ATTITUDES AND PERCEPTIONS OF NEWFOUNDLAND AND LABRADOR PHARMACISTS TOWARDS PARTICIPATING IN MEDICAL ASSISTANCE IN DYING

by © Abigail Turner

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Abstract

Introduction: This thesis aimed to describe pharmacists' willingness to participate in medical assistance in dying (MAiD) and potential barriers to their participation.

Methods: A systematic review on the existing literature and a survey of Newfoundland and Labrador (NL) pharmacists were conducted.

Results: The systematic review found the majority of studies were conducted before 2002 and before MAiD was legal or where MAiD is still not legal. Pharmacists' willingness to participate varied, and there was a gap in the literature on barriers and facilitators to the pharmacist's role in MAiD. The survey of NL pharmacists found the majority were willing to participate, however NL pharmacists felt they lacked knowledge regarding MAiD (e.g. MAiD process, MAiD medications, information to provide patients on MAiD) and had concerns about the consequences of participating in MAiD.

Conclusion: The majority of NL pharmacists are willing to participate in MAiD however, more supports (i.e. educational, emotional) are needed to better prepare and assist pharmacists in this new practice area. Furthermore, research is needed to evaluate pharmacists' experiences with actual participation in MAiD.

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List of Symbols, Nomenclature or Abbreviations

ALS: Amyotrophic lateral sclerosis

CP: Community Pharmacy

CPhA: Canadian Pharmacists Association

CPSO: College of Physicians and Surgeons of Ontario

EUTH: Euthanasia

GI: Gastrointestinal

HP: Hospital Pharmacy

IPA: International Pharmaceutical Abstracts

IV: Intravenous

LTC: Long-term care

MAiD: Medical Assistance in Dying

MeSH: Medical Subject Heading

NB: New Brunswick

NL: Newfoundland and Labrador

NLPB: Newfoundland and Labrador Pharmacy Board

PANL: Pharmacists' Association of Newfoundland and Labrador

PAS: Physician Assisted Suicide

PQDT Global: ProQuest and Dissertations and Theses Global Database

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analysis

S/E: Side Effects

SCC: Supreme Court of Canada

US: United State

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Chapter 1

Introduction

1.1 Introduction

In 2016, medical assistance in dying (MAiD) became legal in Canada, thereby introducing a new practice area for pharmacists.[1] Pharmacists are medication experts and the gatekeepers of medications, therefore, they may be involved in the preparation and dispensing of MAiD medications. Furthermore, they may be involved in providing MAiD drug information to health care professionals, patients, or patient caregivers. Pharmacists who are willing to participate in MAiD need to be knowledgeable about MAiD and the MAiD medications and ensure they have the necessary skills to assist in MAiD. However, not all pharmacists may wish to assist in MAiD. Furthermore, pharmacists are not required to assist if they have a conscientious objection to participation.[1] Therefore, it is important to determine pharmacists' willingness and perception of their preparedness to participate in this new practice area.

Since the legalization of MAiD, only two Canadian studies were identified that surveyed Canadian pharmacists or pharmacy staff members on their willingness to participate in MAiD.[2,3] One of those studies was conducted in June 2016, but it was not exclusive to pharmacists as Ontarian pharmacy staff members' (i.e., pharmacists, pharmacy students, and technicians) willingness to participate was studied.[3] Although the study was not exclusive to pharmacists, it identified that Ontarian pharmacy staff members had concerns with dispensing and answering inquiries about MAiD.[3] It is important to determine whether pharmacists in other provinces have similar concerns.

The second study was conducted in 2017, but it only assessed hospital pharmacy staffs' willingness.[2] Since the legalization of MAiD in Canada, there has been little research on whether pharmacists are willing to participate in MAiD, their perceptions of their preparedness to participate and potential barriers to their participation. Therefore, to better inform policy, practice and future research in MAiD this research will study pharmacists' willingness to participate in MAiD and potential barriers to their participation.

1.2 Background

1.2.1 Medical Assistance in Dying in Canada

Quebec was the first province in Canada to legalize a form of MAiD. In 2014, Quebec passed legislation that permitted physicians to administer medications to assist requesting and eligible patients to end their lives.[4] In June 2016, the prohibition on MAiD was officially lifted in the rest of Canada.[5] The Criminal Code of Canada defines MAiD as, "(a) the administering by a medical practitioner or nurse practitioner of a substance to a person, at their request, that causes their death; or (b) the prescribing or providing by a medical practitioner or nurse practitioner of a substance to a person, at their request, so that they may self-administer the substance and in doing so cause their own death".[1 (p. 284-285)]

The MAiD process where a clinician administers a substance to a person to cause their death is becoming known in Canada as clinician-administered MAiD.[6] It was previously known as voluntary euthanasia.[6] The MAiD process where a clinician prescribes or provides a substance to a person, so that the person may self-administer the substance and in doing so cause their own death is becoming known in Canada as self-

administered MAiD.[6] It was previously known as medically assisted suicide or assisted suicide.[6]

Gloria Taylor was one of the driving forces in the movement to lift the prohibition of MAiD.[7] She had a fatal neurodegenerative disease called amyotrophic lateral sclerosis (ALS).[8] She sought the legal right to receive assistance in dying at a time of her choosing such as when life becomes intolerable due to her disease.[8] As a result, she challenged the prohibition of MAiD in court.[8] Gloria Taylor was joined in challenging the prohibition of MAiD by Lee Carter and her husband Hollis Johnson.[8]

Lee Carter and her husband Hollis Johnson brought forward the case on behalf of Lee Carter's mother, Kathleen Carter.[8] In 2010, Kathleen Carter received assistance in dying in Switzerland through a Swiss death with dignity organization (i.e., DIGNITAS).[7] Kathleen Carter had spinal stenosis that caused her to have limited mobility, chronic pain, and require assistance with most activities of daily living.[7] As a result of her disease, she sought assistance in dying.[8] Lee Carter and Hollis Johnson assisted Kathleen with her request to receive assistance in dying in Switzerland.[8] Lee Carter and her husband felt Kay Carter should have been able to obtain MAiD at home in Canada.[8]

Gloria Taylor, Lee Carter and Hollis Johnson were also joined by Dr. William Schoichet (a physician from British Colombia who was willing to provide MAiD if it was legal) and the British Columbia Civil Liberties Association.[8] This group argued that the prohibition of MAiD (known then as physician - assisted dying) violated the Canadian Charter of Rights and Freedoms.[7,8] Their claim was first heard in 2011 by the British Colombia Supreme Court.[8] In 2012, the judge presiding over this case ruled in favor of

lifting the prohibition of MAiD.[8] Despite Gloria Taylor having received the right to receive assistance in dying, she did not, as she passed away in 2012 from an infection.[7,9]

The lift on the prohibition of MAiD was overturned in 2013 by the British Colombia Court of Appeal.[10] The case was then brought before the Supreme Court of Canada (SCC).[7] In 2015, the SCC made a judgment on the case and ruled that the prohibition of MAiD violated the right to life, liberty, and security of Gloria Taylor and other competent adults who clearly consent to the termination of life, and have a grievous and irremediable medical condition that causes intolerable suffering.[7] As a result, the SCC ruled that the law must be changed to permit MAiD.[7]

In response to the 2015 SCC ruling, federal legislation for MAiD (Bill C-14) was developed.[5] On June 17th, 2016, MAiD legislation was passed, thereby officially legalizing MAiD for eligible Canadians.[5] Federal legislation for MAiD, "created exemptions from the offences of culpable homicide, of aiding suicide and of administering a noxious thing in order to permit medical practitioners and nurse practitioners to provide medical assistance in dying and to permit pharmacists and other persons to assist in the process."[5 (p.ii.)]

