well, there's no fentanyl in his urine. So now what am I supposed to do? Am I actually supposed to give this person Kadian and Dilaudid? Because they're not, they're not even, there's no fentanyl in their pee. Now what?” So I'm calling the prescriber hotline to say what would you do in a situation like that? How do I know they're using fentanyl? I don't know. So that has been very helpful, right? There's the safety net of, of experts who've now got lots of pragmatic experience in the field who are available to me. And so that's been super helpful. [P-07]

Even those NPs with significant experience, experienced a return to the uncertainty of being a novice, and sought support and information from others. Foundational knowledge could also extend beyond pharmacology and treatment protocols, to a grounding in harm reduction and substance use. NPs prescribing safe supply in Canada acknowledged the importance of the evolution of evidenced-based practice for safe supply, including through META:PHI, an Ontario-based organization that provides resources around best practice for care of PWUD. (META:PHI, 2021). Three NPs also named an established community of practice as an important resource for their learning and sense of community.

**Category B: Integrating Knowledge**

As NPs began to provide treatment for OUD, they made connections between their new OUD treatment skills and skills and knowledge in other areas, usually related to their primary care practice. Being an NP was experienced as conferring certain skills, whether related to more
tangible areas such as proficiency with medication dosing, or to a holistic assessment of the patient.

I always felt pretty confident about the prescribing, that didn't really bother me because I was so comfortable with controlled medicines anyway. And all of the quality measures, you know, interpreting urine screening results, you know, medication counts, medication agreements, all that stuff I was well versed in, so there was so much I already had going for me as opposed to somebody who's brand new. [P-14]

As with participant 14 above, for some NPs confidence with general skills conferred a perceived increase in the speed of the learning curve related to treating OUD. Comparing treatment of OUD to other areas of care could be reassuring:

I must have checked it and rechecked it [first prescription for buprenorphine] 1000 times, it's like, it reminded me of the first time I did a weight-based script for amoxicillin for a baby. I was like checking the weight, calculating the kilos, one milligram per kilogram, divided by three and like you know, it's the same kind of thing but, but kind of scarier. And so, um, but again, I think this is the advantage probably of being an experienced NP. Is that like, I think my learning curve was speedier, because I'm an experienced nurse practitioner. And so you know, I'm at that stage of my career where I listen to my gut, I have good intuition about assessments…Like you do develop some expert nurse practitioner abilities that stand you in good stead no matter where you are. [P-07]

NPs also described their care as holistic and took pride in addressing the full scope of a patient’s care, and on integrating treatment of OUD as one aspect:

You can't really look at addiction in a vacuum because there's so many contributing factors to addiction and why someone has an addiction and how they're going to navigate
the journey of recovery, if that's where they're at. And I think nurse practitioners just with, with the training that we have, and the way that we kind of approach client work is, is really kind of beautiful to kind of do that work, because it really draws on the skill sets that nurse practitioners bring to the table. Plus they have the knowledge and the ability to prescribe these medications. So it really brings both those pieces together. [P-12]

Thus, NPs were able to recognize similarities between OUD treatment and other areas of practice; integrating their new practice skills and knowledge with existing knowledge within the new context of treating OUD: “we teach them how to treat hypertension don’t we? It needs to be like that. It can’t be some mystery disease that you have no idea how to treat” [P-14]. Many study participants referenced the impact of working with people who use drugs (PWUD) during their training or work as a Registered Nurse on their subsequent decision to incorporate medication for OUD (MOUD) into their practice.

Category C: Evolving Practice Perspectives

Evolving perspectives emerged through reflecting on practice outcomes, responding to changes in the external environment or policy, or observing other providers. NPs experienced evolution in their perspectives because of reflecting on practice outcomes, responding to changes in the external environment or policy, or observing other providers. As they started to become aware of ways in which practice realities differed from guidelines and protocols, NPs discussed learning how to “handle the gray areas” [P-21] and placed increasing value on anecdotal evidence.

I never thought that this job would be as complex or as um…you like, gray, there's a lot of gray areas, I think in addictions, and I didn't think it would be this way. That's not like the expectation I had. Like I thought I would know more of the answers more like for
more of a percentage of time versus feeling flabbergasted when people tell me like certain things or you know, they're trying a new drug or they’re… but it keeps me on my toes. [P-02]

As they continued their learning, NPs identified gaps in available materials and guidelines, and reflected on their own beliefs. They considered moving from more structured treatment protocols to those that were more flexible, adjusting expectations, responding to patient needs, and recognizing growth in their own approaches and practice. NPs also acknowledged people who use drugs (PWUD) as experts who contributed to their (NP) learning.

So now it's just like, I don't want to say it's like loosey goosey, but it's very much more individualized, right. And we, we work with patients, and I tell them like you know, we'll work at it month by month, and we'll just adjust…, I do try to like, let patients know right like they're half of that equation, work together. You know, they know their body they know what it feels like when they're not feeling well on the medication versus when they feel well. [P-17]

I learn things from my clients every day. So, it's hard to narrow down but I think the biggest thing that I've learned in terms of working in safe supply is that clients really know what they need. So the, the folks that I've worked with that have been really successful in the program are really people that are able to kind of say, you know, “this is why I use and this is what I need to reach my goals.” And I think that from that I've learned that even though I'm, I'm the prescriber, I'm not the expert. And so taking a collaborative approach is really important and letting the client lead and like I, even though this is an area that I really love working in, I don't have personal experience with
OUD right? So I need to learn from, from the populations that I'm serving. And let them sort of educate me about, about what their, their needs are. [P-08]

But there was a recent conversation about the euphoria piece that was what prompted my, my thought around it and made me kind of reflect. Yeah. On a similar, along the line I think the euphoria part came out of conversation with, the original thread was about safe supply and harm reduction. And yeah, treatment, treatment options for those who aren't ready to really just stop experiencing pleasurable effects of their drugs. [P-03]

Some of the NPs practicing in Canada were engaged in safer supply prescribing, in which they provided full opioid agonist therapy to try and eliminate the need for people who use drugs to purchase potentially contaminated supply on the streets. They experienced this as an evolving practice, with areas of uncertainty, and reflected on how they could be successful in this work:

And this individual was like really struggling with the idea of daily dispensing, but I was like, not comfortable with giving him more of the stimulants than needed and this was kind of treading into like...are we safer supply at this point like what like what am I doing? I was kind of questioning my practice. He was using opioids to come down off of stimulants of stimulants and then when he needed to come down, he would use opioids. And unfortunately, he did end up overdosing. There was like some escalating behavior before that and then we just couldn't get him back into the clinic. We couldn't connect and he was kind of all over the place. And then when we came back, actually from Christmas vacation, we found out that he had overdosed over the holiday. And that was like a really hard one for me because I felt like a failure, because I thought I, there was something I missed. There was something more I could have done. Like maybe if I
had’ve just, you know, would’ve, could’ve, should’ve. Like what could I have done differently to have kept him here?...And so, I really felt like I failed him, and I really felt like I failed as a provider when I found out that he had passed away… I did a lot of reflection, and I did like debrief with my co-NP and we talked a lot about it. [P-05]

In this category, the focus of NPs shifted away from their own initial need for basic skills or knowledge, towards an expanded assessment of how treatment protocols were enacted and PWUD were experiencing treatment. Questions moved from the concrete (what or how to prescribe) to the more nuanced. In some cases, there were no clear answers as NPs began to wrestle with the ethics of prescribing decisions and with assessing risk and benefit.

**Category D: Adapting practice**

Practice adaptations involved the adoption of new approaches including trialing new treatment protocols based on changes in thinking or new evidence, adapting treatment approaches, and working beyond established guideline boundaries, or using anecdotal evidence. NPs described working through initial discomfort or fear in their practice, and moving beyond this as they developed confidence with calculation of risk-benefit:

> I think you get more confidence and [the] more exposure you have with any condition about kind of how to handle those gray areas in a way that's therapeutic. [P-21]

> There's certainly times that I feel out of my comfort zone, but I've also worked as a nurse practitioner for a while now. So I feel like I can kind of balance those risks and still feel safe. [P-12]

NPs described navigating perceived or actual boundaries, whether related to treatment, personal disclosure, or practicing outside established practice boundaries or guidelines. NPs engaged flexibly with guidelines and with patients as they redefined risk-benefit calculations and
reframed their definition of success. Sometimes the formal guidelines or learning that NPs were interested in using to help guide their practice was not available to them. For example, one participant noted that “it's hard because there's not a lot of research sometimes to support the decisions that we're making or the research is in progress” [P-02], while another noted that adding Kadian to methadone was being done in the clinic setting based on “clinician experience and expert consultation” [P-09] rather than based on research findings.

Sometimes NPs questioned their own ability, with a lack of confidence serving as a boundary to a particular aspect of practice that they observed others doing. NPs were also aware of when they were prescribing medications “off-label”, and when they were trying new approaches that had not yet been validated in the literature, or included in any guidelines, which they experienced as “practicing on the verge”.

The general consensus of this community of practice and people who are working with this population is that we do need to be creative. And maybe work on, on like on the fringes or like in that fluid space, in the middle and like on the verges of our practice requirements, and obviously, always being safe and making sure patient safety is number one. But you know, since we just know how many people that are dying right now. It's just it seems like there just has to be that flexibility. Like we have the responsibility too, to be flexible in those ways. [P-03]

I think with some of this work, there's definitely some risk involved, especially working with the population that I work with. So, you know, it's that fine line between safety but providing something that's actually going to work for these folks. [P-12]
Many NPs understood their practice development as a move to a more patient-centered or harm-reduction focused approach:

I felt best about my own practice feeling right to me when I adopted a very low-barrier way of treatment. And this evolved over time. [P-14]

I think I would have been much more afraid from like a licensure level at one point. But now I can look and be like, well, she's like, never had an overdose in the history of our program. Like she's doing really well. We have a relationship where she tells me you know, if something is negative is happening, or her use changes. I guess I can see a lot more about how the relationship and like the nuances of someone's use, changes my risk perception and not just like, “this kind of prescribing is bad. And this is unsafe. Never prescribe a clonazepam if someone’s on opiates, never, ever, ever.” And now like judiciously I'll use it. [P-09]

The COVID-19 pandemic prompted changes in prescribing practices for some NPs, some of which remained in place;

I think they [PWUD] have remained more committed to treatment because we also do it in the spaces where they live and spend time, so we're in the shelters, we're at the soup kitchen, you know we're in the libraries. All of the places around the community where homeless individuals spend their time or live, that's where we are… We've talked about even having standing orders for things like Suboxone like they can have eight milligrams waiting for them of Suboxone. They know that they can go to the pharmacy, take their medication, there might be a couple of days there and then they know to follow up with us in 48 hours. So, we've really tried to make it as easy as possible for folks that they can,
you know, feels like they're participating in a little bit they have some control. If they're having a bad day, they're not forced to come and see us on that bad day. They know where to find us the next day and it's you know, a little bit easier… slowly over time, we'll pull in other people from the team if they're, you know, getting more engaged and further along in their journey. [P-12]

As participant 12 describes the adaptation of protocols during COVID-19, NPs in Category D, moved beyond critically reflecting practice and treatment protocols to trialing new approaches, even if they were making small changes incrementally.

**Category E: Becoming Expert**

Expertise acquisition was conceptualized as a responsive process rather than a destination. NPs described gaining a sense of mastery through stepping up to leadership or expert roles intentionally; finding themselves in the role of expert; realizing that they were considered by others to be expert in their practice; or through a recognition of increased confidence around clinical decision making. NPs described working through initial discomfort or fear in their practice, and moving beyond this as they developed confidence. For example, many NPs referenced established guidelines. However, some NPs began to see guidelines as a tool that could potentially be flawed or out of date given the rapidly changing parameters of the opioid poisoning crisis.

Now I'm getting to the point where instead of having that initial, like, anxiety response when someone's like needing something outside of what I [used] to provide, I feel less you know, I feel less like my boundaries are being pushed and more comfortable just being like, let look into this more, you know, and try and figure it out. So now I kind of have this established process. So, I guess you're, you're starting to learn how to, yeah
you’re developing like a process for learning how to manage things you don't have experience with I suppose. [P-11]

It was not always easy for NPs to describe themselves as having expertise or practicing with capability: “I’m the pseudo expert. Yes. And if I don’t know it, I’ll find out” [P-06]; “a lot of providers in the community come and ask me questions. So, that means they think I know what I'm talking about” [P-14]; “even as the semi expert or as I'm supposed to be expert, I was like nope, this is I need help too. Some things are just, you just don't know what to do with them” [P-05]. NPs were responsive to knowledge gaps experienced by others, communicating information about OUD treatment to others, whether to NP colleagues or to individuals outside their immediate work environment. Thus, as NPs gained experience, they began to self-identify as teachers and mentors, in addition to being learners:

It can be intimidating to meet with the chief of the emergency department and challenge a little bit that you might be an expert in a field where I think nurse practitioners that can be challenging for nurse practitioners to admit that they might know more, and I'm not saying that I do, because I don't know this. But I think overall I'm just saying as a blanket statement, I think that can be hard for nurse practitioners sometimes to take that role, to identify as an expert in the community. So, I you know, yeah, there's, there's a little bit of discomfort… it's a good opportunity to just kind of get outside your comfort zone and, and it's more for me for my professional growth, right? I mean, I could just continue to kind of do this work quietly and just make it about me and the client, but I also see such a need and recognize that this really requires a community response. [P-12]

Sometimes stepping into the role of advocate or consultant felt like an obligation for NPs – who recognized that they could help others in the community understand the work they were doing:
There's a lot of work that still needs to be done in the community, to kind of help support people to come along on this issue. It's not going anywhere; it's only going to get worse. So, I think, you know, for the people who are doing this work it also, I do feel like if we have opportunities to engage other people in doing this work, that's part of kind of our responsibility as well, as kind of champions, advocates, that kind of thing. \[P-12\]

One NP found herself able to bring her knowledge about OUD treatment to a new environment in a COVID-related clinic:

When we were in the COVID Centre, back in 2020, three people come through with three police officers and I'm looking at them and... I said, I said “do you take Suboxone?” Because I knew they were, they were just in withdrawal. Their eyes looked big and they're like “Yes”. And I said, “Okay, I'm gonna get you set up”. So, I have the police bring them to the ER and I told the doctor I said, “start them on Suboxone” And I said give them this, give them this, and so I told them what to do right but from their arena where I was at, so that looked like consultation reversed... I was able to help consult the doctor on what to do, because she had no idea what to do for Suboxone. \[P-06\]

When asked about capability or expertise, NPs often considered this through the lens of outcomes – which focused on patients rather than on the NP’s own practice. NPs expressed a degree of confidence that they were offering something of value to PWUD, often evidenced by the fact that PWUD continued to return for appointments and were partnering with the NP on their care.

I used to think that my definition of effectiveness was engaging patients in treatment on medication counseling, active engagement with myself, and the patient population that I work with just like doesn't, isn't that way that's not meeting their needs. So, I would say
effective treatment for my patients for me is that they're like able to engage with me kind of barrier free. So, as I was saying, like, I can text message my patients, they can call me. We do like outreach. And I think knowing that like I'm always very flexible and able to meet them literally where they're at…and I'm not like forcing them into one direction or another. [P-02]

When I'm effective? I guess, boy that comes in so many colours, right? I have some patients that the goal is not dead, right? You know, some people they're not dead. That's the goal. So that is a success. And I feel that, you know, look at them, I never expected them to survive this long. And that's something we have to acknowledge that, you know, there, it's, I don’t know effectiveness and success is in a lot of different colors, right? [P-14]

Expertise was also experienced as a process of gaining legitimacy and being acknowledged by others, and was sometimes evidenced by the changing nature of collaboration:

As like a new and emerging practice, and as a controversial practice, it's definitely felt like we have even more scrutiny and even more like oversight on us and therefore, like really feeling like I need to stick to rules or guidelines or like set protocols. Because we're already practicing in a way that makes people nervous. That's changed a lot. And I'm not sure it's changed just because of like my own growth and my own comfort, but also because we have really built up a visibility of the safe supply prescribing model, and have I think gained a lot more legitimacy. Like I used to have to do a whole educational spiel whenever someone was admitted to hospital and like beg them to continue anything. And now like, I've had clients, they've just continued their safe supply, and they write safe
supply in the progress notes. And like give them a prescription on discharge. And I'm like, “what, this is wild!” So I think the landscape has also changed a lot in the last few years. [P-09]

I now, formally provide consultation. Like we have a prescriber hotline, a national prescriber hotline that I'm part of. People reach out to me and ask for my opinion. People like reach out and ask to shadow with me. I guess because they recognize that I'm doing this work and doing good work and I’m someone to learn from. So that gives me a sense of mastery… I feel like I have a good number of clients and client experiences at this point that I can provide meaningful advice. [P-09]

Becoming expert was a responsive process, in that it was often conceptualized in relationship to others, as described by Participant 09 above. NPs shared expertise by communicating their practice knowledge around treating OUD to others and engaging in collaborative activities.
Table 7

*Categories of Description*

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| A. Developing foundational practice knowledge | I was you know, clearly a new, new to this prescribing, really did not feel like, like you know, I did the course. And then there's all these steps that go in order. And then my real-life patient didn't follow any of the steps in the right order. Yeah. And I was like, “I don't know what to give now”. I you know, so I fortunately, you know, had an NP to consult with who was super helpful and who kind of grounded me in this pragmatic harm reduction focus, which is “yeah, this is not what the books say. But in her case, you know, it's just think of it as harm reduction. You're giving her a little bit”. She suggested a dose I don't remember what that was, but she suggested a dose. “And if that's not enough, you can bump it up a little bit and she's got this on board if she kind of impulsively uses, you know, fentanyl again, or it may help her not use”. So, that was super helpful. I remember, I remember feeling like, you know, the real-world application of my knowledge was much more challenging than I thought it would be. [P-07]  
I already knew if I wanted to start doing this work, I had to seek out education on my own. And so, when I became interested in this work, I sort of talked to some physician colleagues who had done the work and to find out what courses they had taken. And then sort of looking at different sites. So BCCSU has a number of, of courses, CAM-H does the opioid treatment course for Ontario. So, I just started registering for courses and taking online courses just to gain some knowledge around substance use. And so, it was all just self-directed, continuing education, so that I would feel I had the knowledge, skill, and judgment to start doing the work. [P-08]  
You're not always gonna have somebody to like show you right? And also, like, you're right, when you're learning from other people, it's like, it's helpful to learn from other people, but you're also like learning from like, they could be making a mistake, or you know what I mean? Like, so I think it's good to just know the resources and be able to like, sort things out yourself and be resourceful for sure. Because there's so many questions in your practice and within your practice according to guidelines, like they're always changing and it's just good to look things up and, and have that kind of approach to care. Yeah, it also like eases your anxiety and gives you a bit more confidence, right, because you're able to problem solve independently on your own. [P-11] |
It made me look twice and just make sure I wasn't missing anything in the beginning, and I did create a little checklist for myself, just because there are laws around these things and I never wanted to be in a position of working outside of the law. I wanted to make sure that what I was doing was on the up and up and both clinically appropriate, legally appropriate, and just to make sure I wasn't missing anything. [P-13]

B. Integrating knowledge

But I think the benefit of trying to collaborate is that I you know, I think I do know the patient's complex history. I do know their medication record, I am sort of you know, all the meds are in one record. And that you know, if she's coming in to see me because she needs an increase in her OAT, but also has, might have pneumonia. Then we can kind of address those things in one visit. Like I think that there's so much benefit to, you know, she is really a person that faces a lot of structural risks, right, you know, often homeless, serious you know, mental health challenges, indigeneity, lots of lots of things that make her life super hard. And so the idea of having one provider who can do all the things I think is, is beneficial in some ways. [P-07]

And so like a lot of areas, even with primary care when I'm seeing, like a condition or something I'm not sure of I now at least know that I have my process like, I mean, my like assessment skills, I guess, are sort of very developed, so I can usually like assess things pretty effectively. And then like I know, my pattern of like, trying to read on like UptoDate or a medical database about how to address it. Like speaking to a colleague, reaching out on Connecting Ontario where we can consult with like, various specialty services online. I have a process to like, addressing an issue that I'm not familiar with, which I think helps ease my anxiety when new things are coming up that maybe I need to learn about. And then like, trying to make sure that I'm like committed to meet client's needs as opposed to practicing in a way that's just like, based on where my areas of accountability are you know? [P-11]

I've learned though that you can treat people very quickly and easily. It doesn't have to be this big thing, right? Like, you know, it's, I've learned that opioid use disorder, treating that is the same as treating hypertension. It's really not, you know, it's like anything, you've got to learn the risks, the benefits, the red flags, but it doesn't have to be this complicated, scary thing. It's, you know, it's just part of the menu of services that we can offer folks in their health journeys. [P-12]

I think anybody who wants to do anything well, you have to get in there and try, and you have to reflect and you have to learn from your mistakes. And you know, you have to own your shit when, when you mess up. Right? It's okay to tell even your patients that I messed up, you know, if I've, because everybody has messed up a prescription or whatever, and it's okay to do that. The only thing we can't fix is, is death. Right? And so, you know, I think you have to be brave. Get in there and do it. And the good far outweighs the bad. But when things go bad, go sideways. I like to say when things go sideways, figure out why. And if you don't want that to happen again, or if you think it's maybe not a unique experience and you have to kind of roll it into what you do. But it's like anything else,
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right? When you get out of school and you have your first patient who comes to you with a new diagnosis of diabetes, holy crap, we prep. You go back to your checklist. What am I supposed to do? What now? Oh, foot exam, oh crap, you know, oh I forgot. It's like that, and then eventually it becomes routine. And you don't have to fear that…You don't know everything. Nobody knows. [P-14]

I think really thinking about it as a chronic condition, you know, much like a type-two diabetic or hypertension or your, you know, is incredibly helpful. And a lot of the skill sets apply in terms of communication, motivation, assessment, self-assessment, and also that, you know, allied health care professionals who are really helpful and relying on them with appropriate referrals. It's just, I would love to have all of, and I think also, just considering the structure in which you operate, whatever that looks like, whether you're going to have a program or drug screen, what does that drug screen look like? What are you gonna have on your drugs screen, because we don't even have cannabis on it, which I think is very practically sound. I don't know that it makes sense to do that but you know, what is your drug screen? How often are you gonna do it? When are you gonna get the results? How would you handle results? How are you, you know, and that those kind of things have really, as those kind of built up in the first year of my practice there and simultaneously we're building in our own practice recognizing that there was a weakness that was very helpful. And we do that for other conditions as well. [P-21]

C. Evolving practice perspectives

It's funny the parameters that have changed in terms of what is you know, what is successful, what is not successful and like, maybe their survival is, is the success. [P-01]

You know, I used to tell people, you know, you won't get high if you use while you're on Suboxone, but at this point now I'm sort of starting to say, are you ready to lose that euphoria? Like just is this going to be something you're going to be prepared for or you're expecting? Are you expecting to continue to be able to seek that or are you ready to let go of that kind of a thing? So that's one of my more recent kind of revelations. In terms of like, talking to people and deciding on what treatment we're going to choose, is that the euphoria is a reason people do use the substances - one of many - and that it's important to acknowledge that and keep that dialogue open with them so that everything there's no surprises for anyone and I like to really try and keep an honest, open line of communication I find it's just so much easier to get, get somewhere with people. [P-03]

And so, so she [another NP] basically she said, we give people long-acting morphine as a backbone. And then we give them Dilaudid eight milligram tabs, immediate release tablets, up to like 24 tablets a day, to use to hopefully replace some of their use of fentanyl. And so that how this differed from opioid, how this differed from opioid agonist therapy is that the Kadian, the long-acting morphine, is kind of like the methadone. It's the, the thing that keeps your little opioid receptors from you know, being constantly in withdrawal. But the Dilaudid, this is the thing
that's different is the thing that people can go and use to get high. So, this is like game changing, right. And this is like anathema to the medical model. We don't give people their methadone or their Kadian and then stay “plus, here's something so you can experience euphoria, if that’s what you want to do, if that will help you not use fentanyl.” And so that was like, like, just stunning and I remember thinking, “Well, who knows who the hell's gonna be brave enough to do that like that? Good luck with that…like who's gonna be doing that?” But anyways, history has shown that there's, there are people that are understanding that you know, something, something dramatic has, is needed in our current poisoning crisis. And so I understand, you know, much better and obviously, there's been much more uptake in lots of different places in Canada. [P-07]

I'm teaching other clinicians and do a lot of mentorship of other NPs. I think I, we actually hired another NP and she, she looked at my prescriptions she was covering for me for a day, she’d been with us for like, two months and she was like, “some of your prescriptions are terrifying”. And I was like, “Yeah, I felt that way in the beginning. Like I heard what other people were doing and I was like, oh, like that's scary. I don't think I can do that.” And then I thought to myself, like am I being too afraid and too conservative and too like risk averse and too, like, practicing to prescriber comfort. And so I felt a sort of like, okay, there's been a lot of growth in my perspective, I'm now feeling really comfortable doing things that I wasn't comfortable with two years ago. [P-09]

I think there was a brochure in the exam room for Sublocade, the little book. She [the patient] goes, “Hey, what's this stuff?” And we started talking about it and I was blown away because I was reserving it [Sublocade] for people that I considered were the sickest. Right, who am I to decide who's the sickest anyway, right... I was like, oh, we can look at this for people that are stable. Maybe they're not so stable once we talk about it. [P-14]

D. Adapting practice

I know what’s important to ask from a safety perspective, and to start the conversation. So I feel like now because I'm connecting with the people versus like connecting with my tick box, like it's easier to start a conversation about okay, what brings you in today? What are you nervous about? What are you hoping for? What are your goals? Those are easy, open ended questions that get the conversation going, that I feel like I now understand better than when I started and I feel like I know that just based on the feedback that I've had from patients in terms of - they respond better to those questions than, you know, right off the bat, like what is your drug of choice and how much are you using and the conversation flows much easier now. [P-05]

But all of us decided like, oh, methadone, methadone is too far. Like we don't have any methadone experience…And then over time, it was sort of like, there's no there's nothing special to methadone like it is put on this sort of like pedestal and… gave an idea that there was like very specialized skills that you had to have to do this safely. And I think over time, it's like, well, really like you can kill people with insulin. I think I’m more scared to prescribe insulin than methadone at this point, for sure. And you know that you do have those like clinical judgment
and the knowledge and the skills to be able to prescribe it and it's like you are the kind of person that can prescribe it. It doesn't need to be sort of some specialist that isn't you. So, I think it took us a few months to become comfortable with the methadone prescribing… I've done like a two-month methadone prescribing course. So, like I had the knowledge to do it. But I think there was just an idea that methadone was like extremely dangerous. [P-09]

We kind of started talking about low-barrier care or medication-first approach. Because you know, it we used to require counseling, and we used to require all these things for people. And I don't think we realized how much of a barrier that could be for people and how that kept people out of the program. And it made us have to have these conversations with people like “oh, well, you're too sick for us. And you have to go”, you know, it always felt super gross. So when we started saying, “Well, why don't we, you know, why are we kicking people out?” And I'm like, “I don't know, why are we? Is there some rule that says we need to do this?” … So when a patient walks through the door, the first thing I tell them now is “I intend to write you a prescription today. You don't have to answer a question, right. You can ask questions about our agreement. We can have an honest conversation, and I don't even have your urine screen results back, and I don't care. And I'm still planning to write you a prescription”. And you see people just go “Ohhh, really?” “Yeah, really.” And then we can have a convo and we can actually talk. They don't have to lie to me, with some bullshit story about how they’re already three quarters better and so they don’t really need me. And they can just talk with me about stuff. And that's a point where I actually started feeling like this could work, and this could really help people… I've been working with some of my, you know, other people who treat use disorder and they're like, they are “They're not stopping cocaine use” and it's like, “Well, did you ask them if they want to they want to? Do they want to stop?” And you know, they don't. And we're like, oh, you know, we make the assumption. And they don't. But it's still good that you're treating their, their opiate use disorder, and they're not using fentanyl. [P-14]

I’ve changed the way that we give it [Sublocade] by like recommending that we do like some subcutaneous lidocaine prior to administering and going like right in the same little area that you, right in the actual puncture site with it. We do that with our, just as a matter of course with all of our Sublocades now, it was one thing that I started doing with my patients and I had a really good response with it. So it's kind of something that we offer. I shared it with the other two and it's something that's really offered…. we've changed the actual administration [of Sublocade]. A lot of us now just go in like the lower quadrants back and forth instead of like going up in the upper quadrants because it hurts, I think, and with the lidocaine, I think it definitely has to do with patient comfort. [P-17]

E. Becoming expert

I'm an expert in finding the right resources. I'm an expert in creating a...a you know, I'm an expert in finding the right resources to be able to then plan, come up with a plan with the person that's going to work for them. I still, I think it is the, the background in the mental health part that I still always go back to. They are the expert in the room with me that I just need to have to I have to figure out a way to, to hook them and to work with them along
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<td>the way. But because if it doesn't, if they're not game, if it's not going to work for them, it is not going to work. There's nothing there's nothing I can do that's going to work. So the idea of am I an expert in it or how do I feel about that? I think I have some great knowledge and I have I am very, I'm a very resourceful person. And I am caring, and I am compassionate to the people that come through the door. And I think that sometimes that's all, that is good enough as an expert is as you need.[P-01]</td>
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<td>Oh, so when we were in the COVID Centre, back in 2020, three people come through with three police officers and I'm looking at them and… I said, I said “do you take Suboxone?” Because I knew they were, they were just in withdrawal. Their eyes looked big and they're like “Yes”. And I said, “Okay, I'm gonna get you set up”. So I have the police bring him to the ER and I told the doctor I said “start them on Suboxone” And I said give them this, give them this, and so I told them what to do right but from their arena where I was at, so that looked like consultation reversed… I was able to help consult the doctor on what to do, because she had no idea what to do for Suboxone. So somethings like that. Right? I have even mental health workers consult with me. Accidents. They're on their last Suboxone, big car accident, they're on their last day, they were going to be home tonight but they're not, can you send in a prescription and or help them out. So I’ll consult, find you know, their last prescription and send out prescriptions like that. So lots of, variety of people reach out to me, but because I am the sole provider of continuous care of opioid use disorder, persons with that, they come to me. [P-06]</td>
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<td>I have been teaching SBIRT [screening, brief intervention and referral to treatment] and MI [motivational interviewing] with [Physician] and [Physician] for four years….And it was directed towards working with first primary care providers. And then emergency medical people on working with people who were using, and who either have an opioid addiction. That was with the PCPs and then we went to emergency medicine. That was about overdose and how do you, you know, when I first started working with them, I had rarely used MI, like I was a total novice, and in the process of designing these trainings and doing the trainings over and over and working with standardized patients and doing all the interactions like I like would go back to my practice. And now all of a sudden, I'm using all these MI techniques that now were, are normal for me. Like it's just how I talk to people. [P-16]</td>
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Dimensions of Variation

Dimensions of variation can indicate the structural relationships across and between the categories of description, even while they change for each category. Thus, dimensions of variation are aspects of experiencing, that inform the categories of description, and represent the ways in which conceptions of a phenomenon are structured. Identifying dimensions of variation can be a process of considering one aspect of the category, against which other aspects are held unchanging (Åkerlind, 2012). In this study, I identified four dimensions of variation: *role of the self as nurse practitioner; relationality with people with lived experience of using drugs (PWUD); collaboration; and confidence*. Table 6 shows how the dimensions of variation exist across the categories of description within the outcome space. Table 8 lists quotations supporting each dimension.

**Role of Self as Nurse Practitioner**

The first dimension of variation concerns the role of the self as an NP providing MOUD. NPs experienced their role in a variety of ways, including as learners, mentees, teachers, team members, collaborators, mentors, and as evolving and established experts. Self-perception as an NP providing MOUD ranged from novice (Category A) to more competent and confident practitioner. When they were newly providing MOUD, NPs could experience their role as one of beginner in this area of treatment, or as someone who was out of their element. They drew on their own experiences in areas of care other than OUD to inform their work (Category B). As they became more experienced, they reflected on their work as NPs and questioned their own practice and approaches (Category C). With experience, self-perception as an NP transitioned to someone who could make informed choices (Category D), who was a resource for others, and possessed a degree of expertise (Category E). Participants experienced their own resourcefulness
in identifying personal knowledge deficits and seeking out ways to learn and expressed a sense of personal responsibility to make a difference in the treatment of OUD. With experience, NPs adapted how they presented themselves and their services, in a process of becoming more flexible and developing as experienced practitioners.

**Relationality with People with Lived Experience of Using Drugs**

The second dimension of variation concerns NPs relationality with PWUD. PWUD were seen as recipients of MOUD services; individuals with healthcare needs that extended beyond MOUD; experts in their own care; and the source of learning, expertise; and as partners. Early relationships with PWUD were often focused on maintaining protocol and checking boxes (Category A). Initial relationships with PWUD were often perceived as one-directional with the NP providing services to the PWUD. As NPs developed a more nuanced understanding of their own practice, they recognized that most PWUD did not fit the mold of the “textbook patient”. PWUD began to be seen as individuals to be approached with flexibility, more holistically, and less paternalistically. NPs started to relate to PWUD as experts in their own care – they were open to learning from the perspectives of PWUD, to taking those perspectives into account in terms of providing care, and to engaging in shared decision-making. Eventually this could lead to a bi-directional or true partnership with PWUD, where interactions with PWUD were valued, and helped NPs rethink treatment protocols and adapt how they discussed care:

…one example more recently that I've learned and been kind of incorporating into my treatment and my approach is the experience of euphoria. And that being something I'm trying to include in my discussions with patients, and that people with opioid use disorder, there's just such there's such a continuum of where they're at with their substance use and the degree of treatment and the degree of recovery they're looking
for…it's just so individualized so I think lately I've been kind of exploring that with people. [P-03]

I’ve learned…that just the act of injecting brings relief, and perceived high, or stress reduction. So I’ve learned to help them find other ways to do that…like we talked I mean, we’ve framed it as it’s releasing endorphins and simulating dopamine. [P-20]

A flexible responsiveness to the social determinants of health, and to the individual situations and resources of PWUD helped NPs to individualize their care. Seeing someone struggling, not only with OUD, but also with securing necessities, changed the focus of care, as meeting basic needs took priority: “you've got to just step away from even the most basic health guidelines I think” [P-18].

Collaboration

The third dimension of variation concerns collaboration. Collaborative relationships experienced by NPs included with clinical colleagues, mentors, PWUD, and those in organizations outside but connected in some way to their immediate clinical sphere. Across the categories of description NPs perceived collaboration with others as key to their practice and to their learning and experienced the benefits and challenges of working collaboratively. As their practice evolved, NPs developed collaborations with others working in the community, whether with PWUD (sometimes those coming to the NP for treatment), pharmacists, emergency room personnel, or those working in the carceral system. Collaboration also extended to thinking and advocating systemically as NPs considered their roles in relationship to others within the team, as well as their professional roles in relationship to organizational policies and partners. In some cases, collaboration was noted by its absence – for example one participant noted that “what would have made a difference, and what would still make a difference is like ready access to
mentors” [P-07]. As they began their practice of treating OUD, NPs looked to collaborate with and learn from mentors and other learners whether in-person, online, or through learning collaboratives. NPs reflected on prior experiences of collaboration, and on relationships that could inform or contribute to their OUD treatment practice. Collaborators help with clarity of decision making or “thinking outside the box”. Evolving perspectives on collaboration included the realization that opinions vary among individuals, and that the NP themself sometimes would be called upon to determine their own best course of action.