The eligibility criteria, safeguards, and monitoring/documentation requirements for MAiD are also laid out in the Criminal Code of Canada.[1] A person is eligible for MAiD if they are at least 18 years old; eligible for health care services funded by the federal government, province, or territory; mentally competent; has a serious and irreversible illness, disease or disability causing unbearable physical or mental suffering, where natural death has become reasonably foreseeable; makes a voluntary request for MAiD, that is without pressure; and gives informed consent.[1,6] To date, MAiD is not

permitted for minors (<18 years), individuals where mental illness is the sole underlying medical condition, or through advance requests.[6]

According to the current federal MAiD legislation, two practitioners (physicians or nurse practitioners) must assess the requesting person's eligibility for MAiD.[1] The two practitioners will independently conduct this assessment.[1] Furthermore, the person requesting MAiD must submit a written request for MAiD to their physician or nurse practitioner.[1] According to federal legislation, immediately before MAiD is provided, the practitioner must give the person requesting MAiD the opportunity to withdraw their request.[1] This means the person who is to receive MAiD must be competent at the time it is provided.

According to federal legislation, eligible people who request MAiD can choose to have a physician or nurse practitioner directly administer intravenous (IV) medications or can be prescribed oral medications that the patient then self-administers.[1] However, in Quebec, only clinician-administered MAiD is permitted.[11] Provincial and territorial health regulatory authorities are responsible for further regulation and delivery of MAiD.[12]

On November 1st, 2018, a pan-Canadian monitoring system for MAiD came into effect.[6] In the spring of 2020 the federal government will start publically reporting on MAiD using information collected from the pan-Canadian monitoring system.[6] However, there are preliminary reports on MAiD available that were conducted prior to November 1st, 2018.[6] A Health Canada report estimated that there were at least 6,749 medically assisted deaths in Canada between December 10th, 2015 and October 31st, 2018.[13] The most recent report estimated that between January 1st to October 31st, 2018, MAiD accounted for approximately 1.12% of the estimated total deaths in Canada.[13] Compared

to international jurisdictions, the estimated total deaths in Canada attributable to MAiD falls between that of Oregon and the Netherlands.[13] Medically assisted deaths accounted for an estimated 0.46% of total deaths in Oregon in 2018 and 4.4% of total deaths in the Netherlands in 2017.[14,15]

1.2.2 Medications for Medical Assistance in Dying

Clinician-administered MAiD with IV medications comprises the vast majority of cases of MAiD in Canada.[13] There have been very few cases where Canadians have self-administered the oral medications for MAiD.[13] MAiD involves a regimen of medications that are administered intravenously or taken orally. The regimen of IV medications could include an anxiolytic/sedative (e.g., midazolam), a coma-inducing agent (e.g., propofol), and a neuromuscular blocker (e.g., rocuronium).[16,17] The regimen of oral medications could include gastric motility/anti-emetic agents (e.g., metoclopramide, ondansetron, dexamethasone) and a coma-inducing agent.[16-18] The oral coma-inducing agent can be a single medication (e.g., secobarbital) or a combination of medications (e.g., digoxin/diazepam/morphine/propanolol or phenobarbital/chloral hydrate/morphine) that are compounded into a solution or suspension for a patient to drink.[18] A pharmacist may be needed to compound the oral coma-inducing agent. Of the oral agents, secobarbital is the more favoured oral option but combinations of oral agents have been used due to either the expensive cost or unavailability of secobarbital.[18]

1.2.3 The Pharmacist's Role in Medical Assistance in Dying

As pharmacists are medication experts and the gatekeepers of medications, they are likely to play an important role in the MAiD process. At this time, the pharmacist's primary role in MAiD involves the preparation and dispensing of MAiD medications.

They will have no role in administering the MAiD medications. The majority of pharmacy regulatory authorities in Canada have provided direction or resources to pharmacists to guide them in the MAiD process.[3] It is not the responsibility of the pharmacist to assess whether a patient is eligible for MAiD, however a number of Canadian pharmacy regulatory authorities instruct pharmacists to confirm with the prescriber that the patient eligibility criteria and safeguards have been met before dispensing the MAiD prescription.[19-25] Therefore, pharmacists willing to dispense prescriptions for MAiD should be well versed on the patient eligibility criteria and safeguards for MAiD that are laid out in the Criminal Code.

When pharmacists dispense medications for MAiD they must ensure the prescription meets all usual provincial or territorial legal requirements and that it is patient specific.[19,20,22-24] A number of pharmacy guidelines indicate that the MAiD prescription should not be written for "office use".[3,19,20,22,24] Pharmacists are then responsible for ensuring the medications on the MAiD prescriptions are consistent with recognized MAiD drug protocols or collaborate with the prescriber and discuss the protocol selected.[19,20,22,24,26,27] A MAiD guidance document from the New Brunswick College of Pharmacists also discusses a pharmacist's role in assessing for factors that could interfere with the MAiD drug protocols being effective to end a life (e.g., patient factors such as opioid tolerance, body weight or other factors that could interfere with the amount of drug that will be effective).[26] The document also discusses a pharmacist's role in assessing for safety concerns with the MAiD drugs.[26] This could include identifying whether the patient has allergies to the MAiD drugs as this could cause the patient discomfort or pain and ensuring the doses of MAiD drugs are not too low.[26] Too low of a

dose could cause inadequate sedation or analgesia.[26] To assist pharmacists with dispensing MAiD medications some Canadian jurisdictions have developed standardized prescriptions.[16,21,23-25]

The federal legislation states that pharmacists are permitted to dispense MAiD medications either directly to the prescriber or to a person other than the prescriber (e.g., patient, patient caregiver).[1] However, in NL, Prince Edward Island, Nova Scotia, and British Columbia, the pharmacy regulatory documents instruct pharmacists to only dispense MAiD medications directly to the prescriber or to a health care professional designated by the prescriber to pick up the prescription.[19,20,22,25] Therefore, in some jurisdictions pharmacists may have little interaction with the patients requesting MAiD.