**Confidence**

The final dimension of variation is concerned with confidence. Evolving confidence with providing MOUD led to the ability to look beyond the practicalities of writing a prescription or completing a patient visit, to try new treatment protocols, or to be more flexible in their approach. While comfort and confidence are not the same concept, NPs commented on both, and often referred to them together:

I got kind of comfortable with substance use disorders, but I always had a feeling that I just wasn't doing enough like there was more that I could be doing, and I just didn't have the comfort, I didn't have the knowledge, I didn't have the confidence. [P-03]

At times, NPs commented on a lack of confidence and comfort, associated with accompanying anxiety or uncertainty. Confidence could also be diminished by the experience of a poor patient outcome. Increasing confidence and comfort was usually considered positive, however some NPs also referred to staying within their comfort zone, which they did not perceive as positive: “I thought to myself, like am I being too afraid and too conservative and too like risk averse and too, like, practicing to prescribe for comfort” [P-09]. Confidence and comfort were also dependent on context for some NPs and experienced differently in the clinic.
than outside the work arena: “I have a comfort level with treating patients with opioid use
disorder in clinic. Very comfortable with them. And yet outside of my practice outside in the
world, I, I do not have that same comfort level” [P-18]. While confidence increased with
experience, some level of discomfort was an accepted and anticipated element of providing
MOUD for some NPs even within Categories D and E.
### Table 8

**Dimensions of Variation**

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<th>Dimension of Variation</th>
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<td>Role of self as nurse practitioner</td>
<td><strong>Novice practitioner in treating OUD. Learner</strong></td>
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I was kind of I felt lost of where to start, and not knowing or understanding what to do without having all the information that I have now, like looking back. Now, if I saw that person, I would have a lot better knowledge of where to begin. [P-04]

Those with opioid disorders came to the ER, a lot unattached. They were assigned to me to follow through follow up on. And so not knowing anything about opioid use disorder at all like zero, I realized some people had some needs, and so I would try to to investigate what I could do to help. [P-06]

I increasingly was getting clients or patients, I don’t know, who had opioid use disorder, but were being seen at free standing OAT clinics, of which the quality and the care being given in those clinics was pretty poor. So, I was like, hey, I want to be doing this myself. And I took a opioid prescribing like an OAT prescribing course. And shortly after I took the course, I actually applied for a safer opiate supply job [P-09]

And so, it was a lot of trial and error. So I just kind of learned. I think it was kind of a process both for me as the provider figuring out exactly how you order the medication, how you coordinate them coming in to pick up. [P-19]

| Developing practitioner. Seeing OUD in context of other practice areas. | And so that's another thing I've learned is that we need to just change our outlook. It's not necessarily harm reduction. It is not punitive, and this is not a fault. This is something that you need, just like a diabetic needs its insulin you need your OAT to be successful in life and to be advanced in your life. [P-06]

And then in primary care you're looking at, you know, patterns of use. So, in my mind, I'm always thinking as a prescriber for narcotics, I don't want to contribute to an ongoing problem. So to me that was the big part of it is understanding medications, understanding how to convert what an individual's using, for instance, street drugs, what they're using on the street to the safer doses. [P-11]

It's just integrating it into all practice, just assuming when you come out of school, that it's just part of what you, it's you know it's an illness that people have, and this is what you do. [P-15]

I think realizing that like it's all just connected, it's the same thing that you're like, “Oh, my God, this person's thyroid stimulating hormone is a 12”. What do I do? Same thing. It's just it's a slightly different
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<td>Reflective/questioning practitioner</td>
<td>The mentor I have, he would always talk about if people are able if people are able to write a script for Percocet, or for oxycodone or hydromorphone, they should be able to write prescription for Suboxone. Period...But everybody was so comfortable writing these scripts for these wild opioids in the past. And for whatever reason people are so frightened by the idea of this. That's got to change, and I think I think it will, I think at least here Ontario, it will change because things have drastically changed the way we just look at opioid prescribing period. So, I think that has changed, but I still think there is still that social and cultural aspect of things that it is a lot of, “oh, that doesn't exist here,” or “I don't need to worry about asking this person questions about that.” And we just have to get away from that.</td>
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<td>Flexible practitioner/trailblazer</td>
<td>I would love to think that if fentanyl was covered under OW, ODSP, fentanyl for fentanyl would be the way really to treat many individuals that have resistant opioid use disorder to get them off of the street drugs but that's not an option. And then, I mean, there's, there's so many things, these are the things that I continue to have, you know, kind of hypothesize on like how, how could we do things differently or an individual that uses up versus down so, up being crystal meth and you know, what could be safe supply.</td>
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<td>Experienced practitioner/responsive expert, having mastery</td>
<td>I guess I've just learned how to like adapt and be really flexible, I think. But in, I've had to also learn how to, I guess use more anecdotal evidence, which is something I think in my program I wasn't really taught that that was appropriate for NPs to even really do [P-01]</td>
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<td>If my gut said I think this person's actually you know, using XYZ and to actually bring it up because what I found was that people were almost never going to bring it up unless they felt like there was a safe place to do it. And so I tried to really consciously present myself as a safe place to say whatever to say that. And that there would not be, you know, terrible consequences or, you know, shunning that, that, you know, I wanted to have, I wanted to create safe places in health care for people who use drugs. [P-07]</td>
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I'm an expert in finding the right resources to be able to then plan, come up with a plan with the person that's going to work for them…So the idea of am I an expert in it or how do I feel about that? I think I have some great knowledge and I have I am very, I'm a very resourceful person. And I think that sometimes is as that's all that is good enough as an expert is as you need. [P-01] |
|                       | I've only been doing this work for like two years, but I think I'm one of the only people doing it full time as nurse practitioners, one of the few so like, I've written a lot of clinical protocols for our clinic. And it's been good to feel a sense of mastery to the point where it's like, “Oh, I like made this whole document and you can use it and then you can base your practice off of what we've been doing for two years. [P-09] |
|                       | It can be intimidating to meet with the chief of the emergency department and challenge a little bit that you might be an expert in a field…that can be challenging for nurse practitioners to admit that they might know more… I think that can be hard for nurse practitioners sometimes to take that role, to identify as an expert in... |
I think one thing that NPs bring sort of across practice, not just in this, but is the nursing background of listening and seeing patients for, for who they are and where they are, and, and really creating those relationships. I think that that's something that NPs do really well. And I think that's an essential part of success in opioid use disorder treatment is creating, yeah trust, and rapport, and an honest relationship that, that people feel like they can, can fail in it from their perspective and come back to without judgment or shame. [P-18]

I'm pretty sure I was not empathetic [with my first patient] and didn't come across as kind or caring at all because I think I was staring at my computer screen. We have these EMRs, electronic medical record, that we can put stamps into and so I had my stamps all ready to go, my tick box, my like checklist, and this person was so not on tick box it wasn't even funny… I really don't remember the patient much at all. Because I wasn't with the patient. I was totally aside I was in my own tick box world [P-05]

So I don't have lived experience with substance use. My partner doesn't have lived experience with substance use…I had no idea that people would be coming in and talking about like poppers and MJ and like all of these things, or even just like the way that they would describe how they use the substances, let alone the substances themselves. I was constantly asking for clarification. And I think that just like creates a division. I think it creates like a huge split between practitioner and patient. Because all of a sudden, they're like, “Oh, you don't actually understand. You don't know”. [P-05]

I definitely learned from, from patients that I think you kind of go into it in the beginning, at least, not being sure whether or not you know someone's asking for medications, you know, are there red flags you know, your, your threshold for for alarm is a lot lower. And so I think you're a lot more concerned about like, what if something does come back in the urine? Are they diverting the medication, they're selling it, you know, is it not showing up the right way? And I think I probably had more expectations in the negative sense, I, to be honest if you know, if someone was being honest with me about the information that they were giving me. [P-19]

It's been a really interesting way to really look at and challenge your own, your own thoughts of, of er…like, challenge the idea of, of, it's not a choice. It is not a choice when someone ends up, searching out…er, like whatever it is that they're using. [P-01]

People are really thankful when we're able to be flexible and, and kind of meet them where they're at, like,
say for the blister packs, if that was a real barrier going to the pharmacy every day. [P-04]

It also provides better continuity of care in terms of if I’m managing their addictions, then I can also start to manage some of the other pieces as well and be aware of... I think it just helps you get to know someone better and, you know, look at them as the whole person treating the whole person instead of picking them apart and you go here for this and go here for this. [P-12]

So I think it's just really looking at, again, whole person I know it's the holistic... I think really looking like a whole person, like you're here for Suboxone, but what's going on with like, why do you have you know, why is this happening? I think that will be like a… something I bring to practice. Like what are your other goals? I know you're here for medication. But what else? [P-15]

Someone's sitting in front of you, and you see their blood pressure's elevated. Instead of sending them somewhere else or having them go to urgent care or whatever. They have a urinary tract infection, they have you know, they want me to look in their ears. I mean, it's a no-brainer that they're there, they're motivated to come because there's they're so wanting to be in treatment, in recovery, that why impede the you know, their, their overall health by sending them away, right? So if you can treat the whole person, their recovery is going to be better. [P-16]

I have learned working with patients that the best way to approach really any patient... I approach my substance use patients how I do any patient, which is just people are so worried about being judged. They're so worried about being viewed through a lens that is just their diagnosis… [P-17]

You know, we, I think as a profession kind of pride ourselves on, on looking at the patient as the whole person, you know, and not looking at them as a particular diagnosis, not being like treating them like they're an algorithm. [P-17]

So people know that it's not a personal choice, but also an opportunity for people to maybe be more forthcoming about certain things on their mind or in their life, you know? [P-21]

But there was a recent conversation about the euphoria piece that was what prompted my, my thought around it and made me kind of reflect...And yeah, treatment, treatment options for those who aren't ready to really just stop experiencing pleasurable effects of their drugs. [P-03]

She [PWUD] said “every day I take this medicine I'm I'm reminded I'm an addict”. And I'm like, what, you know, what are you saying? And she said "every day she said I take this, and I feel dirty. I am reminded that this is just the bad thing in my life." And so she's making all this judgment on herself because of taking medicine. And it made me realize that your most stable patient might not be so stable, they might be following your rules. But in their brain, their recovery might not even be anywhere close to where you think
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<td>they are. [P-14]</td>
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<td>90% of the people that I've met have already taken Suboxone off the street and they know what their dose is. They know how it works. They know how much they need to [unclear] cravings, and I'm not teaching anybody in these things. They're, they're coming to me with their information, their dose. It's really everything else that we can help with.[P-15]</td>
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<td>I think I learned to be to try to be a little bit more humble with the process of like being a provider that you're not this, you know, paternal figure making decisions for people and that, you know, you know what's right and that it's your decision and what you say goes and that we're all learning in this process. And that the patient's just want to feel better. And that as a provider you just want to help them do that. [P-19]</td>
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<td>I've learned from that person and others that just the act of injecting brings relief, and perceived high, or stress reduction. So, I've learned to help them find other ways to do that…. like we talked I mean, we've framed it as it's, it's releasing endorphins and stimulating dopamine. [P-20]</td>
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<td>PWUD as participant in shared decision making</td>
<td>I know what’s important to ask from a safety perspective, and to start the conversation. So I feel like now because I'm connecting with the people versus like connecting with my tickbox, like it's easier to start a conversation about okay, what brings you in today? What are you nervous about? What are you hoping for? What are your goals? Those are easy, open ended questions that get the conversation going, that I feel like I now understand better than when I started and I feel like I know that just based on the feedback that I've had from patients in terms of - they respond better to those questions than, you know, right off the bat, like what is your drug of choice and how much are you using and the conversation flows much easier now. [P-05]</td>
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<td>So it [safer supply] was very, it was a true shift in thinking to what does the participant need from this program? Rather than what do we need from participants and how are we going to make them comply? [P-07]</td>
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<td>Every single kind of way that the typical system that, which I've been a part for decades, says, you know, “oh, there was some, I don't know cocaine in that urine…explain that to me”, like, you know, like, none of that, like this is just such a different way of really honoring the knowledge and expertise that people have about their own use, and their bodies and it really, it's not how we usually do things in healthcare, right? And so I really, you know…But it's hard to just shake it all off, right? Like I've been socialized in a way for 35 years. That is different, right? Like it's different. So it's not like I aspired to this way of practicing, but I can't pretend that I don't get caught up in the old ways. [P-07]</td>
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|                        | I would be like, you know, you're “what about this drug that you're taking is you know, there's something about it that is helping you that is, that you love, you know, that is good for you at some point and maybe,
Dimension of Variation | Interview Excerpts
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maybe that's changed, but initially, what was it about this drug?” And you know, they would talk about all the benefits of it, and including connecting them to a community. Right, that once they stop they, they have no friends. They're alone, right? So first, really one of the biggest things was really allowing people to talk about what benefits they were getting from using, and then and then and then say, “but the fact that you're here means maybe there's things that are not benefits any longer like there that you feel are negative for you. Can you talk a little bit about that?” [P-16]

And so I think I learned to be to try to be a little bit more humble with the process of like being a provider that you're not this, you know, paternal figure making decisions for people and that, you know, you know what's right and that it's your decision and what you say goes and that we're all learning in this process. And that the patient's just want to feel better. And that as a provider you just want to help them do that. [P-19]

I'm learning to be more open ended, less reactive. So that there's a window for people to disclose any, any concerns about how they're taking their medicine or not. And you know, what they need, what kind of help they need…. I will say things like “is this adequate? Is it working for you?” And like even as the visit starts, I'll say “is there anything you want to talk about today in addition to what we usually do?” Make it very open ended. … Well, it's more interesting. I fell like it's better patient centered care. [P-20]

I keep coming back to how the patient defines it a little bit because, because there is a lot of debate so I do always, I ask my patients what their goals are for their sobriety or relationship to the medicine either current or future. [P-21]

Sometimes when I shake my head and think I didn't think this would ever be part of my job that I'd be I'd be searching out these details from, from people that wouldn't you know, other people would not think would be trustworthy sources of information and they are my they are my sources of information for certain topics. [P-01]

I learn things from my clients every day. So it's hard to narrow down but I think the biggest thing that I've learned in terms of working in safe supply is that clients really know what they need. So the, the folks that I've worked with that have been really successful in the program are really people that are able to kind of say, you know, “this is why I use and this is what I need to reach my goals.” And I think that from that I've learned that even though I'm, I'm the prescriber, I'm not the expert. And so taking a collaborative approach is really important and letting the client lead and like I, even though this is an area that I really love working in, I don't have personal experience with OUD right? So I need to learn from, from the populations that I'm serving. And let them sort of educate me about, about what their, their needs are. [P-08]

I think it really helps to create therapeutic relationships, right? Like clients feel that there's, there's like a mutual respect, right? Like they can come to me and be really honest about what's going on in their lives. And we can have a really clear conversation that we can, together we can work out what needs to happen. And I think as a as a provider, it actually makes my job more satisfying, and also we can get to, we can we
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<td>can meet goals faster, right when we work together at things. If, if people are coming in and I'm constantly like “no, you got to do it this way, we've got to do it my way”. It doesn't work right, like it doesn't people don't come back and people don't feel heard. So I think it actually makes, makes the job, the work smoother when you have those kinds of relationships with your , with your clients where it's really open and trusting and they, they feel heard by you… I think that it took away a bit of fear because this work is particularly risky… And so, I think that when I came to the realization that yes, I have knowledge and I have awareness and I can be cautious about, you know, dose titration or, you know, reducing medications for missed doses. I also, you know trust that my clients can say, like, “this is working for me, this is not working for me, this is too much, I can't I can handle it, I can't handle it”, you know what I mean? Like really knowing that, that the client can help guide those within, within the limits of, of my knowledge and practice. So I think it took away a bit of that fear that I had when I initially started doing the work. [P-08] I have a couple of people that are looking at doing some vocational changes and looking at potentially getting a job. People that are now housed, one person wants to go back to school. Like so, to me, those are like really significant benefits. Those aren't my goals. Those are the goals of the individuals that I'm helping to support. [P-10] I think the effectiveness is some patients doing really well [unclear] in life, but really, it's they get the credit right? I'm just, I feel like I'm just sitting there listening, writing your prescription, knocking around ideas, connecting people to resources that I know about, you know. [P-14] I'd say number one is if a patient can, can tell me what's going on for them and can walk in and say, you know, “you're gonna see this in my urine. And this is what happened”. That that's when you know, it makes me want to cry. Like I feel like oh, I did it. [P-16]</td>
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**Collaboration**

| **Seeking out communities of learners and mentors** | I think actually working with clients, but even though I was a new, new provider, having a team there who had experience, and who I could just, you know, like pop out and go talk to, and say like, “what do I do in this situation?” And because he had experience I could get some sort of direct feedback and also then to be able to talk to the whole team. So our team consists of, there's NPs, there's an RN, and there's community health workers. And so everyone kind of comes from a different perspective. And so being able to get the perspective of someone who sort of sees the situation from a social side and someone who sees it from the medical side, was very helpful in my learning. [P-08] I do think having a having that community of practice and the support from other nurse practitioners is critical because you know, I when I started this job, I did the courses, and I was so like, it was still scary, very scary. And I don't think I would have the confidence I have today if I hadn't had both physician colleagues to coach me along the way, in person and on the phone and in moments. And it's like, I
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<td>Building network of collaborators and mentors</td>
<td>remember when I first started prescribing OAT and Suboxone I had a physician that was like my go to provider and I definitely called her before and made sure I get everything right. Like it was very important to have that, and I was still very scared but, probably triple checked the prescription about 10 times… I do think now looking back, that having that knowledge of other providers doing the same and a constant line of communication with someone that I could ask for guidance and direction with was really, really, or is, continues to be very important. [P-03]</td>
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<td>Rethinking collaboration with PWUD. Recognizing that others do not have all the answers.</td>
<td>I think it also helps that I am I'm 60 years old. I've been a nurse for 35 years. I'm probably one of the longest-practicing NPs in my community. I have a profile the community. I have in my before I did safer supply I was, I was the lead nurse practitioner for the for the clinic. And so I had a few years of being the clinic, kind of clinical voice to the community. So I have, like I have a reputation in the community, which is positive, I think. [P-07] As a provider, I tend to solve problems and fix things. So like, I might see what's wrong in the situation. Oh, right there was fentanyl in the urine. Still smoking a lot of marijuana. Or homeless. But when you talk to someone who's not as close to it, they can see the strengths and you know, help you stay in there with the client. Even though it's not up to your ideals. They might give you suggestions you hadn't thought of…Well, we have like here we don't have a lot of infrastructure for treatment.. So sometimes, the church, people from the church can be really helpful. And or neighbors. Or I think this is nationwide, but here we have been telling people about options which help 24/7 with anything related to addiction… Friends, you know, we there's the treatment team. Which is usually the prescriber and the counselor and really promote recovery programs. We have the recovery center, but we also pull in neighbors and friends and the church and any, anyone that's in a position to help…. Well, we might invite the client to bring their support person along, with their permission, we might call them. We also here have recovery coaches, and we'll try to get them involved too. [P-20]</td>
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<td>This particular woman [PWUD] is coming in and every week she brings me someone new. Like that's, that's pretty great. Right? Like that's a pretty great feeling that um…, that there's trust in that, that there's someone advocating, like there's someone advocating, helping supporting navigating someone through this, but then I'm the person that they would trust to bring them to [P-01] I'm seeing repeat referrals from this primary care office, and there was a few of them, that felt really good because I was like not only am I seeing potential progress here and in terms of people reducing their use or you know, kind of early remission things like that, but this provider must be seeing the effects as well because they wouldn't just keep sending people to me if it was like a crap referral [P-05] I have two or three out of like six patients maybe, who were going through their prescriptions faster than you know, increasing their own dose intermittently. And how to handle that. Because on the one hand, there's you could argue that you really want a steady state and if they're going up maybe they’re</td>
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<td><strong>Using collaboration to achieve clarity of decision making or to think creatively</strong></td>
<td>Subtherapeutic, on the other hand, you could argue that's abusing a medication you know. And so, what is the correct response you know, is it to kind of really double down on “this is prescribed you can’t take more” be “like under any circumstance” versus do they have a different need is there tolerance? [P-21] What's interesting is depending on the mentor, you might get a different answer, you know, for the same question… It depends on how discordant they are, you know, and might mean that I have an area where I need to probe more with the mentor, like clarify further or you know, present an alternative approach or something and see thoughts. It may mean that I'm looking to a third party to clarify, outside of two conflicting things, you know, it may mean that it comes down to my own individual judgment and what I think is best for the patient. [P-21] I really I have the benefit of learning from someone who's very experienced. She's very up on the guidelines, she's comfortable with it. She's very pragmatic about some of the issues that people can get fixated on like, you know, precipitated withdrawal. And like she's really taken the fear away from some of those things that I think can be barriers for folks like for healthcare providers to engage in doing some of this work. So I think it was her reviewing the guidelines…. So I think it's just I've got a good mentor that can, that I can, you know, consult with and learn from, and other professionals in the healthcare community doing some of this work and not being afraid to kind of step outside the guidelines, and we can learn from them. I think with some of this work, there's definitely some risk involved, especially working with the population that I work with. So, you know, it's that fine line between safety but providing something that's actually going to work for these folks. [P-12] The doctors - two of them have been doing this for you know, sort of as long as it's been around - it's been really helpful to hear them talk about how their minds have shifted over time from, you know, the judgment to the harm reduction [P-18] It was collective and asking the other providers how they'd respond. And then there, and then there were there were other people with similar concerns and we had a provider meeting for the three of us that had started around the same time and discussed how we would respond [to a clinical scenario]…. after that meeting, that's when I went back and told every single patient, this is how we respond every single… whether or not it was personal to them or had come up or hadn't. [P-21] I think anytime that I'm making a decision outside of sort of established guidelines or without guidelines, I'm always a little bit less sure and want to make sure that it's somebody else, you know, am I out on a limb? Am I right on target? How does somebody else approach this? And what's best for the patient and what's the current science that's most applicable? [P-21]</td>
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| **Looking at system-focused solutions** | Using collaboration to achieve clarity of decision making or to think creatively | Looking at system-focused solutions; |}

The closest legitimate, like real proper addiction, like withdrawal management is 300 kilometers away from any of our communities. So we have to be resourceful. We have to be able to learn how to do this in this community and we have to be open to it, the, everybody needs to be open to the pharmacist, hospitals...
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<td><strong>Taking the lead in working with others</strong></td>
<td>...other providers. There should not be just one expert in living in the community. [P-01]</td>
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<td>I think when I feel comfortable advocating for a patient in different avenues that makes me feel like I'm being a really good and effective practitioner, so when I can, you know, go write a letter to somebody's housing. You know, like ODSP, or OW, or whoever it may be that I need to kind of advocate for them in whatever realm that looks like. So to be able to do that and have confidence in what I'm saying. Makes me feel like I know what I'm doing. [P-05]</td>
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<td>It takes like seeing it like several times, like I start to see a pattern, right, like, even like the pattern of not being able to access care well, and that centered around a lot of the work I did at [clinic], where we have like the outreach clinics and that kind of thing that we're doing, and also we did, we did do a lot of advocacy. Like we met with, like, what hospitals, and you know, we did presentations on low-barrier care provision at like conferences and like other places. And even the proposal, we were on the safer supply proposal there and then we had the community health centers, which is like a larger organization, we asked them to partner. So now, now this larger, more established organization has a safer opiate supply program, and I'm able to practice here and like a low-barrier way which didn't exist before, you know. And so yeah, I guess when I start to see like a pattern of something happen to many people. Then, yeah, that's when I would start like trying to advocate for, for broader changes. Also, for me, I do get really frustrated by like inefficiencies and that kind of thing. So doing this program is like a half measure, just like on a personal level I find it very challenging and so it kind of drives me to change the things like it just like oh I can't meet people's needs, and like, that's frustrating. [P-11]</td>
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<td>We saw like a dramatic increase in the amount of overdose deaths around 2015 around the time that fentanyl sort of entered the drug supply. So there's, seems to be a huge need for like a safer supply for folks. So that's how I got more involved in committees working to help devise a safer drug supply, and eventually we put together like a proposal for the federal government. And we got funding for the safe opioid supply program. [P-11]</td>
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<td>We developed protocols on starting people on methadone when they went into isolation [for COVID-19]. So, I think it wasn't really about one patient specifically, it was looking at the big picture and trying to create systems that everyone could access when they went into shelter and then training the nurses and the rest of the support staff about what those protocols are and what that would look like. [P-12]</td>
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<td>I have a patient who has a history of opiate use disorder and crack use and she is not on, on Suboxone, so slightly different patient, but, you know, using that information that I gained at that one of the courses around medications that was hosted by a dentist on what we can do for people who are opiate dependency, or dental pain after procedures. So I called and worked with her dentist on like a nerve block to use after her removing her teeth. [P-16]</td>
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| | I think our wraparound service here makes it feel more expert I guess, that they're able to get you know,
psychiatric care and counseling and like that, that some of those more than just the opiate use piece is actually being helped. We have care coordinators too who can help with you know, getting access to food shelves and rides to work and things like that. So… help finding housing, like really getting those sort of bigger things taken care of, that feels, like we you know, that's not just me that, that's like we as a team are actually making a difference for these people. That I think feels like we've done something and it's not it's not one or the other of us, it’s all of us working together to make that happen. [P-18]

Confidence

Experiencing initial lack of confidence, sometimes expressed as fear and discomfort. [feeling unprepared] created like a lot of anxiety. And then, like noticing that my anxiety kind of was like exhibiting itself as like a loss of control, like I couldn't…um, like because patients are unpredictable… I still feel like my NP degree didn't necessarily prepare me for what was going to actually like come to fruition in my clinical practice, like I had a good barrier, but it's still a learning curve for me. [P-02]

As providers, I think we have to get out of our own way. I think that we become very comfortable. And I think for me as just as a person, I have a very hard time with not knowing. [P-05]

I can very acutely still remember that first patients I had to see on my own, and I was still terrified. I still felt like I really didn't have a great grasp of what I was doing. And heavily relied on guidelines documents to kind of aid me and was very like true to the guideline, like I didn't really stray. [P-05]

I was out of my element. I was out of the water, and I knew that I needed to learn more and that this was this was on me and my comfort level and I was gonna have to get comfortable. [P-05]

I was losing people and I was I had such a future, such futile tools in my box to prevent that. And then, you know, there really was largely substance use, user-driven call to action saying, “if you can prescribe opioids for people you should effing be doing it” and I remember thinking, oh, “yeah, but ah, God! but I …[unclear]. And so you know, if I really do remember it being there was a period of time where I really took that to heart like I and people I knew were doing it and people I respected were doing it and I remember just thinking, but that terrifies me like, oh my god, it just sounds it just seems like the scariest thing ever. What if I, what if I prescribe some massive amount of opioids, someone and they die, they take it and they die. Like I was thinking about that. And of course they are going to take, you know they're dying from fentanyl. But that's not my fault. Right? Like and that's the convoluted you know, kind of thinking right? It's like, my name’s not on that prescription. Right, like so there was a lot of. I guess, angling about it, thinking like, “oh, obviously that's the right thing to do. But like, holy shit, I don't want to do it. Like I don't want to do it.” And it was I remember really kind of agonizing about that. [P-07]

Increasing confidence in decision making and I think this is the advantage probably of being an experienced NP. Is that like, I think my learning curve was speedier, because I'm an experienced nurse practitioner. And so you know, I'm at that stage of my career
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<td><strong>prescribing</strong></td>
<td>where I listen to my gut, I have good intuition about assessments, like it you're probably the same right? Like you do develop some expert nurse practitioner abilities that stand you in good stead no matter where you are. So even in a new area of practice, which, you know, was admittedly, is terrifying in many ways. [P-07]</td>
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<td><strong>Considering factors that contribute to confidence</strong></td>
<td>Oftentimes [rapid induction onto Sublocade] happens in hospital and I have never done in the community and again, like so I think there's, there's a good example of like, I'm still uncertain of part of that, right? Like, why haven't I done that, like could I do it in the community? And I pose those questions to people like why not? And I'm like, I don't know I just seems like I'm not ready to do that yet. [P-01]</td>
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<td>[feeling unprepared] created like a lot of anxiety. And then, like noticing that my anxiety kind of was like exhibiting itself as like a loss of control, like I couldn't…um, like because patients are unpredictable… I still feel like my NP degree didn't necessarily prepare me for what was going to actually like come to fruition in my clinical practice, like I had a good barrier, but it's still a learning curve for me. And so something I'm just like working on every day to try to be better for my patients… I think it was like the theoretical patients and then because the clinical environments I had been exposed to as my like practicum placements were very much like the standardized patients or the theoretical patients because of like the socio economic, you know, like where I was coming from in a community or a clinic. So I didn't have a lot of like those I guess wildcards. Like I feel like some of the, lots of the patients I have now. If people were to work with them, they would, they would be like “I don't even know where to start.” … I think that happens lots of the time in my role, because they're not like, it's not, it's not very standardized patient like, it's not very simple I guess. There's always a lot of confounders. [P-02]</td>
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<td>Like women in primary care, but I think that we're willing to admit our areas of discomfort and our lack of either confidence or whatever that is in certain areas. [P-15]</td>
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<td>Sometimes I think we see ourselves as either completely novice with zero experience or there's experts, and there's nothing in the middle and I think that's always scary when something appears like that. And you don't realize that there's a lot of people who are kind of in the in between, and that's actually the majority. If that's the case, but I kind of assume most people feel like they're flailing around. [P-19]</td>
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<td><strong>Confidence trying new approaches, prescribing</strong></td>
<td>And then with experience and comfort…and also the acknowledgement that it is a safer option than continuing illicit opioids on the street, I, I was much more at ease prescribing at different rates and, and</td>
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off-label, thinking creatively, reframing risk. | I am certainly more comfortable, more competent than I started, 100 percent. And that, that lends a lot to the care provided. But I'm still not an expert and I am but like I said I am resourceful. And I am not I'm not afraid to find out. Ask the people that I that I see as the expert above me, right? [P-01]

I have a patient and I'm still following him at this time, so he had come to me about eight months into my journey... And when we finally got to the point, I think, probably mid-September, this was probably four to five weeks later, and he was ready to talk about it. He was ready to talk about Suboxone. And what could we do differently this time? Because he had had an experience with precipitated withdrawal and he's like, I don't want to do that again, I don't like being in withdrawal, I'm using constantly around the clock because I don't want to feel that. And I was like, well, there's this thing that like maybe we could do. Maybe we could explore micro-dosing. And this was my first, I felt so proud and confident in myself and kind of taking that like next step to like the next big thing for me, which was like not the standard induction but to try this micro induction. We ended up having to try it three times because he just, something would happen and just couldn't complete it, every single time. And then not only did we get him through the micro-induction, but we got him stabilized on a daily dispense of Suboxone and he was doing incredibly. He was telling all of his friends about it, his friends were coming to see me, and then we started picking away at some of the other social stuff that was going on... And then we were finally able to switch him over to Sublocade. So he was getting tired of the daily dosing and I was like, okay, like, let's talk about this. And then for me, that was like my next big thing. So not only can I now micro-induce folks, and then once I'd done it with him and done it successfully and realized it wasn't gonna kill anybody, that gave me such confidence to then try it with other folks and other folks were coming to me. [P-05]

Rules aren't necessarily made to stay forever. We're meant to examine them and to question them and to try to figure out if there are better ways to practice and which is why guidelines change all the time. [P-19]

Confidence sharing knowledge with others. Acknowledging discomfort as part of the process of providing care | I think it can be like really overwhelming because sometimes I know that maybe I'll never see this person again. But they're so complex, and I want to try to keep them like engaged in, in treatment. Yeah, I think, I think I, maybe I never thought that this job would be as complex or as um...you like, gray, there's a lot of gray areas, I think in addictions, and I didn't think it would be this way. That's not like the expectation I had. Like I thought I would know more of the answers more like for more of a percentage of time versus feeling flabbergasted when people tell me like certain things or you know, they're trying a new drug or they're... but it keeps me on my toes. [P-02]

[an example of a risk is] prescribing methadone to someone who's using fentanyl...you know. That is a good example of...knowing they're using fentanyl and prescribing the methadone too, right like it's a clear fact that they're using it, and just you know, knowing that you could potentially increase the risk of overdose but also knowing that there's a potential reduction in their well their improved opioid tolerance
and reduced risk of fatal overdose. So, it's kind of like just having confidence in that and kind of holding on to that fact, I suppose. [P-03]

I now, formally provide consultation. Like we have a prescriber hotline, a national prescriber hotline that I'm part of. People reach out to me and ask for my opinion. People like reach out and ask to shadow with me. I guess because they recognize that I'm doing this work and doing good work and I'm someone to learn from. So that gives me a sense of mastery… I feel like I have a good number of clients and client experiences at this point that I can provide meaningful advice. [P-09]

I think that can be hard for nurse practitioners sometimes to take that role, to identify as an expert in the community. So I you know, yeah, there's, there's a little bit of discomfort… it's a good opportunity to just kind of get outside your comfort zone and, and it's more for me for my professional growth, right? [P-12]

I guess the one thing I would add would, that's part of NPs too, like being being, or maybe this is just new providers, like being okay with being uncomfortable initially. Like that's okay. And, yeah, I think that's the only thing I'd add - it's okay to be uncomfortable. [P-18]
Conclusion

Capability development in the treatment of OUD was experienced by NPs as five hierarchical and inclusive categories of description. Each category contains some element of the preceding categories. Thus, becoming expert assumes not only the acquisition and integration of foundational skills and knowledge, but is also a process of questioning, grappling with uncertainty, and sometimes trying new approaches. Becoming expert was finally experienced as sharing that knowledge with others, and moving from learner to teacher, whether formally or informally.

Participants described the incorporation of MOUD into their practice as a steep learning curve. Learning conditions and the NP participants’ learning experiences were shaped by a general lack of formal training in addiction, including treatment for opioid use disorder. Healthcare practitioners routinely learn to incorporate new developments into their practice, for example prescribing new medications or adjusting recommended plans of care based on evolving evidence. However, in most cases practitioners are building on an established personal knowledge base, while most NPs in this study had limited to no formal training in treating addiction. However, NPs were able to build on clinical skills common to multiple areas of practice; they were not novice practitioners (except for those who were new to NP practice).

The role of self, and relationality with PWUD were key dimensions of variation, woven throughout the categories of description. In the process of moving through the categories of description, and in reflecting on self and other (in this case PWUD), confidence and collaboration were experienced in at a variety of contexts, from smaller interactions to larger, systemic approaches.
Chapter Six References


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https://doi.org/10.1080/07294360500284706


https://doi.org/10.1002/berj.3669
Chapter Seven

Discussion

In this chapter I discuss implications for the findings from my empirical study of nurse practitioner (NP) capability development around provision of medication for opioid use disorder (MOUD) and consider how NP conceptions of capability development compare to findings from a scoping review on capability in advanced practice nursing (APN). Additionally, I address two study sub-questions concerning learning conditions that contribute to capability development for NPs providing MOUD.

A scoping review was conducted to describe what is known in the literature about capability as applied to advanced practice nursing and education. Review sub-questions considered how the concept of capability is described, how it has evolved with APN and education, and how it informs evaluation in APN. Results from the scoping review showed that there is relative consistency in definitions of capability in the literature on APN. Although definitions did not vary widely, capability was used as a framework, as a distinguishing characteristic of advance practice nursing, and to describe APN practice that exceeded competency. Results of the review suggested that capability is a useful description of and preparation for APN, especially within complex healthcare environments. The practice of MOUD within primary care provided a setting for the subsequent phenomenographic exploration of how NPs experienced capability development.

The phenomenographic study of NPs working in primary care settings was aimed at answering the question “How do nurse practitioners experience and understand capability development in the context of treatment of opioid use disorder (OUD) in primary care?” Results included five categories of description, incorporating conceptions of capability development:
developing foundational practice knowledge; integration of new knowledge; evolving practice perspectives; adapting practice; and becoming expert. The first two categories (A and B) were focused on the acquisition of knowledge about OUD in general and about MOUD prescribing, followed by the integration of that new knowledge with existing skills and knowledge areas. In categories C and D, NP participants began to question existing practices and protocols and to adapt and customize their approaches to care, at times including intentional departures from existing guidelines. Finally in category E, NPs described a process of becoming expert, and their conceptions of capability in treating OUD became more holistic, with a focus on collaboration. Two study sub-questions asked about the informal or formal learning conditions that contribute to the development of capability in treating OUD, and the ways in which learning activities are experienced. Since NPs have only been able to prescribe MOUD for less than a decade in North America, this area of practice was new enough to make it memorable for study participants, meaning that they were able to recall details of their learning. Even though learning was frontloaded for some NPs as they prepared to incorporate MOUD into their primary care practice, learning was a multifaceted and ongoing process, as it would be in other clinical areas. However, in contrast to most other aspects of clinical care, most participants did not experience any formal learning in MOUD or in addictions more generally, increasing NP reliance on informal and self-identified learning opportunities. Most NP participants were also not new to NP practice; as more experienced practitioners they were able to build and draw upon clinical skills common to multiple areas of practice.

**Capability Development: Categories of Description**

*Acquisition and Integration of Foundational Knowledge*

The phenomenographic study results provided me with confirmation that, like many NPs
in North America, study participants had little or no basic training in treating addiction, with only three out of the 21 participants reporting any training in addiction during their pre-licensure NP education. Therefore, the development of knowledge about OUD was relevant, compared to other practice areas where NP educational preparation has historically been more robust. Participants referenced a lack of formal education in substance use disorders and described what they perceived to be missing from their initial NP education. Overall, NPs felt that educational preparation should reflect treatment of OUD as a “core competency of primary care” [P-09]. NPs advocated for the normalization of OUD treatment and offered comparisons to other areas of care as a way to frame OUD treatment as accessible and as an expansion of existing skills. Many study participants referenced the impact of working with people who use drugs (PWUD) on their subsequent decision to incorporate MOUD into their practice, highlighting the importance of exposure to a variety of clinical settings and opportunities. NPs expressed the desire to be able to treat PWUD holistically, providing MOUD as part of routine care instead of having to send individuals to another provider for MOUD. Although they sometimes lacked training in MOUD, NPs were clear that treating OUD fell well within the remit of their scope as primary care providers. There was an acknowledgment that foundational training in treating OUD normalized its place in the provision of primary health care.

One could argue that the acquisition of foundational knowledge in a particular area of practice is a pre-requisite to capability development and should be assumed. However, in this study, capability development encompassed the ability to determine what knowledge was needed and to seek out learning opportunities. Knowing how to learn was important, but the ability to identify gaps in knowledge was also critical. Because study participants often had prior experience as NPs, they were able to move quickly from knowledge acquisition to considering
how treatment of OUD fit within their existing skill sets, as well as applying knowledge gleaned from practice in other areas to the treatment of OUD. The perception of MOUD as a legitimate area of primary care helped NPs in this study consolidate learning, with the realization that skills for treating OUD did not differ significantly from skills they already possessed. Some NPs expressed surprise about how they were able to integrate knowledge and skills specific to OUD and identify commonalities with other areas of their work; this suggests that capability may not be specific to a particular practice area. Rather, capability could be seen to include the ability to seek out missing knowledge or information, consult others if needed, and determine next steps as a part of the process of self-preparation and education for any new area of care.

It is important to note that study data was collected as the opioid overdose epidemic continued to worsen, and as many NPs (and other providers) were stepping in to provide treatment, without benefit of prior education in substance use, and in the setting of evolving regulation. For example, since the data collection phase of this study, the United States has enacted a requirement for all U.S. based prescribers of controlled substances to complete training in order to obtain a Drug Enforcement Administration (DEA) license (United States Congress, 2022). This new DEA training requirement is likely to change the level of preparedness reported by newly graduated NPs and other providers moving forwards, given that changes to educational curricula will follow the DEA mandate. Further, study data collection also coincided with the evolving COVID-19 pandemic, with implications I discuss in upcoming sections.