Pharmacists may also be responsible for providing consultation/support to patients and MAiD providers.[28] As pharmacists are easily accessible health care professionals, they may receive questions about MAiD from patients. Therefore, it is important for pharmacists to be knowledgeable on their role with interacting with patients regarding MAiD. A number of pharmacy guidelines instruct the pharmacist to refer all initial patient questions about MAiD to a physician or nurse practitioner.[3,19-23] Pharmacists may also receive questions from medical practitioners about MAiD medications and they must ensure the health care professional or other persons designated to pick up the prescription (e.g., patient or patient caregiver) has all necessary information regarding the MAiD medications. This includes information on the preparation, stability, storage of the medications as well as information pertinent to the efficacy and administration of the medications.[3,19,21,23,24] Pharmacists should also discuss with the physician the plan for destruction of any unused medications.[19,20, 22-26]

As of November 1st, 2018, pharmacists who dispense medications for MAiD also have a role in the federal monitoring of MAiD in Canada.[6,29] Pharmacists are required to submit a report to either a designated provincial or territorial authority, or the federal Minister of Health within 30 days of dispensing MAiD medications.[29]

MAiD is a new practice area for pharmacists that introduces a role that is not traditional to the pharmacist. It is not traditional for pharmacists to be knowledgeable of the effective combinations of medications and doses to end a person's life safely (i.e., minimal pain or complications) and to counsel physicians on how to administer medications to end a person's life. Prior to the legalization of MAiD, members of the Canadian pharmacy community expressed concern that they lacked the training to dispense prescriptions for MAiD and provide appropriate counselling.[30] Furthermore, a study conducted right after the legalization of MAiD, in June 2016, also identified Ontarian pharmacists', pharmacy technicians', and pharmacy students' concerns related to dispensing medications and answering inquiries about MAiD.[3] This study reported that, "close to 86% (474/552) of respondents reported at least 1 concern about dispensing MAiD medications" and "approximately 60% (281/469) indicated that they had concerns about answering general inquiries about MAiD".[3 (p.127)] Pharmacists in other provinces may also have similar concerns. Therefore, it is important to identify concerns as they could help inform MAiD policy and practice.

1.2.4 Conscientious Objection

We anticipate that not all pharmacists will be willing to assist in the MAiD process. For some pharmacists, assisting in MAiD may conflict with their personal morals or religious beliefs.[31] A study conducted prior to the legalization of MAiD in Canada

surveyed Canadian pharmacists and technicians and found that around 70% felt pharmacists should not be obligated to participate in MAiD.[30] According to federal legislation, nothing compels a health care professional to assist physicians or nurse practitioners in MAiD.[1] Therefore, health care professionals are not obligated to participate in MAiD if they have conscientious or religious objection.

Conscientious objection in pharmacy practice is when pharmacists object to providing certain products or services because the provision of that service or product conflicts with the pharmacists' morality or religious beliefs, and the pharmacist believes their conscience may be harmed by providing the product or service.[3,32] The federal legislation does not address how a pharmacist's conscientious objection to participation in MAiD should be managed and balanced with respect to a patient's right to receive care. It has been left to the provincial and territorial governments and health care professionals' regulatory authorities to manage conscientious objection.

Notably, a survey of the Canadian pharmacy community conducted prior to legalization of MAiD found around 24% felt pharmacists who object to MAiD should not be required to refer the patient or physician to another pharmacist.[30] Some pharmacists may feel direct referral to another pharmacist or pharmacy may be morally equivalent to assisting in MAiD.[31] The majority of available pharmacy regulatory authorities in Canada have guidelines recommending objecting pharmacists to provide a patient or physician with a referral to another pharmacist or to a third party that could assist in providing a referral (e.g., health authorities, pharmacy board, care coordination service).[3,20, 22-24,33-35] In New Brunswick (NB), pharmacists are to develop a detailed plan with management on how their conscientious objection to providing specific services is managed.[36] In NL,

management of pharmacists' objection to participation in MAiD is unclear. Guidance instructs pharmacists to report their conscientious objection to supervisors or management who are to organize a plan to accommodate the pharmacist's objection to participation while also ensuring timely patient access to MAiD.[19]

Whether pharmacists decide to assist in the MAiD process or not, they will still be required to be knowledgeable about provincial legislation and pharmacy practice regulations. Those who do not wish to participate (i.e., conscientious objectors) should be aware of obligations or considerations associated with their decision (e.g., requirements to provide a referral). To date, there are no studies in Canada aimed at evaluating the factors contributing to why pharmacists are not willing to participate.

1.3 Rationale

MAiD is a new practice area in which pharmacists are likely to play an important role. Therefore, it is important to determine pharmacists' views towards participating. Pharmacists are the gatekeepers of the medications for MAiD. As a result, determining pharmacists' willingness to participate in the delivery of MAiD provides insight into the accessibility of MAiD. Determining pharmacists' willingness to participate in MAiD could also help inform provincial policymakers on whether changes in health service policies and practice guidelines are required. Changes may be required to ensure equitable and timely access to MAiD for patients, while also balancing pharmacists' concerns with participation.

Rural and remote areas in provinces create challenges in accessing health care services. In rural or remote communities, there may only be one pharmacy serving an entire community or collection of communities. Therefore, it is particularly important to

determine pharmacists' willingness to participate in MAiD to describe any regional disparity that may exist in terms of access to MAiD services.

Four studies were identified that surveyed Canadian pharmacists' or pharmacy community members' (i.e., pharmacists, pharmacy technicians, students, assistants) views on MAiD.[3,30,37,38] Three of these studies were conducted prior to the legalization of MAiD in Canada, thus important contextual factors may have been missed.[30,37,38] In addition, none of these three studies asked pharmacists about their willingness to participate in MAiD. The remaining study was conducted in June 2016, right after the legalization of MAiD and it was not exclusive to pharmacists.[3] Instead, the study reported on Ontario pharmacists', pharmacy technicians' and pharmacy students' willingness to participate in MAiD and concerns they have regarding dispensing prescriptions and answering inquiries about MAiD.[3] Since the legalization of MAiD, research on whether Canadian pharmacists are willing and feel prepared to participate in MAiD is limited. Research on the potential barriers to pharmacists' participation in MAiD is also limited.

1.4 Thesis Objectives

The objectives of this thesis were to:

1. Review the literature to:
    - Determine pharmacists' attitudes and willingness to participate in MAiD.
    - Identify factors influencing pharmacists' attitudes and willingness to participate.
    - Identify pharmacist perceived barriers and facilitators to their role in MAiD.

2. Survey pharmacists in NL to:
    - Quantify the proportion of pharmacists in NL willing to participate in MAiD.
    - Identify potential barriers to NL pharmacists' participation in MAiD.
    - Identify differences in NL pharmacists' willingness to participate in relation to their personal and professional characteristics.

1.5 Thesis Overview

The second chapter of this thesis presents a systematic review of the literature that aimed to determine what the literature reveals about pharmacists' attitudes and willingness to participate in MAiD across countries as well as barriers and facilitators to the pharmacist's role in MAiD. To our knowledge, this is the first systematic review studying these areas. Furthermore, the systematic review of the literature was used to assist in the development of the survey questionnaire for the second study in this thesis.

The third chapter presents the results of an exploratory survey of pharmacists in NL to describe the proportion of pharmacists who are willing or unwilling to participate in MAiD, identify potential barriers to their participation in MAiD, and identify differences in their willingness to participate in relation to their characteristics. This survey aimed to provide insight into the accessibility of MAiD in NL and potential barriers that can be addressed by education and policy. The study also explored the role of pharmacists who expressed conscientious objection to participating in MAiD. Results from this study could help inform current pharmacy practice and assist in the successful

implementation of MAiD throughout NL, while balancing the rights of pharmacists to practice according to their moral and religious beliefs.

The fourth chapter is the final chapter of the thesis. It summarizes the findings from the systematic review of the literature, summarizes the results of the survey of pharmacists in NL and describes how the two studies complement each other. It also summarizes the implications this research has on policy, practice, and future research.