**Adopting a Critical Lens and Adapting Practice**

As they gained confidence with basic skills and experience in working with PWUD, NPs described evolving practice perspectives. One could argue that this was the point at which NPs departed from established competencies and began to consider their practice and implications of
their actions using a capability lens. In this way a division can be drawn between categories of
description A and B, and the ones that follow, as NPs moved from acquiring and consolidating
knowledge to thinking more critically and adapting their practice. At this point, NPs began to
exercise autonomy, even if they still relied on mentors and their practice community for
guidance.

Moving towards capability entailed both a consolidation of knowledge, and the
willingness and ability to question current evidence and guidelines, critically analyze practice,
and when necessary, consider treatment modifications. The emerging nature of this practice is
echoed in the Canadian Centre for Addiction and Mental Health (CAMH) and American Society
of Addiction (ASAM) guidelines, whose authors made allowance for the changing nature of the
opioid poisoning epidemic, and for the potential that practices will evolve (American Society of
Addiction Medicine, 2020; Centre for Addiction and Mental Health, 2021). For example, while a
comprehensive assessment of patients has been the standard of care, recent CAMH and ASAM
guidelines advise that NPs delay full assessment of PWUD/patients and prioritize access to
MOUD with full assessment to follow (American Society of Addiction Medicine, 2020; Centre
for Addiction and Mental Health, 2021). NP study participants discussed exactly this strategy,
which it appeared they came to of their own accord.

**Becoming Expert and Assuming Expert Roles**

One definition of capability in APN is autonomous practice at the expert level (Bord
Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland, 2017). The
later stages of capability development were characterized by the adoption of leadership roles,
continued interprofessional collaborations, and an analytical and critical approach to practice that
sometimes included a thoughtful departure from established protocols.
Conceptualizations of capability development were of evolving skills and knowledge, echoing the idea that reflective practice produces “advancing practitioners” (Jasper & Rolfe, 2011) and that capability is a process of “becoming” (Phelps et al., 2005). With increasing comfort and conviction about their work, NPs were able to step into roles where they contributed as experts or applied prior knowledge in unfamiliar clinical settings. NPs discussed increased comfort dealing with ambiguity, developing processes for coping with the unexpected. Mentors were important to NPs early in their work providing MOUD; those mentors continued to be valued for their perspectives and guidance on new treatment approaches, even as NPs became more capable. Mentors became valued colleagues, and NPs appreciated the sense that they were part of a community doing the work of providing MOUD and working with PWUD. Mentors also provided validation for NPs as they contemplated practice changes, including divergence from practice guidelines. Being able to look to a colleague who was more experienced, or who was already integrating new practice approaches was important.

While some NPs were intentional about their transition to providing consultation to others, or serving in an expert capacity, for others these roles were assumed by chance, or because no one else was willing or able to serve in this capacity. NPs were often reluctant to state that they had arrived at capability or expertise – seeing this as a developmental process, in which looked back and reflected on how their practice and thinking had evolved. While leadership was not explicitly named by any participant, in sharing their expertise and functioning with capability, many participants assumed leadership roles. Leadership activities included mentoring of other NPs or students, committee memberships, development practice protocols, advocacy, and staffing of a national provider hotline. Interprofessional interactions were an important aspect of how NPs saw themselves as serving in the capacity of acknowledged expert.
NPs talked about working with other members of the healthcare and social support teams including pharmacists, individuals working in the carceral system, emergency department physicians, and perhaps most importantly with PWUD. These interprofessional interactions and the practice of collaboration spanned all categories of description and were not limited to the point at which NPs perceived that they were becoming experts.

While capability may not always translate to the embodiment of expertise through leadership, it could be argued that the set of attributes that constitute capability are likely to be manifested in the assumption of expert roles, acting in a capacity of expert, or taking on leadership responsibilities. There remains a question of whether leadership is itself an element of capability, or whether it is more likely to emerge when capability is present?

**Phenomenographic Study Results in the Context of the Scoping Review on Capability in APN**

Authors writing about capability in the context of advanced practice nursing have drawn on definitions developed outside nursing that include the ability to use competencies in new situations or envision their potential application to future development, creative thinking, risk taking, team work, self-efficacy, and knowing how to learn (Cairns & Stephenson, 2009; Hase & Davis, 1999). Capability, as used in advanced practice nursing, can describe a set of attributes that distinguishes advanced practice roles, or be used to indicate advanced skill that exceeds competency (Whitfield et al., Under Review). Given the multi-faceted nature of capability, it can be challenging to parse the different aspects within the data to consider them separately. The capability elements outlined by Hase and Davis (1999) and others, including authors like Gardner et al. (2008) who applied these elements to nursing, were present in the results of this study, although NPs did not always describe them using the exact vocabulary included in
previous definitions of capability. In part, the discrepancy in vocabulary could be attributed to my desire as a researcher to avoid teaching participants about capability and its definitions during interviews. I avoided leading the conversation, and instead tried to provide an opportunity for NPs to talk about how they developed and conceptualized their development as practitioners. However, in the section that follows I comment on the elements most cited in the capability literature – namely the ability to apply competencies in new and familiar situations, creativity, self-efficacy, risk taking, knowing how to learn, and teamwork – and consider how they were manifested in the data from this study.

**Knowing How to Learn**

Knowles (1970; 1977) proposed a departure from pedagogy, with its etymological roots in the education of children, to a focus on to the use of andragogy as an approach focused on the teaching and learning of adults, and across the lifespan. Although pedagogy and andragogy are often associated with children and adults respectively, it is not possible to stratify types of learners or learning and teaching styles by age only (Holmes & Abington-Cooper, 2000). In contrast to pedagogical prescriptive or directive learning models, andragogical or adult-based learning approaches are focused on application of knowledge, drawing on the individual’s prior accumulated experience (Holmes & Abington-Cooper, 2000). Andragogical approaches have been identified as an important facet of graduate education in nursing (Wilson et al., 2015), and evaluation methods that fit with andragogical learning were recommended by Anderson et al. (2009). While andragogical approaches depart from pedagogy, heutagogy goes beyond andragogy, with a focus on student-designed or self-designed learning. Andragogy preserves the relationship of teacher and student, although the teacher can assume the role of consultant or coach; heutagogical learning is self-designed (Hase & Kenyon, 2000). The benefits of moving
from andragogical to heutagogical learning were outlined by Hase and Kenyon (2000), who proposed that such a shift could positively impact the development of individual capability.

Learning for NPs in this study was often heutagogical. Because NPs were already working professionally, it fell to them to design and seek out educational experiences. While NPs sometimes participated in more formal learning activities or worked with mentors in which some form of the teacher/student relationship persisted, for the most part NPs designed their own program of learning. Self-designed learning and practice development was at the core of capability development; thus, the study data supported the proposition that “learning how to learn” and a commitment to lifelong learning is a central element of capability, without which other facets of capability cannot be developed (Gardner et al., 2008).

**Applying Competencies in New and Familiar Situations**

Given that almost all NPs interviewed for this study (18 of the 21 participants) had no foundational training in treatment/safe supply for OUD, the use of competencies in new situations and in a new area of care was in some ways “baked in” to the study. The words competency or competencies were used sparingly verbatim in the transcripts, but it was clear that in developing foundational knowledge, NPs were acquiring basic competencies. Therefore, NP conceptions of capability extended to a pre-competency stage, as NPs described acquiring basic skills, as well as the integration of those skills into their primary care practices.

**Creativity**

Creativity could be driven by the need to be resourceful, given a lack of treatment access or specialist facilities for OUD. New constraints related to practicing during the COVID-19 pandemic required NPs to practice with creativity. Thus, creativity and flexibility not only resulted from NP longevity and experience, but also emerged from the realities of the practice
environment, the experience of patients, or from scarcity. For example, one NP’s prior experience of working in remote Northern Canada helped her to adopt a flexible approach to treating OUD: “sometimes you run out of medication or the hospital’s flooding, or you don’t have all the equipment that you might normally need. So, you have to change your practice to adapt to what’s happening” [P-04]. While creativity was only mentioned explicitly by one NP, the study participants embraced creative approaches to their practice, for example discussing how they varied dosing, or adopted new approaches to medication administration. For example, one NP [P-17] described her practice of giving subcutaneous lidocaine prior to administering injectable long-acting buprenorphine, as a pain reduction strategy.

**Self-Efficacy**

NPs did not always express self-efficacy, and when they did, they were often quick to qualify their belief in their own abilities, even when describing the process of becoming expert, or being considered expert by others. Small acts of autonomy represented NPs growing confidence in their own decision making, including feeling more self-empowered in balancing risk and benefit when engaging in shared decision making with PWUD. However, self-efficacy in terms of functioning in the realm of capability, or perceiving the self as expert was sometimes lacking, and appeared secondary to other elements of capability. Once an NP had consolidated knowledge and applied that knowledge in new and familiar situation, once they had begun to think creatively and even to take risks, and once they had found themselves acting in the role of expert, then self-efficacy could begin to be expressed. In a systematic review looking at APN capabilities, Hako et al. (2022) also discussed the ambivalence expressed by some APNs around their practice, largely in relation to physical assessment skills. However, the NP participants in my study expressed ambivalence around their practice more generally, perhaps because they
were discussing an area of practice where physical assessment and examination skills are sometimes less important than skills around medication prescribing, mental health evaluation, and risk assessment.

Risk Taking

Risk taking was frequently discussed in terms of balancing risks and benefits for individual PWUD. As NPs questioned practice norms, and considered their own practice limits, they discussed the assumption of and calculation of risk versus benefit – weighing what a PWUD might request, what they as NP felt to be appropriate, and considering clinical practice guidelines. When these elements were not fully aligned, the NP had to make decisions regarding who should assume risk, the risks of doing something versus doing nothing, or taking a particular action that was risky but also had potential benefit. For example, one NP described the decision to discontinue safe supply prescribing for a patient after carefully weighing options both with her colleagues and the patient and concluding that she might be “enhancing this individual’s risk” [P-10]. As NPs became more comfortable with prescribing, they described sharing risk-benefit decisions with PWUD, taking those individual’s preferences into account. Thus, moving towards capability was associated with a more nuanced appreciation of risk/benefit, and an acknowledgment of the multifactorial nature of decision making. For NPs providing safe supply, this often meant balancing the benefits of providing MOUD with their knowledge that it would be taken together with illicitly obtained drugs, and balancing beneficence with the need to avoid harm.

Teamwork and Collaboration

As NPs moved towards becoming expert, they integrated elements of capability, and considered their practice systemically, often in the context of collaborative relationships.
Collaboration took place at several levels: with PWUD in the clinic setting; with PWUD as advisors; with clinic team members; and more broadly. NPs discussed the benefits of collaboration with PWUD and appreciated the knowledge that they provided. NPs also experienced the development of their own capability as the ability to learn, advocate, and participate with immediate colleagues, and in interprofessional contexts. Engagement with individuals ranging from police to pharmacists to emergency department personnel provided NPs with insight and guidance in a variety of contexts, and NPs actively sought out partnership with other providers of services for PWUD.

Developing relationships and partnerships, both with patients and with other health and social services providers is a key element of the CAMH Guidelines for treatment of OUD (Centre for Addiction and Mental Health, 2021). Note is made of the pharmacist’s role in the CAMH Guidelines, and NP-pharmacist communication is encouraged. The CAMH Guidelines also directly references mentoring, and relationships within collegial groups. While the skill sets needed for relationship and coalition building are broad, few NPs will have had training in these skills as part of their initial education. NPs curricula in general do not address facilitation skills for cross-disciplinary care coordination to address social supports including housing, financial, and skills training supports. Additionally, maintaining these interprofessional relationships in the absence of additional support staff may be time and cost prohibitive.

Leadership

Leadership has been proposed as a specific type of capability in advanced practice nursing (Lamb et al., 2018; McDermott et al., 2021), as well as one domain of capability more broadly conceived. Of note, none of the NP study participants mentioned leadership explicitly. Although NPs were not asked directly about leadership, the omission of leadership in the
discussion was interesting, given that they often described activities that involved taking on leadership-related roles. For example, one NP participant discussed their work providing consultation to other providers, including as part of a national prescriber hotline [P-09]. NPs who demonstrate capability could be seen as well-prepared for leadership, even though they often felt underprepared to take on these leadership and collaborative roles – which were often assumed inadvertently rather than intentionally. Interactions with peers and others were sometimes intimidating for the NPs, and on occasion required a re-evaluation of their own role as NP and as expert, as they engaged with others in unfamiliar circumstances to instigate or advocate for change.

NPs also found themselves assuming what Sriharan et al. (2022) have described as a crisis leadership role. Crisis leadership in the public health and health sector has been shown to require skills in the areas of collaboration, and to stress the importance of trust in relationships, while environmental and other factors can act as facilitators or barriers (Sriharan et al., 2022). While Sriharan et al.’s (2022) framework for healthcare crises focused on disease outbreaks including SARS, Zika, Ebola, COVID-19, and others, their framework could also be applied to the opioid poisoning and overdose crisis, which certainly meets criteria as a healthcare crisis. Crisis leadership elements included task, people, and adaptive competencies, with leadership occurring where these competencies came together (Sriharan et al., 2022). Further, crisis leadership is enacted within structural, cultural, and political contexts (Sriharan et al., 2022). While competencies related to achieving specific objectives or tasks were important for NPs in our study, relationship skills and the ability to adapt and employ an interprofessional mindset helped NPs to move beyond or overcome structural impediments.
Identifying Factors that Impact Scope of Practice

Hako et al. (2022) proposed that the ability of the NP to determine factors influencing scope of practice should be included as an element of capability, and discussed the regulatory scope of practice, including the ability of the NP to practice to the full extent of that scope (Hako et al., 2022). The question is whether the recognition of personal, organization, and regulatory limitations (whether real or perceived) is important for capability development? Regulatory scope of practice is certainly a critical issue for NPs, especially within the context of providing treatment/safe supply for OUD, where regulations have changed for NPs in both Canada and the United States over the past decade. However, I did not find strong evidence for development of the ability to identify factors affecting regulatory scope as a key element of capability. For example, although prescriptive authority differs for NPs in Canada versus the United States, most participants did not discuss this as a barrier to providing care. In a notable exception, one NP waited impatiently for prescriptive authority to be granted: “A lot of my patients struggled, and I felt I couldn’t do anything about it. I wanted to do something about it” [P-20]. Rather, factors affecting whether NPs were practicing full extent of their existing scope were discernable within the study results, whether they were dealing with personal, experiential, or external barriers and facilitators. NPs also talked about scope in terms of their own comfort, strengths and limitations, as well as the ability to recognize when a clinical situation exceeded their personal comfort.

While there were NPs who expressed discomfort when starting to provide MOUD, this did not always equate with providing a service that was out of their scope of practice. However, for one NP [P-02], the awareness that treatment of OUD was within their scope motivated them to learn how to provide MOUD. Even when working within established regulatory scope, NPs
have discretion about whether to adhere strictly to published clinical guidelines. NPs spent time considering when it might be appropriate for them to depart from published guidelines or to prescribe medications off-label and were keen to describe their awareness of when and why they were taking this step. One could argue that guidelines are a component of scope, and deviating from guidelines is part of the ability to identify the factors affecting scope of practice as proposed by Hako et al. (2022). However, considerations of scope could be considered as an element of risk calculation and the ability to engage in appropriate risk taking.

The ability to intentionally practice outside established guidelines might also be related to the ability to recognize structural and environmental factors affecting the NP’s scope of practice. Such scope limitations are not necessarily NP-specific but rather are related to the research practice gap, and a lag in practice guideline updates. Authors of the CAMH Canadian guidelines anticipated this scenario; noting that providers may need to practice outside guidelines or explore treatment options that do not yet have robust supporting evidence (Centre for Addiction and Mental Health, 2021). For example, safe supply itself is categorized as an emerging practice in the CAMH Guidelines (Centre for Addiction and Mental Health, 2021).

Learning Activities and Opportunities

NPs described both formal and informal learning opportunities, with some overlap between the two in terms of mentorship, which could be provided through an organized educational program, or sought out independently. Many NPs continued to draw on discussions they had previously with mentors at the beginning of their informal training; conversations with mentors were meaningful and had relevance even as time passed. NPs identified learning opportunities and communities of practice through word of mouth, professional networks, email listservs, and discussions with colleagues. While few of the NPs had received substance use
training prior to licensure, several identified the inclusion of formal training in substance use as important for the next generation of NPs. Some NPs hosted students in the clinical setting, to ensure that the next generation of NPs is exposed to provision of MOUD, and because they felt that having students kept their own learning up to date: “I made sure that students also came to my MAT practice. And that’s imperative that you have that experience in school…one thing we could do as a state is provide mentors for people who want to learn” [P-16]. NPs were engaged in learning that could be described as both andragogical (tailored to the adult learner), and heutagogical (self-designed). This learning was highly relevant to them, and they were able to recall it in detail when asked.

Learning was preceded by a process of identifying knowledge gaps and seeking out ways to remedy them. Sometimes learning was unintentional, but often NPs were focused on developing their own skills and took initiative to design their own learning pathways. Self-designed approaches to learning occurred in part because learning was taking place informally, and generally outside more formalized pre-licensure education. For example, one NP planned her own mini-internship experience in a specialty addiction clinic, which gave her valuable experience that she was able to transfer to her own primary care practice [P-16]. Informal learning could be small in scope, including activities such as reviewing clinic guidelines to ensure that all steps were complete prior to writing a prescription. NPs also spent time reading the literature to keep up with new developments, or to expand their personal knowledge base around prescribing modalities such as micro-dosing or rapid induction onto long-acting buprenorphine.

Henderson (2022) referenced the importance of what she terms a “living experience advisory committee” for safe supply treatment programs in addition to employees who also have
lived experience (p.15). Although no participants in my study described a formal lived experience advisory committee, PWUD were frequently referenced as an invaluable resource for the development of practice knowledge and approaches. While having an advisory committee and employees with lived experience may be optimal, I am wary of any move to impose treatment program requirements in this regard, given the potential for such requirements to limit access to treatment, just as authors of the ASAM guidelines have stressed that lack of access to psychosocial treatment should not delay MOUD. Also, even though PWUD have much to contribute to NP understanding of treatment/safe supply barriers and facilitators, we cannot impose the responsibility for capability development in NPs onto PWUD.

Although I did not mention communities of practice in the interview questions, many NP participants were clear that participating in communities of practice or consortiums was an important contributing factor to their development. Communities of practice not only bring together individuals with a shared interest in learning about a topic but can also serve as a means of disseminating best practices (Wenger & Snyder, 2000), as well as providing safe spaces for discussion and mutual support (Whitfield et al., 2022). Membership in a community of practice provided NPs with the opportunity to learn together with other prescribers, people with lived experience of drug use, and other support individuals. Learning from PWUD, including patients, was identified as important. Learning from PWUD could be informal learning gleaned through clinic interactions. More deliberate learning opportunities came from peer support workers through a community of practice. Whether ready-formed, or developing organically, communities of practice were a source of support and information.

**Relevance to Nursing Theory**
The structural and referential aspects of capability and its development as described in the findings of the phenomenographic study share elements with several theories including patient centered care (PCC), harm reduction, and reflexive practice. In the section that follows I briefly compare capability and its development to models of nursing care and decision making, including to elements of PCC, Benner’s Novice to Expert framework (Benner, 1982, 2001), and to reflexive practice. I invite the reader to consider that capability might include the ability to hold different ways of knowing simultaneously, to sit with tensions that may exist between them, and to perceive practice from more than one viewpoint.

**Person Centered Care**

Person-centered care (PCC) has been described in a variety of ways, including as a way of providing care (Byrne et al., 2020) and as a middle range nursing theory and framework (McCormack & McCance, 2021). In general, PCC is focused on meeting individual health care needs, and in providing care that is holistic in its approach (Andraka-Christou et al., 2021). In the context of this study, PCC has potential as a frame for NPs conceptions of their own capability development. The tenets of PCC resonate with the referential and structural aspects the outcome space defined in the phenomenographic study (see Table 6). I use the term person-centered rather than patient-centered here, both to recognize a holistic approach to persons interacting with NPs providing MOUD, and in recognition that PWUD are not necessarily ill, thus *person* may be more appropriate than *patient*. NP participants used the terms client, patient, and PWUD – for the purposes of this thesis I have chosen to use PWUD as a neutral term and choose person over patient for the same reason. Following a review of the literature on PCC, Byrne et al. (2020) proposed the themes of *people, practice, and power*, as critical to understanding of how person-centered care is conceived and structured. The Person-Centered Nursing Framework
McCormack & McCance, 2021) focuses on the nurse and their skills or prerequisites, the care environment, person-centered processes of care, and expected outcomes, all of which are necessary for a person-centered care experience (McCormack & McCance, 2006).

The nursing prerequisites outlined in the PCC Framework (competence, skills, work ethic, beliefs and values, and knowledge of the ‘self’) align with development and integration of foundational practice knowledge, within the context of the role of the self. Risk taking appears both as an element of the care environment as outlined in the PCC framework (McCormack & McCance, 2021) and within NPs capability development around trying new approaches, based on a critical appraisal of current practice and adaptation of their own provision of care. Power sharing is explicitly outlined in the PCC framework; NPs conceived of capability development in part as the ability to move towards shared decision making and compromise in provision of MOUD. NPs referred to low barrier care and were focused on reducing barriers to care for PWUD; elements of the care environment that were not always within their individual control. McCormack and McCance (2006) discussed the importance of ongoing learning, that prepares individual nurses to develop their practice and to take risks. For NP participants in the phenomenographic study, capability development included the acquisition of foundational knowledge and competence providing MOUD as well as the development of the ability to act with flexibility in their practice, apply a critical lens to practice guidelines, and to consider risk and benefit in their decision making.

Person-centered nursing processes, such as the ability work with the person’s beliefs and values, engage authentically, and share decision making (McCormack & McCance, 2021), fit with structural aspects of capability, specifically related to the NPs relationality with PWUD, which moved towards a bi-directional partnership between provider and receiver of care. NPs
initially often saw PWUD as other, as patients, or as more passive recipients of care. However, as capability developed, NPs began to see their relationship with PWUD as one of shared decision making and collaboration—recognizing the uniqueness of the individuals they were dealing with, and the potential that those individuals had to contribute to their care, and in many cases to inform and teach NPs. The development of bi-directional relationships between NPs and PWUD is seen in PCC as the ability of the nurse to recognize individuals’ “uniqueness” and to work in partnership (Byrne et al., 2020; McCormack & McCance, 2006).

The relationality of NPs in this study with PWUD included consideration of how power is distributed, and who holds power within the prescribing relationships of MOUD. NPs were concerned with examining how the balance of power between provider and PWUD plays out in the provision of MOUD. In referencing ongoing debates (sometimes internally with themselves) about how they calculated and weighed risks and benefits around prescribing, NPs grappled with power in care held by PWUD, and power held by the NP as prescriber. The study data is centered around NP perceptions rather than those of PWUD, however the discussions of power over care, and how that is balanced between provider and receiver, echo findings from the literature about PCC (Byrne et al., 2020). In contrast to the focus on providing care that is person centered, only 23% of U.S. substance use clinics involved patients in shared decision making according to a 2017 study by Park et al. (2020), who concluded that patient-centered care was likely to be inaccessible for many PWUD. Individuals who access MOUD have expressed a strong preference for care that is person-centered (Andraka-Christou et al., 2021), including a harm reduction focus.

**Novice to Expert**

Benner’s Novice to Expert framework is perhaps the most recognizable theory of
expertise development in nursing (Benner, 1982, 2001, 2004). The findings from this study share similarities with Benner’s vision, in which she described the nurse moving through various stages: from novice to advanced beginner, competent, proficient, and expert (Benner, 1982, 2001, 2004). Benner’s holistic vision of expert practice is intuitive and requires nurses to draw on prior experience, clinical knowledge, and analytical skill. However, while Benner asserted that nurses cannot move beyond their practice knowledge, NPs treating OUD often had to move beyond their existing knowledge. NPs recognized that they returned to the status of a novice as they embarked on treating OUD, even when they were highly experienced in other areas of practice. Thus, being an expert in one area of practice could co-exist with being a novice in another. NPs’ ability to make connections with areas of practice where they felt more confident helped them to become comfortable in the newer area of providing MOUD. While their pre-existing practice knowledge and expertise may have varied based on years of experience and other factors, many NPs who stepped into the role of providing treatment for OUD envisioned their role in terms of filling a lack of treatment options or need for new approaches. In many cases they relied on their own judgment and initiative to devise a plan of learning and towards capability. Perhaps then, capability includes the ability to return to the role of novice, combined with the self-efficacy and ability to determine the learning path towards expertise in a new area of practice.

**Reflective and Reflexive Practice**

Rolfe (2011b) distinguished between reflection-on-action, that is reflection after the fact, and reflection-in-action which occurs during practice, and which he proposed as a “distinguishing feature of the more advanced practitioner” (p.160). A healthcare practitioner who practices reflection-on-action might be referred to as *reflective*, whilst one who practices
reflection-in-action is *reflective*. It is not enough simply to reflect on one’s practice, rather this process must be an active one, that translates back into practice (Jasper & Rolfe, 2011).

NPs study participants were intentional in how they considered their departure from existing guidelines or practiced “off-label”. Several NP participants articulated tensions between the science of *evidence-based practice* and the outcomes of *reflective practice*, which can be considered as two paradigms for understanding healthcare knowledge (Rolfe, 2011a). NPs acknowledged the importance of guidelines and evidence-based practice, while recognizing that guidelines often trailed current practice. Thus, in weighing the existing evidence and considering the context in which they were working, NPs sometimes perceived a disconnect between the two. NPs grappled with knowing what they were *able* to do, and worked to discern what and how much they *should* do. They balanced issues of risk and benefit, weighing the scientific knowledge base against realities they encountered in clinical practice. NPs needed to understand the evidence base (through acquiring foundational knowledge) and integrate that knowledge into their existing clinical practice. However, their ability to reflect on their experiences and those of other providers, and their understanding of the social determinants of health could be argued to be equally as important as knowledge of medication dosing and adverse effects. As NPs reflected on both the evidence and their practice, they engaged in an active process of questioning the status quo, adjusting their practice, and finally becoming expert as they gained confidence and comfort making practice decisions.

*Harm Reduction*

Within the context of OUD, it is difficult to separate PCC from harm reduction approaches. NPs considered drug use within the context of the social determinants of health as experienced by PWUD. In general, NPs strove to provide value neutral and non-judgmental care,
and were especially concerned with their own ability to mitigate potential harms from drug use. With evolving practice perspectives, and growth in their confidence around decision making and prescribing, NPs engaged in calculated decisions about quality of life and desires of PWUD weighed against guidelines and known risks. Providing MOUD in ways that allowed for shared-decision making between NPs and PWUD often entailed such risk-benefit discussions. Additionally, participants stressed the importance of low-barrier care; removing obstacles that made it more difficult for PWUD to access MOUD; and adjusting practice requirements; all of which constituted an overall approach grounded in harm reduction principles.

NP engagement in reflective practice and considered action echoed the definition of capability by Baillie et al. (2013), who described capability as a balance between the Aristotelian concepts of *episteme* (essentially the development of concepts), *phronesis* (the ability to make judgments and determine actions), and *techne* (technical skills) (Baillie et al., 2013). NP capability could be seen to embody both *techne*—in this case the craft of providing MOUD—as well as *phronesis* in taking actions that they felt best met the needs of the PWUD with whom they were working. In essence NPs were engaged in decision making about how they could reduce harm. NPs in my study were articulate in their consideration of ethical imperatives at several levels. Some NPs felt an ethical imperative to offer MOUD to PWUD, even if doing so meant that they had to move outside their own personal comfort zone or to an area where they lacked confidence. Others discussed the ethical challenges including decisions around prescriptions, and an acknowledgment of the power dynamic inherent in the PWUD-provider relationship where the NP provider often held most of the decision-making power. NP participants reflected individually and in community, describing the importance of discussions with mentors and in communities of practice in shaping their clinical practice. Thus, meaning
and clinical decision making was not constructed only by the individual practitioner but through attention to collective thinking; a combination also articulated as a tenet of phronesis by Kinsella (2012).

**Intersection of COVID-19 and the Opioid Crisis**

Any conclusions articulated here must be considered in the context in which this study was conducted, namely the coincidence of the COVID-19 epidemic and the opioid overdose and poisoning crisis. The onset of the COVID-19 pandemic added another layer of previously unexperienced complications both for PWUD and for the NPs and the organizations they worked for. Thus, the setting, context, and time frame of this study ensured that NPs were learning and working within environments that already had aspects of “instability” (Phelps et al., 2005). The impact of the COVID-19 pandemic and its intersection with the opioid overdose crisis represents a unique moment in healthcare in North America and provided an opportunity to consider both the impact of the pandemic and possible implications for capability development in providing treatment/safe supply for OUD.

In the early days of the COVID-19 pandemic, resources were diverted to deal with COVID-19, and despite regulatory changes intended to make access to MOUD easier, many factors contributed to worsen the opioid epidemic and make MOUD access more difficult at least for some populations (Bart, 2023; Frederique & Kim, 2020). Additionally, people with substance use disorders were often at higher risk for poor outcomes from COVID-19 (Madras et al., 2020). In the United States, opioid overdose deaths exceeded forecasts by 12% during 2020, results that are proposed as likely due to the COVID-19 pandemic (Cartus et al., 2022). The COVID-19 crisis not only exacerbated the opioid epidemic; it also meant that NPs were providing treatment for OUD within the uncertain context of a global pandemic – in essence leaving them no choice
but to apply their skills within new and unfamiliar circumstances. Because of the timeline for this study, it is not possible to separate the ways in which NP participants conceptualized capability from the syndemic created by the intersection of COVID-19 and the opioid poisoning crisis. NPs expressed concern that practice guidelines were inadequate, in large part due to the rapidly evolving toxicity of the street drug supply, as well as challenges related to the COVID-19 pandemic. Essentially these intersecting crises provided an incubator in which capability development was accelerated by structural, political, and other factors. The urgency of both crises invited and intensity of focus and attention on the need for solutions.

For some NPs, the onset of COVID-19 provided time for consolidation of learning around MOUD due to a decrease in clinic visits. For others, visits continued for patients who had no other way to access treatment. NPs had to think creatively to continue treatment/safe supply for PWUD during the COVID-19 pandemic, especially when PWUD also had to comply with isolation mandates. Individuals who were previously unhoused were forced to live in shelters during portions of the pandemic, and to isolate when infected with COVID-19, which affected their access to street-based drug suppliers and upended their daily routines.

COVID-19 has been defined as a “capability crisis” (Anand et al., 2020), in recognition of the loss of capability experienced by many individuals and organizations. However, for the NPs in this study, the intersection of opportunity and necessity may have resulted in an acceleration in their individual capability within the frame of OUD treatment. Thus, the COVID-19 pandemic can be framed as an opportunity as well as a catastrophe — where the silver lining for healthcare organizations and individuals working within them is that they may emerge from a complex, rapid-paced, and highly unpredictable event better prepared to respond flexibly to future crises, and with a new cohort of leaders (Begun & Jiang, 2020; Whitfield et al., 2023). Not
only did the COVID-19 and opioid overdose syndemic potentially hasten capability development in NPs treating OUD, it also laid bare the fact that competencies alone are not sufficient; advanced competencies, higher order thinking, and creative approaches were required. While NP study participants did not discuss them, COVID-19-related changes in legislation in the United States also made it easier for NPs to provide MOUD without the need for additional training (United States Department of Health and Human Services, 2021) and to provide care through a variety of modalities including telehealth (Drug Enforcement Administration, 2020). Thus, barriers to starting to prescribe MOUD were lowered.

**Recommendations for NP Practice and Education**

While NPs in this study sought out education on their own and were often very successful in creating individualized learning pathways, they were also advocates for more formal training, including as part of the NP education curriculum. To ensure increased access to MOUD we should “prime the pump” by ensuring that all NPs receive adequate training in addiction as part of their initial education. Given the important role that NP clinical preceptors play in socializing NPs to work with PWUD, and the effects of work with PWUD in motivating NPs to provide MOUD in their own practices, NP education could prioritize clinical placements that include MOUD. Normalizing MOUD as a part of primary care should include ensuring that it is part of the student experience, just as we expect NP students to gain experience with patients with heart failure, diabetes, and hypertension. Lack of appropriate clinical education has been cited as a significant barrier to extending access to MOUD (Madras et al., 2020; National Academies of Sciences Engineering and Medicine, 2019).

Educational experiences for promoting capability in NPs training to provide MOUD should be designed not only from an andragogical perspective, but also with an emphasis on self-
designed learning. Further, promoting learning environments that include elements of uncertainty may promote capability acquisition. The intersection of COVID-19 and the opioid overdose crisis resulted in rapidly changing practice environments which can be argued to have contributed to NP capability development, aided by regulatory changes that removed barriers to NPs providing MOUD. While the literature and study data may suggest that a degree of instability or uncertainty may promote capability development, it is also worth noting that NPs participating in the study often craved more stability, and a clearer path to capability acquisition. A balance between too much and too little stability is needed.

NPs in this study also contributed to the education of other healthcare providers, whether other NPs, primary care providers, specialists, and others involved in providing support to PWUD. This study demonstrated significant NP leadership in the provision of MOUD, with NP participants stressing the importance of ongoing learning, and providing examples of their assumption of leadership roles. This has implications for the inclusion of NPs on leadership teams in primary care and other settings.

The NPs in this study, although purposefully selected, were likely more motivated than most, given their interest in participating in discussions around their work providing MOUD. However, even this group of individuals expressed uncertainty around their skills and sought out communities of practice and mentors. Thus, NPs did not only need to know how to learn, but also how to learn in community. A focus on interprofessional learning opportunities, and on collaboration and leadership skills as part of NP education about MOUD would help to develop these skills, which apply to NPs throughout their careers, not only in provision of MOUD, but more generally. Communities of practice or Project ECHO (Extension for Community Healthcare Outcomes) type learning activities that include a variety of healthcare and other
professionals have the potential to encourage closer collaboration. NPs must engage in professional development throughout their careers.

**Implications for Future Research**

Primary care was self-designated by participants, and I accepted this self-designation as meeting study criteria, however across the study sample there was a large range of clinical settings. While variation in settings could be considered a strength of this study, future research might focus on specific practice setting more narrowly or compare results between practice settings – for example between mobile clinics and brick and mortar primary care offices.

In conducting this study, my expectation was that providing MOUD services would be accompanied by the acquisition of capability in doing that work. I was interested in exploring NP perspectives on that capability development. However, the study results demonstrated that while NPs developed capability as they incorporated MOUD into their practice, capability development was also accompanied by perceptual changes about MOUD itself. In this way, the development of capability in providing MOUD included an evolution of NP perceptions about what constitutes MOUD as well as how it should be provided. This study was not designed to explore conceptions of MOUD, however a secondary analysis looking at how NPs understand and conceptualize MOUD might be a worthwhile next step.

As NPs grew in comfort and confidence with providing MOUD, they often reviewed available evidence, and participated in conversations about best practice. NPs who practice with capability, and who participate in educational experiences that prepare them to do so were often closely familiar with best practice. NP participation in communities of practice exposed them to emerging practices and helped them incorporate these practices into their own work. Therefore, future studies might usefully explore whether educating for capability can help to bridge the
theory practice gap. This area might be suited to inquiry using participatory action research, perhaps in partnership with an established community of practice. Participatory action research is a collaborative approach that is often used to explore issues of health inequity or within marginalized populations (Oetzel et al., 2018).

There is also a need to consider new approaches to treatment/safe supply for OUD, and to further explore why individuals do not participate in treatment, given the continued poor uptake of MOUD treatment programs (Madras et al., 2020). This study was concerned with the variation in experiences of NPs as they developed capability in treating OUD. As such, the experience of PWUD was only considered tangentially. A combination of community-based participatory action research and a phenomenographic approach might be used to explore variation in the experience of PWUD or to further explore the NP experience. In particular, the impact of COVID-19 on PWUD and how and why they accessed or did not access MOUD could help to determine how best to provide ongoing support related to the opioid overdose crisis, as well as consider how best to support PWUD during any future health crises. For example, this study did not consider the impacts of regulatory change and increased options for telehealth on the experience of PWUD during COVID-19; this could be a fruitful area for further research.

While not extensively discussed by NPs in this study, it is possible that reimbursement rates may contribute to decisions by healthcare organizations or individual NPs to offer MOUD services. Several NPs from Canada did compare their salaried positions to those of physicians who were billing for their services; making it easier for the NPs to take the time they needed with patients. Since billing was not discussed in relationship to capability development, I did not pursue this avenue in any detail. However, it is important to note that there are significant differences in the way healthcare is financed and services reimbursed between Canada and the
United States, as well as between clinic types. Further research might consider whether changes in reimbursement or financing of MOUD services might influence healthcare provider decisions around offering this care.

Limitations

Capability is a complex and multi-dimensional concept. I did not want to “teach” participants about capability, but rather to see what they talked about in thinking about their development as providers of treatment/safe supply for OUD. Additionally, capability is not a commonly used term in NP education or practice. Therefore, I used some additional terms including expert, capable, competent during the interviews. While categories of description drew directly on language used by participants, for this discussion section I have looked at how those categories relate to discussion of capability in the literature.

This study was conducted with NPs working in one area of practice: namely provision of MOUD in primary care. It follows that results will be most applicable to this area of practice. However, there may also be implications for NP capability development in other areas, and for NP treatment of other substance use disorders, which share similarities with OUD. As discussed above, the study conducted at intersection of the COVID-19 pandemic and the opioid overdose crisis. Therefore, study findings must be considered within the context of these crises.

Conclusions

I have addressed the question: How do NPs experience, and understand the development of capability in the context of treatment of opioid use disorder in primary care? There are five different ways in which NPs experienced their capability development in treating OUD. The hierarchical categories of understanding included two preliminary categories focused on knowledge acquisition and integration, followed by a shift in thinking as NPs applied a critical
mindset to their work, finally preparing them to act in the capacity of expert, adopt an interprofessional collaborative mindset, think systematically, and assume leadership roles. Capability could be seen to include the ability to intentionally step outside guidelines, to thoughtfully deviate from evidence-based practice, and apply interprofessional and leadership skills.