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Chapter 2: Co-authorship Statement

Authors of the Systematic Review: Abigail Turner (AT), Dr. Jason Kielly (JK), Dr. Maria Mathews (MM), Dr. Shawn Bugden (SB), Meshari Fahad Alwashmi (MA), and Dr. Erin Davis (ED)

I. **Design and identification of research proposal:** AT was the primary researcher on the systematic review of the literature. AT developed the study questions and the protocol for the systematic review and the protocol was revised by JK and ED.

II. **Practical aspects of the research**

    a. **Search Strategy:** The search strategy was developed in consultation with Librarian Alison Farrell. AT and MA performed the study searches.

    b. **Study Selection**: The 1st round of study selection was conducted by AT and MA. The second round of study selection was completed by AT and JK or ED.

    c. **Data Extraction:** The data extraction form was developed by AT. Data was extracted independently by at least two reviewers AT and ED or JK

    d. **Critical Appraisal of articles:** Articles were independently critically appraised by at least two reviewers, AT and ED or JK

III. **Data Analysis:** Performed by AT

IV. **Manuscript Preparation:** Prepared by AT. The manuscript was revised by JK, ED, MM, and SB

Chapter 2

Pharmacists' Attitudes towards Participating in Medical Assistance in Dying: A Systematic Review of the Literature

2.1 Introduction

There are a growing number of jurisdictions around the world with legal forms of MAiD. One form of MAiD involves an authorized health care professional, generally a physician, prescribing or providing a substance to a requesting, eligible patient, so that the patient can then self-administer the substance to cause their own death (i.e., [physicians] assisted suicide).[1-5] The other form of MAiD involves an authorized health care professional, again generally a physician, directly administering a substance to a requesting, eligible patient to cause their death (i.e., [voluntary active] euthanasia).[1-5] In the literature and between jurisdictions around the world, there is variability in the terms used to describe the forms of MAiD and the definitions of those terms.[3-5]

Currently six countries (Canada, Columbia, Luxembourg, Belgium, Netherlands and Switzerland), the state of Victoria in Australia, and six states (Oregon, Washington, Vermont, California, Colorado, and Hawaii) and the District of Columbia in the United States (US) have a legal form or forms of MAiD.[2,3,6-8] There are some differences in MAiD law amongst these jurisdictions. These differences include the form of MAiD permitted, terminology used (e.g., [physician] assisted suicide, [voluntary active] euthanasia, voluntary assisted dying, medical aid in dying), who can provide/prescribe or administer medications for MAiD (e.g., physicians only versus physicians and nurse

practitioners), eligibility criteria (e.g., age, citizenship, patients' medical condition(s), some jurisdictions require patients to be terminal), and the use of advance directives.[2,3,6,7]

Pharmacists are likely to play an important role in MAiD because they are medication experts and the gatekeepers of medications. Therefore, pharmacists will be involved in providing access to MAiD. In some jurisdictions the pharmacist may potentially be the last point of contact for patients before the patient self-administers the MAiD medications.[9] In addition to dispensing medications, pharmacists may also be involved in regulatory oversight and providing consultation/support to patients or providers.[9] During consultations pharmacists may provide drug information to patients or physicians (i.e., counselling on drug: preparation, stability, storage, disposal, efficacy and administration).[9-11]

There may be some pharmacists who are uncomfortable participating in MAiD. Pharmacists who do not wish to participate (e.g., conscientious objectors) should be aware of specific obligations or considerations associated with their decision. In a number of jurisdictions with legal MAiD pharmacists are not obligated to participate if they have a conscientious objection.[12] As the legalization of MAiD is growing around the world and pharmacists are likely to play an important role, it is important to review the literature to assess pharmacists' views towards participation.

To date, systematic reviews have mainly focused on physicians' attitudes towards MAiD, and one systematic review focused on the motivations of nurses and physicians to participate in voluntary euthanasia.[13-15] A scoping review has mapped out the professional roles and challenges of health care professionals with regards to MAiD.[9] Challenges for pharmacists were identified in the scoping review, thus suggesting there may be potential

barriers to the pharmacist's role in MAiD.[9] To our knowledge there has not been a systematic review of the literature focusing specifically on pharmacists and MAiD.

The purpose of this study is to review the literature to determine pharmacists' attitudes and willingness to participate in MAiD, identify factors influencing attitudes and willingness, and identify pharmacist perceived barriers and facilitators to their role in MAiD. This study may also help inform health care policy, pharmacy practice and direct future research in this area.

2.2 Methods

2.2.1 Study Design

The systematic review was conducted following guidance from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses[16] and the Cochrane Handbook of Systematic Reviews for Interventions.[17] The protocol is registered in PROSPERO (ID: CRD42018087648).[18]

2.2.2 Definitions

MAiD is defined in the Canadian Criminal Code as: "a) the administering by a physician or nurse practitioner of a substance to a person, at their request, that causes their death; or (b) the prescribing or providing by a physician or nurse practitioner of a substance to a person, at their request, so that they may self-administer the substance and in doing so cause their own death."[1(p.284-285)] Although MAiD is a Canadian term it encompasses two types of MAiD legalized in other jurisdictions around the world. The terms and the definitions of the terms used to describe the forms of MAiD vary by source and jurisdiction.[3,4] Terms such as: "voluntary euthanasia", "euthanasia", "voluntary active euthanasia" and "clinician-administered medical assistance in dying" have been used to

describe the form of MAiD that involves an authorized health care professional (generally a physician) directly administering a substance to a requesting, eligible patient to cause their death.[2-5,19] Terms such as: "assisted suicide", "physician assisted suicide", "self-administered medical assistance in dying", "physician assisted death" have been used to describe the form of MAiD that involves an authorized health care professional (generally a physician) prescribing or providing a substance to a requesting, eligible person, so that the person can then self-administer the substance to cause their own death.[2-5,19] For the purpose of including and excluding studies we were guided by the Canadian definition of MAiD, and other commonly used terms to describe MAiD.

We considered barriers to be concerns, issues, obstacles, or difficulties to a pharmacist's role in MAiD or reasons why pharmacists are unwilling to participate. We considered facilitators to be reasons why pharmacists were willing to participate or anything pharmacists identify that enable or assist them with their role in MAiD.

2.2.3 Information Sources and Search

We searched PubMed, EMBASE, PsycINFO, CINAHL, and International Pharmaceutical Abstracts (IPA) for relevant literature. In addition, a grey literature search was conducted through ProQuest Dissertations and Theses Global (PQDT Global) database and reference lists of included studies were hand-searched.[20] We developed the search strategy in collaboration with a research librarian who has experience with systematic reviews.[20] There was no restriction on publication date applied to the searches. The last search was conducted in February 2018. We searched PubMed, EMBASE, PsychINFO, and CINAHL using a list of indexed terms (e.g., MeSH terms in PubMed), in addition to free-text terms.[20] Free-text terms were used to search IPA and ProQuest

Dissertations and Theses Global database. See Appendix 2A for the search strategy used for each database. RefWorks was used to manage references.[20]

2.2.4 Study Selection

As suggested by the Cochrane Handbook for Systematic Reviews of Intervention, two independent reviewers (AT & MA) completed study selection.[21] We followed a "typical process" for selecting studies for a systematic review.[21(ch. 7.2.3)] Firstly, we removed duplicate records and then titles and abstracts of articles were screened for relevance.[21] Irrelevant articles were removed. In the next stage, we retrieved full texts of relevant articles and assessed them against the inclusion/exclusion criteria (Table 2.1).[21] In accordance with performing systematic reviews, we pre-specified the study eligibility criteria.[22] When disagreements about article inclusion could not be resolved by discussion between the two reviewers, a third reviewer (JK or ED) assessed the article(s) and was the deciding vote.

Table 2.1: Inclusion/Exclusion Table

	Inclusion Criteria	**Exclusion Criteria**
Population	Pharmacists	Studies where pharmacists were not a clearly identifiable group
Outcomes	Pharmacists' attitudes/views towards MAiD, their willingness to participate in MAiD and, their perceived barriers or facilitators to their role in MAiD. Associations between pharmacists' characteristics and their attitudes/willingness to participate in MAiD	Studies that focused on terminal sedation/palliative sedation, withdrawing or with-holding of life-sustaining treatment, and the provision of a prescription or medications or direct administration of MAiD by someone other than a physician or nurse practitioner
Study Design	Published and unpublished English language articles that reported primary research	Commentaries, opinion pieces, editorials, conference abstracts, conference proceedings, reviews, and articles that could not be obtained in full text, and non-English language articles

2.2.5 Data Extraction, Quality Appraisal and Data Analysis

Two independent reviewers (AT and ED or JK) extracted data from the included studies using an extraction form designed for this review. Critical appraisal was also performed by at least two independent reviewers (AT and ED or JK) using a nine-item assessment tool developed by Hawker et al. for disparate studies.[23] We selected this tool as it assessed both quantitative and qualitative studies and provided the ability to calculate an overall score for each study (minimum=9, maximum=36). The tool did not classify studies into categories of low and high quality, rather it provided a framework to describe and grade methodological rigor.[23] The tool assessed: abstract and title, introduction and aims, method and data, sampling, data-analysis, ethics and bias, findings/results, transferability/generalizability, and implications and usefulness.[23] Each item in the tool was given a grade of "good", "fair", "poor", and "very poor".[23] We discussed

discrepancies in scoring until an overall score was agreed upon. We did not exclude studies based on quality. Instead, we compared study quality and critically appraised and discussed findings.

We undertook a narrative synthesis to analyze the data. A narrative synthesis can be undertaken in place of a quantitative synthesis when included studies are "insufficiently similar".[249(p.7)] Study and participant characteristics were tabulated and then summarized in text. We tabulated the extracted data from the outcomes of interest and then content that showed commonality was colour coded, collated and given a potential theme. Themes were then organized under overarching themes. The identification of the overarching themes was guided by the outcomes of interest.

2.3 Results

2.3.1 Study Selection

A total of 14 studies were included in the review. However, a 15th record[25] was retrieved through a search of The Health Care in Canada Survey Website[26] to clarify results reported in one[27] of the included studies (Figure 2.1). The grey literature search and hand review of reference lists of included articles did not identify any additional studies.

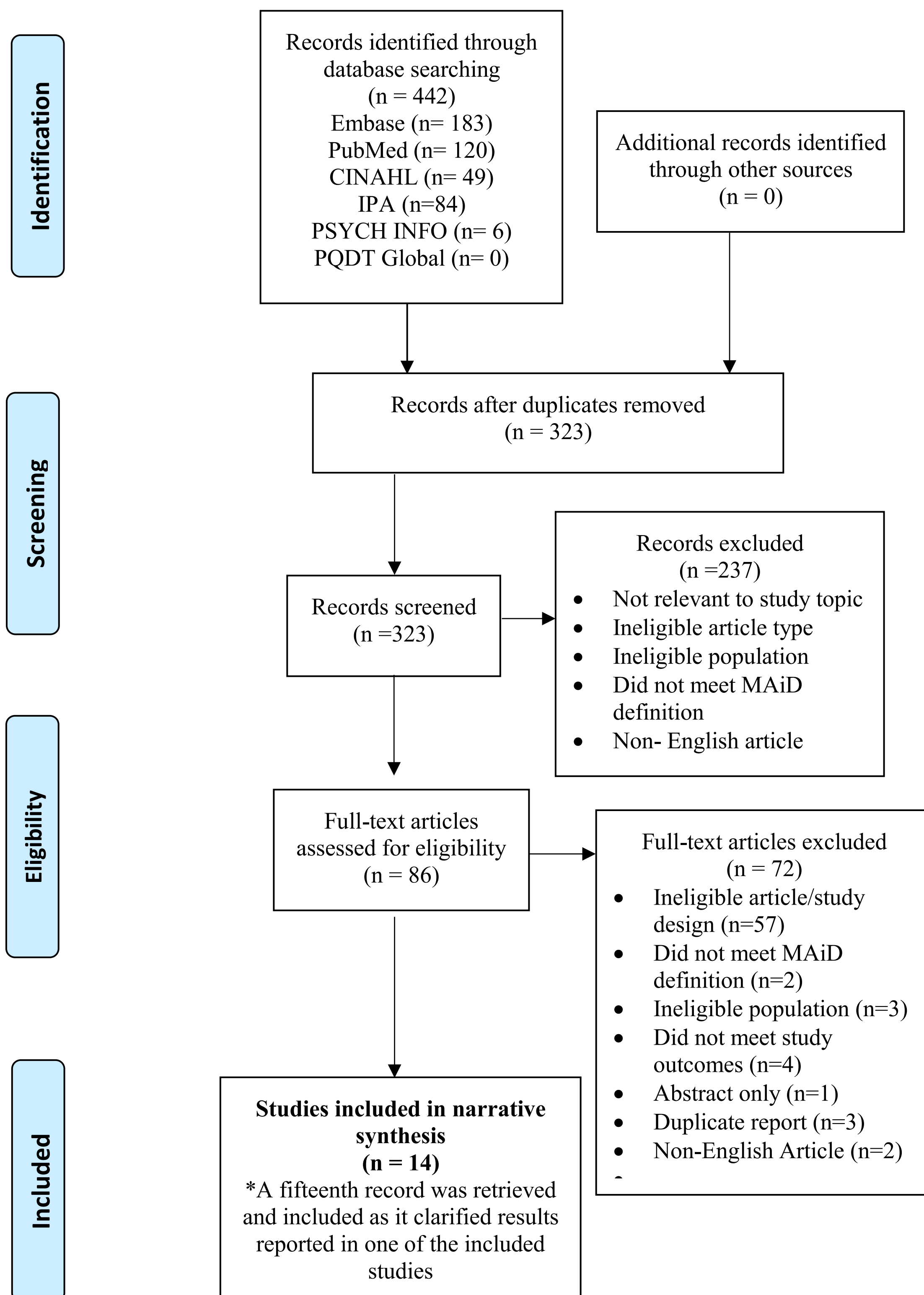

Figure 2.1: PRISMA Flow Diagram for Study Selection[16]

2.3.2 Study & Participant Characteristics

Most studies (13/14, 93%) were conducted in 2002 or earlier (Table 2.2).[28-40] The majority were conducted in the US (8/14, 57%).[29-31,35-39] All studies reported quantitative data and most used mailed surveys. Four studies[28,32-34] described pretesting/ piloting their questionnaires and two studies[28,40] developed their questionnaires based on studies[33,34,36] included in this review. Only one study was conducted in a jurisdiction where MAiD was legal at the time of the study.[37] Two studies took place around the time that MAiD was becoming legal in their respective countries (i.e. Canada, Belgium).[27,28] Although the study conducted in the Netherlands took place before MAiD was legal, the article states that physicians were "rarely prosecuted if they adhere to three conditions for justifiable euthanasia and if they notify the coroner about the case".[34(p.3)]

To describe the forms of MAiD studied, studies generally used variations of similar terms such as [physician/medically] assisted suicide, and [voluntary active] euthanasia. We standardized the terms as, "physician assisted suicide (PAS)" and "euthanasia (EUTH)" as these were the most commonly used terms in the studies (Table 2.2). Only four studies defined the MAiD terminology used in their studies (Appendix 2B).[28,32-34] Five studies[27,28, 32,34,36] assessed pharmacists' views towards both forms of MAiD (i.e., physician assisted suicide and euthanasia), whereas eight studies[29-31,33,37-40] assessed views towards physician assisted suicide and one study[35] assessed views towards euthanasia.