Elements of capability (as defined in the literature) were made visible and considered within the area of treatment/safe supply provision of OUD. Understanding how NPs move towards capable practice in this area has implications for substance use education. Given that NPs have the potential to increase access to OUD treatment, understanding their experiences is critical for policy makers looking to encourage more NPs to provide MOUD. Making the elements of capability explicit, and teaching and evaluating NP students with capability in mind may help students consolidate and integrate their skills as they approach practicing in a new field. While the acquisition of foundational knowledge and skills has not traditionally appeared in discussions of capability in APNs, for NPs practicing in an area such as MOUD, the ability to identify knowledge gaps, and ways to remedy those gaps was critical. Knowing how to learn extended to the ability to return to the role of novice and determine what learning was needed. To be an NP practicing with capability does not always imply full mastery of all relevant knowledge and skills. Rather NPs need to be equipped with the ability to critically evaluate a clinical scenario, identify knowledge gaps, and proceed to address their knowledge needs in a systematic and appropriate way. Of course, such a process takes time.

A focus on care that is person-centered and considers harm reduction principles provides a compelling approach to capability development around MOUD. When viewed in the light of person-centered care and harm reduction, capability development around MOUD is purposeful;
diverse elements are unified in service of improving the lives of PWUD, and focused on people, practice, and power as articulated by Byrne et al. (2020). Relationality with PWUD develops alongside and as part of capability, moving NPs towards more person-centered approaches in which PWUD become partners in their care.

The study helps illuminate what capability development in action looks like for NPs providing MOUD in primary care and extends the literature on capability in NP practice generally. Additionally, it contributes to literature on NP provision of treatment/safe supply prescribing for OUD. To my knowledge, no prior studies have explored capability development in the context of NP treatment of OUD.

Finally, study findings must be interpreted considering the COVID-19 pandemic and the opioid overdose crisis. The resulting syndemic served to accelerate NP capability development around MOUD. Additionally, changes in prescriptive authority for NPs around MOUD both preceded and were enacted in response to COVID-19. For the next generation of NPs graduates, who may not experience such changes to their practice scope, the experience of capability development may differ.
Chapter Seven References


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https://doi.org/10.1111/inr.12896
Appendix A

Social Identity Map

Adapted from model outlined by Jacobson and Mustafa (2019)
Appendix B

Capability as a Concept in Advanced Practice Nursing and Education:

A Scoping Review Protocol

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Abstract

**Objective:** The objective of this scoping review is to identify and map how the concept of capability in advanced practice nursing education and practice is described in the literature.

**Introduction:** Advanced practice nursing and education is often described in terms of the achievement of competencies. The concept of capability has been proposed as a more accurate description of the attributes of advanced practice nursing. Definitions of capability in advanced practice nursing vary, but often focus on the integration of prior knowledge, skills, resources, judgment, and experience when solving unanticipated problems or working in new situations.

**Inclusion criteria:** This review will consider studies addressing the concept of individual capability in any setting related to advanced practice nursing education and practice. The working definition of capability in this review is a combination of knowledge, skills, experience, and competencies that enables advanced practice nurses to provide appropriate care for patients in both familiar and unfamiliar clinical settings. Advanced practice nurses will include nurses with both graduate education and an expanded scope of practice.

**Methods:** Eight academic databases will be searched for qualitative, quantitative, and mixed methods study designs. The gray literature search will include policy and practice documents from nursing and health organization websites. Two reviewers will independently complete title and abstract screening prior to full-text review and data extraction. Articles published in English from 1975 to the present will be included. Other languages will be included if translations are available.
**Keywords:** advanced practice nursing; advanced practice nursing education; capability; graduate nursing education
Introduction

An advanced practice nurse (APN) is defined by the International Council of Nurses (ICN) (International Council of Nurses, 2020) as “a generalist or specialized nurse who has acquired, through additional graduate education … the expert knowledge base, complex decision-making skills and clinical competencies for advanced nursing practice, the characteristics of which are shaped by the context in which they are credentialed to practice.” (p.6) Throughout this document, we use the abbreviation APN to indicate both an advanced practice nurse and, on occasion, advanced practice nursing as a field, consistent with ICN definitions (International Council of Nurses, 2020). The term “advanced nursing practice” (ANP) can also be used, although this usually refers more generally to the advancement of the field of nursing.

As defined by the ICN, the APN role includes appropriate educational preparation as well as participation in clinical practice, research, care coordination, clinical leadership, and consultation activities (International Council of Nurses, 2020). A master’s degree is recommended as the minimum entry-level requirement for practice for APNs (International Council of Nurses, 2020). While development and regulation of APN roles is context- and country-specific (International Council of Nurses, 2020), APNs have been proposed as having potential to increase the supply of primary care and public health services, especially in light of the current COVID-19 pandemic (World Health Organization, 2021).

Advanced practice nursing and APN education have historically been based on competencies, which often refer to the mastery of specific skills or tasks (O'Connell et al., 2014; Pulcini et al., 2019; Wilson et al., 2015). However, the use of competencies to the exclusion of other attributes has been identified as a potential weakness in the evaluation of APNs (Banning,
2012; Wilson et al., 2015). Competencies can be viewed as one component of a broader vision of advanced practice nursing, which also includes education at the graduate level, expertise, and critical thinking and decision-making skills (International Council of Nurses, 2020). The concept of capability can be used to describe the ability of an APN to use existing knowledge and skills in new and unfamiliar situations (Gardner et al., 2008; Sciacca & Reville, 2016), and as a way of linking competencies and competency-based learning with complex practice settings (Hartviksen et al., 2017; O'Connell et al., 2014). We propose that capability as a concept has potential as an inclusive and overarching descriptor of APN expertise in practice. Given that definitions of both competencies and capability are varied, it is necessary to provide a clearer understanding of the attributes of capability and how it is used within the context of APN practice and education.

The concept of individual capability has roots in the “capabilities approach,” which originated in the late 1970s with the work of Sen (Sen, 1979) and was further developed by Nussbaum (Nussbaum, 2011; Robeyns & Fibieger Byskov, 2011, revised 2020). Capability in the context of higher education was subsequently explored by Stephenson and others in the 1990s (Stephenson, 1998). For Nussbaum, the essence of the “capabilities approach” is what individuals are capable of being and doing (Nussbaum, 2011). Individual capability in the context of advanced practice nursing has been defined as a general way of approaching APN education (Gardner, Dunn, et al., 2006); a distinguishing feature of the APN role (Gardner, Carryer, et al., 2006); and an APN education and practice assessment framework (Sciacca & Reville, 2016; Wilson et al., 2015), and an integrated set of attributes, such as practical skills, knowledge, experience, and judgment (Chater et al., 2019; O'Connell et al., 2014). Components of capability may include knowing how to learn, working in collaboration, creative thinking, and self-efficacy (Gardner et al., 2008; Hase & Davis, 1999). Advanced practice nurses use these
attributes in their own practice, and when collaborating with other health care professionals (Raleigh & Allan, 2017).

Implementation of capability in advanced practice nursing requires a measurement approach that accounts for the complexity of clinical practice and APN roles (Kostas-Polston et al., 2018; McAllister & Flynn, 2016; Sciacca & Reville, 2016). There is an acknowledged need to assess higher-order critical thinking, communication, and knowledge synthesis skills alongside skills specific to clinical care (O’Connell et al., 2014). Although capability approaches are established within higher education, they have not been adopted widely in nursing education (Bromley, 2017). However, capability has been proposed as a way of assessing APN workforce readiness (Kostas-Polston et al., 2018), postgraduate nurse practitioners (NPs) participating in residency programs (Sciacca & Reville, 2016), and nursing educators (McAllister & Flynn, 2016). Portfolios that include documentation of student accomplishments have been proposed as one tool for evaluating capability and as a way of tracking and showcasing professional development (Anderson et al., 2009; Sciacca & Reville, 2016).

A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews, Epistemonikos, JBI Evidence Synthesis, and the Campbell Collaboration was conducted. No comprehensive review of capability as a concept in APN practice or education was identified. In a protocol for a qualitative narrative systematic review, Hako et al. (2019) proposed to summarize and compare international literature on APN capabilities. Our review differs the protocol by Hako et al. (2019) in three ways: i) we will focus on capability as a concept; ii) we will consider both APN practice and education; and we will conduct a scoping, rather than a narrative qualitative review, in which we will consider a broad range of sources. In
adopting the ICN definition of APN, we will also consider a wider range of APN roles than those included in the Hako et al. (2019) protocol.

The objective of this scoping review is to identify and map how the concept of capability is described in the literature about APN practice and education to gain clarity about the concept and its potential in assessing clinical expertise and judgment. A scoping review will allow us to map the diversity of approaches and understanding of capability as a concept in advanced practice nursing, and to bring together the academic and gray literature. The review will also lay the groundwork for a full concept analysis and/or a more targeted review (e.g., perspectives of APNs, use of capability in specific APN settings, qualitative review). In countries where the APN role is still being defined and developed, a better understanding of the concept of capability may be useful in delineating how the APN role fits within existing health care structures.

Our study team includes five APNs, all of whom are also in clinical practice as APN/NPs. Three members of the study team also teach nurse practitioner students in various capacities. All have been actively involved from the outset with the design and scope of this review and the review questions. We will consult with APN colleagues practicing in other roles or locations, as required. Stakeholders who contribute to the development of this scoping review will be acknowledged, including as review co-authors, if relevant.

**Review Questions**

What is known about the concept of capability as applied to advanced practice nursing and advanced practice nursing education?

**Sub-questions:**

- How is the concept of individual capability described in the context of advanced practice nursing and education?
• How has the concept of capability developed in advanced practice nursing and education?
• How does the concept of capability inform the evaluation of advanced practice nursing and education?

Inclusion criteria

Participants

The population for this review will be APNs who meet the ICN definition, as outlined in the introduction (International Council of Nurses, 2020); who have completed graduate education; and who have an expanded scope of practice beyond that of a generalist or specialist registered nurse. Worldwide, there are multiple titles for nurses who have an advanced scope of practice. In the United States, the term “advanced practice provider” is also used to denote any advanced practice registered nurse or physician’s assistant. For the purposes of this review, APNs will be considered to include NPs, certified registered nurse anesthetists, certified nurse midwives, clinical nurse leaders, and clinical nurse specialists. While APNs in some countries hold licenses that specifically relate to their advanced practice roles, in countries where the role of APNs is still evolving, the licensing regulations may not yet reflect the expanded APN scope, or the role title may not be protected. Therefore, we will also include nurses with both graduate education and an expanded scope of practice who work in settings where the APN role is not as clearly delineated. When referencing the literature, we will adopt the terms used by the authors of specific studies or specific to provider certification—for example “nurse practitioner/NP.” Studies with a focus on undergraduate or associate nursing, or on physician or physician assistant practice or education will be excluded.
Concept

The concept of interest is capability as an individual attribute or set of attributes. The working definition of individual capability used in this review is a combination of knowledge, skills, experience, and competencies that enables APNs to provide appropriate care for patients in both familiar and unfamiliar clinical settings or scenarios. Studies that consider individual capability in the context of advanced practice nursing will be included. We will also include studies in which the authors discuss or propose appraisal tools for the evaluation of APN capability, or where capability is a key component of a theoretical or conceptual framework. Studies in which the authors focus on organizational, rather than individual capability, will be excluded.

Context

We will consider capability in any clinical and educational setting related to the development of individual attributes in APN practice and education. This will include all dimensions of the APN role as defined by the ICN (International Council of Nurses, 2020). Studies in which the authors consider capability at an organizational or logistical level only will be excluded. Our search will consider global sources and settings.

Types of sources

The review will consider all types of quantitative, qualitative, and mixed methods studies, reviews, and reports. A search of the gray literature will include, but will not be limited to, expert opinions, clinical guidelines, dissertations and theses, editorials, articles, and reports on policies and strategies in use by professional bodies or organizations.
Methods

The proposed scoping review will be conducted in accordance with the JBI methodology for scoping reviews (Peters et al., 2020). We will use the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) checklist (Tricco et al., 2018).

Search strategy

In our search strategy, we will aim to locate both published and unpublished studies, as well as text and opinion articles that reference capability in the context of APN practice or education. An initial limited search of MEDLINE, CINAHL, PsycINFO, and Education Source was undertaken to identify articles on the topic. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles, were used to develop a full search strategy, in collaboration with a librarian scientist. Boolean operators (OR, AND) including adjacencies and truncations were used to combine appropriate keywords and related terms. The search strategy, including all identified keywords and index terms, will be adapted for each included database and/or information source. The reference lists of all included sources of evidence will be screened for additional studies. A sample search strategy for CINAHL is included in Appendix I.

Articles published from 1975 to the present will be included, considering that the concept of capability was first discussed in the late 1970s by Sen (1979) and expertise development in nursing was first discussed in the early 1980s by Benner (1982, 2001). Literature published in English will be included. Non-English abstracts will be reviewed for relevance using Google Translate. We will attempt to locate translation services to enable us to include the full text of relevant studies in other languages.
The databases to be searched include CINAHL, ERIC, Education Source (all via EBSCO); MEDLINE, Embase, PsycINFO, Cochrane (all via Ovid); and Web of Science Core Collection including SciELO, SSRN, and ASSIA. Sources of unpublished studies and gray literature to be searched include Primo Central Index, ProQuest Nursing and Allied Health Source, ProQuest Health Management, SSRN, Google Scholar (first 100 results only), ProQuest Dissertations and Theses Global (PQDT Global), ProQuest Health, and Medical Complete. In addition, we will search for reports and guideline documents from professional nursing practice, education, membership, and regulatory organizations to include the ICN, country and regional/state boards of nursing, and membership organizations such as the American Academy of Nurse Practitioners. We will begin the gray literature search by searching documents and policy briefings from the ICN and the WHO. We will then move to searching the websites of ICN member organizations. Other advanced practice nursing or nursing organizations will be added as they are identified. The search strategy was developed together with the academic librarian scientist on our research team.

**Study selection**

Following the search, all identified citations will be collated and uploaded into EndNote v.20 (Clarivate Analytics, PA, USA). The citations will then be uploaded into Covidence software (Veritas Health Innovation, Melbourne, Australia) and duplicates will be removed. Following a pilot test, titles and abstracts will be screened by two or more independent reviewers for assessment against the inclusion criteria. Potentially relevant sources will be retrieved in full, and their citation details imported into the JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI; JBI, Adelaide, Australia) (Munn et al., 2019). The
full text of selected citations will be assessed in detail against the inclusion criteria by two or more independent reviewers.

Reasons for exclusion of full-text sources of evidence that do not meet the inclusion criteria will be recorded and reported in the scoping review. Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion or with an additional reviewer. The results of the search and the study inclusion process will be reported in full in the final scoping review and presented in a PRISMA flow diagram (Tricco et al., 2018).

**Data extraction**

Data will be extracted from documents included in the scoping review by two or more independent reviewers using a data extraction tool developed by the reviewers. The data extracted will include specific details about the participants, concept, context, study methods, and key findings relevant to the review question, including definitions, details of any identified appraisal tools, and any study recommendations. Direct quotes may be extracted as relevant to the study questions, for example, for conceptual definitions.

A draft extraction form is provided in Appendix II. The data extraction tool will be piloted by two members of the study team and will be modified and revised as necessary during the process of extracting data. Any modifications to the data extraction tool will be detailed in the scoping review. Any disagreements that arise between the reviewers will be resolved through discussion or with an additional reviewer. We will contact authors of papers to request missing or additional data, where required.

**Data analysis and presentation**

An initial descriptive approach will be used to outline publication type, author, year of
publication, and topic as it aligns with the review objective and research questions. Extracted data will be presented in tabular format, complemented by a narrative summary. The tabular results will clearly describe how the results are aligned with the objectives and research questions of the scoping review. We will provide an overview of how capability is defined and described in the literature, describe any evolution of the concept of capability in APN and education, outline capability frameworks used in advanced practice nursing and education, and present any identified capability appraisal tools.
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Appendix C

Scoping Review Appendices

To distinguish this set of appendices for the Scoping Review, they are labeled C (I – VII).

Appendix C (I)

Search strategy

CINAHL via EBSCO

Search run: 3/13/2022, 2,190 hits
Re-run 2/12/23, 127 additional hits

S11 S9 AND S10
S10 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8
S9 TX (capabil* or capable or "self efficacy" or "higher order" or "graduateness" or "autonom*")
S8 graduate nursing education
S7 nursing organization*
S6 nurse specialist*
S5 nurse anethe*
S4 nurse clinician*
S3 nurse midwi*
S2 nurse practitioner*
S1 advanced practice nurs*

Medline via OVID

Search run: 3/11/2022, 3299 hits
Re-run 2/12/23, 115 additional hits

Ovid MEDLINE(R) ALL <1946 to March 11, 2022>
1 Advanced Practice Nursing/
2 Nurse Practitioners/
3 Nurse Midwives/
4 Nurse Clinicians/
5 Nurse Anesthetists/
6 nursing organizations.mp.
7 Education, Nursing, Graduate/
8 (capabil* or capable or "self efficacy" or "higher order" or "graduateness" or "autonom*").mp.
9 or/1-7
10 ("Advanced Practice Nurs*" or "Nurse Practitioner*" or "Nurse Midwi*" or "Nurse Clinician*" or "Nurse Anesthetist*" or "Nurse Anaesthetist*").mp.
11 9 or 10
12 8 and 11
**Education Source via EBSCO**

Run 11/13/21, 639 hits  
Re-run 2/12/23, 17 additional hits  

(capability OR (clinical competence)) AND ((Advanced practice nurs*) OR (Nurse practitioner*) OR (Nurse midwi*) OR (Nurse clinician*) OR (nurse anesthe*) OR (nursing organization*)) OR (graduate nursing education))

**Embase via Ovid**

Classic+Embase <1947 to 2022 March 11>  
Run 3/14/22, 2,832 hits  
Re-run 2/12/23, 237 additional hits  

1 advanced practice nursing/  
2 nurse practitioner/  
3 nurse midwife/  
4 clinical nurse specialist/  
5 nurse anesthetist/  
6 nursing organization/  
7 education, nursing, graduate.mp. or nursing education/  
8 (capabil* or capable or "self efficacy" or "higher order" or "graduateness" or "autonom*").mp.  
9 1 or 2 or 3 or 4 or 5 or 6 or 7  
10 8 and 9

**ERIC via EBSCO**

Run 3/14/22, 34 hits  
Re-run 2/12/23, 0 additional hits  

(Capability OR (clinical competence)) AND ((Advanced practice nurs*) OR (Nurse practitioner*) OR (Nurse midwi*) OR (Nurse clinician) OR (Nurse Anesthetist*) OR (Graduate nursing education) OR (nursing organization*))

**Google Scholar**

Run 3/14/22 for first 100 hits  
Re-run 2/12/23 for first 100 hits  

At least one: "advanced practice nursing" "nurse practitioner" "nurse midwife" "nurse clinician" "nurse anesthetist"  
AND capabil*  
1975-2022

**JBI EBP Database via Ovid**
Run 3/14/22, 122 hits
Re-run 2/12/23, 9 additional hits

1 advanced practice nursing.mp. [mp=text, heading word, subject area node word, title]
2 nurse practitioner.mp. [mp=text, heading word, subject area node word, title]
3 nurse midwi*.mp. [mp=text, heading word, subject area node word, title]
4 nurse clinician.mp. [mp=text, heading word, subject area node word, title]
5 nurse specialist.mp. [mp=text, heading word, subject area node word, title]
6 nurse anesthetist.mp. [mp=text, heading word, subject area node word, title]
7 education, nursing, graduate.mp. [mp=text, heading word, subject area node word, title]
8 graduate nursing.mp. [mp=text, heading word, subject area node word, title]
9 nurs* organizations.mp. [mp=text, heading word, subject area node word, title]
10 (capabil* or capable or "self efficacy" or "higher order" or "graduateness" or "autonom*").mp.
11 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9
12 10 and 11

OMNI
Run 3/14/22, 34 hits
Re-run 2/12/23, 3 additional hits

"Advanced practice nurs*" OR "nurse practitioner" OR "nurse midwi*" or "nurse clinician" or "nurse anesthetist" AND “Capability”

Searched both Title and Subject

ProQuest Health and Medical Complete via ProQuest
Run 3/14/22, 849 hits
Re-run 2/12/23, 0 additional hits

(noft(capabil*) OR noft(capable) OR noft(self efficacy) OR noft(higher order) OR noft(graduateness) OR noft(autonom*)) AND (noft(advanced practice nurs*) OR noft(nurse practitioner) OR noft(nurse midwi*) OR noft(nurse clinician) OR noft(nurse specialist) OR noft(clinical nurse specialist) OR noft(nursing organization) OR noft(graduate nursing education) AND pd(1975-2022))

Date range 1975-2022

This search included 5 databases:
- Canadian Business & Current Affairs Database: Health & Medicine
- Nursing & Allied Health Premium
- ProQuest Dissertations & Theses Global: Health & Medicine
- PTSDpubs
- Sports Medicine & Education Index

APA PsycInfo via OVID
APA PsycInfo <1806 to March Week 1 2022>

1. Midwifery/
2. nurse practitioner.mp.
3. advanced practice nursing.mp.
4. nurse anesthetist.mp.
5. nurse clinician.mp.
6. nurse specialist.mp.
7. nursing organization.mp.
8. graduate nursing education.mp.
9. capabil*.mp.
10. capable.mp.
11. Decision Making/
12. Self-Efficacy/
13. higher order.mp.
14. critical thinking/
15. graduateness.mp.
16. Autonomy/ or autonom*.mp.
17. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
18. 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16
19. 17 and 18

Web of Science Core Collection via Clarivate

Run 3/14/22, 390 hits
Re-run 2/12/23, 11 additional hits

1. (((((TS=("advanced practice nursing")) OR TS=("nurse practitioner")) OR TS=("nurse midwife")) OR TS=("clinical nurse specialist")) OR TS=("nurse anesthetist")) OR TS=("nursing organization")
2. (((((TI=("advanced practice nursing")) OR TI=("nurse practitioner")) OR TI=("nurse midwife")) OR TI=("clinical nurse specialist")) OR TI=("nurse anesthetist")) OR TI=("nursing organization")
3. (((((TS=("capabil*")) OR TS=("capable")) OR TS=("self efficacy")) OR TS=("higher order")) OR TS=("graduateness")) OR TS=("autonom*")
4. (((((TI=("capabil*")) OR TI=("capable")) OR TI=("self efficacy")) OR TI=("higher order")) OR TI=("graduateness")) OR TI=("autonom*")
5. 1 OR 2
6. 3 OR 4
7. 5 AND 6

Web of Science SciELO via Clarivate

Run 3/14/22, 158 hits
Re-run 2/12/23, 24 additional hits

1. (((TS=("advanced practice nursing")) OR TS=("nurse practitioner")) OR TS=("nurse midwife")) OR TS=("clinical nurse specialist") OR TS=("nurse anesthetist") OR TS=("nursing organization")

2. ((((TI=("advanced practice nursing")) OR TI=("nurse practitioner")) OR TI=("nurse midwife")) OR TI=("clinical nurse specialist") OR TI=("nurse anesthetist")) OR TI=("nursing organization")

3. (((TS=("capabil*")) OR TS=("capable")) OR TS=("self efficacy")) OR TS=("higher order") OR TS=("graduateness") OR TS=("autonom*")

4. ((((TI=("capabil*")) OR TI=("capable")) OR TI=("self efficacy")) OR TI=("higher order")) OR TI=("graduateness") OR TI=("autonom*")

5. 1 OR 2

6. 3 OR 4

7. 5 AND 6

Social Science Research Network SSRN

Run 4/11/22, 4 hits
Re-run 2/12/23, 3 additional hits

Searched for Nursing AND Capability

ASSIA via ProQuest

Run 4/11/22, 240 hits
Re-run 2/12/23, 94 additional hits

((advanced practice nurs*) OR (nurse practitioner) OR (nurse midwi*) OR (nurse clinician) OR (nurse specialist) OR (clinical nurse specialist) OR (nursing organization) OR (graduate nursing education)) AND (capabil* OR capable OR (self effic*acy) OR (higher order) OR graduateness OR autonom*)
Appendix C (II)

Grey Literature Hand Search Strategy Including Organizational Websites

**Search Terms:** Capability, capabilities, advanced practice nursing

**Search Strategy for Organizational Websites:**

1. General search feature, if available
2. Search of any pages relating to publications, resources, or document repositories
3. Search of any pages relating to education, standards, or professional development

For non-English resources DeepL and Google Translate were used to review titles and first sentences of any pages or documents

<table>
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<th>Date Site Updated</th>
<th>Organization</th>
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<th># of items screened (uploaded to citation management software for full text screening), and titles</th>
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<td>6/11/22</td>
<td>2022</td>
<td>World Health Organization</td>
<td><a href="https://www.who.int/health-topics/nursing#tab=tab_1">https://www.who.int/health-topics/nursing#tab=tab_1</a></td>
<td>WHO – website search including Nursing and Midwifery</td>
<td>84 results screened (0 uploaded)</td>
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<tr>
<td>6/13/22</td>
<td>2021</td>
<td>World Health Organization IRIS – Institutional Repository for Information Sharing</td>
<td><a href="https://apps.who.int/iris/">https://apps.who.int/iris/</a></td>
<td></td>
<td>78 results reviewed: (8 uploaded)</td>
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</table>
| 4/10/22       | 2022             | International Council of Nurses (ICN) | [https://www.icn.ch](https://www.icn.ch) | Home>>publications Home>>news | 61 items reviewed (4 uploaded)  
• Guidelines on prescriptive authority for nurses 2021 |
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<th>URL</th>
<th>Search Path</th>
<th># of items screened (uploaded to citation management software for full text screening), and titles</th>
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</table>
• Health is a human right: Access, investment, and economic growth.  
• New CGFNS International and ICN certification will produce a registry of experts to contribute to national and global nursing and healthcare policy  
Approx. 25 items screened – mix of links, documents, and webpages (3 items uploaded)  
• Addressing Issues Impacting Advanced Nursing Practice Worldwide  
• Mapping of Advanced Practice Nursing Competencies from Nineteen Respondent Countries against the Strong Model of Advanced Practice Nursing (2000) and the International Council of Nurses (2008)  
• Advanced Practice Nursing Competencies Australian research investigating the role of nurse practitioners: A view from implementation science  
This resource page provides links to other NP/APN organizations globally – which were used as the second tier, following ICN and WHO. |
| 7/10/22      | 2022             | American Association of Colleges of Nursing (AACN) | [www.aacnursing.org](http://www.aacnursing.org) | Home >> News and Information >> Position Statements & White Papers | Position statements: 25 reviewed (1 uploaded)  
• The Essentials: Core Competencies for Professional Nursing Education  
White papers: 10 reviewed (2 uploaded)  
• The Doctor of Nursing Practice: Current Issues and Clarifying Recommendations  
• Faculty shortages in baccalaureate and graduate nursing programs. |
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<th>Search Path</th>
<th># of items screened (uploaded to citation management software for full text screening), and titles</th>
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| 6/13/22       | 2022              | American Association of Nurse Anesthetists | www.aana.com | Home>>Publications>>AANA Journal | Joint statements: 3 reviewed (0 uploaded)  
• Self-Efficacy, Stress, and Social Support in Retention of Student Registered Nurse Anesthetists  
• Nurse Anesthesia students with disabilities: A legal and academic review of potential professional standards  
• Predictors of Situation Awareness in Student Registered Nurse Anesthetists – this article introduced the idea of situation awareness  
• Educating for Excellence: A Cohort Study on Assessing Student Nurse Anesthetist Non-Technical Skills in Clinical Practice  
1 article identified from a reference list (1 uploaded):  
• Jordan: Qualifications and capabilities of the certified registered nurse anesthetist |
| 7/11/22       | 2022              | American Organization for Nursing Leadership | www.aonl.org | General site search | 5 documents/pages reviewed, (0 uploaded) |
| 7/11/22       | 2022              | American Psychiatric Nurses Association | www.apna.org | General site search  
Review of position statements | 3 documents/pages reviewed (0 uploaded) |
<p>| 7/11/22       | 2022              | Association National Francaise des Infirmiere et Infirmier | <a href="https://anfiide.fr">https://anfiide.fr</a> | General site search for “capacité” | 5 documents/pages reviewed (0 uploaded) |</p>
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<th>URL</th>
<th>Search Path</th>
<th># of items screened (uploaded to citation management software for full text screening), and titles</th>
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| 7/11/22      | 2022             | Association of Advanced Nursing Practice Educators (AANPE) UK | www.aape.org.uk | General site search | 5 documents/pages reviewed (1 uploaded)  
  - The development of leadership outcome-indicators evaluating the contribution of clinical specialists and advanced practitioners to health care: a secondary analysis |
  2. Home>>Research>>Research reports | 1. 8 documents/pages reviewed (1 uploaded)  
  - The nurse practitioner clinical learning and teaching framework: A toolkit for students and their supervisors  
  2. Research: 5 documents reviewed (1 uploaded)  
  - Diabetes Capabilities for the Healthcare Workforce Identified via a 3-Staged Modified Delphi Technique |
| 7/19/22      | 2022             | Australian College of Nursing | https://www.acn.edu.au | General search bar  
  Home>>Policy | 1. 38 results reviewed (3 uploaded)  
  - Press release on: National Nursing and Midwifery Digital Health Framework – reviewed framework itself and uploaded  
  - Webpage on leadership – led to Nurse Executive Capability Framework – uploaded  
  - A Five Year Change Management Road Map >> Transforming Your Experience  
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<th>Search Path</th>
<th># of items screened (uploaded to citation management software for full text screening), and titles</th>
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  - A New Horizon for Health Service: Optimising Advanced Practice Nursing  
  - Advanced Practice Nursing: A Pan-Canadian Framework  
  - ICN Guidelines on Advanced practice |
| 7/19/22       | 2022              | Conselho Federal de Enfermagem – Brazil | [http://www.cofen.gov.br](http://www.cofen.gov.br) |  | 3 results (0 uploaded) |
| 8/7/22        | 2022              | German nurses Association | [https://www.dbfk.de](https://www.dbfk.de) | Home>>bildungsangebote>>aktuelle positionspapiere des DBfK >> https://www.dbfk.de/de/veroeffentlichungen/Positionspapiere.php | 4 documents reviewed (using DeepL for translation) (1 uploaded)  
  - Advanced Nursing Practice in Deutschland, Österreich und der Schweiz: Eine Positionierung von DBfK, ÖGKV und SBK |
  2. Home >> Education and Training  
  3. Home>>Publications | 1. No results  
  2. No results (education modules and applications)  
  3. 37 titles reviewed (0 uploaded)  
  4. 4 documents reviewed (0 uploaded) |
| 8/7/22        | 2022              | National Association of Clinical Nurse Specialists (United States) | [https://nacns.org](https://nacns.org) | Home>>publications | 2 results (0 uploaded) |
| 8/7/22        | 2022              | National Association of Nurse Practitioners in | [https://npwh.org](https://npwh.org) | Home>>education>>NPWH Clinical guidelines | 1 document uploaded:  
  - Women’s Health NP: Guidelines for Practice and Education |
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<th>Search Path</th>
<th># of items screened (uploaded to citation management software for full text screening), and titles</th>
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<tr>
<td>7/10/22</td>
<td>2022</td>
<td>National Organization of Nurse Practitioner Faculty (NONPF, United States)</td>
<td><a href="http://www.nonpf.org">www.nonpf.org</a></td>
<td>Home&gt;&gt;Educational Resources&gt;&gt;NTF Standards</td>
<td>1 document reviewed: (0 uploaded) Papers and other documents are accessible to members only.</td>
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2. Home>>Professional codes and guidelines  
3. Home>>NP standards for practice  
4. Home>>position statements  
5. Home>>frameworks  
6. Home>>fact sheets | 1065 results:  
“capability” 669 results  
“capability framework” 17 results  
“capability” and “competence” 2 results  
“capability and competence” 182 results  
“threshold professional capability” 50 results  
Results sorted by relevance, first 50 results for each category reviewed (5 documents uploaded, 1 saved for background)  
- Decision making framework for nursing and midwifery  
- Nurse practitioner standards for practice: Review and consultation report  
- National principles for clinical education during the COVID-19 pandemic  
- National competency standards for the nurse practitioner  
- Supervised practice framework  
2. 2 documents reviewed (0 uploaded)  
3. 2 documents reviewed (1 uploaded)  
- NP Standards for Practice  
4. 7 titles reviewed (0 documents uploaded) |
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<th>Search Path</th>
<th># of items screened (uploaded to citation management software for full text screening), and titles</th>
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| 6/13/22       | 2022              | Royal College of Nursing, UK | https://www.rcn.org.uk/Professional-Development/Advanced-Practice-Standards | 1. Home>>Professional Development>>Advanced Practice Standards  
2. Home>> Professional Development>>Publications | 5. 2 documents reviewed (1 uploaded)  
- Framework for assessing standards for practice for registered nurses, enrolled nurses and midwives  
6. 22 titles reviewed, 1 document reviewed in detail (0 uploaded) |
2. Capability and performance reviews  
3. Case studies | 1. 1 document reviewed (0 uploaded)  
2. 7 documents reviewed (4 saved for background; 0 uploaded) |
2. Media, Advocacy & Journals>>position statements | Journal articles: 50; not searched as should appear in database searches  
Position Statements: 34 results (0 uploaded)  
AWHONN Consensus Statements: 12 results (0 uploaded)  
AWHONN Co-Publications: 10 results (0 uploaded) |
| 7/19/22       | 2021              | South African Nursing Council | https://www.sanc.co.za/Advanced-practice-nursing/ | >>Advanced Practice | 1 result (0 uploaded) |
| 7/19/22       | 2020              | CNAI Consociazione Nazionale delle Associazioni Infermiere/I (Italy) | https://www.cnai.pro | No links in English  
No search function | No links in English  
No search function |
| 7/19/2022     | 2020              | European Nursing Council | https://enc-eu.org | Home>>What we do:  
Home>>news>>our positions | No search bar  
No links to documents |
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<th>Date Accessed</th>
<th>Date Site Updated</th>
<th>Organization</th>
<th>URL</th>
<th>Search Path</th>
<th># of items screened (uploaded to citation management software for full text screening), and titles</th>
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</thead>
</table>
| 8/7/22       | 2020             | National Association of Pediatric Nurse Practitioners (United States) | https://www.napnap.org | 1. General search for capability  
2. Capable | 1. 2 search results – none relevant  
2. 4 search results – none relevant |
| 6/13/22      | 2020 (copyright date) | Sigma Theta Tau | www.sigmanursing.org | Sigmanursing.org >> Advance and Elevate >> Research >> Sigma Repository | General search: 18 results reviewed (0 uploaded)  
Sigma Repository >> advanced practice nursing, where subject includes “capability” 2 results (0 uploaded)  
>> “advanced practice nursing” and “capability” 2187 results. Sorted by relevance, and first 100 screened. (7 uploaded)  
- Care coordination clinical reasoning model, Tabatha Arms, 2015, conference presentation  
- Care coordination clinical reasoning model for advanced practice nurses, Kuiper, RA  
- Illness script formation in diagnostic reasoning within advanced nursing education  
- Clinical guideline development: students putting the process into practice. Willson, P. 2016  
- New evidence-based practice competencies for practicing nurses and advanced practice nurses: from development to real world implementation. Melnyk, B |
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<tr>
<th>Date Accessed</th>
<th>Date Site Updated</th>
<th>Organization</th>
<th>URL</th>
<th>Search Path</th>
<th># of items screened (uploaded to citation management software for full text screening), and titles</th>
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<td>International Confederation of Midwives</td>
<td><a href="https://www.internationalmidwives.org">https://www.internationalmidwives.org</a></td>
<td>Home &gt;&gt; resources &gt;&gt; policy and practice</td>
<td>All documents pertain to midwifery only – no nursing related information</td>
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<td>7/10/22</td>
<td>11/3/2020</td>
<td>NPAO – NP Association of Ontario (Canada)</td>
<td><a href="http://www.npao.org">www.npao.org</a></td>
<td>No documents located</td>
<td>No documents located</td>
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<td>6/13/22</td>
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<td><a href="http://www.midwife.org/ACNM-Library">http://www.midwife.org/ACNM-Library</a></td>
<td>No relevant documents identified</td>
<td>No relevant documents identified</td>
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<td>6/13/22</td>
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<td>American Nurses Association</td>
<td><a href="http://www.ana.org">www.ana.org</a></td>
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<td>American Nurses Credentialing Center</td>
<td><a href="https://www.nursingworld.org">https://www.nursingworld.org</a></td>
<td>General site search</td>
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<td>7/11/22</td>
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<td>Association Nationale des Infirmiers(e)s Luxembourgeois(es) (Luxembourg)</td>
<td><a href="http://www.anil.lu">http://www.anil.lu</a></td>
<td>General site search for capacité</td>
<td>No results identified</td>
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</table>