The median number of study participants was 359 (IQR 183 to 625) and the reported response rates ranged from 36-80% (Table 2.2). Ten studies provided respondent characteristics.[28,30-36,39,40] In seven of those ten studies, the majority of the sample worked

in community/retail pharmacies.[28,30,31,33-35,39] In seven of the ten studies, the majority of the sample was male.[30,31,33-36,39] The average age and number of years practicing could not be determined due to differences in data collection methods between studies.

There was heterogeneity in the studies with regards to the form of MAiD (i.e., physician assisted suicide and/or euthanasia) studied, the provision, or lack thereof, of details about MAiD (i.e., definitions, hypothetical or actual legal framework, and details about the patient/eligibility criteria for MAiD). In addition, there were inconsistencies in the survey items between the studies. This included differences in the phrasing and wording of survey items. Due to the heterogeneity between the studies a narrative synthesis was conducted to analyze the extracted data.[24]

2.3.3 Quality Assessment

The mean quality score, using the Hawker et al. checklist, was 20 (range 11 -33).[23] Overall scores were generally low. There were a range of reasons for the low scores, including inadequate descriptions of: methods, sampling (e.g., sample size justification), ethics/bias (e.g., reporting of ethical approval of study, consent, or self-reflection of bias), and data analysis. Of the studies that assessed for associations between demographic variables and responses, one study had discrepancies between results in the data table and text regarding how age influenced responses.[36] However, the author of this study was contacted and they provided clarification on the association with age.[41] Generally, transferability/generalizability received lower scores. Only a few studies attempted to assess for non-response bias[32-34,36] or compared the sample to a wider population.[28,34] One study[32] cautioned readers that the results may not be representative of the wider population, and five studies[28,34,36,38,39] acknowledged issues that may have impacted the

representativeness or generalizability of their results. Issues included: low response rate,[34] small sample size,[39] samples drawn from organizations where membership may not have been representative of pharmacists in the jurisdictions studied[28,38,39] and the possibility of non-response bias[28,36] and selection bias.[34] Five studies[29-31,35,37] also received lower scores on generalizability and transferability because they either did not provide a good description of sampling or, context, or setting and they did not assess or comment on representativeness.

Table 2.2: Study Characteristics

Author & Year of Publication	Setting & Timing of Study	Data collection	Practice setting	# of pharmacist participants	Response Rate (%)	Type of MAiD	Status of MAiD legalization at the time of study	Outcomes Studied	Quality Scores
Bilsen, J. et al. (2005)[28]	East Flanders, Belgium (2002)	Mail survey	CP	359	54	PAS & EUTH	Not legal, the study was conducted a month before the EUTH law was passed	• Attitudes • Willingness	33
Buckley B. (1994)[29]	US (1994)	Magazine opinion poll	-	Over 1 200	-	PAS	Not legal	• Attitudes	11
Conlan, M.F. (1995)[30]	US (1995)	Mail survey	CP	559$^{\alpha}$	57	PAS	Not legal	• Attitudes • Willingness	14
Conlan, M.F. (1999)[31]	US (1999)	Mail survey	Various	720$^{\alpha}$	36	PAS	PAS was legal in Oregon, but not legal in any other US jurisdictions	• Attitudes • Willingness	14
Hackett, E. A. et al. (2003)[32]	England and Wales (2000)	Mail survey	CP & HP	295	59	PAS & EUTH	Not legal	• Attitudes • Willingness • Associations	30
Hanlon, T. R. et al. (2000)[33]	Great Britain (1998)	Mail survey	CP	183	56	PAS	Not legal	• Attitudes • Willingness • Associations	26

Author & Year of Publication	Setting & Timing of Study	Data collection	Practice setting	# of pharmacist participants	Response Rate (%)	Type of MAiD	Status of MAiD legalization at the time of study	Outcomes Studied	Quality Scores
Lau, H. S. et al. (2000)[34]	Netherlands (1994)	Mail survey$^{\chi}$	CP & HP	396 (CP) 52 (HP)	52 (CP) 51 (HP)	PAS & EUTH	Not legal, but physicians were rarely prosecuted for EUTH or PAS if they followed the conditions$^{\beta}$ for justifiable euthanasia[34]	• Attitudes$^{\delta}$ • Willingness$^{\delta}$ • Barriers$^{\delta}$	27
Montague, T. et al. (2017)[27]/ HCIC (2016)[25]	Canada (2016)	Web-based survey	-	100	NR	PAS & EUTH	Not legal, study was conducted a month before MAiD law was passed	• Attitudes • Barriers	20
Maxwell T. et al. (1992)[35]	US (1992)	Mail survey	CP & HP	1 150	67	EUTH	Not legal	• Attitudes • Willingness	14
Rupp, M. T. et al. (1994)[36]	US (1992)	Mail survey	Various	534	61	PAS & EUTH	Not legal	• Attitudes • Willingness • Associations	29
Slezak, M. (1998)[37]	US, Oregon (NR)	Unclear	-	16	80	PAS	PAS legal	• Willingness	11
Snyder, K. (1997)[38]	US (1996)	Mail survey	-	625	47	PAS	Not legal	• Attitudes	13
Vivian, J. C. et al. (1993)[39]	US, Michigan (1992)	Mail survey	Various	209	52	PAS	Not legal	• Attitudes • Willingness • Associations	18

Author & Year of Publication	Setting & Timing of Study	Data collection	Practice setting	# of pharmacist participants	Response Rate (%)	Type of MAiD	Status of MAiD legalization at the time of study	Outcomes Studied	Quality Scores
Yung, D.K et al. (1999)[40]	Canada, Nova Scotia (1998)	Mail survey	-	188	41.8	PAS	Not legal	• Attitudes • Associations	23

PAS = Physician assisted suicide, EUTH = euthanasia, CP = community pharmacy, HP = hospital pharmacy

α. The # of participants was estimated by the authors of this review based on the response rate and the reported number of participants sampled

β. The three conditions: the patient must have volunteered a well informed and sustained wish to die, the patient is suffering unacceptably without any hope of relief, and that the physician must consult a colleague who agrees that euthanasia is acceptable in the given case.[34]

χ. There were two different questionnaires one for pharmacists working in hospital and one for pharmacists working in community.

δ. Only community pharmacists were asked questions about their attitudes, willingness, and barriers

2.3.4 Themes

We summarized the study results under the following four overarching themes:

1) Pharmacists' attitudes towards MAiD,

2) Pharmacists' attitudes towards participation in MAiD,

3) Factors influencing attitudes and willingness to participate in MAiD, and

4) Barriers and facilitators to the pharmacist's role in MAiD

2.3.5 Pharmacists' Attitudes Towards Medical Assistance in Dying

Twelve studies examined pharmacists' attitudes towards MAiD.[25,27-36,39,40] In these twelve studies the survey items used to examine pharmacists' attitudes were frequently different. Of these twelve studies, pharmacists were commonly asked whether they: felt patients are justified/have the right to choose when or how to end their lives (7/12 studies),[28,32-34,36,39,40] were supportive of MAiD (11/12 studies),[25,27-31,33-36,39,40] were supportive of the legalization of MAiD (4/12 studies),[28,32-34] and felt medications are an appropriate means to accomplish MAiD (4/12 studies).[32,33,36,40]

In all seven studies that examined pharmacists' views towards patients being justified or having the right to choose when or how to end their lives, the majority of pharmacists (52-95%) felt patients are justified/have the right in choosing when or how to end their own lives.[28,32-34,36,39,40] Of the eleven studies[25, 27-31,33-36,39,40] that asked pharmacists whether they were supportive of MAiD, eight studies[25,27-30,33,34,39,40] found the majority of pharmacists (57-94%) were supportive (Table 2.3). Of the four studies[28,32-34] that examined pharmacists support towards the legalization of MAiD, three studies[28,32,34] found the majority of pharmacists (56-88%) were supportive of the legalization (Table 2.4). Of the four studies[32,33,36,40] that examined pharmacists' views

towards the use of medications to accomplish MAiD, three studies[34,36,40] found the majority (67-70.9%) felt medications are an appropriate means to accomplish MAiD. However, one of those studies[36] only asked those that did not oppose assisted suicide. The fourth study found the responses divided between agree, disagree, and unsure.[33]

When taking into consideration all twelve studies that examined pharmacists' attitudes, the majority of studies (8/12) found over 50% of the pharmacists were either supportive of MAiD and/or the legalization of MAiD. [25,27-30,32,34,39,40] Of the remaining studies, one found the majority of pharmacists were supportive of physicians assisting patients to end their lives, but not supportive of the legalization of MAiD.[33]

Table 2.3: Pharmacists' Support/Approval of Medical Assistance in Dying

Reference	Type of MAiD	Setting and Timing	Practice Setting	Status of MAiD legalization at the time of study	Eligibility Criteria	Sample Size	Support/Oppose MAiD		
							Support (%)	Oppose (%)	Unsure/ Neutral/ Other (%)
Maxwell T. et al. (1992)[35]	EUTH	US (1992)	CP & HP	Not legal	-	1150	41	33	26
Vivian, J. C. et al. (1993)[39]	PAS	US, Michigan (1992)	Various	Not legal	-	209	58	-	-
Rupp, M. T. et al. (1994)[36]	PAS	US (1992)	Various	Not legal	Hypothetical criteria specified[γ]	533	48.6	35.5	15.9
Buckley B. (1994)[29]	PAS	US (1994)	-	Not legal	Hypothetical patients that are terminally ill and suffering	Over 1200	56.1	34.9	9
Lau, H. S. et al. (2000)[34]	PAS	Netherlands (1994)	CP	Not legal, but physicians were rarely prosecuted for EUTH or PAS if they followed the conditions[β] for justifiable euthanasia[34]	-	390	91	9	-
	EUTH				-	389	94	6	-
Conlan, M.F. (1995)[30]	PAS	US (1995)	CP	Not legal	Hypothetical patients that are terminally ill	559	67	-	-

Reference	Type of MAiD	Setting and Timing	Practice Setting	Status of MAiD legalization at the time of study	Eligibility Criteria	Sample Size	Support/Oppose MAiD		
							Support (%)	**Oppose (%)**	**Unsure/ Neutral/ Other (%)**
Yung, D.K. et al. (1999)[40]	PAS	Canada, Nova Scotia (1998)	-	Not legal	Hypothetical criteria specified [η]	187	64.2	17.6	18.2
Hanlon, T. R. et al. (2000)[33]	PAS	Great Britain, 1998)	CP	Not legal	-	179	57	28	15
Conlan, M.F. (1999)[31]	PAS	US (1999)	Various	PAS was legal in Oregon, but not legal in any other US jurisdictions	-	729	38	-	-
Bilsen, J. et al. (2005)[28]	PAS[ϕ]	East Flanders, Belgium (2002)	CP	Not legal, the study was conducted a month before the EUTH law was passed	-	359	61	22	17
	EUTH[ϕ]				-		84	6	10
	EUTH[ϕ]				Hypothetical patient that is competent		86	-	-
	PAS[ϕ]				Hypothetical patient that is competent		77	-	-
	EUTH[ϕ]				Hypothetical patient that is comatose		71	-	-

Reference	Type of MAiD	Setting and Timing	Practice Setting	Status of MAiD legalization at the time of study	Eligibility Criteria	Sample Size	Support/Oppose MAiD		
							Support (%)	Oppose (%)	Unsure/ Neutral/ Other (%)
HCIC (2016)[25]/ Montague T. et al. (2017)[27]	EUTH/PAS	Canada (2016)	-	Not legal, study was conducted a month before the MAiD law was passed	Hypothetical individuals reaching the end of their life	100	67	-	-

PAS = physician assisted suicide; EUTH = euthanasia, CP = community pharmacy; HP = hospital pharmacy

ϕ. The study had two differently worded survey items that asked pharmacist their attitude towards PAS, and three differently worded survey items asking about EUTH.

γ. The Rupp study provided the following guidelines to help pharmacists evaluate the appropriateness of patient suicide/euthanasia: 1. An explicit, repeated request by the patient to die, 2. Severe mental or physical suffering, with no prospect of relief, 3. An informed, free, and consistent decision by the patient, and 4. The lack of other treatment options and/or the failure of those unavailable[36]

η. The Yung study provided the following circumstances under which assisted suicide was to be considered. Respondents were instructed to consider assisted suicide under one of the following circumstances: terminal illness with no prospect of relief or other treatment options; an explicit, repeated to die, made by the patient on the basis of an informed, free, and consistent decision; or severe mental or physical suffering with no hope of recovery.[40]

β. The three conditions: the patient must have volunteered a well informed and sustained wish to die, the patient is suffering unacceptably without any hope of relief, and that the physician must consult a colleague who agrees that euthanasia is acceptable in the given case.[34]

Table 2.4: Pharmacists' Attitudes towards the Legalization of Medical Assistance in Dying

Reference	Type of MAiD	Setting	Practice Setting	Status of MAiD legalization at the time of study	Sample Size	Should MAiD be legalized?		
						Agree/Yes (%)	Disagree/No (%)	Unsure/ Neutral (%)
Lau, H. S. et al. (2000)[34]	EUTH/PAS	Netherlands (1994)	CP	Not legal, but physicians were rarely prosecuted for EUTH or PAS if they followed the conditions$^{\beta}$ for justifiable euthanasia[34]	386	56	44	-
Hanlon, T. R. et al. (2000)[33]	PAS	Great Britain (1998)	CP	Not legal	178	44	33	23
Hackett, E. A. et al. (2003)[32]	EUTH	England and Wales (2000)	CP & HP	Not legal	290	61	27	12
	PAS				289	58	29	13
Bilsen, J. et al. (2005)[28]	PAS	East Flanders, Belgium (2002)	CP	Not legal, the study was conducted a month before the EUTH law was passed	359	77	12	11
	EUTH					88	5	7