- Dimensions of care coordination clinical reasoning: systems thinking, value network analysis and health analytics. Kuiper, RA.
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<tr>
<th>Date Accessed</th>
<th>Date Site Updated</th>
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<td>Clinical Nurse Specialist Association of Ontario, Canada</td>
<td><a href="https://chapters-igs.rnao.ca/node/2458">https://chapters-igs.rnao.ca/node/2458</a></td>
<td>No relevant documents identified</td>
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<td>Cyprus Nurses and Midwives Association</td>
<td><a href="https://cynma.org">https://cynma.org</a></td>
<td>No links in English.</td>
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<td>7/19/22</td>
<td>Could not determine</td>
<td>Democratic Nurses Organization of South Africa</td>
<td><a href="https://www.denosa.org.za">https://www.denosa.org.za</a></td>
<td>&gt;&gt;Publications&gt;&gt;position papers No search bar 1 position statement identified (0 uploaded)</td>
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<tr>
<td>8/7/22</td>
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<td>European Forum of National Nurses and Midwives Association (EFNNMA)</td>
<td><a href="https://uia.org/s/or/en/1100056526">https://uia.org/s/or/en/1100056526</a></td>
<td>N/A one landing page for nursing Paid subscription required to access publications</td>
<td></td>
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<tr>
<td>8/7/22</td>
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<td>Icelandic Nurses Association</td>
<td><a href="https://www.hjukrun.is/english/about-us/">https://www.hjukrun.is/english/about-us/</a></td>
<td>Genearl site search 12 document titles/first sentences reviewed using Google Translate (0 uploaded)</td>
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<td>Manual site search as search function was not working. Reviewed information on “Nursing in Japan”. No mention of APNs.</td>
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<td>Home&gt;&gt;about&gt;&gt;position statements&gt;&gt;APRN publications (at bottom of page) 14 titles reviewed 7 docs reviewed in more detail (0 uploaded)</td>
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| 7/11/22      | Could not determine | / National Association of Neonatal Nurse Practitioners (United States) |   | Search for “evne/evner” | 1. Evne – 37 results – mostly webpages, none in English, no reports  
2. Capability – no results |
| 8/7/22       |                  | Norwegian Nurses Organization | www.sykepleierforbundet.no | 1. General search capability  
2. Capable  
3. Home>>resources | 1. 1 result – duplicate – not uploaded  
2. 1 result (0 uploaded)  
3. No relevant resources identified |
| 7/19/22      | Could not determine | Nursing and Midwifery Board of Ireland (An Bord Altranis) | https://www.nmbi.ie/Home | General search | 20 results reviewed (0 uploaded) |
| 7/19/22      | Could not determine | Nursing and Midwifery Board of Ireland (An Bord Altranis) | https://www.nmbi.ie/Publications | 1. Home>>Publications>>Education  
2. Home>>Publications >>Standards and Guidance  
3. Home>>Publications >>Fitness to practice | 1. 15 titles/documents reviewed, (1 uploaded)  
- Advanced practice (nursing) standards and requirements  
2. 18 titles/documents reviewed (1 uploaded)  
- Scope of nursing and midwifery practice framework  
3. 5 titles/documents reviewed (0 uploaded) |
<p>| 7/11/22      | Could not determine | Pediatric Nursing Certification Board (United States) | <a href="https://www.pncb.org">https://www.pncb.org</a> | General search bar | 54 results (0 uploaded) |</p>
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<td>General site search</td>
<td>English site very limited. No articles identified</td>
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## Appendix C (III)

### Data extraction instrument

<table>
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<th>Authors</th>
<th>Year</th>
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<th>Design/Methodology</th>
<th>Methods</th>
<th>Context/Setting</th>
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<td>Discussion</td>
<td>Outcome measures</td>
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<td>Discussion</td>
<td>Outcome measures</td>
<td>Concept - capability</td>
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<td>Applications to APN education</td>
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<th>Type of capability discussed</th>
<th>Conceptual definition</th>
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<th>Applications to APN education</th>
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<td>Inclusive or Holistic</td>
<td>Academic Research</td>
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<td>Other</td>
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Appendix C (IV)

Included Studies


http://international.aanp.org/Content/docs/MappingOfAdvPracNursingCompetencies.pdf

https://doi.org/http://dx.doi.org/10.7748/nop.2019.e1088


Appendix C (V)

Sources in other languages

Based on abstract and title screening 17 sources in other languages were identified. We were unable to complete a full text review of studies in other languages, based both on the difficulty of translating them appropriately, given that we are looking at the concept of capability, which does not easily translate consistently to one word in other languages. The list of studies is provided here so that readers may access them.


https://doi.org/http://dx.doi.org/10.18270/rce.v18i2.2663
## Appendix C (VI)

### Key characteristics of included sources

<table>
<thead>
<tr>
<th>Author/Date/Title</th>
<th>Country of Origin / Geographical Location</th>
<th>Type of Source</th>
<th>Aim / Purpose</th>
<th>Context</th>
<th>Methodology / Methods</th>
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</thead>
</table>
| **Anderson et al. (2009)**  
E-portfolios: Developing nurse practitioner competence and capability | Australia | Peer reviewed journal article | "to integrate nurse practitioner on competence and capability with post graduate and nursing literature on e-portfolios in order to demonstrate the merits of e-portfolios in nurse practitioner education for competence and capability development" (p. 70) | Nurse practitioner education and practice, New Zealand and Australia. | Literature review |
| **Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland (2017)**  
Advanced practice (nursing) standards and requirements | Ireland | Guideline | Outlines guidelines for APN practice with aim: “to guide the development of innovative, flexible and practice-orientated programmes that lead to registration as advanced nurse practitioners” (p. 11). Purpose does not reference capability specifically. | Advanced practice nursing, Ireland. | Literature review, survey (n=250), focus groups (n=8), expert consultations. |
| **Carryer et al. (2007a)**  
The capability of nurse practitioners may be diminished by controlling protocols | Australia | Peer reviewed journal article | “To stimulate debate about the use of specific protocols or pathways to determine nurse practitioner (NP) practice” (p. 108). To explore the potential for protocols to diminish NP capability. | Nurse practitioner practice, New Zealand and Australia. | Discussion paper based on prior study (Nurse Practitioner Standards Project), including a review of the literature. |
| **Cashin, Buckley, et al. (2015)**  
Development of the nurse practitioner standards for practice Australia | Australia | Peer reviewed journal article | To describe the context and development of the 2014 nurse practitioner practice standards for Australia. “To analyze the gap between Australia’s existing 2004 National Competency Standards for the NP and actual NP practice. A second aim was to use a | Nurse practitioner practice, Australia. | Mixed methods: Review of the literature 2004-2013; expert interviews (n=17); focus groups including 48 nurse practitioners; |
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<th>Author/Date&gt;Title</th>
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<tr>
<td>Cashin, Green, et al. (2015)</td>
<td>Australia &amp; USA</td>
<td>Peer reviewed journal article</td>
<td>Aim not clearly stated; appears that the purpose was to determine what is known about NP curriculum content in the USA and Australia devoted to developing capability to address mental health /psychiatric care.</td>
<td>NP education programs in Australia and USA.</td>
<td>Review of standards for psychiatric and mental health core capabilities.</td>
</tr>
<tr>
<td>Cashin et al. (2017)</td>
<td>Australia and Ireland</td>
<td>Peer reviewed journal article</td>
<td>“A scoping review was undertaken of the development of professional doctorates in the discipline of nursing to inform thinking with regard to future design work for a post-masters (nurse practitioner endorsement) professional doctorate” (p. 1). “The aim was to determine what is known about professional doctorates, their evolution and evidence of impact or outcomes” (p.3).</td>
<td>Nursing “professional doctorates” globally.</td>
<td>Scoping review. Pearl-growing strategy for identifying additional sources.</td>
</tr>
<tr>
<td>Chief Nursing and Midwifery Officers Australia (2021)</td>
<td>Australia</td>
<td>Guideline</td>
<td>Purpose of guidelines is to provide “information and guidance for nurses, employers, health planners and health policymakers on the concept of advanced nursing practice in the Australian context” (title page)</td>
<td>APN practice, Australia.</td>
<td>Work on guideline initiated at symposium on APN in 2017 which was partnership between Chief Nursing and Midwifery Officers</td>
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<tr>
<td>Author/Date/Title</td>
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<tr>
<td>Gardner, Dunn, et al. (2006) Competency and capability: Imperative for nurse practitioner education</td>
<td>Australia</td>
<td>Peer reviewed journal article</td>
<td>To &quot;inform the development of standards for nurse practitioner education in Australia and New Zealand and to contribute to the international debate on nurse practitioner practice&quot; (p.8). Aim does not reference capability specifically.</td>
<td>Nurse practitioner practice, New Zealand and Australia.</td>
<td>Multi-methods. Curricular review with data extraction (n=14) Interviews with practicing NPs and academic conveners (n not specified).</td>
</tr>
<tr>
<td>Gardner, Carryer, et al. (2006) Nurse Practitioner Competency Standards: Findings from collaborative Australian and New Zealand research</td>
<td>New Zealand/Australia</td>
<td>Peer reviewed journal article</td>
<td>To research NP practice and inform development of generic standards for education, authorization and practice by NPs (p.601).</td>
<td>Nurse practitioner practice in New Zealand (8 jurisdictions regulating NP preparation and practice) and Australia (5 states/territories)</td>
<td>Multi-methods approach including investigation of policy and curricula grey literature and interviews with clinicians.</td>
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<tr>
<td>Author/Date/Title</td>
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<tr>
<td><strong>Gardner et al. (2016)</strong> Educating for health service reform: Clinical learning, governance and capability – a case study protocol</td>
<td>Australia</td>
<td>Peer reviewed journal article – study protocol</td>
<td>“To investigate educational governance of advanced clinical learning and teaching and its contribution to capability theory through exploration of specialty learning and teaching in a case study research context” (p. 2). One specific objective is to “explore how a theoretical framework of capability influences curriculum learning outcomes” for a sample of NP students (p.2). In relation to capability, goal is to use data to “confirm the existing capability framework and describe any additional characteristics of capability and capability learning” (p.1)</td>
<td>Nurse practitioner students (up to 12), their clinical mentors and university academic staff.</td>
<td>Embedded case study design including qualitative data from interviews, observations, and student documents. This is a protocol only. Data will be coded, aggregated, and explored.</td>
</tr>
<tr>
<td><strong>Gardner et al. (2019)</strong> The nurse practitioner clinical learning and teaching framework: A toolkit for students and their supervisors</td>
<td>Australia</td>
<td>Guideline /Framework</td>
<td>This study was one deliverable from the CLEVER2 study: “One aim of the CLinical LEarning, goVERnance and capability (CLLEVER2) study was to guide consistency of specialty clinical learning and teaching for these master’s degree nurse practitioner students” (p. 4)</td>
<td>Nurse practitioners, Australia.</td>
<td>Deliverable from the CLinical LEarning, goVERnance and capability study and drawing on work by O’Connell et al. (2014) Secondary analysis of interview data using capability as guiding framework. Data were selectively coded according to the Hase and Davis framework.</td>
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<td>Author/Date/Title</td>
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<td><strong>Hako et al. (2022)</strong> Advanced practice nurse capabilities: A mixed methods systematic review</td>
<td>Finland</td>
<td>Peer reviewed journal article</td>
<td>“To summarize and compare published international literature on the capabilities of advanced practice nurses and the dimensions of these capabilities” (p. 1)</td>
<td>APN globally</td>
<td>Mixed methods systematic review that considered literature between 1998 -2021. Authors employed abductive content analysis, including deductive and inductive analysis.</td>
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<tr>
<td><strong>Health Education England et al. (2020)</strong> Core capabilities framework for advanced clinical practice (nurses) working in general practice/primary care in England</td>
<td>UK</td>
<td>Guideline</td>
<td>To set the standard for advanced clinical practice knowledge and skills for nurses: “This framework has identified a core set of capabilities required both for nurses who work in general practice/primary care settings seeing people with undifferentiated and undiagnosed conditions and those using the advanced title. Clinicians employed at ACP level work autonomously and are not constrained by protocols.” (p. 8)</td>
<td>Nurses working in general practice/primary care at the level of Advanced Clinical Practice (ACP) – referred to as ACP (Primary Care Nurse) in the framework. Population includes CNS, APN, NP, nurse consultant, or clinical nurse consultant, educated to at least master’s degree level.</td>
<td>Guideline</td>
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<tr>
<td><strong>Hill et al. (2021)</strong> The changing context of advanced practice nursing within the UK community care setting</td>
<td>UK</td>
<td>Peer Reviewed Journal Article Discussion paper</td>
<td>Discussion of APN roles in the UK, and the Skills for Health Framework.</td>
<td>APN Roles in the UK.</td>
<td>Review of current literature, policy, and requirements for APN.</td>
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<td>Author/Date/Title</td>
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| **International Council of Nurses NP/APRN Network (2019)**  
To align country-specific (n=19) NP/APN competences with the Strong Model of Advanced Practice Nursing (98) and the Scope of Practice, Standards and Competencies of the Advanced Practice Nurse (ICN 2008).” | APN nursing globally  
Convenience sample of n=19 countries (Australia, Botswana, Canada, England, Finland, Germany, Hong Kong SAR-PRC, Japan, Macau SAR-PRC, Netherlands, New Zealand, Norway, Republic of Ireland, Scotland, Singapore, Spain, Switzerland, United States of America, Wales.) | Committee members gathered role descriptions, standards of practice, and clinical competency documentation from published literature and formal Nursing Boards and Ministries of Health websites. (p.3) |
| **Kilgore (2019)**  
Development of a capability-based training programme for an advanced nurse practitioner | UK | Peer reviewed journal article | To explore "how a capability-based training programme was developed for one advanced nurse practitioner (ANP) in the care of older people in a community healthcare NHS trust.” (p. 1). Training program itself was designed to enable the trainee ANP to cope with the demands of an increasingly complex patient population and to develop the 4 elements of advanced nursing practice (clinical/direct care; leadership and collaborative practice; quality improvement; self-development and development of others). | UK National Health Service Trust new to role of ANP. | Case study, including semi-structured interviews with senior staff with educational and advanced clinical roles. |
| **Lakeman (2000)**  
Advanced nursing practice: Experience, education and something else | UK | Opinion piece | Narrative commentary (editorial) on the evolving concept of "advanced practice” nursing. | Editorial; some literature review. |
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<tr>
<td><strong>Lamb et al. (2018)</strong>&lt;br&gt; Describing the leadership capabilities of advanced practice nurses using a qualitative descriptive study</td>
<td>Canada</td>
<td>Peer reviewed journal article</td>
<td>Exploring APNs concepts of their leadership capabilities.</td>
<td>Eastern Canada tertiary acute care APN.</td>
<td>Qualitative descriptive methodology informed by the LEADS in a Caring Environment Leadership Capabilities Framework. (99) Face to face interviews and document analysis.</td>
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<td><strong>McCrea (2019)</strong>&lt;br&gt; Examining the educational pathways and other antecedents of nurse practitioners who work in the emergency care setting as predictors of future perceptions of capability</td>
<td>USA</td>
<td>Thesis</td>
<td>Evaluating relationship between several variables including educational pathways to self-assessment of competence and capability in the emergency room setting. “The intent of this study was to understand the antecedents that effect perceptions of competence, capability and complexity of tasks and environment.” (p.30)</td>
<td>NPs working in the emergency room setting in the USA.</td>
<td>Non-experimental descriptive survey administered to convenience sample of NPs. Capability survey questions derived from practice standards for Emergency Nurse Practitioners. Self-reported capabilities included medical screening, medical decision, patient management, patient disposition, professional legal.</td>
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<tr>
<td><strong>McDermott et al. (2021)</strong>&lt;br&gt; Acute care pediatric nurse practitioners as leaders: Perceptions, self-identity and role congruity</td>
<td>USA</td>
<td>Peer reviewed journal article</td>
<td>“This study aimed to gain an understanding of practicing acute care pediatric nurse practitioners’ (AC-PNPs’) perceptions of themselves as leaders in both</td>
<td>Children's hospital Acute Care Pediatric NPs in the midwestern USA.</td>
<td>Qualitative: Cultural domain analysis, semi-structured interviews, and</td>
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<td>Monk (2021)</td>
<td>UK</td>
<td>Thesis</td>
<td>The purpose of this research was to explore and understand the NP’s practice experiences, with a focus on emergency nurse practitioners. To consider how practice experiences influence or affect feelings of role proficiency, specifically from the position of the autonomous and clinically proficient ENP. The author aimed to bring together &quot;concepts of role identity, competency, capability, and confidence.&quot; (p.iv)</td>
<td>Emergency nurse practitioners, NHS trust, northern England, UK.</td>
<td>Qualitative; hermeneutic phenomenology; digital diary (p. 97-100); semi-structured interviews (p.100-103).</td>
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<td>Nursing and Midwifery Board of Australia (2021)</td>
<td>Australia</td>
<td>Guideline</td>
<td>Outline standards for NP practice</td>
<td>NP practice in Australia.</td>
<td>Not discussed</td>
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<td>O'Connell et al. (2014)</td>
<td>Australia</td>
<td>Peer reviewed journal article</td>
<td>“Discussion on the application of a capability framework for advanced practice nursing standards/competencies.” (p.27280)</td>
<td>NPs working in Australia</td>
<td>Literature review and discussion paper.</td>
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<td>Raleigh (2015)</td>
<td>UK</td>
<td>Thesis</td>
<td>&quot;To explore the use of medical physical assessment skills (PAS) by community nurse practitioners in primary care in the UK&quot; (p.9)</td>
<td>Community NPs in the UK.</td>
<td>A qualitative interpretative embedded case study design; semi-structured</td>
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<td>primary care: A qualitative study of current practice in the UK</td>
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<td>interviews and focus groups.</td>
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<td>Raleigh and Allan (2017)</td>
<td>UK</td>
<td>Peer reviewed journal article</td>
<td>&quot;To explore multiple perspectives on the use of physical assessment skills by advanced nurse practitioners in the UK.&quot; (p.2025)</td>
<td>South of England, UK</td>
<td>Qualitative; interpretive single-embedded case study, including focus groups and interviews.</td>
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<tr>
<td>A qualitative study of advanced nurse practitioners’ use of physical assessment skills in the community: Shifting skills across professional boundaries</td>
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<td>Ryder et al. (2023)</td>
<td>Ireland</td>
<td>Peer reviewed journal article</td>
<td>“To evaluate a nurse practitioner’s clinical practicum module designed with a capability education framework” (p. 1).</td>
<td>APN education, Ireland.</td>
<td>Organizational case study to evaluate NP clinical practicum module with a capability framework. Mixed methods: document review (random sample of 20 student documents); focus group; field notes. N=51 students across two academic year cohorts.</td>
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<td>Evaluation of a nurse practitioner clinical practicum module using a capability education framework: A case study design</td>
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<tr>
<td>Schoenwald et al. (2022)</td>
<td>Australia</td>
<td>Peer reviewed journal article</td>
<td>&quot;To gain insights into the role and capability of NPs to provide telephone advice and direction within an after-hours prison health model of care.&quot; (p.305)</td>
<td>3 primary health clinics located within 3 correctional centers in Southeast Queensland, Australia.</td>
<td>Qualitative. Semi-structured interviews; thematic analysis.</td>
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<td>Author/Date/Title</td>
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<td>Sciacca and Reville (2016b)</td>
<td>USA</td>
<td>Peer reviewed journal article</td>
<td>“This article summarizes a comprehensive literature review of publications about NP evaluation in postgraduate fellowship programs” (p.e276).</td>
<td>Literature review. A systematic search of 8 databases 2000 to 2015.</td>
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<tr>
<td>Searby et al. (2023)</td>
<td>Australia</td>
<td>Peer reviewed journal article</td>
<td>1. Describe the current Alcohol and Other Drug (AOD) NP workforce; 2. Explore barriers and facilitators to AOD NP uptake in Australia.</td>
<td>NPs working or training to be AOD specialist NPs in Australia.</td>
<td>Mixed methods. Survey with AOD workforce (n=41); semi-structured interviews (n=14). Interview transcripts were mapped to the COM-B framework (Capability, Opportunity, Motivation – Behavior).</td>
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<tr>
<td>Speight (2020)</td>
<td>USA</td>
<td>Thesis</td>
<td>To explore the barriers and facilitators to NP buprenorphine prescribing using the Theoretical Domains Framework (TDF).</td>
<td>NPs working in primary care in Eastern North Carolina, USA.</td>
<td>Semi-structured interviews. Findings were aligned with the TDF framework domains, and mapped to the COM-B framework (Capability, Opportunity, Motivation – Behavior).</td>
</tr>
<tr>
<td>Wilson et al. (2015)</td>
<td>Canada</td>
<td>Peer reviewed journal article</td>
<td>“To examine conceptual and/or theoretical frameworks that are</td>
<td>NP education, global.</td>
<td>Scoping review protocol using JBI methodology.</td>
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<td>Author/Date/Title</td>
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<td>for nurse practitioner education: A scoping review</td>
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<td>relevant to nurse practitioner education” (p. 146) “An assessment of available conceptual and/or theoretical frameworks for graduate education in nursing generally, and for nurse practitioner education specifically, is required with the ultimate goal of providing recommendations for adaptation or adoption as a unifying approach” (p.149).</td>
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<tr>
<td><strong>Wolf et al. (2017)</strong>&lt;br&gt;The experience of advanced practice nurses in U.S. emergency care settings.</td>
<td>USA</td>
<td>Peer reviewed journal article</td>
<td>&quot;The purpose of this study was to (1) identify skills being performed by APRNs practicing in emergency care settings (2); explore types of training; and (3) describe competency validation. Additionally, we explored frequency of skill use and facilitators and barriers to performing a skill to the full extent of training and education.” (p.426)</td>
<td>APNs working in emergency settings in the USA.</td>
<td>Mixed methods: Exploratory mixed methods. Self-report survey and focus group interviews.</td>
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### Appendix C(VII)

## Summary of key findings for included sources

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<tr>
<th>Source</th>
<th>Key Findings</th>
<th>Conceptual Definition/s of Capability</th>
<th>Implications for APN Nursing or Education</th>
<th>Frameworks/Models/Appraisal Tools</th>
</tr>
</thead>
</table>
| Anderson et al. (2009)  
*E-portfolios: Developing nurse practitioner competence and capability* | E-portfolios could be used to showcase NP capability. Capability was not explicitly searched for in e-portfolio literature, however literature alluded to capability traits.  
"The current evidence on nurse practitioner education, competence, capability and e-portfolios points to the integration of the use of an e-portfolio into current nurse practitioner curriculum models to meet the unique needs of nurse practitioner candidates" (p.1) | **Type of capability:** Holistic/inclusive  
**Definitions/Discussion:** Holistic trait including self-efficacy, creativity, communication skills and teamwork, knowledge of how to learn, ability to apply competencies in new and familiar situations.  
**Capability frameworks or definitions referenced:** Hase (2000), Gardner, Dunn, et al. (2006) | Learning strategies for acquiring capability were referenced including experiential or problem-based learning, situated learning, flexible learning pathways (p. 72).  
Authors suggested including e-portfolios in NP education as andragogical learning method and showcase for capability traits. | Propose e-portfolios as appropriate ways to showcase capability. |
| Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland (2017)  
*Advanced practice (nursing) standards and requirements* | APN practice defined by "higher levels of capability". Capability listed as overarching 6 domains of practice for APNs in a conceptual model. | **Type of capability:** Holistic/inclusive  
**Definitions/Discussion:** Capability inclusive of skills, knowledge, values, and self-esteem. Ables individuals to manage change. Moves beyond competency. APNs practice “at a higher level of capability as independent, autonomous and expert practitioners” (p.15). Capability also included as | APN practice distinguished by higher levels of capability.  
Capability frameworks listed as part of leadership content for APN education. | APN Nursing Model includes capability as overarching trait (p. 16)  
Capability should be included in leadership frameworks as part of APN education. |
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<td><strong>Carryer et al. (2007a)</strong></td>
<td>The authors propose that the definition of capability is in contradiction to the use of protocols designed to regulate NP practice, because protocols may limit their ability to practice flexibly, with capability.</td>
<td><strong>Type of capability:</strong> Inclusive/holistic; Clinical</td>
<td>&quot;The strength and value of extended nursing practice, as practised by the NP, is the ability to respond with confidence to the myriad complexities produced by human variation in situations of health, injury and wellness. The notion of capability captures what we found in case studies of NPs, and this has significant implications for the current trend of using prescriptive protocols to define and direct the practice of NPs.&quot; (p.111).</td>
<td>Capability as a framework (no model provided)</td>
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| Cashin, Buckley, et al. (2015)  
*Development of the nurse practitioner standards for practice Australia* | Focus group and interview findings - participants agreed that the standards should be clinically focused attributes. The pillars common in many advanced practice nursing standards, such as practice, research, education, and leadership, were combined and expressed in a new and unique clinical attribute" (p.27). | Capability is in contradiction to the use of protocols designed to regulate NP practice, because protocols may limit their ability to practice flexibly, with capability.  
**Capability frameworks or definitions referenced:** Cairns (1996); Hase and Kenyon (2000); Stephenson and Weil (1992); Cairns (2000) | APN as a continuum moving towards "higher levels of capability" (p.34). | Nurse Practitioners Standards Framework - includes "diagnostic capability" as one of four clinical domain Nurse Practitioner Standards Framework (p.34) |
| Cashin, Green, et al. (2015) | NPs can provide mental health/psychiatric interventions including | **Type of capability:** Diagnostic; Inclusive/holistic  
**Definitions/Discussion:** no concise definition provided. Authors define Advanced Nursing Practice: "ANP is a continuum along which nurses develop their professional knowledge, clinical reasoning and judgment, skills and behaviors to higher levels of capability (that is recognizable)" (p. 34). Framework for NP practice specifically references "diagnostic capability" which cuts across domains of education, research, and leadership.  
**Capability frameworks or definitions referenced:** N/A | Mental health assessment and treatment capability as a key | |

**Cashin, Buckley, et al. (2015)**  
*Development of the nurse practitioner standards for practice Australia*  
Focus group and interview findings - participants agreed that the standards should be clinically focused attributes. The pillars common in many advanced practice nursing standards, such as practice, research, education, and leadership, were combined and expressed in a new and unique clinical attribute” (p.27).  
**Type of capability:** Diagnostic; Inclusive/holistic  
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**Capability frameworks or definitions referenced:** N/A  
APN as a continuum moving towards "higher levels of capability" (p.34).  
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<td>330</td>
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<td>Definitions/Discussion: No definition provided. Authors are asking whether NP curricula lead to outcomes of “demonstrable mental health core capability”.</td>
<td>aspect of primary/family healthcare.</td>
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<td>Psychiatric and mental health core capabilities and learning outcomes developed in nurse practitioner programmes in Australia and the United States of America</td>
<td>prescribing with consumer satisfaction in several contexts of practice and specialties.</td>
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<td>Cashin et al. (2017) Third-generation professional doctorates in nursing: The move to clarity in learning product differentiation</td>
<td>NP learning to develop capability is described as process of &quot;undertaking doctoral modules that are based in leadership, participatory action research, evidence-based emancipatory practice development (EBEPD) and reflective practice” (p.8). The authors discuss the fulfillment of a learning contract, and completion of the doctorate as including assessed capability, although they do not outline what this process might look like. They propose that a third-generation professional doctorate would &quot;focus on building practice capability rather than producing nurse scientist capability” (p.10) to distinguish the practice doctorate from the PhD research doctorate.</td>
<td>Type of capability: Clinical; Academic/research Definitions/Discussion: Capability is not definitively defined. Professional doctorates need “matrices of capability transferable to practice at doctoral level” (p.6). NP learning to develop capability is described as process of “undertaking doctoral modules that are based in leadership, participatory action research, evidence-based emancipatory practice development (EBEPD) and reflective practice” (p.8). In this context &quot;student capability&quot; is described as the outcome of the doctorate: &quot;Student capability development, in which the vision is raised towards the system and organisational level beyond individual episodes of care. A novel, tested, socioculturally</td>
<td>Focus is on practice doctorates (DNP) - moving them to be equivalent but different from the PhD - capability described as part of this, but not defined.</td>
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| Chief Nursing and Midwifery Officers Australia (2021)                 | To clarify Advanced nursing practice  
"The purpose of these guidelines is to reduce the confusion that often exists about the scope of advanced nursing practice roles and provide greater clarity and understanding for nurses, employers, consumers and policy makers" (p.2)  
No results or key findings directly related to capability. | situated, realisable model of nurse-led community care in the chronic disease-related domain of interest." (p.8).  
**Capability frameworks or definitions referenced:** N/A |                                                                 | Nurse Practitioner Standards Framework (Fig. 2, p.7) |
| **Advanced nursing practice: Guidelines for the Australian Context** |                                                                 | **Type of capability:** Holistic; Clinical focus  
**Definitions/Discussion:** No in-depth discussion of capability.  
"NP's have a clinical focus and are capable in research, education and leadership as applied to clinical care" (p.7).  
Framework lists diagnostic capability as one clinical standard - further discussion of clinical work includes  
"autonomous and self directed practice", and the demonstration of "high-level knowledge, critical thinking and complex decision-making skills to plan, initiate and evaluate therapeutic interventions" (p.10). The guidelines suggest that employers ask themselves how “capability will be reviewed and enabled?” (p.15)  
**Capability frameworks or definitions referenced:**  
Nursing and Midwifery Board of Australia (2021) | Framework includes diagnostic capability. Authors also reference the Strong Model of Advanced Practice, but do not specifically link capability to this model. | | |
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| **Cornforth and Ashurst (2007)**  
*Is academic capability essential in promoting advanced nursing practice?*                                                                 | Cornforth proposes that advanced level nursing practice, including for NPs requires the ability to incorporate information that requires academic study to obtain, including the ability to perform a literature review and critical appraisal of published literature. Cites the Nursing and Midwifery Council "second-level advanced practice register" and references academic capability as a needed requirement for advanced level practice. Ashurst believes that requiring academic capability will prevent older nurses or others without academic experience from advancing in the nursing profession. Proposes that requiring academic capability may further move academic nurses away from those in clinical practice. | **Type of capability:** Academic  
**Definitions/Discussion:** Academic capability - as ability to synthesize information through use of academically obtained skills such as literature review, critical appraisal, and to bring that knowledge into practice. Authors debate whether this is needed in order for nurses to advance their role. | Debate about whether advanced practice requires academic skills. Capability applied/discussion in academic arena only, but Cornforth does discuss the synthesis of information for formulation of differential diagnoses etc. | N/A |
| **Gardner, Dunn, et al. (2006)**  
*Competency and capability: Imperative for nurse practitioner education*                                                                 | Capability proposed as educational theoretical framework to "inform curriculum development for nurse practitioners", which they discussed as having "joint imperatives" of “becoming capable requires different learning experiences from becoming competent” (p.13) | **Type of capability:** Clinical  
**Definitions/Discussion:** Capability seen as having flexibility to respond to "self-identified" student learning needs (p.12). Capability "emphasizes the role of..." | Model for Nurse Practitioner Education includes strategies for capability learning, and recommends capability-informed assessment (p.13). | N/A |
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| **Gardner, Carryer, et al. (2006)**  
*Nurse Practitioner Competency Standards: Findings from collaborative Australian and New Zealand research* | student-directed and contextual learning (p.12). | complexity in influencing the learning context whereby dynamic systems provide the environment for non-linear and unpredictable events” (p.13). Capability defines how competencies are executed.  
**Capability frameworks or definitions referenced:** Hase and Davis (1999a); Phelps et al. (2002); Stephenson and Weil (1992) | **Type of capability:** Inclusive/holistic  
**Definitions/Discussion:** Capability as the ability to use “non-linear reasoning and draw upon creative solutions” when dealing with high-level attributes of NP practice.  
**Capability frameworks or definitions referenced:** Stephenson and Weil (1992); Hase and Kenyon (2000); Hase (2000); Cairns (1997). The authors also reference the X factor - referred to by Cattini and Knowles (1999) - "the ‘X factor’ is a combination of higher level of clinical decision making, flexibility, problem solving and change management that characterize the dynamic | Recognition that APN practice is “qualitatively different” from other levels of nursing practice (p. 605). The authors note that further research and work will be needed to determine the “fit” of capability with NP standards. | Nurse Practitioner Competency Standards Framework – does not reference capability directly, but authors state it “sets a standard for capability attributes” (p.605) |
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<td><strong>Gardner et al. (2008)</strong>  <em>From competence to capability: a study of nurse practitioners in clinical practice</em></td>
<td>Capability and its dimensions are a useful model for describing NP advanced level attributes which included: 1. using competencies in novel and complex situations as well as the familiar 2. being creative and innovative 3. know how to learn 4. having a high level of self-efficacy 5. working well with teams (p.251)</td>
<td><strong>Type of capability:</strong> Inclusive/holistic.  <strong>Definitions/Discussion:</strong> Capability as a “holistic attribute” that includes high self-efficacy, knowing how to learn, working well with others, creativity, ability to use competencies in new and familiar situations, able to manage “complex and non-linear challenges” (p. 17).  <strong>Capability frameworks or definitions referenced:</strong> Hase and Davis (1999a); Phelps and Hase (2007); Phelps et al. (2005)</td>
<td>Capability and its attributes as complementary to competency, and as key to NP practice. Authors propose that both competencies and capability should be seen on a continuum for an NP framework including education, evaluation, and licensing (p.257).</td>
<td>Capability attributes based on work of Davis and Hase (1999) used to define Analytical Framework - as model for “describing advanced level attributes of nurse practitioners” (p.251)</td>
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<td><strong>Gardner et al. (2016)</strong>  <em>Educating for health service reform: Clinical learning, governance and capability – a case study protocol</em></td>
<td>This is protocol, no key findings as yet. &quot;At a higher level, the study outcomes will be an important contribution to the body of knowledge about models of clinical learning that go beyond competency attainment and expand understanding about capability and capability learning.” (p.6)</td>
<td><strong>Type of capability:</strong> Framework and definition of capability as inclusive/holistic; Conceptual model for learning and teaching.  <strong>Definitions/Discussion:</strong> Definition not explicitly provided. Capability as a overarching framework for NP practice and education. Capability as reflexive and helping “students to create new knowledge and new action” (p.3).</td>
<td>When completed, the findings from this research will deliver postgraduate educational models and guiding frameworks that are internationally relevant, for nursing as well as other health disciplines.</td>
<td>References Model for Nurse Practitioner Education (Gardner, Carryer et al. (2006) – plan to “explore how a theoretical framework of capability influences curriculum learning outcomes” (p. 2).</td>
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<td>Gardner et al. (2019)  &lt;br&gt; <em>The nurse practitioner clinical learning and teaching framework: A toolkit for students and their supervisors</em></td>
<td>Capability referenced as &quot;high level of clinical&quot; practice. Capability as a high level is required for the NP role. This is a toolkit – no research findings.</td>
<td><strong>Type of capability:</strong> Inclusive/holistic; clinical  &lt;br&gt; <strong>Definitions/Discussion:</strong> &quot;Capability moves beyond competency and is the extent to which an individual can adapt to change, generate new knowledge and continue to improve practice. Capability and its dimensions include: knowing how to learn; working well with others; applying competencies to both novel and familiar situations; being creative; having a high degree of self-efficacy&quot; (p.3)  &lt;br&gt; Broad “metaspecialties” are comprised of clinical practice standards. Although the authors indicate that the metaspecialty framework is designed to develop capability, capability is not mentioned in the framework itself explicitly.  &lt;br&gt; <strong>Capability frameworks or definitions referenced:</strong> O'Connell et al. (2014); Fraser and Greenhalgh (2001); Gardner, Carryer, et al. (2006)</td>
<td>Broad “metaspecialties” are comprised of clinical practice standards. The metaspecialty clinical practice standards can &quot;guide clinical learning and teaching approaches that support the development of high levels of clinical capability required for the nurse practitioner role&quot; (p.4)</td>
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<td>Hako et al. (2022)</td>
<td>This was a scoping review in which the authors looked</td>
<td><strong>Type of capability:</strong> Holistic</td>
<td>Capability proposed as an adjunct to competency and as a Preliminary APN capability model.</td>
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<td><em>Advanced practice nurse capabilities: A mixed methods systematic review</em></td>
<td>at the literature to identify the dimensions of capability outlined by Hase and Davis (Hase &amp; Davis, 1999b). They identified all five dimensions of Hase and Davis framework and proposed a sixth dimension – the ability to recognize factors affecting the scope of practice for APNs.</td>
<td><strong>Definitions/Discussion:</strong> Capability as holistic, exceeds competencies, includes ability to apply competencies in new situations. Capability is the “quality of state of being capable” and includes the “ability to do something” (p.2) Capability encompasses six attributes: (1) can apply competencies in the novel as well as familiar situations; (2) works well in teams; (3) is creative; (4) has high level of self-efficacy; and (5) knows how to learn; and (6) identifies factors affecting the scope of practice of the APN (p.1) Sixth attribute related to scope is newly determined by the SR authors.</td>
<td>framework for use in APN practice and education. The sixth dimension identified by the authors is proposed as a way to understand how APNs can be used to full capacity and scope within healthcare organizations.</td>
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<td><em>Health Education England et al. (2020)</em></td>
<td>The framework is presented in 4 domains: 1. person-centred collaborative working 2. assessment, investigations and diagnosis</td>
<td><strong>Type of capability:</strong> Inclusive/holistic</td>
<td>“The framework specifies minimum standards for ACP (Primary Care Nurse) employment. It sets out clear expectations about what the ACP (Primary Care Nurse) can</td>
<td><em>Core Capabilities Framework. Builds on Pillars of the Advanced Clinical Practice Framework</em></td>
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<td><em>Core capabilities framework for advanced clinical practice (nurses)</em></td>
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<td><strong>Definitions/Discussion:</strong> Capability describes the ability to be competent, and to move</td>
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<td>working in general practice/primary care in England</td>
<td>3. condition management, treatment and prevention 4. leadership and management, education and research. Within the domains are a total of 13 capabilities that reference what the ACP (Primary Care Nurse) working in general practice/primary care settings must be able to demonstrate and are underpinned by clinical knowledge (p. 11).</td>
<td>beyond competency; to work effectively in situations which may require flexibility and creativity. Attributes (skills, knowledge, behaviors) which individuals bring to the workplace – include ability to be competent and beyond this, to manage change, be flexible, deal with complex and unpredictable situations, and continue to improve performance. Authors refer to &quot;triangulated evidence of capability&quot; (p. 9). Capability is conceived as holistic and more inclusive than competence. <strong>Capability frameworks or definitions referenced:</strong> Health Education England (2017)</td>
<td>do, recognizing that the ACP (Primary Care Nurse) has the knowledge and skills to be flexible in their approach and work autonomously to provide evidence-based care for people” (p.13).</td>
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<td>Hill et al. (2021) <em>The changing context of advanced practice nursing within the UK community care setting</em></td>
<td>Articulation of APN roles, and why some APN roles in UK meet criteria as outlined by ICN and others, even though master's level academic work not always included. Discussion of need for capability to be demonstrated by APNs working in the community setting. Discussion of Core Capabilities in the Skills for Health Framework.</td>
<td><strong>Type of capability:</strong> Inclusive/holistic; clinical  <strong>Definitions/Discussion:</strong> No full definition of capability. Capabilities referenced in Skills of Health Framework. in Discusses APN role in some detail - lists elements of capability without necessarily specifying them. Describes &quot;courageous and critical thinking&quot; (p.6) and the APN</td>
<td>References Royal College of Nurses definition of APN as &quot;a level of practice, rather than a role, type or specialty of practice&quot; p.3. &quot;Although key organizations suggest advanced clinical practitioners (ACPs) should be educated to master's level or equivalent, not all advanced level practitioners in England hold a master's; therefore, employing organisations must ensure that they have achieved this level of</td>
<td>References the Core Capabilities Framework for Advanced Clinical Practice (Nurses) Working in General Practice/Primary Care in England.</td>
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<td>International Council of Nurses (2020) Guidelines on Advanced Practice Nursing</td>
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| Skills for Health framework "intended to ensure advanced nursing practitioners work to an advanced level." (p.3). References the NHS Long Term Plan which "highlights how advanced clinical practice is central to helping transform service delivery and better meet local health needs by providing enhanced capacity, capability, productivity and efficiency within multi-professional teams." (p.4). |

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<td>Role as &quot;an advanced and autonomous role&quot; (p.6).</td>
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| Capability frameworks or definitions referenced: |
| Core Capabilities for Advanced Clinical Practice (Nurses) Working in General Practice/Primary Care in England. (Health Education England et al., 2020) |

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<td>Practice through experience and expertise&quot; (p.3)</td>
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| “Nurses working at an advanced level can be employed in roles such as the advanced nursing practitioner. If working in the community care setting, they must show capability against the Core Capabilities Framework for Advanced Clinical Practice (Nurses) Working in General Practice/Primary Care in England" (p.16). “Advanced level practitioners can demonstrate expertise and professional judgement to achieve set capabilities in areas that include diagnostics and therapeutics, enhanced skills in consultation, critical thinking and clinical decision-making, and the leadership they demonstrate within their teams” (p.16). |

| Type of capability: |
| Inclusive/holistic |

| Definitions/Discussion: |
| Capability listed as a term, no full definition. |

| There are 3 references to capability in the context of: 1. Support of APN practice including the “capacity, capability, and empowerment |

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<td>2015) found that APNs &quot;exhibit patterns of practice that are different from other nurses&quot; (p.9). The nature of APN practice includes &quot;the capability to manage full episodes of care and complex healthcare problems including hard to reach vulnerable and at-risk populations&quot;. They go on to discuss ability to integrate research, an extended range of autonomy, case management, &quot;advanced assessment, judgement, decision making and diagnostic skills&quot; (P.10)</td>
<td>of the nursing profession to meet the growing demands and health needs of individuals and communities” (p.7) 2. Assumptions about advanced practice nurses having “roles or levels of practice with increased levels of competency and capability that are measurable, beyond that of a generalist nurse” (p.9) 3. Nature of practice: “capability to manage full episodes of care and complex healthcare problems including hard to reach, vulnerable and at-risk populations” (p.10)</td>
<td>Capability frameworks or definitions referenced: N/A</td>
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<td><strong>International Council of Nurses NP/APRN Network (2019) Mapping of advanced practice nursing competencies from nineteen respondent countries against the Strong Model of Advanced Practice Nursing (2000) and the International Council of Nurses (2008) Advanced Practice Competencies</strong></td>
<td>APN competencies, and role definitions and scope of practice, were sourced from 19 countries and mapped against 5 Domains of the Strong Model (2000) (p.8). 17 emerging themes/roles were identified during the mapping portion. Capability was referenced only by documents from Australia and centered around diagnostic capability, defined as &quot;conducts comprehensive, relevant, and holistic health assessment” (p. 32) &quot;applies</td>
<td><strong>Type of capability: Clinical</strong>  <strong>Definitions/Discussion:</strong> Capability was very narrowly defined within the context of the competencies in Domain1 (Direct Comprehensive Care) of the Strong Model, i.e., diagnostic capability) and only for Australia (pp.32, 41, 46). <strong>Capability frameworks or definitions referenced:</strong> N/A</td>
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| Kilgore (2019)  
*Development of a capability-based training programme for an advanced nurse practitioner* | There is merit in using a standardised capability-based training programme when developing advanced practitioners. Standardisation allows an organisation to ensure that advanced practitioners can provide an appropriate level of clinical practice to older patients with complex needs. Review of literature and qualitative interviews were used to determine what elements should be included/how to design training program. The programme included skill development in critical thinking, educating others (including professional leadership) (p.25) The trainee was able to meet the requirements of the programme. She was appointed to senior ANP post at the end of the 2-year training programme. | Type of capability: Inclusive/holistic; clinical  
Definitions/Discussion: This paper has in-depth discussion of capability approach to master’s level training for ANPs. The authors suggested that “adopting a capability approach rather than the competency standards used by most universities as part of a master’s programme may be the key to ensuring excellence in practice” (p.26). The programme focused on incorporating critical thinking, provision of autonomous care, ability to educate others as a leader, and use of a pathway for the ANP’s progress through the program. | “Although the capability-based training programme was set up for a particular individual its structure and adaptability should enable successful repetition with other trainee ANPs. Continued expansion of similar structured programmes that allow senior clinicians to flourish as expert practitioners in the care of older people outside of a classroom is vital. The capability-based training programme in this article has the potential to support other practitioners to develop, provided that expert support is in place in their organizations” (26) | N/A |
| Lakeman (2000)  
*Advanced nursing practie: Experience, education and something else* | "Expert nursing is advanced nursing, and advanced nursing is not merely some expanded or extended role" (p.90). "Consideration of | Type of capability: Inclusive/holistic  
Definitions/Discussion: The authors describe capability as | The authors use the definition of capability as an underdeveloped faculty/potential that is not yet realized. "Education may |
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<td>Lamb et al. (2018) <em>Describing the leadership capabilities of advanced practice nurses using a qualitative descriptive study</em></td>
<td>how expertise develops and promoting the right conditions for the development and application of expertise is crucial to advancing practice&quot; (p.90). The authors differentiated expertise and advanced practice, discussed clinical supervision and role development including a CNS like role.</td>
<td>“an undeveloped or unused faculty… to advance practice the application of expertise is required, rather than the mere possession of it. Expertise that is unused is not helpful to anybody. Consideration of how expertise develops and promoting the right conditions for the development and application of expertise is crucial to advancing practice.&quot; (p.90).</td>
<td>facilitate capability but it does not insure application&quot; (p.91)</td>
<td>Used LEADS in a Caring Environment Leadership Capabilities Framework. Developed APN Leadership Capabilities Model (p.403). Tables which detail the patient-focused leadership and organizational and system-focused leadership capability domains and capabilities (pp. 404-409).</td>
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<td>describe the leadership capabilities in LEADS often refers to system-level change and does not fully capture APN leadership.</td>
<td>“leadership” included the following seven leadership capability domains: 1) improving the quality of care provided; 2) enhancing professional nursing practice; 3) being an expert clinician; 4) communicating effectively; 5) mentoring and coaching; 6) providing leadership on internal and external committees and 7) facilitating collaboration. Each capability domain has associated leadership capabilities. Leadership capabilities are the skills and abilities advanced practice nurses described as necessary for demonstrating leadership” (p.403).</td>
<td>Capability frameworks or definitions referenced: LEADS framework (Dickson, 2010)</td>
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<td>McCrea (2019) Examining the educational pathways and other antecedents of nurse practitioners who work in the emergency care setting as predictors of future perceptions of capability</td>
<td>Educational pathways affect competence but not in a clear pattern. RN experience does not affect perceptions of capability. Years of experience as an NP affects perceptions of competence and capability the most. Perceptions of the complexity of tasks and environments of NPs tend</td>
<td>Type of capability: Inclusive/holistic Definitions/Discussion: Study explored the relationship between educational pathway and perceptions of competence and capability. Capability defined as holistic, including ability to deal with change or turbulence, apply competencies in common and new situations, creativeness,</td>
<td>Education pathways did not influence competence or capability perception of FNP. All NPs may find transition to practice difficult and need support. Thoughtful training and onboarding can help move new NPs into the zone of complexity as capable practitioners (p. 133). Learning happens best in the zone of complexity and capability -</td>
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| McDermott et al. (2021)  
*Acute care pediatric nurse practitioners as leaders: Perceptions, self-identity and role congruity* | Leadership within the clinical realm was referenced more frequently and with more specific examples than leadership within the professional context. Alternately, there were notable gaps identified in the NPs’ | **Type of capability:** Leadership  
**Definitions/Discussion:** "Leadership capacity encompasses systems at an organizational level, whereas leadership capability refers to individual skills, abilities, attitudes, and competencies" | Leadership capability can be developed during NP training and transition to practice. Educators should consider transitioning from a time-based to a competency-based understanding of leadership | |
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| perception of their role as leaders within the broader interprofessional team. Numerous examples were described of conditional leadership in which the NP needs a certain set of conditions to be present to feel they could be a leader. AC-PNPs "have a limited self-view of leadership" (p. 559).  
"Nurse practitioners need additional leadership capacity and capability building during graduate education, the transition to practice, and throughout their careers." (559)  
"Although this is a small study, it suggests that NPs need a broader conception of leadership, and there are opportunities to enhance leadership capacity and capability during graduate training programs, transition into practice, and throughout their careers."  
(p.562). Authors proposed these two elements of leadership need to be balanced.  
**Capability frameworks or definitions referenced:** Elliott et al. (2016) | | | |
| **Monk (2021)**  
**Type of capability:** Inclusive/holistic; clinical  
**Definitions/Discussion:** The author framed capability as a concept under the umbrella of | | | Advocates for ENP education and practice to move practitioners towards the "zone of proficiency". |
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<td>practitioners: <em>A phenomenological study</em></td>
<td>&quot;Role identity, competency, capability and confidence were drawn together and connected under the term proficiency.&quot; (p.185). &quot;Proficiency moves beyond competence and capability&quot; (p.178). ENP education and practice should move practitioners towards the &quot;zone of proficiency&quot;.</td>
<td>proficiency in the literature review (p.66-67). Competence as a subset of capability. Extensive discussion of prior literature on capability. <strong>Capability frameworks or definitions referenced:</strong> Stephenson (1998); Fraser and Greenhalgh (2001)</td>
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<td>Nursing and Midwifery Board of Australia (2021) <em>Nurse practitioner standards for practice</em></td>
<td>Scope is independent and incorporates the domains of clinical, education, and research and leadership. In the NP Standards framework, &quot;Diagnostic capability&quot; cuts across all three domains as the first of 4 standards.</td>
<td><strong>Type of capability:</strong> Framework with diagnostic capability cutting across all domains. <strong>Definitions/Discussion:</strong> Competence is defined as &quot;Competence is the combination of skills, knowledge, attitudes, values and abilities that underpin effective and/ or superior performance in a profession/occupational area.&quot; (p.8). Capability in Standard 1 is specific to describing assessment skill with &quot;diagnostic capability&quot; and has three sub-statements: • &quot;NPs demonstrate complex and critical thinking to conduct comprehensive, relevant and holistic health assessments. • NPs demonstrate accountability in the timely</td>
<td>Standards may drive educational curriculum or level or both.)</td>
<td>Nurse Practitioner Standards Framework</td>
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| O'Connell et al. (2014)     | Main arguments of the authors: Capability is an innovative term that could be used for future practice (p. 2731). "Leading researchers into capability in health care state that traditional education and training in health disciplines concentrates mainly on developing competence. To ensure that healthcare delivery keeps pace with increasing demand and a continuously changing context there is a need to embrace capability as a framework for advanced practice and education." (2728) | and considered use of diagnostic investigations to inform clinical decision making.  
• NPs integrate theoretical and practical knowledge to apply diagnostic reasoning to formulate diagnoses" (p.4). The standards as a whole are described in the glossary as a measure for capability to practice.  
**Capability frameworks or definitions referenced:** N/A  
**Type of capability:** Inclusive/holistic  
**Definitions/Discussion:** Capability as "combination of skills, knowledge, values and self-esteem which enables individuals to manage change, be flexible and move beyond competency." (2728) Capability framework as fitting NP practice that is "dynamic, often complex and evolving" (p.2730). They review capability definitions described by other authors including dictionary definitions "unused capacity" or "potential ability". Australian Capability Network - "combination of skills,  
"As advanced practice nursing becomes more established and formalized, novel ways of teaching and assessing the practice of experienced clinicians beyond competency are imperative for the changing context of health services." (2728) "Capability theory should be incorporated into graduate education aimed at non entry level clinicians." (p.2729) | The document includes a table in which the authors map conceptual themes from Emergency Nurse Practitioner modes of practice to capability.  
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<td>Stephenson and Weil (2014)</td>
<td>&quot;Continuum moving from the familiar to the unfamiliar.&quot; Authors discuss prior literature about providers (not only APNs) and capability, learning in the &quot;zone of complexity&quot;.</td>
<td>knowledge, values and self-esteem which helps individuals to handle change&quot; (p. 2731). Authors discuss prior literature about providers (not only APNs) and capability, learning in the &quot;zone of complexity&quot;.</td>
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<td>Table of Emergency Nurse Practitioner themes around modes of practice – mapped to elements of capability from Cairns (2000) which include:</td>
<td>- “Can take appropriate and effective action to formulate and solve problems. - Can apply competencies in unfamiliar and familiar situations. - Mindfulness; awareness and openness to change. - Being able to engage with the social values relevant to actions. - Works well with others”</td>
<td>Capability frameworks or definitions referenced: Cairns (2000); Cairns and Stephenson (2009)</td>
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<td>Raleigh (2015)</td>
<td>&quot;Competence, capability and performance are necessary to make complex&quot;</td>
<td><strong>Type of capability:</strong> Clinical – related to physical assessment skills.</td>
<td>“GPs believe that education and training of physical assessment skills are vital for nurses to</td>
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<td><em>Multiple perspectives of community nurse</em></td>
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<td><strong>practitioner’s use of medical physical assessment skills in primary care: A qualitative study of current practice in the UK</strong></td>
<td>Use of physical assessment skills are widely used by community nurse practitioners and improve competence, capability, and performance for APN roles.</td>
<td>Definitions/Discussion: Conceptual definition not provided.</td>
<td>manage the burden of assessment work in primary care” (p.9)</td>
<td>N/A</td>
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<td><strong>Raleigh and Allan (2017)</strong></td>
<td>3 main themes: 1)Policy perspectives 2)The practice context 3)Education (p.2028-2032) Capability was mentioned in relation to the practice context (alongside, experience and confidence). “Competence, capability and performance with physical assessment skills are an expectation of advanced nursing practice” (p. 2025). Authors separate out competence, capability, and performance - however do not provide descriptions/definitions of these. They do discuss &quot;sophisticated assessment skills” (p. 2030).</td>
<td>Type of capability: Clinical – related to physical assessment skills.</td>
<td>The role of mentors with clinical experience for the development of capability with NPs was mentioned (p. 2033).</td>
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<td><strong>Ryder et al. (2023)</strong></td>
<td>“Students identified the transitioning process from competent to capable practitioners.” (p.1). The authors outlined a capability-designed clinical practicum and used a Mini-CEX assessment tool as part of assessment process.</td>
<td>Type of capability: Clinical; holistic</td>
<td>“Nurse practitioners are required to practice autonomously and independently at a level of capability in clinical practice. The education preparation of nurse practitioner students must be directed appropriately” (p.1)</td>
<td>Education for Capability (Cairns and Stephenson, 2009).</td>
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<td>Overall students were satisfied with the Mini-CEX.</td>
<td>change in current clinical environments, thereby moving beyond a level of competency” (quoting Cairns and Stephenson and O'Connell et al.) (p.2). Authors discussed capability as defined by Cairns and Stephenson (2009), with three key elements: ability, self-efficacy and values. Capability seen as building on or beyond competency. &quot;Capability is a necessary part of specialist expertise where a capable person takes responsibility to develop their own education, knowledge, and skills (Cairns &amp; Stephenson, 2009; O'Connell et al., 2014). A capability educational framework prepares the student to trust their intuition and clinical judgement, develop the ability to problem-solve and use their acquired knowledge and skills in new ways to meet the needs of their professional specialist environment (Cairns &amp; Stephenson, 2009; Lester, 2014). A capability-informed educational framework focuses on the level of ongoing practice and the wider aspects of professionalism, enabling evolution in the nature and context of practice rather than</td>
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<td>Schoenwald et al. (2022)</td>
<td>Consultation with nurse practitioners over the telephone in prison health</td>
<td>RNs were interviewed about NPs. Three main themes: value and capability, nursing team, and safety of the on-call model of care (p. 306). “Participants in this study perceived NPs as capable clinicians with the ability to solve complex clinical problems, in many situations equal to that of physicians. This study contributes to abundant Type of capability: Clinical Definitions/Discussion: Value and capability was one theme in the findings (p.306). In this theme capability included consistency, knowledge, communication, trust, and collaboration (p.306/307). The only mention of capability in the discussion was &quot;In a United States study that explored scope of practice in a prison health service, nurses stated that they found</td>
<td>Major themes were outlined in a diagram (p. 307).</td>
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<td>Sciacca and Reville (2016b)</td>
<td>Evidence that NPs can safely manage complex patients in primary care with a wide range of prescribing capability” (p.308). Evaluation methods used in NP postgraduate training programs include: self-assessment, competency measures, mentoring, portfolio, simulation based learning, written evaluation (p. e278). Issues of competency and capability &quot;warrant intense consideration” when considering how to evaluate post-graduate residency programs.</td>
<td>Decision-making to be difficult in the absence of physicians and were tempted to overstep their own capability” (p. 308) which was then cited from another study.</td>
<td>&quot;There is a need for an evidence-based evaluation process that integrates theory relevant to NP practice (eg, competency and capability) with the experiences of existing programs and tested evaluation tools. As discussed, to be capable is to perform effectively in unfamiliar situations. This know-how is the very essence of the nursing profession and a core characteristic of the NP role. NP fellowship programs should educate participants, with the main goal of creating capable practitioners.” (p.e278)</td>
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"There is a need for an evidence-based evaluation process that integrates theory relevant to NP practice (eg, competency and capability) with the experiences of existing programs and tested evaluation tools. As discussed, to be capable is to perform effectively in unfamiliar situations. This know-how is the very essence of the nursing profession and a core characteristic of the NP role. NP fellowship programs should educate participants, with the main goal of creating capable practitioners.” (p.e278)
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<td>relevant to NP practice (e.g., competency and capability) with the experiences of existing programs and tested evaluation tools. As discussed, to be capable is to perform effectively in unfamiliar situations. This know-how is the very essence of the nursing profession and a core characteristic of the NP role. NP fellowship programs should educate participants, with the main goal of creating capable practitioners.” (p.e278).</td>
<td>Recommendation of several tools for assessment, including a capability tool. “Competencies provide lists of the roles and responsibilities of practitioners; however, they can be difficult to translate into evaluation criteria. Capability measures are able to assess multiple factors and allow a more flexible framework to capture what an NP does and how professional skills are strengthening. The competencies and role descriptions that have been published by accrediting organizations serve as starting points for the development of NP capability measures. The methods of developing</td>
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**Source** | **Key Findings** | **Conceptual Definition/s of Capability** | **Implications for APN Nursing or Education** | **Frameworks/Models/Appraisal Tools**
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Searby et al. (2023) *Barriers and facilitators to becoming an alcohol and other drug nurse practitioner in Australia: A mixed methods study* | COM-B framework used to map results. Capability broken down to include two main questions: 1. "Do nurses feel that they can progress to the nurse practitioner role?" - facilitators identified: "opportunity arising" (p. 6); barriers identified: "lack of organizational support"; organizational "preference for other health professions/specialties"; | **Type of capability:** Inclusive/holistic  
**Definitions/Discussion:** Capability discussed in reference to the COM-B behavior change framework. "The Behaviour Change Wheel (BCW) is used to understand barriers and facilitators to implementation by applying three conditions of behaviour change (capability, opportunity, and motivation—" | The authors discuss recommendations to address barriers to NP role uptake. They discuss capability in terms of psychological capability (knowledge) and physical capability (skills). 1. Psychological Capability intervention recommendations: "Modelling, environmental restructuring: Modelling of the collaborative potential of the nurse practitioner role to | COM-B Framework

**Key Findings**
- "In order to ensure that these competencies adequately capture the NP participant’s strengths and weaknesses, competencies should be translated into a capability language. The developed capabilities should be placed on a scale reflecting Benner’s developmental stages so that each capability can be assessed individually" (P.278)
- Capability frameworks or definitions referenced: Work by Gardner and colleagues (Gardner et al., 2008; Gardner, Carryer, et al., 2006); Benner’s Novice to Expert Framework
- "Psychological Capability intervention recommendations: "Modelling, environmental restructuring: Modelling of the collaborative potential of the nurse practitioner role to..."
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| Speight (2020) | "Analysis identified barriers and facilitators in eight domains: beliefs about capability, beliefs about consequences, emotion, environmental context and resources, reinforcement," | "Type of capability:
Inclusive/holistic

Definitions/Discussion:
Authors cite Michie et al regarding the COM-B framework:" Capability is "the" | Discussion of implications of removing barriers to buprenorphine prescribing. | COM-B Framework (Michie & West, 2013). |

"arduous process to 'prove' yourself" (p.7).
2. "Do AOD nurse practitioners feel they can work autonomously and have the advanced skills necessary to work at this level?" - facilitators identified: "autonomy, seeking support where needed" barriers identified: "limited AOD scope" "holistic care needs expanded skills" (p.7)

"Capability frameworks or definitions referenced: COM-B Framework (Michie & West, 2013)

organizations and other healthcare professionals, changing healthcare structures to make nurse practitioners an integral part of the healthcare team". Policy measures recommended: "Fiscal measures: Provide financial incentives for organizations to employ, and fully utilize, AOD nurse practitioners; consider government-led financial incentives for nurse practitioners (such as higher duties allowance or scholarships to undertake further study)" (p.13).
2. For physical capability, intervention recommendations included “expansion of AOD nurse practitioner skills and scope of practice to encompass mental and physical health needs of AOD consumers" Policy recommendations included "clear, consistent guidelines indicating expanded scope of practice; education requirements that reinforce holistic nature of AOD nurse practitioner role"
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<td>care settings in Eastern North Carolina</td>
<td>skills, social influences, and social and professional role identity&quot; (p.1). Findings extend and add to literature on buprenorphine prescribing by NPs.</td>
<td>individual’s psychological and physical capacity to engage in the activity;” motivation is “all those brain processes that energize and direct behavior;” and opportunity is “all the factors that lie outside the individual that make the behaviour possible or prompt it” (Michie et al., 2011, p. 4). Capability and opportunity interact with motivation, which influences behavior and in turn influences capability, motivation, and opportunity.&quot; (p.12).</td>
<td>Findings have potential implications for APN nursing or education, given that authors are proposing a capability-based approach.</td>
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| Wilson et al. (2015) Exploring conceptual and theoretical frameworks for nurse practitioner education: A scoping review | No findings – scoping review protocol. However, authors proposed that “a framework for NP education must include both competency building elements...and capability building elements which can be fostered through self-directed learning." (p.148). | **Type of capability:** Inclusive/holistic  
**Definitions/Discussion:** The authors reference work done in Australia and New Zealand by Gardner and others, that explores use of capability "Capability, as an approach to the learning process, includes the flexibility to respond to the specific, self-identified learning needs of students. Knowing how to learn, having high self-efficacy, applying competencies to new task, |  |  |
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| Wolf et al. (2017)  
*The experience of advanced practice nurses in U.S. emergency care settings.* | APNs reported combination of soft and hard skills, as well as "direct and indirect" care skills. The authors collected data on frequency of these skills being used, and how they were learned. | "collaborating with others, and being creative are all signs of a capable practitioner" (p.148)  
**Capability frameworks or definitions referenced:** Gardner et al. (2008); Gardner, Carryer, et al. (2006); Hase and Davis (1999b)  
**Type of capability:** Inclusive/holistic  
**Definitions/Discussion:** The authors referenced an inclusive definition of capability as described by O'Connell et al. and note that their participants also described higher-level skills:  
"Our participants described a similar combination of hard (clinical emergency) and soft (communication and organizational) skills, as well as clinical and diagnostic reasoning skills, that may provide an appropriate framework within which to examine the advanced practice role." (p.432) They describe the need for APNs to have both "hard and soft skills":  
"On an advanced level, clinical competence consists not merely of enhanced assessment skills and the ability to meet patient needs but also the creation of trusting" (p.432)  
"a more nuanced approach to assessing APRN capabilities as a combination of hard (clinical emergency) and soft (communication and organizational) skills may be an appropriate framework within which to examine the advanced practice role." (p.426) | Outlined possible basis for framework based in part on capability – not fully described. |
patient relationships and collegial collaborations. Thus competence in the advanced nursing role is more accurately defined as an expanded capability to use a repertoire of both soft and hard skills."
(p.432)

**Capability frameworks or definitions referenced:**
O'Connell et al. (2014)
### Appendix C (VIII)

#### Resources used to answer each review question, and indication of frameworks proposed or referenced

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<tr>
<th>Source</th>
<th>How is the concept of individual capability described in the context of APN and education?</th>
<th>How have definitions of capability developed and evolved in APN and education?</th>
<th>How is the concept of capability used in the evaluation of APN and education?</th>
<th>New (N), proposed (P) OR existing (E) framework referenced (other than as background discussion)</th>
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<td>Anderson et al. (2009)</td>
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<td>Bord Altranais agus Cnaimhséachais na hÉireann Nursing and Midwifery Board of Ireland (2017)</td>
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<td>Hako et al. (2022)</td>
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<td>Hill et al. (2021)</td>
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<td></td>
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<td>E</td>
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<td>Kilgore (2019)</td>
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<td>Lakeman (2000)</td>
<td>X</td>
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</tr>
<tr>
<td>Source</td>
<td>How is the concept of individual capability described in the context of APN and education?</td>
<td>How have definitions of capability developed and evolved in APN and education?</td>
<td>How is the concept of capability used in the evaluation of APN and education?</td>
<td>New (N), proposed (P) OR existing (E) framework referenced (other than as background discussion)</td>
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<td>X</td>
<td>E/N</td>
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<td>McCrea (2019)</td>
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<td>X</td>
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</tr>
<tr>
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<td>O’Connell et al. (2014)</td>
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<td>X</td>
<td>E</td>
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<td>Ryder et al. (2023)</td>
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<td>E</td>
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<td>Schoenwald et al. (2022)</td>
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<td>Sciacca &amp; Reville (2016)</td>
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<td>E</td>
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Appendix C (IX)

Illustrations

The following is a representative selection of illustrations of capability from the review sources.

Figure IX (1)

*Model for NP Education.*

Reprinted from Advanced practice (nursing) standards and requirements, Bord Altranais agus Cnaimhseachais na hEireann Nursing and Midwifery Board of Ireland, 2017, with permission from Bord Altranais agus Cnaimhseachais na hEireann/Nursing and Midwifery Board of Ireland.
Figure IX (3)

Major Themes

Reprinted from The Journal for Nurse Practitioners, 18(3), Schoenwald A, Ponting B, R. H, Mansfield Y, T. M. Consultation with nurse practitioners over the telephone in prison health, 2022, with permission from Elsevier.
APN, advanced practice nurse; HC, health care; MDT, multidisciplinary team

Appendix C (X)

Studies Excluded on Full Text

Due to space limitations this list is not included here but is included in supplemental material submitted with the review.
Appendix D

Consolidated Criteria for Reporting Qualitative Studies (COREQ) Checklist

<table>
<thead>
<tr>
<th>Domain 1: Research team and reflexivity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal characteristics</strong></td>
</tr>
<tr>
<td>1. Interviewer/facilitator</td>
</tr>
<tr>
<td>2. Credentials</td>
</tr>
<tr>
<td>3. Occupation</td>
</tr>
<tr>
<td>4. Gender</td>
</tr>
<tr>
<td>5. Experience and training</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Relationship with participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Relationship established</td>
</tr>
<tr>
<td>7. Participant knowledge of the interviewer</td>
</tr>
<tr>
<td>8. Interviewer characteristics</td>
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</table>

Domain 2: Study design
<table>
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<tr>
<th>Theoretical framework</th>
<th>What methodological orientation was stated to underpin the study? e.g., grounded theory, discourse analysis, ethnography, phenomenology, content analysis</th>
<th>Phenomenography</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.   Methodological orientation and Theory</td>
<td>What methodological orientation was stated to underpin the study? e.g., grounded theory, discourse analysis, ethnography, phenomenology, content analysis</td>
<td>Phenomenography</td>
</tr>
<tr>
<td>10.  Sampling</td>
<td>How were participants selected? e.g., purposive, convenience, consecutive, snowball</td>
<td>Combination of purposive and network sampling.</td>
</tr>
<tr>
<td>11.  Method of approach</td>
<td>How were participants approached? e.g. face-to-face, telephone, mail, email</td>
<td>The recruitment strategy included word of mouth using addiction treatment networks, direct outreach to NPs through membership and addiction-based organizations in New England and Ontario. META:PHI (metaphi.ca), the Northern New England Society of Addiction Medicine (nnesam.org), and the Nurse Practitioner Association of Ontario (NPAO) disseminated study recruitment information to their membership. I conducted outreach to an RN working within safe supply in Canada, and to members of my personal network, who connected me to NPs doing this work. I participated in the Data Collection Program at the 2022 American Association of Nurse Practitioner (AANP) conference.</td>
</tr>
<tr>
<td>12.  Sample size</td>
<td>How many participants were in the study?</td>
<td>21</td>
</tr>
<tr>
<td>13.  Non-participation</td>
<td>How many people refused to participate or dropped out? Reasons?</td>
<td>7 Did not respond following initial contact, cancelled interviews and did not reschedule.</td>
</tr>
<tr>
<td>14. Setting of data collection</td>
<td>Where was the data collected? <em>e.g. home, clinic, workplace</em></td>
<td>Data was collected via Zoom conference calls.</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>15. Presence of non-participants</td>
<td>Was anyone else present besides the participants and researchers?</td>
<td>No</td>
</tr>
<tr>
<td>16. Description of sample</td>
<td>What are the important characteristics of the sample? <em>e.g. demographic data, date</em></td>
<td>The sample included NPs in their first year of practice, as well as those with decades of experience. Study participants had been treating or working with patients with opioid use disorder for between three months and eight years, although at the time of the study, four years was the longest time that NPs could have been prescriptive authority for medications for opioid use disorder. Very few of the NPs had received training in treatment of opioid use disorder as part of their initial nurse practitioner education.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant characteristic</th>
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<tbody>
<tr>
<td>Age</td>
<td></td>
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<tr>
<td>Under 30</td>
<td>1</td>
</tr>
<tr>
<td>30-39</td>
<td>7</td>
</tr>
<tr>
<td>40-49</td>
<td>4</td>
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<tr>
<td>50-59</td>
<td>3</td>
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<tr>
<td>60 and above</td>
<td>5</td>
</tr>
<tr>
<td>Did not disclose</td>
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<td>Gender Identity</td>
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</tr>
<tr>
<td>Female</td>
<td>20</td>
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<tr>
<td>Male</td>
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<td>Other</td>
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<td>Practice Location</td>
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<td>Connecticut</td>
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<td>Massachusetts</td>
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<td>Maine</td>
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<td>New</td>
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<td>Hampshire/Vermont</td>
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<td>Rhode Island</td>
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<tr>
<td>Vermont</td>
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<tr>
<td>Practice Type</td>
<td>Count</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>FQHC/community health</td>
<td>11</td>
</tr>
<tr>
<td>NP-led clinic</td>
<td>2</td>
</tr>
<tr>
<td>Hospital-affiliated primary care</td>
<td>2</td>
</tr>
<tr>
<td>Mobile clinic</td>
<td>2</td>
</tr>
<tr>
<td>Private primary care</td>
<td>3</td>
</tr>
<tr>
<td>Family health team</td>
<td>1</td>
</tr>
<tr>
<td>Corrections/carceral system</td>
<td>1</td>
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</tbody>
</table>

### Data Collection

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. Interview guide</td>
<td>Were questions, prompts, guides provided by the authors? Was it pilot tested?</td>
<td>An interview guide was used and was pilot tested with initial interviews.</td>
</tr>
<tr>
<td>18. Repeat interviews</td>
<td>Were repeat interviews carried out? If yes, how many?</td>
<td>No repeat interviews per best practices in phenomenographic method.</td>
</tr>
<tr>
<td>19. Audio/visual recording</td>
<td>Did the research use audio or visual recording to collect the data?</td>
<td>Yes, interviews were recorded on Zoom, and Otter.Ai was used for audio recording and to generate an initial written transcript.</td>
</tr>
<tr>
<td>20. Field notes</td>
<td>Were field notes made during and/or after the interview or focus group?</td>
<td>Notes and written memos were made during the interview process.</td>
</tr>
<tr>
<td>21. Duration</td>
<td>What was the duration of the interviews or focus group?</td>
<td>Interviews ranged from 42-90 minutes in length, most were approximately 60 minutes in length.</td>
</tr>
<tr>
<td>22. Data saturation</td>
<td>Was data saturation discussed?</td>
<td>No, as goal in phenomenography is to ensure maximum variation.</td>
</tr>
<tr>
<td>23. Transcripts returned</td>
<td>Were transcripts returned to participants for comment and/or correction?</td>
<td>No, per phenomenographic methods, participant checking is not recommended.</td>
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</tbody>
</table>

### Domain 3: Analysis and findings

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<tr>
<th>Question</th>
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</thead>
<tbody>
<tr>
<td>24. Number of data coders</td>
<td>How many data coders coded the data?</td>
<td>No coding per se per phenomenographic methods. Data analysis was primarily done by Martha Whitfield. Analysis findings were reviewed for congruence with the data by members of Whitfield’s PhD thesis committee, including by</td>
</tr>
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<tr>
<td>---</td>
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</tr>
<tr>
<td>25. <strong>Description of the coding tree</strong></td>
<td>Did authors provide a description of the coding tree?</td>
<td>N/A</td>
</tr>
<tr>
<td>26. <strong>Derivation of themes</strong></td>
<td>Were themes identified in advance or derived from the data?</td>
<td>Derived from the data.</td>
</tr>
<tr>
<td>27. <strong>Software</strong></td>
<td>What software, if applicable, was used to manage the data?</td>
<td>Initial transcripts were generated by Otter.Ai. Relevant quotations included in the data pool were compiled in Excel.</td>
</tr>
<tr>
<td>28. <strong>Participant checking</strong></td>
<td>Did participants provide feedback on the findings?</td>
<td>No.</td>
</tr>
<tr>
<td><strong>Reporting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. <strong>Quotations presented</strong></td>
<td>Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number</td>
<td>All quotations presented were identified by a participant number.</td>
</tr>
<tr>
<td>30. <strong>Data and findings consistent</strong></td>
<td>Was there consistency between the data presented and the findings?</td>
<td>Findings were reviewed for consistency by Whitfield, and members of her thesis committee.</td>
</tr>
<tr>
<td>31. <strong>Clarity of major themes</strong></td>
<td>Were major themes clearly presented in the findings?</td>
<td>Per phenomenographic principles findings were presented in an “outcome space” in which categories of description are outlined. Categories are hierarchical and inclusive and are described in terms of both referential (meaning), and structural (how meaning is constructed) aspects. Dimensions of variation serve to illustrate the structural aspects of each category.</td>
</tr>
<tr>
<td>32. <strong>Clarity of minor themes</strong></td>
<td>Is there a description of diverse cases or discussion of minor themes?</td>
<td>See above.</td>
</tr>
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</table>

Adapted from Tong et al. (2007)
Appendix E

Interview Guide

Study: Understanding capability in nurse practitioner treatment of opioid use disorder in primary care: A phenomenographic study
Principal Investigator: Martha M. Whitfield

Introduction

Hello, my name is Martha Whitfield, and I am the principal investigator for this research study. Welcome, and thank you again for agreeing to participate in the study. I am looking forward to talking with you and to learning about your experiences treating patients with opioid use disorder in your primary care practice.

The interview will last approximately 60-90 minutes. With your permission I will audio and video record the interview. I will be using the recordings to transcribe our conversation. I will also take some written notes. Our conversation is confidential. I will use a pseudonym to identify you as a participant in any publications. You can choose your pseudonym if you like. The only people who will see your responses are the research team, and a professional transcriptionist if I use one. You can choose not to answer any question and can also choose to end the interview at any time.

If any of the questions or our conversation makes you uncomfortable in any way, I encourage you to make use of the counseling and other resources that I have included with your information form.

Please allow me to provide you with some context for this interview and the questions I will be asking. As you know, in the United States and Canada, NPs can treat patients for opioid use disorder. I am interested in exploring the experiences of NPs who treat opioid use disorder in primary care, and how they learn to do this work.

Did you have a chance to read the letter with a description of the research study? Did you have any questions about anything in the letter. [If no – then review letter, including definition of capability with participant.]

I am here to talk with you in my capacity as a researcher. In full disclosure, I am an NP, and I treat opioid use disorder in my primary care practice. However, I am here to listen to you and learn about your experiences.

Before we begin, do you have any questions for me regarding the study or the interview format?

Draft Interview Questions

1. First, to give a little context, would you please tell me about how you got started treating patients with opioid use disorder?
Probe: (if no specific answer is given): Why did you decide to include treatment for opioid use disorder in your practice?

2. Thinking about your experiences as a nurse practitioner, can you talk about an occasion where you learned something from treating a patient with opioid use disorder?
   
   Probe any of the following, as appropriate:
   
   - What did you learn?
   - Why did you do it that way?
   - Why do you think that happened?
   - Why do you think that was important?
   - What was the benefit to you?
   - What was the benefit to the patient?
   - What does that knowledge mean to you?
   - How did that knowledge or learning change your practice moving forwards?

3. Now I would like to ask you to think about times when you are not seeing patients. Can you tell me about learning something about treating opioid use disorder that was not directly connected to a patient visit?
   
   Probe any of the following, as appropriate:
   
   - What did you learn?
   - Why do you think that was important?
   - What was the benefit to you?
   - What was the benefit to patients?
   - What does that knowledge mean to you?
   - How did that knowledge or learning change your practice moving forwards?

4. Based on your experiences, what does it look like when you are effective in treating patients with opioid use disorder?

   Probe with any of the following as appropriate:
   
   - What makes you say that?
   - What do you know when you have been effective?
   - How do you know that?
   - What does it mean to be effective?
   - Can you describe an occasion when you did not achieve success?
   - What patient outcomes would tell you that you are providing the best possible care?

5. You mentioned earlier that you found [refer to something already mentioned, possibly something they found helpful or difficult] Why do you think this was important on this occasion?

   Probe: What meaning did that [experience mentioned] have for you?

6. Earlier, I asked you about an example of when you learned something from treating a patient with opioid use disorder. Now that you have reflected on your practice, could you think back over what you have told me during this interview and sum up how you think nurse practitioners learn to be effective treating opioid use disorder in primary care?
7. Before we conclude, is there anything you would like to add that you have not had a
chance to talk about?

Probe: Is there anything else you would like to say, for example about…

Conclusion

Thank you so much for sharing your experiences with me today.

I just want to remind you that our conversation today is confidential, and you will not be
identified individually in any write up.

If anything about our conversation today was difficult or uncomfortable for you, I encourage you
to follow up by talking to someone about this. A list of counseling resources was included with
your information letter.

Thank you again for talking with me. I very much appreciate your participation and insight, and
your contributions are very valuable for my study. I will be in contact when I have a summary of
my findings.

Thank you.
Appendix F

Ethics Approval

Queen's University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board (HSREB)

HSREB Initial Ethics Clearance

May 09, 2022

Ms. Martha Whitfield
School of Nursing
Queen's University

TRAQ #: 6036164
Department Code: NURS-542-22
Co-Investigators/Supervisor: Dr. Tracy Klein, Dr. Mike Mimirinis, Dr. Danielle Macdonald, Dr. Rosemary Wilson

Review Type: Delegated
Date Ethics Clearance Issued: May 09, 2022
Ethics Clearance Expiry Date: May 09, 2023

Dear Ms. Whitfield:

The Queen's University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board (HSREB) has reviewed the application and granted ethics clearance for this study as of the date noted above.

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<th>Document Name</th>
<th>Comments</th>
<th>Version Date</th>
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<td>Participant Information Letter and Consent Form</td>
<td>2022/05/07</td>
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<td>Consent Form</td>
<td>Verbal consent script</td>
<td>2022/05/07</td>
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<tr>
<td>Questionnaire</td>
<td>Demographic Qualtrics Survey</td>
<td>2022/05/03</td>
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<td>Interview Guide</td>
<td>Interview Guide</td>
<td>2022/03/13</td>
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<td>Recruitment postcard/poster</td>
<td>2022/05/03</td>
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<td>AANP Data Collection Program Poster</td>
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<td>Snowball recruitment scripts</td>
<td>2022/05/03</td>
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<td>Twitter scripts</td>
<td>2022/03/13</td>
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<td>2022/03/13</td>
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<td>Other document</td>
<td>Master participant log</td>
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<tr>
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<td>List of crisis support resources for participants, should they need them post interview</td>
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<td>Other document</td>
<td>Field Notes / Observation Templates for use during interviews</td>
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</tr>
<tr>
<td>Other document</td>
<td>Dissemination and publication plans</td>
<td>2022/03/13</td>
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</table>

Documents Acknowledged:
- Ethics Training Certificates
- Supervisor’s letter
- Confidentiality Agreement
- AANP Data collection program agreement and acceptance letter

**Amendments:** No deviation from, or changes to the protocol, informed consent form and conduct of study should be initiated without prior written clearance or an appropriate amendment event from the HSREB, except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the study.

**Renewals:** An annual renewal event form or a study closure event form must be submitted annually as per the TCPS 2 Article 6.14. As a courtesy, the Office of Research Ethics Compliance may send reminders 30 days in advance of the ethics clearance expiry date. All lapses in ethics clearance will be documented on the annual renewal clearance letter. A Suspension letters may be issued for lapses in ethics clearances, with subsequent termination and closure of the ethics file for lapses greater than 10 business days. Terminations should be reported to regulatory authorities (e.g., Health Canada, FDA) as applicable.

**Completion/Termination:** The HSREB must be notified of the completion or termination of this study through the submission of a study closure event form in TRAQ.

**Reporting of Serious Adverse Event (SAE)/Privacy Breach:** Any SAEs that meet the HSREB reporting criteria (i.e. definition of an unanticipated problem) and all privacy breaches must be reported as outlined in 410 HSREB Reporting Adverse Events.

**Reporting of Complaints:** Any complaints made by participants or persons acting on behalf of participants must be reported to the HSREB within 7 days of becoming aware of the complaint using the protocol deviation event form. If your study is registered you are responsible for ensuring that the registration information is accurate and complete.

Regards,

Albert F. Clark, PhD
Chair, Queen’s University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board

The HSREB operates in compliance with, and is constituted in accordance with, the requirements of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2); the international Conference on Harmonisation Good Clinical Practice Consolidated Guideline (ICH GCP); Part C, Division 5 of the Food and Drug Regulations; Part 4 of the Natural Health Product Regulations; Part 3 of the Medical Devices Regulations, and the provisions of the Ontario Personal Health Information Protection Act (PHIPA 2004) and its applicable regulations. The HSREB is qualified through the CTO REB Qualification Program and is registered with the U.S. Department of Health and Human Services (DHHS) Office for Human Research Protection (OHRP). Federalwide Assurance Number: FWA#: 00004184, IRB#: 00001173. HSREB members involved in the research project do not participate in the review, discussion or decision.
HSREB Delegated Amendment to Ethics Clearance

July 06, 2022

Ms. Martha Whitfield
School of Nursing
Queen’s University

TRAQ #: 6036164
Department Code: NURS-542-22
Review Type: Delegated
Date Ethics Clearance Issued: July 06, 2022

Dear Ms. Whitfield:

The Queen’s University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board (HSREB) has reviewed the amendment event form and is granting ethics clearance for the changes listed below:

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<th>Document Name</th>
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<td>Interview Guide</td>
<td>Revised interview</td>
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Regards,

Albert F Clark, PhD
Chair, Queen’s University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board

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HSREB Delegated Amendment to Ethics Clearance

July 06, 2022

Ms. Martha Whitfield
School of Nursing
Queen's University

TRAQ #: 6036164
Department Code: NURS-542-22
Study Title: "NURS-542-22: Understanding capability in nurse practitioner treatment of opioid use disorder in primary care: A phenomenographic study"

Review Type: Delegated
Date Ethics Clearance Issued: July 06, 2022

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<td>Recruitment Letter/Email/Notice/Poster</td>
<td>Twitter recruitment graphic - changed to include state of MA</td>
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Appendix G

Participant Information Letter and Consent Form

Study Title: Understanding capability in nurse practitioner treatment of opioid use disorder in primary care: A phenomenographic study
Principal Investigator: Martha M. Whitfield, MEd, MS, APRN, PhD Student, Queen’s University School of Nursing
Faculty Supervisor: Rosemary Wilson, RN(EC), PhD, Associate Director, Graduate Programs & Associate Professor, Queen’s University School of Nursing

General Information
You are invited to participate in a study looking at the development of capability as a measure of clinical expertise in nurse practitioners treating opioid use disorder in primary care.

This letter of information is intended to provide you with the information required for you to make an informed decision about your participation in the study. Before you decide whether to participate in this study, please take the time to review this letter and ask any questions you may have. If you do decide to participate, please keep a copy of this letter for your records.

Study Background:
The purpose of this study is to learn more about how nurse practitioners understand and develop capability in treating opioid use disorder in primary care. For the purposes of this study capability is tentatively defined as a combination of knowledge, skills or competencies, prior experience, and clinical expertise. The study is being conducted by me, Martha M. Whitfield, a PhD Student in the School of Nursing at Queen’s University, as part of my thesis work. It is being supervised by Dr. Rosemary Wilson.

Who can participate in the study?
You are eligible to participate in the study if you can answer yes to all of the following:

✓ You are licensed as a nurse practitioner in the United States or Canada.
✓ You work as a nurse practitioner in a primary care clinic in the United States or Canada.
✓ You treat patients with medications for opioid use disorder (MOUD) as part of your primary care practice. (MOUD is sometimes known as MAT – Medication Assisted Treatment).
✓ You are willing to participate in an interview to discuss your practice.

Study Details
If you agree to participate in this study, you will be asked to:

- Meet with me via phone or Zoom for approximately 20 minutes to review the details of the study, and to give your verbal consent to participate.
- Complete an online survey to provide some demographic information and information about your work as a nurse practitioner and your work treating patients with OUD. I will ask for information about your age, sex, work setting, education in addiction treatment,
number of years working as an NP and treating patients with OUD, number of patients you treat for OUD, and medications that you prescribe for OUD. This survey will use the Qualtrics software. I estimate that it will take you approximately 5 minutes to complete this survey.

- Participate in an interview to discuss your work treating patients with OUD. Due to COVID-19 restrictions, the interview will be held online using Zoom© at a mutually agreeable time. I anticipate that we will meet for one interview lasting between 60 and 90 minutes.
- With your permission, the interview will be audio and video recorded. I will also take notes during the interview to keep track of my thoughts and observations.

Potential Benefits of Participating in the Study
There is no direct benefit to you for participating in the study. However, participating in the study may provide you with deeper understanding of your own practice of prescribing MOUD, the ability to voice your thoughts and concerns regarding MOUD prescribing by NPs, and your contribution to NP role development and the field of addiction. You may learn something about yourself and enjoy reflecting on your practice.

Potential Risks of Participating in the Study
Possible risks associated with participating in this study are that discussion of your work as a NP may bring up unsettling emotions or reactions. If you feel upset after the interview, I encourage you to reach out to mental health services to further process your response. A list of resources and hotlines is attached to this letter. If your employer offers an employee assistance program (EAP) you may also be able to get counseling through the EAP if you feel you need it.

Your Rights as a Participant
Participation in this study is voluntary. You may withdraw from the study or request to have your data withdrawn from the study up until one month after the interview by contacting me at martha.whitfield@queensu.ca. You are free to ask questions about the study at any time. You can stop your participation without any penalty or impact on employment, license to practice as a nurse practitioner, or your prescribing privileges. If anything changes about the study, I will let you know so that you can decide if you wish to continue as a study participant.

Confidentiality
During the study, personal information will be collected from you as described above. Your confidentiality will be protected to the extent permitted by applicable laws.

For USA participants only: I would like to remind you that I am a mandated reporter. If you disclose information to me about specific patients that would require me to make a report, I will have to do so.

Demographic information will be collected using a confidential Qualtrics survey.

The interview recording will be transcribed. Once transcription is complete, the recording file will be destroyed. All information you provide to the research team, including the transcripts of
your interviews, will be de-identified. Your name will be replaced with a participant code in all study records and with a pseudonym in all publications and presentations, unless you tell us that you want us to use your real name. You may choose your own pseudonym for this purpose if you wish. The participant code will be used to link your survey data with your interview responses. No identifying information about you, your practice, or your patients will be shared with other participants or in research findings. No patient information will be included in this study. Any patient information that is disclosed during the interview will be redacted from interview transcripts. The only exception to this would be if you disclose information to me that I am obligated to act upon in my capacity as a mandated reporter, since I am required by law to report any concerns for the safety of children or vulnerable adults.

Besides myself as the Principal Investigator, the only other people who will have access to the audio transcript of your interview will be my supervisor, Dr. Rosemary Wilson. The people who will have access to the written transcript will be myself, my supervisor Dr. Rosemary Wilson, and my committee members, Dr. Tracy Klein, and Dr. Mike Mimirinis. If I use a professional transcriptionist that person will sign a Confidentiality Agreement. Any printed transcripts or research notes will be kept in a locked file cabinet or at all times. The key will be kept on my person and once the study is complete, the written transcript and notes will be shredded.

The study data will be stored on an encrypted hard drive on Queen’s University servers. The code file that links real names with pseudonyms and study ID numbers will be stored securely and separately from the data in an encrypted file. I will keep the data securely for at least five years per Queen’s University Policy, after which the de-identified data will be deposited into the Queen's University's Institutional Repository. The code file identifying your pseudonym and study ID number will be destroyed five years after study closure.

**Referrals**

I am using snowball sampling as part of my recruitment strategy for this study. This means that I am asking participants to provide names and contact information for other NPs who may be interested in participating in the study. If you do provide me with any referrals, I will be letting potential participants whom you refer know that you were the source of the referral. You also have the right to request that you are given time to notify the potential participants prior to us contacting them. Alternatively, you may contact potential participants yourself and provide them with my name and contact information. You are under no obligation to provide any referrals as part of this study and there will be no penalty if you do not provide this information. If you are interested in providing me with referrals, I will provide you with information on the study that you can share.

**Payment**

There is no payment for participating in the study.

**Confidentiality and Ethics**

I will share my research findings with you after the study is completed. I plan to publish the results of this study in academic journals and present them at conferences. I will include quotes
from some of the interviews when presenting my findings. I will never include any real names with quotes. I will do my best to make sure quotes do not identify participants. During the interview, please let me know if you say anything you do not want me to quote.

This study has been reviewed for ethical compliance by the Queen’s University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board (HSREB). HSREB may require access to study-related records to monitor the ethical conduct of the research. If you want to talk privately about your rights as a participant, you can reach the Queen's University Office of Research Ethics: Toll Free Telephone in North America: 1-844-535-2988 or hsreb@queensu.ca.

If you have any questions at any time, you may contact me at martha.whitfield@queensu.ca, +1 802-777-8599. Or you can contact my supervisor, Rosemary Wilson, PhD at rosemary.wilson@queensu.ca.

The verbal consent process and Letter of Information provides you with the details to help you make an informed choice. All your questions should be answered to your satisfaction before you decide whether to participate in this research study. Please keep a copy of this Letter of Information for your records.

I will be documenting your verbal consent in our research records. You have not waived any legal rights by consenting to participate in this study.

**Consent Statement**
When providing verbal consent to participate in this study, you understand and agree to the following statements as a study participant:

- ✓ The research study has been explained to you and your questions have been answered to your satisfaction.
- ✓ You understand what will be asked of you to participate in this study.
- ✓ You understand the risks and benefits of participating in this study.
- ✓ You understand that I you do not have to participate in this study, and that you can withdraw at any time, until one month after the interview, without any impact on your employment, license to practice as a nurse practitioner, or prescribing rights.
- ✓ You understand that your legal rights are not affected by consenting to participate in this study.
- ✓ You understand your rights regarding confidentiality as a research participant.
- ✓ You have been provided with a copy of the Letter of Information for your records.
- ✓ You agree to participate in this study.
- ✓ You consent to the use of video and audio recording and the use of quotes

This letter was printed on Queen’s letterhead.

2022-03-05 Participant Information Letter and Consent Form
Appendix H

Verbal Consent Script

**Study Title:** Understanding capability in nurse practitioner treatment of opioid use disorder in primary care: A phenomenographic study

**Principal Investigator:** Martha M. Whitfield

[Principal investigator will be speaking to the participant in person, or by phone or Zoom. Participant is anticipated to be in their home or workplace. Principal investigator will be speaking from home or work in a private space. If participant is speaking with principal investigator in person, a space that allows for privacy will be obtained for this discussion.]

“Hello [participant name]. I am Martha Whitfield, and I am a PhD student at Queen’s University. I am also a nurse practitioner working in a primary care clinic.

I am speaking with you today because I am doing a research study about nurse practitioner treatment of opioid use disorder in primary care settings. You were kind enough to let me know that you were interested in participating in my study. Thank you for your interest. Would this be an okay time to have a 15-minute conversation with you to give you more information about the study?”

If YES: see below for continuation of the script.

If NO (no time): “Is there a better time for you to talk?”

If NO (not interested): “Thank you for your time. Thank you for considering being a part of this study and have a great day.”

“Thank you. As I tell you about the study, please feel free to stop me to ask questions at any point.

Before I explain the details of the study, I would like to ask you a few questions to make sure you meet the criteria to participate in the study:

- Are you licensed as a nurse practitioner in the [United States/Canada]?
- Do you work in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, or Ontario?
- Do you work as a nurse practitioner in a primary care setting?
- Do you treat patients with medications for opioid use disorder (MOUD) as part of your primary care practice? MOUD is sometimes known as MAT or medication assisted treatment.
- Are you willing to participate in an interview to discuss your practice?”

If YES to all the above: see below for continuation of the script.
If NO to all the above: “Thank you for your willingness to participate in my study. Unfortunately, you do not meet criteria to participate in the study at this time. I appreciate your time. Have a great day.”

“You meet the criteria to be a part of this study, thank you. If you agree to be a part of this study, I will ask you to read the letter of information and consent form that I sent to you by email earlier. Do you have the letter in front of you or do you need me to resend it to you? I will ask you to sign the consent form and provide me with verbal consent to participate. The verbal consent will be recorded and will act as your signature since we cannot meet in person due to physical distancing rules related to COVID-19 [and to geographic distance].

If you consent to participate, I will start by sending you a link to an online Qualtrics survey. The goal of this survey is to collect some demographic information and information about your work as a nurse practitioner and your work treating patients with opioid use disorder. I will ask for information about your age, sex, work setting, education in addiction treatment, number of years working as an NP and treating patients with opioid use disorder, number of patients you treat for opioid use disorder, and medications that you prescribe for opioid use disorder. I estimate that it will take you approximately 5 minutes to complete this survey.

Once you have completed the Qualtrics survey, we will arrange a mutually convenient time to meet by Zoom for an interview. The interview will be recorded on Zoom and I will be taking notes. The recording will allow me to listen to and view our conversation later in order to transcribe it, and to learn about you and your story. I anticipate that the interview will last approximately 60-90 minutes.

Once the study is complete, I will share a summary of my findings with you and give you access to any published articles.

Your participation in this research study is completely voluntary. If you decide to participate, you have the right to withdraw at any time. You do not have to answer any questions that feel uncomfortable to you. You can also ask that a response you give me be removed from the study at the time of our conversation or up to one month following the interview.

Thank you so much for taking the time to hear about this study.

Are you still interested in participating?”

If YES: see below for continuation of the script.
If NO: “Thank you for considering being a study participant. I appreciate your time. Have a great day.

“Thank you for agreeing to participate. The next step is to obtain your verbal consent. We can do this today if you have about five minutes to go over it. Does that work for you?”

If YES: see below for continuation of the script.
If NO: When would be a good time to meet again to do the verbal consent? [record date and time]

“This meeting will be recorded because I need to verify that you understand all of the terms of the research study before giving consent to participate [start recording]. We will go over the risks and benefits of the study as well as the consent form [read sections with participant and see Appendix G for verbal consent log for obtaining informed verbal consent]. Do you agree that you are informed about all the terms of the study, and that all your questions have been answered to your satisfaction? Do you consent to participate in this study?”

If YES: “Thank you. I am looking forward to talking with you about your experiences. I will send you a link by email for a very short demographic survey. Your participant ID will be [ID number]. Please make a note of this, so that you can use it to log in to the survey. I would like to set the time for the interview. [Set time for first interview]

If NO: Thank you for your time and interest in my study. I appreciate your willingness to consider participating. Have a great day!
Appendix I

Categories of Description Supporting Quotations

Category A: Developing foundational practice knowledge

I learned something, I do learn likely from every, every interaction I have. I may learn from, from what went well, what didn't go well, what can be done next time. [P-01]

So that Google group that I mentioned, is really useful for those types of things, because people will post cases and they'll ask the group for, for advice, especially questions that are just not in the guidelines, or there's no real concrete guidance for. So, it's very much like providers sharing their anecdotal experiences. And you know, I think this, this whole mode of communication is so critical right now because the… what's coming on to the streets is changing so quickly. [P-03]

I do think having a having that community of practice and the support from other nurse practitioners is critical because you know, I when I started this job, I did the courses, and I was so like, it was still scary, very scary. And I don't think I would have the confidence I have today if I hadn't had both physician colleagues to coach me along the way, in person and on the phone and in moments. And it's like, I remember when I first started prescribing OAT and Suboxone I had a physician that was like my go to provider, and I definitely called her before and made sure I get everything right. Like it was very important to have that, and I was still very scared but, probably triple checked the prescription about 10 times… I do think now looking back, that having that knowledge of other providers doing the same and a constant line of communication with someone that I could ask for guidance and direction with was really, really, or is, continues to be very important. [P-03]

As providers, I think we have to get out of our own way. I think that we become very comfortable. And I think for me as just as a person, I have a very hard time with not knowing. I have a very hard time of not being good at things. And that I was an expert RN in my area, I was super hyper-focused, and I was very good at what I did. And then you transfer to the NP world and you know, like this much about this much like quite wide, so you've got a wide scope and very limited depth and then we throw in this addictions piece, and I was out of, I was out of my element. I was out of the water, and I knew that I needed to learn more and that this was this was on me and my comfort level and I was gonna have to get comfortable. [P-05]

I did have the really good fortune to work in, first of all, a community health center in Toronto for about nine years, which was sort of located downtown in this kind of inner-city community, characterized by poverty, substance use, homelessness, lots of refugees and newcomers. And there were people who worked there who knew a lot about harm reduction, and who fought, you know, to create access to harm reduction strategies like needle and syringe exchanges and later, a safer crack using crack-smoking equipment. And, and so it was there that I actually began to meet people who use substances… And so it was in those groups sitting with those folks learning about kind of the nuts and bolts of their lives and their use and what would be helpful, what was not helpful, really learned so much about the, like the
I was amazed that with an openness of approach I guess, when I said with if somebody used a, like a drug-specific, I don't know slang or terminology or something that I didn't understand I would say, “what's, what's that like, what, you know, I don't understand what, what is that? What's a stem?” And they would say, “oh, a stem is that glass pipe that you use to smoke crack? And they call them stems”. And so like, I’d be like, “Oh, okay, stem”. So people were really generous with their knowledge and really generous with their, and educating me about things and seemed, I think because I was like, genuinely I want to learn this. People were very forthcoming, and would you know, show me and like, “why do some people use a pipe and some people use you know, this other method” and people are like, “well, here let me show you. There's people that are, you know, ash smokers and they're really wedded to this.” And so they just people were very keen and happy to kind of teach, teach me and so I just kind of really developed an enjoyment and a kind of affinity to kind of upping my game and having more to offer I guess that would be substantial for, for folks with substance use. And yeah. So I think that was really foundational. [P-07]

The onus really becomes on the NP after graduation to kind of learn that knowledge or gain that knowledge if you want to work in that area [substance use disorder]. And then I think just having, being able to have colleagues around you who can act as teachers is really important. [P-08]

And we ended up being connected to a lot of folks who lived in a community housing building. So, I increasingly was getting clients or patients, I don't know, who had opioid use disorder, but we're being seen at free standing OAT clinics, of which the quality and the care being given in those clinics was pretty poor. So I was like, hey, I want to be doing this myself. And I took a opioid prescribing like an OAT prescribing course. And shortly after I took the course, I actually applied for a safer opiate supply job. [P-09]

So, we have a community of practice, and the community of practice has been very helpful. There's some guidelines, and those specific guidelines are around prescribing and supporting in a safe supply program. UBC has a free program. So, it actually is a program that you can just register online for. So University of BC… that was a very great opportunity to learn about opioid use disorders pretty broadly. So, I did that even before I started with the program. And the community of practice is around prescribers, peers, and support individuals and, and that community of practice meets weekly. And there is some educational components that are brought in around that as well. [P-10]

So, I'm a year and a half into it. I feel far more comfortable, you know, I had, I had kind of a ceiling on how much I could prescribe but when we think about people, they're still using fentanyl. They're still overdosing because the fentanyl doses are laced with benzos, for instance, and they're on the nod quite regularly. I mean, my patients teach me a lot about
Category A: Developing foundational practice knowledge

addiction. Things that I didn't know about addictions. How they use their drugs, you know, not just IV use but different things cotton fever, I never knew what cotton fever was. So like stuff like that? endocarditis, right you think about endocarditis and IV drug use. I don't always think about it in the lens from you know, even individual that is not using toxic drugs but continued to have that addiction to injecting their drugs and are injecting their safe supply...Now I feel a little bit more comfortable around at the beginning stages… now converting is kind of second nature to me, but I think the conversion piece was, was a challenge. And there were guidelines on how to convert it. Convert street drug use to safe supply, so that's been helpful. [P-10]

If you happen to be new, even if you've had that in school, or if you haven't had it in school, I think you, you should go out of your way. If you don't have somebody at your place of practice, that you find a MAT provider somewhere and mentor with them. Like it's a, it's a, that's the I mean, it's the only is to be mentored by someone isn't that you know, who is an expert or, or at least comfortable with treating folks and have the experience. [P-16]

Because, you know, relatively speaking, it's not super complicated. In terms of dosing for Suboxone. There's only there's only so many levels of dosing that you can go through. And there's only so many options of buprenorphine/ buprenorphine-naloxone that exist. So the, it makes, it makes it once you've done it enough there's, there aren't too too many changes. But in that research, it's hard not to also talk about cocaine use or alcohol use. And so just learning about the use of naltrexone, using, how to transition someone to naltrexone, particularly if they're also you know, co substance use with alcohol and opioids, figuring out you know, transitioning weaning someone from, you know, or transitioning from methadone to Suboxone, or treating someone for alcohol use disorder alone. [P-19]
Category B: Integrating knowledge

I mean a lot of the other training I've done since doing this work has been in like mental health and, and psychiatry. I'm trying to build my, my knowledge of working with people with personality disorders, because we run into them as well along with this journey quite a bit. So that's been helpful too… treating the concurrent mental health for my patients who are on OAT. Yeah. And then of course, like the psychosocial stuff, and obviously I don't have any training in counseling but the, a lot of motivational interviewing skills really come in. [P-03]

But I think the benefit of trying to collaborate is that I you know, I think I do know the patient's complex history. I do know their medication record, I am sort of you know, all the meds are in one record. And that you know, if she's coming in to see me because she needs an increase in her OAT, but also has, might have pneumonia. Then we can kind of address those things in one visit. Like I think that there's so much benefit to, you know, she is really a person that faces a lot of structural risks, right, you know, often homeless, serious you know, mental health challenges, indigeneity, lots of lots of things that make her life super hard. And so the idea of having one provider who can do all the things I think is, is beneficial in some ways. [P-07]

I do have an extensive mental health background. Not personally, like working as an NP in mental health settings, so I could bring that lens to this population, providing the support that's necessary, some MI some CBT, even some DBT stuff that individuals may require to you know, to keep them kind of engaged in the program and helping. Because in my experience, not necessarily coloring in the program but it's been my experience over the years that self-medication with opioids is because of untreated other issues. [P-10]

I think that's what changed it for me is just, and so that really only applies to my experience, but it just really normalizing it as a treatment. Just like we treat anything else…. it just comes with building knowledge and skill, the more comfortable you get doing anything, the more it just comes easier and more naturally and if you know, and I think knowing that in primary care, if you know you have someone that you can bounce something off of, you could start someone that day. [P-12]

I learned you know, [during COVID when patients had to isolate] how to work collaboratively in a remote, in a virtual kind of environment. And I've learned that you can spread your reach though by working virtually, you can make yourself accessible to a lot more people. But it can also become very overwhelming to be that accessible to people. I've learned though that you can treat people very quickly and easily. It doesn't have to be this big thing, right? Like, you know, it's, I've learned that opioid use disorder, treating that is the same as treating hypertension. It's really not, you know, it's like anything, you’ve got to learn the risks, the benefits, the red flags, but it doesn't have to be this complicated, scary thing. It's, you know, it's just part of the menu of services that we can offer folks in their health journeys. [P-12]
Category B: Integrating knowledge

I always felt pretty confident about the prescribing, that didn't really bother me because I was so comfortable with controlled medicines anyway. And all of the quality measures, you know, interpreting urine screening results, you know, medication counts, medication agreements, all that stuff I was well versed in, so there was so much I already had going for me as opposed to somebody who's brand new. [P-14]

When you get out of school and you have your first patient who comes to you with a new diagnosis of diabetes, holy crap, we prep. You go back to your checklist. What am I supposed to do? What now? Oh, foot exam, oh crap, you know, oh I forgot. It's like that, and then eventually it becomes routine. [P-14]

Someone's sitting in front of you, and you see their blood pressure's elevated. Instead of sending them somewhere else or having them go to urgent care or whatever. They have a urinary tract infection, they have you know, they want me to look in their ears. I mean, it's a no-brainer that they're there, they're motivated to come because there's they're so wanting to be in treatment, in recovery, that why impede the, you know, their, their overall health by sending them away, right? So, if you can treat the whole person, their recovery is going to be better. [P-16]

I think it is it follows a progression really similar to you know, mastering any skill in primary care. I think, you know, it starts with the training. You know, some exposure during school is really important. I never actually got taught any of it in school but you know, did see it in clinical practice. I had the opportunity to, you know, actually get the training online after I became a nurse practitioner, again, important just like any other skill, you know, kind of learning the didactic piece of it. And then having a mentor again, very lucky when I look at my three colleagues that I was hired alongside, various ages, different backgrounds. Definitely, I had the advantage of having a practitioner who was very comfortable with recovery visit patients, the treatments, knew the community resources, that's another huge one, you know, I wouldn't know half of the people that I send my patients to and different resources I hooked them up with, unless it was you know, basically pilfering from her list. You know, so having a good mentor that knows how to approach, that has the experience with the patients and knows of the ways to surround them with the support they need in the community. And then having that outlook that I think nurse practitioners in particular, you know, we bring for our patients in primary care. You know, we, I think as a profession kind of pride ourselves on, on looking at the patient as the whole person, you know, and not looking at them as a particular diagnosis, not being like treating them like they're an algorithm. [P-17]

When, when there's inconsistency, I think that there's more again, individual responsibility on any side of that coin, whether it's mine or the patient, but when there's inconsistencies. But certainly for me as a provider…it put more pressure on my individual judgment, I think than, than, in other conditions where there's kind of parameters and guidelines, very clear cut. And maybe there are very clear-cut guidelines on this with evidence-based practice, but I'm not, I didn't encounter them in the way that I was exposed or didn't absorb them very
Category B: Integrating knowledge

well, in the way that I was learning about this initially. In terms of like communicating with patients about results and all that I felt confident about communicating, just sticking to the facts without any accusatory like, you know, just “I have something here we need to discuss” or “I’d like to discuss” or hear what's going on. And, you know, I think techniques like motivational interviewing and other things can apply to these interventions. So, skill sets that I have that I understand are applicable to you know, a variety of clinical settings. But I think that somebody starting out in something, without you know, it's kind of on my call whether or not I see them back and in what way. [P-21]

I thought that that was a good place to start getting to know somebody and asking, you know, where they're at now and their kind of assessment and checking in especially if you're picking up where somebody left off. So that was kind of my strategy like any disease management visit. I mean, that's sort of how I approach hypertension. When were you diagnosed, how were you diagnosed? What meds have you taken, how long, how high were your blood pressures? Have you measured? You know, same thing with, so sort of applying what I felt confident with other conditions to this condition. [P-21]

Category C: Evolving Perspectives

I'm also a part of... an email network of prescribers and anyone addiction, anyone involved in addiction care. And there is, there's often people with lived experience with addictions involved as well like and there's been some very challenging conversations that have come up through the email chain. And it's, it's good to, it is good to read and to think of, of, of er...of sometimes that paternalistic approach that medicine has in general, and it's been it's been very...er... I appreciate reading what they're, what they're posing and what they're questioning. And then I struggle then with the guidelines and with the, the professional responsibility I hold and such so it's been an interesting like, like very challenging case conversations of not my own patients, but listening, listening it out and then having other people share their thoughts. Especially things around like prenatal or you know, people with maybe not full capacity to be making decisions on care and things like that. Having other people's input has been an amazing really like moral and ethical thought of having, and why do we treat addiction medicine differently than we do with other, er... treatment modalities for other illnesses and other health issues is beyond, like it is beyond me when I say that, but I can see how there is some there is an internal judgment almost in medicine with addiction medicine. So that's been, it's been a really interesting way to really look at and challenge your own, your own thoughts of, of er...like, challenge the idea of, of, it's not a choice. It is not a choice when someone ends up, searching out...er, like whatever it is that they're using. [P-01]

For me personally when this particular woman is coming in and every week she brings me someone new. Like that's, that's pretty great. Right? Like that's a pretty great feeling that um...that there's trust in that, that there's someone advocating, like there's someone advocating, helping supporting navigating someone through this, but then I'm the person that they would trust to bring them to. Um, so that personally gives me you know, another sense of,
you know, satisfaction and, and, and even knowing that... even if things are not perfect and they may not be... if they're still using oral buprenorphine and that, the fact that someone will come in and say I'm still using every once in a while, but I haven't overdosed in four weeks. I'll take that too. You know, like it, like it's, it's different. It's funny the parameters that have changed in terms of what is you know, what is successful, what is not successful and like, maybe their survival is, is the success. [P-01]

I guess I get some of my information from UpToDate, but I find that like UpToDate is not up to date in the world of addictions medicine, in terms of just like, obviously, they don't have the... I mean, they're up to date in terms of the evidence but maybe not in terms of like anecdotical experiences and what's actually working on the ground 'cause the research just isn't there yet... I think, but then I think it's hard because there's not a lot of research sometimes to support the decisions that we're making, or the research is in progress. [P-02]

[Feeling unprepared] created like a lot of anxiety. And then, like noticing that my anxiety kind of was like exhibiting itself as like a loss of control, like I couldn't... um, like because patients are unpredictable... I still feel like my NP degree didn't necessarily prepare me for what was going to actually like come to fruition in my clinical practice, like I had a good [unclear], but it's still a learning curve for me. And so something I'm just like working on every day to try to be better for my patients... I think it was like the theoretical patients and then because the clinical environments I had been exposed to as my like practicum placements were very much like the standardized patients or the theoretical patients because of like the socio economic, you know, like where I was coming from in a community or a clinic. So I didn't have a lot of like those I guess wildcards. Like I feel like some of the, lots of the patients I have now. If people were to work with them, they would, they would be like “I don't even know where to start.” ... I think that happens lots of the time in my role, because they're not like, it's not, it's not very standardized patient like, it's not very simple, I guess. There's always a lot of confounders. [P-02]

I never thought that this job would be as complex or as um... you like, gray, there's a lot of gray areas, I think in addictions, and I didn't think it would be this way. That's not like the expectation I had. Like I thought I would know more of the answers more like for more of a percentage of time versus feeling flabbergasted when people tell me like certain things or you know, they're trying a new drug or they're... but it keeps me on my toes. [P-02]

I've had to like reduce my expectation I think. So even just having someone tell me that they've reduced their use, maybe not stopped. Managing someone's mental health conditions, effectively. Engaging them in counseling and treatment or assisting them getting into like an addictions or rehab program that they would like to go to. And with some of my patients, reducing the number of times that they present to like the ER. [P-02]

Certainly, always incorporating what their goals are and what kind of relationship they have with the substance, and how willing they are to, you know, to lose the effects of the substance in their day-to-day life and then, you know, choosing treatment based on that factor for
Category C: Evolving Perspectives

them... But there was a recent conversation about the euphoria piece that was what prompted my, my thought around it and made me kind of reflect. Yeah. On a similar, along the line I think the euphoria part came out of conversation with, the original thread was about safe supply and harm reduction. And yeah, treatment, treatment options for those who aren't ready to really just stop experiencing pleasurable effects of their drugs. [P-03]

By the nature of my work that I was doing, I became more attuned to when there were problems, questions, concerns, and I was able to kind of more readily start to begin to address those within my primary care patients as well. [P-05]

I'm pretty sure I was not empathetic [with my first patient] and didn't come across as kind or caring at all because I think I was staring at my computer screen. We have these EMRs, electronic medical record, that we can put stamps into and so I had my stamps all ready to go, my tick box, my like checklist, and this person was so not on tickbox it wasn't even funny... I really don't remember the patient much at all. Because I wasn't with the patient. I was totally aside I was in my own tick box world [P-05]

And so that's another thing I've learned is that we need to just change our outlook. It's not necessarily harm reduction. It is not punitive, and this is not a fault. This is something that you need, just like a diabetic needs its insulin you need your OAT to be successful in life and to be advanced in your life. [P06]

So, it [safer supply] was very, it was a true shift in thinking to what does the participant need from this program? Rather than what do we need from participants and how are we going to make them comply? And this beautiful document, you know, it made me want to weep because it was so different than anything I'd ever read. It was, it was like, these are humans who know what they need. [P-07]

I'm thinking about people that in my own practice that could potentially benefit from safer supply prescribing, because I know they've just been to Emerge [the emergency department of the hospital] six times this year already with overdoses. And like what is that even doing to their brains like being without oxygen like anyway, you know, thinking about all the consequences of this terrible, terrible poisoning crisis. And so, this is moving me along, I guess in my coming to some realization what I want to be doing, or what I feel would potentially be helpful. [P-07]

I've always pretty much always worked in settings where there were a lot of patients with substance use disorders of a variety of types. So, I've worked in inner city community health centers in Toronto, I worked in rural primary care, in sort of not really remote but a northern kind of community, which is where I first really started to see opioid use disorder but not treat it, but started to see kind of the sort of rampant prevalence of opioid use disorder. And then for the last 10 years, I have been practicing in [city], which is a medium, small to medium sized city, again, in a sort of inner city, nurse practitioner led clinic with, working with lots of people who are homeless and have other structural risks, and who have a variety of substance
Category C: Evolving Perspectives

use disorders. So, I think it was really I was working in the northern rural community when it really hit me how the prevalence of the opioid use disorder which was rampant in North America, but really noticed so many patients struggling, how horribly badly the healthcare system treated them, how little it had to offer them that wasn't punitive and cruel. [P-07]

My daily practice is telling me that what's happening in the poisoning crisis is affecting my patients in terrible ways. And they're being harmed if not, and they're repeatedly going to the Emerge. Fentanyl OD, fentanyl OD. And so, it's at the same time this is becoming so real and I'm thinking about people that in my own practice that could potentially benefit from safer supply prescribing, because I know they've just been to Emerge six times this year already with overdoses. And like what is that even doing to their brains like being without oxygen like anyway, you know, thinking about all the consequences of this terrible, terrible poisoning crisis. And so, this is moving me along, I guess in my coming to some realization what I want to be doing, or what I feel would potentially be helpful. [P-07]

I think there's a lot of fear around the work. And so, I think that when I came to the realization that yes, I have knowledge and I have awareness and I can be cautious about, you know, dose titration or, you know, reducing medications for missed doses. I also, you know trust that my clients can say, like, “this is working for me, this is not working for me, this is too much, I can't, I can handle it, I can't handle it”, you know what I mean? Like really knowing that, that the client can help guide those within, within the limits of, of my knowledge and practice. So, I think it took away a bit of that fear that I had when I initially started doing the work. [P-08]

Part of figuring out how to help people change their patterns of uses to try and understand what that substance does for them in their life. And sometimes that's like coping with trauma, or sometimes that's like “I do sex work and I need to be awake all night. So, I use crack”. And that a lot of helping people meet their goals was not just you know, trying to replace things with methadone or replace things with some sort of opioid agonist, but to replace whatever role a substance represents in that person's life… I think one thing I was surprised about was the amount of people for whom, like the actual act of injecting was something that they said they were addicted to… they're like the craving is also associated just with the ritual and with like injecting him with use itself, not even just for the feeling of getting high… I think I've always understood addiction, through like a very social lens. Like I think if you look at people who are most affected by addiction, you can see that a lot of it is social determinants of health. But I think it, it really reframes that the social determinants of health are not just like antecedents to addiction, but they're also part of the solution. Like, expecting people to get clean when they don't have housing is pretty ridiculous… especially during the pandemic we didn't have like a lot of drop-ins we didn't have a lot of community programming. [P-09]

I have one client that was recently housed and like actually getting housed was destabilizing for him because he was so used to being in like, chaotic shelter environments and with people around all the time. And then to be housed was like, oh, like all the stimulation is gone and actually relapsed… in a way it makes me more like tentative about my positive feelings about people being housed almost. Like it's supposed to be such a positive thing and like yes, like,
“Thank God, someone's getting housed” but when they get removed from health care… truly is like health care deserts in areas of the city. [P-09]

I'm teaching other clinicians and do a lot of mentorship of other NPs. I think I, we actually hired another NP and she, she looked at my prescriptions she was covering for me for a day, she'd been with us for like, two months and she was like, “some of your prescriptions are terrifying”. And I was like, “Yeah, I felt that way in the beginning. Like I heard what other people were doing and I was like, oh, like that's scary. I don't think I can do that.” And then I thought to myself, like Am I being too afraid and too conservative and too like risk averse and too, like, practicing to prescriber comfort. And so I felt a sort of like, okay, there's been a lot of growth in my perspective, I'm now feeling really comfortable doing things that I wasn't comfortable with two years ago. [P-09]

I would love to think that if fentanyl was covered under OW [Ontario Works], ODSP [Ontario Disability Support Program], fentanyl for fentanyl would be the way really to treat many individuals that have resistant opioid use disorder to get them off of the street drugs but that's not an option. And then, I mean, there's, there's so many things, these are the things that I continue to have, you know, kind of hypothesize on like how, how could we do things differently or an individual that uses up versus down so, up being crystal meth and you know, what could be safe supply. And again too I have, you know, had some opportunity really in looking at prescribing to help keep people of crystal meth, a few people, subsection of people, but you know, having conversations within the community of practice on what works for others is helpful but you know, going into it, “not prescribing anything until you get off it” that kind of thing, but how can an individual get off at when that's part of their substance use disorder?... it's one more hypothesis in my brain. How do I help that person that may be doing really, really well on safe supply, still has those desires and cravings to use fentanyl still uses fentanyl or a, you know every now and again. How could you keep them off of that? [P-10]

I think the whole piece around the urine drug screens sometimes is also kind of an interesting debate or question. If they're doing, if they don't have carries, what are, yeah, so if they're going to the pharmacy daily without carries, what are we really doing the urine drug screens for, for people and how does that make them feel? What are the consequences of that? Is it really just a moneymaker? Not for nurse practitioners but why? Why are we doing some of these things? I think the lack of Sublocade being offered in our addiction clinics is also kind of an outstanding question. I mean, these are more higher-level things. But why is Sublocade not being more widely offered? And how can we support that maybe in our communities? Because the folks that we do have on it, yes, it's painful and they don't love the injection, but it's a month of, its freedom, right? It's, it's total freedom. So why aren't we kind of addressing the benefits of that better? So those are more higher-level things. [P-12]

People were very forthcoming, and would you know, show me and like, “why do some people use a pipe and some people use you know, this other method” and people are like, “well, here let me show you. There's people that are, you know, ash smokers and they're really wedded to this.” And so they just people were very keen and happy to kind of teach, teach me and so I
I don't remember which book it was, but um talking about safe, safer injection sites. And you know, because initially, I was like you know, I was thinking all negative about it. Then after I read about it, I'm like, oh, I guess I didn't know all there was to know about that. I think they're having there's some success with that. And with my own patients, I've been, those who are still using I'm trying to get them to consider not using alone. So that's been something I've been pushing in my practice recently is that... if you, if you're going to use since everything's contaminated with fentanyl now, here's some Narcan don't use alone....it's bad. [P-14]

One lady, she's super stable in recovery, like super stable. I think she's been with me since I was very fresh at treating substance use disorder. And she and I were talking about, we're, my particular office, we're using the monthly injectable, buprenorphine Sublocade... But anyway, particular lady had been stable, so I never thought anything about offering her a monthly injectable. And she one day she said to me, “you know, this medicine makes me a nervous wreck. How so? And she said, I'm always afraid that I'm gonna lose it. I was afraid that I can't [unclear]. I'm afraid when I'm in my, when I'm on my in my kayak that I either leave the medicine at home and something happens at home, or something happens in my car. I bring it with me, and I drop it in the water." She was like constantly fighting with this. She said [name] every day I take this medicine I'm I'm reminded I'm an addict. And I'm like, what, you know, what are you saying? And she said "every day she said I take this, and I feel dirty. I am reminded that this is just the bad thing in my life." And so she's making all this judgment on herself because of taking medicine. And it made me realize that your most stable patient might not be so stable, they might be following your rules. But in their brain, their recovery might not even be anywhere close to where you think they are.... They're beholden to you for the medicine. And so you don't know those internal processes, especially, you know, if somebody's in counseling, it's counseling somewhere else. You're kind of, I call myself a Pez dispenser of Suboxone, you know, I'm just there facilitating a prescription. You just don't fully understand these processes until you start learning to ask about it I guess, but it made me realize the burden of treatment for the patient, you know, how, how would I feel? If I did, if I was in that situation anyway. So she she taught me a ton that way. [P-14]

My mentor, she would say, what's the worst thing that's gonna happen [Name] if you prescribe them Suboxone, and they're not going to be using all of it, you're helping somebody else out on the street. Somebody's buying the Suboxone from them. You're helping somebody. And I'm like, you know what, I never looked at it that way. And it just really kind of opens you up to caring for, you know, potentially like community in like a weird way [P-17]

So, for some patients who are just getting out of jail or just you know, have to do treatment because of an arrest or something like that, I think just coming to appointments and sitting and
talking to me once a week is, is the success even if there's cocaine in their urine, but there's not, you know, there's not opiates. And I think that that can be a success. [P-18]

I think, you know, it has opened it opens up my mind to what are different ways that you can practice, right? And I mean, rules aren't necessarily made to stay forever. We're meant to examine them and to question them and to try to figure out if there are better ways to practice and which is why guidelines change all the time. So even though it's an n of eight or whatever it was, you know, that may actually end up being what the recommended guidelines are, ultimately, 10 years from now. It's just that it's the beginning stages of trialing something like that, so… I think it provides me with some guidance on maybe what to try but I haven't had that many opportunities to do that. [P-19]

But every condition is a little unique. So how to manage findings and communicate, and you know, how to manage I guess, sort of navigating you know, what I think the person needs versus what they think they need, which I think you get more confidence and more exposure you have with any condition about kind of how to handle those gray areas in a way that's therapeutic. [P-21]
Category D: Adoption of New Approaches

I think micro-dosing was something that we were much more comfortable with when it was easing someone into it trying to prevent the withdrawals. And now the flip more to like an idea of macro dosing, and then a quick switch to the Sublocade has been kind of the newest thing again that I'm really posing a lot more questions about and trying to have a have a really clear when I say guideline I mean my own like visual guideline of like how to do it. [P-01]

More recently that I've learned and been kind of incorporating into my, my treatment and my approach is the experience of euphoria. And that being something I'm trying to include in my discussions with patients, and that people with opioid use disorder, there's just such there's such a continuum of where they're at with their with their substance use and the degree of treatment and the degree of recovery they're looking for and what they, what their, it's just so individualized so I think lately I've been kind of exploring that with people. [P-03]

I haven't done this yet, personally, but I've seen some of my physician colleagues do it and they just seem to just be like, completely ballsy when it comes to these kinds of things, and it's very admirable, but for example, macro induction onto Sublocade within 24 to 48 hours, is something that's happening. I haven't done it personally yet. I have, I have provided Sublocade after four days of Suboxone, when they're meant to be on it for seven according to the product monograph. They were in a withdrawal management setting. So I was very confident that they weren't using anything else. That would be an example of being on the verge of a guideline or a product recommendation. [P-03]

I have a patient and I'm still following him at this time, so he had come to me about eight months into my journey. And when we finally got to the point, I think, probably mid-September, this was probably four to five weeks later, and he was ready to talk about it. He was ready to talk about Suboxone. And what could we do differently this time? Because he had had an experience with precipitated withdrawal and he's like, I don't want to do that again, I don't like being in withdrawal, I'm using constantly around the clock because I don't want to feel that. And I was like, well, there's this thing that like maybe we could do. Maybe we could explore micro-dosing. And this was my first, I felt so proud and confident in myself and kind of taking that like next step to like the next big thing for me, which was like not the standard induction but to try this micro induction. We ended up having to try it three times because he just, something would happen and just couldn't complete it, every single time. And then not only did we get him through the micro-induction, but we got him stabilized on a daily dispense of Suboxone and he was doing incredibly. He was telling all of his friends about it, his friends were coming to see me, and then we started picking away at some of the other social stuff that was going on... And then we were finally able to switch him over to Sublocade. So, he was getting tired of the daily dosing and I was like, okay, like, let's talk about this. And then for me, that was like my next big thing. So not only can I now micro-induce folks, and then once I'd done it with him and done it successfully and realized it wasn't gonna kill anybody, that gave me such confidence to then try it with other folks and other folks were coming to me. [P-05]
Category D: Adoption of New Approaches

Now, I am not an expert at anything, maybe some things, but I can, if I can learn it, and I can show you a guideline, I'm more than happy to try it. And I can show the patients. I have two screens right now. And I have one screen to educate my patients. And so I'll say “see the guideline says right there”, and they're like “oh, yeah”, and so it's like, “this is how we're going to do it. Okay”. And they're like, “Okay.” So really, you know, I do have permission, because if there's a guideline... So yeah, so I definitely, if I can see it on paper, and I have seen it work for others, I'm more than willing to do it. I have never tried anything on my own, ever like, it's more of seeing someone else do it, and then I'll do it.... I had a doctor - young doctor, she only been a doctor a year. And she said to me, “I would never show a patient something like that because then it looks like I don't know what I'm doing.” And I looked at her, I said “you don't! Why not show where you're getting it from? So then they know it's been done before. So you're not current pulling something, pulling something out of nowhere and telling them what to do. It's been you know, some evidence-based matter of factness you know, intervention” And she just, she just wandered off like it was, there was no you know, discussion about that. [P-06]

So our program is, it is essentially a medical program because I'm writing prescriptions for people, but we don't call them patients we call them participants and so that is I have to still stop and catch myself. Because I've been saying patients for a million years, but I love how that changes how I think about people... I love the notion that this is sort of a partnership, that we sort of sit down together and we talk about, you know, “what was this like for you the past week?” and, you know, “how are your, how are your cravings? What's your withdrawal? Like, what's your fentanyl use? Like? You know, what do you think you need to sort of to reach your goals?” And people set a goal, and people's goals are things like oh, you know, “sleep through the night without withdrawal and not die” like that people's goals for entering our program. Or you know, “use less fentanyl don't use every day, you know, have a better relationship, get my kids back”, like there's so many things right. And so, it's really been beautiful, I would say to be able to have very frank conversations. So again, you don't enroll in this program unless you're using fentanyl. And so that's the criteria. That's what makes you eligible. And so people don't have to bullshit me. Like, really, it's, it's liberating for both of us, because every visit I'm asking people about their fentanyl use: “Are you using that, you know, intravenously or snorting it, or not snorting but smoking, intravenously?” And so, you know, people will actually start to answer the question and then they'll say, “I really can't believe in having this conversation with you.” Because really, their whole experience of healthcare has been this is not what we talked about. [P-07]

If my patients were on methadone or Suboxone through one of those private OAT clinics, I would only ever find out if they told me. But if there was never any communication between me and them, like they might even use a different pharmacy for their methadone then the pharmacy where all my scripts were going. Like a really, not only unhelpful from a, you know, kind of coordination of care standpoint. But dangerous really from a prescribing standpoint. Because you know, I'm adding meds that might prolong someone's QT interval and I'm upping their Seroquel, I don't know they're on methadone. Like it's, it's ridiculous that the system is so fragmented in that way. Like what other part of your health care would be sort of put over here
Category D: Adoption of New Approaches

and no one talks about it, like it really, really struck me that, you know, you're kind of, it kind of felt like going rogue to be prescribing Suboxone in my primary care practice when a) it was hard to find mentors and b) there was sort of this specialty stream of providers doing it who were kind of annoyed that I was cutting grass, you know, like it just it really did seem kind of like it's a pretty flawed system. [P-07]

Safe supply is an emerging practice. So even now, we're still sort of developing policies and procedures and it's, it's a harm-reduction approach right? So it's actually a bit of a different philosophy from OAT, where we don't have this expectation of abstinence from, from fentanyl. Clients set their own goals. Clients are able to tell us what they, they need, we work very closely with them. We do prescribe Kadian and we do prescribe methadone, but we also prescribe Dilaudid tabs, so that learning was really a lot of sort of like learning in the moment. So with the team, seeing clients, consulting with the other NP that I worked with, starting people on safe supply, sort of, you know, working them through the titration and then talking with my team for support and brainstorming around how to successfully you know, maintain people on safe supply. So it was, that was very sort of clinical, like clinical learning as opposed to book learning. Just because it's such an emerging practice.[P-08]

I have become less risk averse. Like, I think I was very strict in the beginning about like, benzos. Like if someone was on Clonazepam, we're like, we're taking you right off that clonazepam, We're not gonna give you anything until you're off that clonazepam, I'm gonna check your urine every week to make sure you're not taking that Clonazepam. And then, like putting that out there being like, hey, like, what's the best way to taper this or deal with the situation and someone's like, well, actually like I have a few clients who are on like a really low dose of Clonazepam, I've left it, like, it's actually acceptable to take certain risks or it's acceptable. I do a lot more like informed consent with my clients now, like, if people were drinking, I'd be really scared about like, interactions with the opioids and it's still something to think about, certainly, but I'm more about like, Okay, well, like are you aware that drinking or using benzos with this medication increases your risk of overdose? And they're like, yes, I'm aware. And I'm like, okay, then like, let's proceed and that's what they document because it's… the interventions still needed. [P-09]

A lot is trial and error and a lot is like, do it, see, adjust. I think it lends itself I guess to like an element of creativity with your clients where it's, you know, it's not just this like start people with this dose and increase it by this and do it every three to five days. It's very individual. And when things, like when we're not reaching the outcomes, we're not reaching client's goals, like I really have a large community of prescribers that I turn to, like we have message groups, and discussion boards, and even people who are very, who I see as very experienced put out questions all the time, and people come up with different solutions and different approaches. [P-09]

We get criticized a lot for there like not being a lot of good evidence for safe supply. And we get criticized that like a lot of what we do is based on like expert, expert opinion, like clinician-to-clinician consult, and then it's like, actually, like the same thing happens in OAT,
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like first line OAT all the time. It's the same thing with like, now we're adding Kadian onto methadone. And that's not from research, that's from like clinician experience and expert consultation. And somehow that has legitimacy. [P-09]

Also, when I worked at [clinic] like the, a lot of the outreach clinics, we see like a lot of barriers to accessing primary care...And like as a long, it takes like a long time sometimes to even like meet people and build the rapport and then like, you can try to accompany them to appointments but sometimes that doesn't work. And so yeah, just from the frustration of like people needing things and not be able to do it. It's partly why I did nurse practitioner program and then I was able to do more like outreach clinics and develop like more low-barrier care. So, like even with my clients now, I can see that like if they've struggled to meet, miss appointments, so I see people on a walk-in basis like pretty much like 9 to 5. Yeah, or like finding like other ways to work with people like, I can see they don't have phones. So now I like make sure I take down people's numbers and, or not numbers but like other places they might be like for work or like [unclear] another shelter hotel and I can call them there, or if there's like a pharmacy I can reach out to. So, I’ve tried to like change the way I practice I guess to make it make my care easier for people who are homeless to access, because there's like a lot of barriers to them accessing care through these models. [P-11]

I really, I have the benefit of learning from someone who's very experienced. She's very up on the guidelines, she's comfortable with it. She's very pragmatic about some of the issues that people can get fixated on like, you know, precipitated withdrawal. And like she's really taken the fear away from some of those things that I think can be barriers for folks like for healthcare providers to engage in doing some of this work. So I think it was her reviewing the guidelines.... So I think it's just I've got a good mentor that can, that I can, you know, consult with and learn from, and other professionals in the healthcare community doing some of this work and not being afraid to kind of step outside the guidelines, and we can learn from them. I think with some of this work, there's definitely some risk involved, especially working with the population that I work with. So, you know, it's that fine line between safety but providing something that's actually going to work for these folks. [P-12]

I changed my definition of success so that I don't get bogged down in it. Because my success rate is way too low. So I, to me, success is someone who comes back.... so I think in the beginning when we were doing some of this work and if you follow the guidelines and all of those things to the tee, it's really invasive for a lot of people. And if they're just meeting me for the first time, I don't really need to know, as much as is suggested that I need to know in order to start them safely on methadone or Suboxone. I wouldn't ask those kinds of questions to start them on Metformin. So why do I need to ask some of these really invasive questions to start them on Sublocade? And so I think sometimes the population that I work with can get really turned off from those really invasive questions. And so, I think that's one big lesson that we learned in the beginning about engaging with these folks and lessons learned is to really just make it as simple as possible. What are the medical pieces that I need to know and keep it there? [P12]
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I just think our way of doing it now is to break it up in very small manageable pieces for the client. [P-12]

And then I think once, definitely once COVID hit, so that was one of the main catalysts for it also was because we had all of these folks that then had to go into isolation. And everyone was so COVID focused, but within like, the first 24 hours, we realized that their substance use was going to be a major barrier to their ability to isolate. So, then we had to get really creative about how we were going to support folks with addiction while trying to isolate. So, I think that's what really prompted the need, that we couldn't rely on one physician anymore to do this for the whole population. [P-12]

I think we've learned a lot, and guidelines have changed a lot over the pandemic, which has certainly helped around treating opioid use disorder and people who use fentanyl. And so, it was not easy. People were not happy. They felt like they were being forced to start something that they really didn't want to do. However, I would say two years later, there's a lot of people that started methadone during that time that have continued on it. And we've actually brought in methadone services to all of the shelters now, they'll do deliveries to the shelters every day. So it's a practice that's kind of continued. But in the beginning, there was a lot of pushback, because it wasn't something that people were necessarily wanting. So, it was a different way of starting, you know, kind of jumping into treatment because it wasn't people coming to me saying this is what I want. It was a way of trying to help people isolate and not be sick. [P-12]

What I have learned I think, is sometimes so there's guidelines that we have to look at and suggestions on ways to do the work. I work with a population who is very hard to reach, who is very mistrusting, who has a lot of trauma. And I think sometimes when we go in and we try and do these really invasive first encounter interviews and assessments with people we might be trying to collect more information than is necessary. I'm not saying that it's not important information, but I don't know that we need to collect it all on the first interview. I think it can make it very overwhelming for folks. I think when you're trying to start someone on treatment for addiction, we have to remember that they are cognitively impaired probably, whether they've just used to that day or their brain is in a healing process. So their ability to take in all this information and participate and engage might be limited. And sometimes what we're doing might be too cognitively based for what they're capable of and then we get frustrated because they're not able to succeed in these programs that we established. So I think by making some of these appointments 15, 20 minutes, it's what they can handle. We have a plan to follow up in a day or two. Hopefully they'll be feeling a little bit better by that time. But it just doesn't have to be quite, this really long hour long assessment where we're gathering a lot of information. [P-12]

A primary care provider would say, “Whoa, I don't want to take that patient” because they're on these medicines that we weren't, we were no longer thinking were appropriate. So we had a lot of people in our community floundering with nobody to taper them, nobody to figure out that they might have a use disorder, you know, and I felt badly so I proposed my particular role to my current employer. I met with the VPs of the hospital and I'm like, Hey, this is why
you need me to help you. And they said, okay, and I thought, wow, that's pretty cool. …Very early on I found that as I was tapering people from chronic opioids, I uncovered a lot of substance use disorder a ton. And I had a colleague who worked right in the office next to me who was treating opiate use disorder. [irrelevant] So anyway, I uncovered tons of use disorder, I was referring people to my colleague, and I thought, well, isn't it a shame, I already have a relationship with these folks. And it would be pretty slick rather than making them wait a few weeks to get in with a provider wouldn't it be slick and if I could identify it, we could discuss it and start treating right there in one swoop. So I decided why not. [P-14]

Now I really try to dig into what's your routine with this medicine. You know what, where do you keep it, or where do you store it? You know, because it’s a big deal. And it never, ever occurred to me, until she said that “every day I'm reminded I'm an addict” I’m like holy crap. [P-14]

I think I’m going through a bit of a crisis of confidence around the Suboxone, and I think I'm actually requesting to reduce my Suboxone panel, because it hasn't felt professionally satisfying… I'm actually going to move some people off my panel to another new provider that is really interested in tackling that. So I think that feels empowered to be able to say, I'm not helping these people like I, and it's not helping me want to stay in practice. So it's not going to help anybody. So just realizing that, okay this isn't therapeutic for them, or for me, and they might benefit from a different provider. And then that way, I can stay in, in the field for other people. [P-15]

I have a patient who has a history of opiate use disorder and crack use and she is not on, on Suboxone, so slightly different patient, but, you know, using that information that I gained at that one of the courses around medications that was hosted by a dentist on what we can do for people who are opiate dependency, for dental pain after procedures. So I called and worked with her dentist on like a nerve block to use after her removing her teeth… We have some people with dental phobia … just to be able to say to them you know, this is an option for afterward you know, ask for like a Novocaine block instead of opiates, but yes, so that's definitely changed how I approach them if they're going to go to the dentist. [P-15]

I would be like, you know, you're “what about this drug that you're taking is you know, there's something about it that is helping you that is, that you love, you know, that is good for you at some point and maybe, maybe that's changed, but initially, what was it about this drug?” And you know, they would talk about all the benefits of it, and including connecting them to a community. Right, that once they stop they, they have no friends. They're alone, right? So first, really one of the biggest things was really allowing people to talk about what benefits they were getting from using, and then and then and then say, “but the fact that you're here means maybe there's things that are not benefits any longer like there that you feel are negative for you. Can you talk a little bit about that?” And then they would talk about that and then I would, you know, help you know, then I would learn a lot about them. [P-16]
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The other thing I seem to remember was learning to trust the patient's responses. Because everything you hear about addiction before you start practicing, is that people are manipulative, like, that's part of the disease. That's like a huge thing that people talk about. And I don't know if that's still as true. But when I was first started, that's the first thing people would tell you. These people are very… because they know how to get what they need. Because it's survival for them. So they're very manipulative, and they're really good at it. And that's the message you get bombarded in your brain. And so, learning how to listen in a non-judgmental way, and trusting, like trusting what they say to you and not, not starting off by not believing people and thinking they're manipulating you. And yes, that happens. But so what?... So it was really good for me to watch them and and, and be like wow, they're just like totally believing everything that person says and writing it down and trusting them and it was really important. [P-16]

When I was starting out there was in the clinic that I was in, there were specific guidelines. There was a clinic contract that a patient would sign. We have one as well, but the patient contract that they would sign at the other clinic was very specific about like, you know, you have to attend one or two in-person meetings, you had to attend this many group meetings a week, you had to show up to your appointment, if you did not show up to your appointment you were gone, you weren't coming back. Failing urine drug screen, you're not coming back… Here at our clinic, we have the same, a similar contract that patients sign, but the verbiage and I don't know if it is specific to [Clinic Name] is like this may result in a dismissal from the program. This may result in like you not getting your refills, but we definitely, the few providers that do medication assisted treatment. Everybody probably does a little differently, but there's definitely a forgiveness in that, in our practice that maybe it's not in the other practice. That you know, if patients do miss their appointment we have, we live in a rural state. People can't get in sometimes. Cars break down, whatever it is. They're not penalized for something unless it becomes a pattern you know, and even then, it's really we don't really kick them out because it's just usually a manifestation of the fact that they're struggling with the thing that we're trying to treat. [P-17]

Sometimes I think we see ourselves as either completely novice with zero experience or there's experts, and there's nothing in the middle and I think that's always scary when something appears like that. And you don't realize that there's a lot of people who are kind of in the in between, and that's actually the majority. If that's the case, but I kind of assume most people feel like they're flailing around. [P-19]

We have a client who lives away from the office. I mean, [County] is the size of Rhode Island, and we don't have public transportation. This client shows up about 50% of the time, and she's got weekly visits scheduled. We were going to wait, we were, we were doing a refill at her visit a week at a time. But then when she does, when she didn't come it was sometimes hard to reach her. And then she might go a day or two with no medicine. So, I decided with her let's keep the weekly visits but do a Suboxone prescription every 14 days so you're not unprotected. That would be an example of the kind of thinking we didn't have as a program five years ago… We, she and I both talked about the risk and that and that, you know, maybe
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It's better if we do a longer prescription whether you come in or not, and that's okay if you don't know. It's okay if you don't come in but it means we won't be addressing these other things as quickly. [P-20]

I'm learning to be more open ended, less reactive. So that there's a window for people to disclose any, any concerns about how they're taking their medicine or not. And you know, what they need, what kind of help they need…. I will say things like “is this adequate? Is it working for you?” And like even as the visit starts, I'll say “is there anything you want to talk about today in addition to what we usually do?” Make it very open ended. … Well, it's more interesting. I felt like it's better patient centered care. You know, Suboxone visits can get repetitive and it helps to not stay on the script. [P-20]

Our second patient unfortunately had some unexpected urine test results. Attendance wasn't great and a committee, we meet as a shared practice and review patients together and make big decisions together. So, the program decided to dismiss her and now you know, now with that, well, first of all, our policies are different. We’re much more embracing harm reduction, but now had she been a patient she would have stayed here. So, we've evolved you know, we, we developed, before we even accepted patients, we developed policies and procedures that were in keeping with the other local you know, we actually borrowed policies from other local practices and made ours like them. But we've revised them twice since then… there was trepidation about the dose and whether to raise it. Back then, five years ago, there was um a lot of drive to taper people and maybe stop Suboxone if you could and we spent more time justifying, not tapering. We asked more regularly about tapering and if somebody needed a higher dose, the whole team would meet and really deliberate. Whereas now it's less agonizing to make those decisions… we've evolved to value keeping people engaged in treatment and taking their medicine even if, even if the urine tests have cocaine and meth in them, we, you know, I think it's more of a partnership with clients. And know that the supply available in the community is so unsafe, that we've really changed our view and our approach. We now, we didn't use to, but we now have Narcan at the office and do we do a lot of teaching on safer use and work pretty closely with our recovery center and I've learned a lot from those interactions about what patients want and need. [P20]

I think anytime that I'm making a decision outside of sort of established guidelines or without guidelines, I'm always a little bit less sure and want to make sure that it's somebody else, you know, am I out on a limb? Am I right on target? How does somebody else approach this? And what's best for the patient and what's the current science that's most applicable? So trying so it meant that more kind of background research or consulting with others or, you know, asking colleagues who had their X-waiver, how they would approach it, you know, it just, it means more busy work, I think to some degree, but also, not busy because that's not, but just sort of more preparation, you know, in terms of capacity, in contrast to some other conditions where you're managing numbers, like a hemoglobin A1c that you're titrating it's a, you know, it's pretty clear cut what type of medications to add it for whom, what, where… It just meant that
I didn't feel particularly confident for a while in my decisions, and I would be more concerned than in other instances, if I hadn't made the correct choice, second guessing at times. [P-21]

I've like realized that drug use lies on a continuum of problematic non-problematic use. So like I see quite a bit of people who use either opioids or stimulants in ways that aren't problems really in their lives. And then I also see the people even who have problematic drug use patterns often make very good decisions and have like a good sense of what they need. And that like if you support their ability to make decisions, like you're gonna get further than like a top-down approach, in terms of building the rapport, and also yeah, having them stay in the program. And also just probably even addressing their needs, like in terms of like which opioids you're prescribing and that kind of thing. So, I've changed the way practice a lot in that sense, where I think I'm a lot more client-led in the way that I interact with people. [P-21]

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And then with experience and comfort you, and with experience and comfort, and also the acknowledgement that it is a safer option than continuing illicit opioids on the street, I, I was much more at ease prescribing at different rates and, and methods and than previously. [P-01]

Now I feel like I can talk to people comfortably because I feel like I have confidence in my knowledge as well… I've seen probably hundreds of patients through the addictions clinic and now I have, I don't know how many I'm still seeing in primary care specific for opiate, but maybe like six to 10 specifically with opiates. So I feel like I have that knowledge and I feel like I can speak to it. I feel like I can have some of those more difficult conversations and go off script [P-05]

I'm seeing repeat referrals from this primary care office, and there was a few of them, that felt really good because I was like not only am I seeing potential progress here and in terms of people reducing their use or you know, kind of early remission things like that, but this provider must be seeing the effects as well because they wouldn't just keep sending people to me if it was like a crap referral, right because we know this, like you send to a specialist and you get terrible note back like you don't send them there again, or the patient was like, they were so mean, you don't send people there. So obviously, on the other end, this provider must have been getting some good responses as well, which also makes you feel like okay, I know what's up I can do this job. I'm good at what I do. [P-05]

Speaking of corrections, because a lot a handful of my patients have been in jail. They tell them my name. So I become their primary care provider and also with their opioid use disorder. So I get realigned that way sometimes with my patients that are gone to jail, and the jail will call me and say, “Hey, you did this course, you did this prescription, why?” Like, “this is the reason but you do what you want. “So we do have the, so that's another consultant actually to add. [P-06]

Those with opioid disorders came to the ER, a lot unattached. They were assigned to me to follow through follow up on. And so not knowing anything about opioid use disorder at all like zero, I realized some people had some needs, and so I would try to to investigate what I could do to help. And then interesting enough that, so that was 2017, 2018, my, my boss, who was the CEO of [Substance Use Treatment] center introduced RAAM, and she said there's this program why don’t you, cause she's part of the Mental Health Group for [City] which is chock full of different kinds of professions. And I said, “Great, I'll, I'll refer my patient and then it was two-week wait. I don't need two weeks I need now and of course, I didn't know anything. So I said to my boss, “I want this program here now”. And she said, “Okay.” so by, that was probably made, May, April, May. By the next year by February, we had our own RAAM here. [P-06]

Oh, so when we were in the COVID Centre, back in 2020, three people come through with three police officers and I'm looking at them and… I said, I said “do you take Suboxone?” Because I knew they were, they were just in withdrawal. Their eyes looked big and they're like “Yes”. And I said, “Okay, I'm gonna get you set up”. So I have the police bring him to the ER
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and I told the doctor I said “start them on Suboxone” And I said give them this, give them this, and so I told them what to do right but from their arena where I was at, so that looked like consultation reversed… I was able to help consult the doctor on what to do, because she had no idea what to do for Suboxone. So somethings like that. Right? I have even mental health workers consult with me…So lots of, variety of people reach out to me, but because I am the sole provider of continuous care of opioid use disorder, persons with that, they come to me right, so it's easy. [P-06]

If I've been able to create a space where they feel comfortable coming back, despite all those things, having happened, that to me is me being effective as a provider. [P-08]

I guess when I when I've been able to get them to a comfortable dose, and there's no more titration like, we're just I'm just renewing prescriptions at the same dose is when I feel like I've really managed to match their tolerance with their need to manage withdrawal and cravings. So that, to me feels, feels like I've been effective because I've gotten them into a place where they're comfortable and then they, they can carry on with their with their lives.. [P-08]

And then, as a result of the overdose crisis, and some of the advocacy groups I was on was involved with starting the supervised consumption site like the [Name] overdose prevention tents, like the one that opened up the unsanctioned site in the park, and I was somehow, the nurse the first day they were opening, which was like kind of terrifying because I've never responded to an overdose before. But then so I got more involved with supervised consumption sites through that... So yeah, the main cause of the, of overdose deaths, like we saw like a dramatic increase in the amount of overdose deaths around 2015 around the time that fentanyl sort of entered the drug supply. So there's, seems to be a huge need for like a safer supply for folks. So that's how I got more involved in committees working to help devise a safer drug supply, and eventually we put together like a proposal for the federal government. And we got funding for the safe opioid supply program. [P-11]

The Governor had an opiate Opioid Summit. So I was there, and there were a lot of interesting talks, and I was actually a speaker there for a little bit. I also um I’m kind of, I put my little paws into everything I sit on a controlled substance stewardship committee. That is this, this, it's under some umbrella called the [names organization], and we actually advise primary care providers, this board advises them regarding the controlled substances that patients are on and often will provide a tapering schedule and rationale and research articles to primary care providers. So that's a big part of my learning as well. And I do some work for [other state] has a state-run organization for ongoing primary care provider education, and they have a pain section and substance use disorders section, and so I do a lot of talks for them as well. [P-14]

So the biggest thing is that my patients will now tell me everything they do, so they don't try to hide use. I would say that that makes me feel like I've been the most effective. You'd like to think “Oh, I feel the most effective when my patient has been in recovery for you know a year and no slips” but I don’t I don't see that as, as me being…that’s they're the most effective when that's happened, but I for me, I'd say number one is if a patient can, can tell me what's going on
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for them and can walk in and say, you know, “you're gonna see this in my urine. And this is what happened”. That that's when you know, it makes me want to cry. Like I feel like oh, I did it. So yeah. [P-16]

I've done a lot of my own reading and my own personal work to try to understand, and I now dwell less on the physical stuff around my patients. Like instead of taking time to do physical things, for people who are in desperate need of that, like I try to at least provide an opening but I'm, I'm doing some work now that I'm hoping will take me in a different direction someday, and working with a community of like-minded providers in [County Name] County to form an alternative place for people to go to, to work on trauma issues. And we've just formed, we've just started. So we'll see where that goes. But I realized in the last, you know, six months or so, a year that I, I feel like the work I'm doing is pretty stagnant. That it’s just writing those prescriptions and keeping people safe. But that I'm not getting to the root cause, I'm not helping, and I can't find the resources for these folks. And so there's a bunch of us who have also recognized that and so we're starting to put together our little community of providers to talk about how we can provide a different kind of care for people outside of the Western medical health system. [P-16]

I think honestly, when patients keep, when they keep coming back, even if they're using and they continue to be honest with you and open. I think we're being effective because I feel like them airing and being open is their way of asking for help, even if they're not coming out and saying like, okay, like I effed up because I need more help or different help. But I think it's just their way of saying it. [P-17]

I've been considering working with the NP that is going over to the hospital and seeing if we can kind of you know, potentially, you know, expand our reach out to some of the rural clinics outside of the you know, the greater [geographical] area, places that I did my training at that see 1000s, 1000s of patients and not a single provider will offer it because I remember one of my favorite places to do clinical one of my favorite preceptors he's like, “nobody wants those types of patients around here”. [P-18]

[effective treatment is] that they have good treatment engagements, meaning they come to visits, they're in, they're in long-term recovery and abstinent. They're, they're satisfied. I mean, they're comfortable with their treatment. They're not wanting you know, it's not someone that doesn't want to take this medicine. It's not someone that wants more than they're getting, you know, that they're, they're comfortable, I'm comfortable. And some other indicators that happen along the way are that people tend to get their driver's license is back, and they get a job, and they get a vehicle, and they get secure housing and so that you know, that to me is success [P-20]