PAS = physician assisted suicide; EUTH = euthanasia, VAE = voluntary active euthanasia, CP = community pharmacy; HP = hospital pharmacy
β. The three conditions: the patient must have volunteered a well informed and sustained wish to die, the patient is suffering unacceptably without any hope of relief, and that the physician must consult a colleague who agrees that euthanasia is acceptable in the given case.[34]

2.3.6 Pharmacists' Attitudes Towards Participation in Medical Assistance in Dying

Pharmacists' willingness to participate in MAiD was reported in ten studies (Table 2.5).[28,30-37,39] The majority of studies asked pharmacists hypothetically, if MAiD was legal or if official guidelines followed, would they be willing to dispense prescriptions for MAiD.[28,30-35,39] One study[37] was conducted where physician assisted suicide was already legal, one study[36] provided hypothetical eligibility criteria for MAiD, and four studies defined MAiD.[28,32-34] The other studies provided very little context on MAiD.

Overall, the percentage of pharmacists willing to participate varied, ranging from 21% to 95%. Five of ten studies found the majority of pharmacists (>50%) willing to participate. [28,30,32,34,35] However, in some of these cases there was still close to 40% of pharmacists who were either unsure or not willing to participate.[30,35] In the remaining five studies, 51 to 79% of respondents were unwilling/unsure.[31,33,36,37,39] Five studies asked pharmacists how they felt about pharmacists opting-out of participating and found that 67% to 91%, felt pharmacists/health care workers should be permitted to opt-out of being involved in MAiD.[25,27,28,31,33, 38]

Five studies asked pharmacists whether they desired to know that the prescription they were filling was for MAiD.[28,32,33,36,40] In all of these studies MAiD was not legal but, one study[33] asked participants to consider their response as if MAiD was legal. Three studies found the majority of pharmacists (>50%) would want to know the prescription they were dispensing was for MAiD.[28,33,36] However, there was still a substantial percentage of pharmacists that did not want to know (25% to 39.4%) or were unsure (15% to 21.8%).[32,33,36,40]

Table 2.5: Pharmacists' Willingness to Participate in Medical Assistance in Dying

Reference	Setting	Practice Setting	Type(s) of MAiD	Status of MAiD legalization at the time of study	Eligibility Criteria	Sample Size	Willingness to participate		
							Willing (%)	Unwilling (%)	Unsure (%)
Maxwell T. et al. (1992)[35]	US (1992)	CP & HP	EUTH	Not legal	-	1150	~60[o]	-	-
Vivian, J.C. et al. (1993)[39]	US, Michigan (1992)	Various	PAS	Not legal	-	209	37	46	17
Rupp, M.T. et al. (1994)[36]	US (1992)	Various	EUTH/PAS	Not legal	Hypothetical criteria specified[π]	344	34.3	29.3	35.8
Lau, H.S. et al. (2000)[34]	Netherlands (1994)	CP	EUTH/PAS	Not legal, but physicians were rarely prosecuted for EUTH or PAS if they followed the conditions[β] for justifiable euthanasia[34]	-	396	95	5	-
Conlan, M.F. (1995)[30]	US (1995)	CP	PAS	Not legal	Terminally Ill	559	62	-	-
Hanlon, T.R. et al. (2000)[33]	Great Britain (1998)	CP	PAS	Not legal	-	179	49	24	27

Reference	Setting	Practice Setting	Type(s) of MAiD	Status of MAiD legalization at the time of study	Eligibility Criteria	Sample Size	Willingness to participate		
							Willing (%)	Unwilling (%)	Unsure (%)
Slezak, M. (1998)[37]	US, Oregon (NR)	-	PAS	PAS was recently legalized	"Adult who is capable, is a resident of Oregon, … suffering from a terminal disease, and who has voluntarily expressed his or her wish to die"[37]	16	31.25	68.75	-
Conlan, M.F. (1999)[31]	US (1999)	Various	PAS	PAS was legal in Oregon, but not legal in any other US jurisdiction	-	720	21	-	-
Hackett, E. A. et al. (2003)[32]	England and Wales (2000)	HP & CP	PAS	Not legal	-	291	64	22	14
			EUTH				63	23	14
Bilsen, J. et al. (2005)[28]	East Flanders, Belgium (2002)	CP	EUTH	Not legal, the study was conducted a month before the EUTH law was passed	Competent patient	359	81	-	-
			PAS		Competent patient		77	-	-
			EUTH		Comatose patient		69	-	-

PAS = physician assisted suicide; EUTH = euthanasia, CP = community pharmacy; HP = hospital pharmacy

o. Study only reported estimated percentage

π. Respondents were only pharmacists that did not oppose of a physician assisting a patient to end their life. The Rupp study also provided the following guidelines to help pharmacists evaluate the appropriateness of patient suicide/euthanasia: 1. An explicit, repeated request by the patient to die, 2. Severe mental or physical suffering, with no prospect of relief, 3. An informed, free, and consistent decision by the patient, and 4. The lack of other treatment options and/or the failure of those unavailable[36]

β. The three conditions: the patient must have volunteered a well informed and sustained wish to die, the patient is suffering unacceptably without any hope of relief, and that the physician must consult a colleague who agrees that euthanasia is acceptable in the given case.[34]

2.3.7 Factors Influencing Attitudes and Willingness to Participate in Medical Assistance in Dying

Five studies tested for significant associations between pharmacists' characteristics and attitudes towards MAiD.[32, 33,36,39,40] The chi-squared test was most commonly used to test for associations. The assessed characteristics were: religion (n=5),[32,33,36,39,40] sex/gender (n=5), [32,33,36,39,40] age (n=3),[32,36,39] number of years practicing (n=2),[32,33] practice setting (n=2),[32,36] experience of death of a relative or close friend (n=1),[32] interaction with terminally ill or severely debilitated patients (n=1).[36] Four studies found that religion (i.e., a higher self-reported degree of religiosity, having a religion and ethnic/religious declaration) was associated ($p<0.05$) with pharmacists' opposing the practice of MAiD.[32,33,36,40] One study found Catholics' approval of suicide as a moral or ethical right to be significantly lower than Protestants (no p-value reported).[39]

Associations between sex/gender and responses to questions/statements regarding pharmacists' attitudes towards MAiD was reportedly found in two out of five studies.[33,39] One study[32] found females were more favourable towards physician assisted suicide ($p=0.028$), and the other study[39] found females were more likely to favor a legal right to commit suicide (no p-value reported). One study found pharmacists who experience the death of a relative or close friend were more likely to feel people do not have the right to choose their own manner of death ($p=0.025$).[32] No other significant associations were reported.

Three studies[32,36,39] assessed for associations between overall willingness to participate and the following participant characteristics: age (n=3),[32,36,39] religion

(n=2),[32,36] interaction with terminally ill or severely debilitated patients (n=1),[36] practice setting (n=2),[32,36] gender (n=2),[32,39] number of years practicing (n=1),[34] experience of death of a relative or close friend (n=1).[32] One study[36,41] found younger pharmacists were more unwilling to participate ($p<0.05$) and one study[32] found pharmacists with a religion were more likely to be unwilling to dispense MAiD medications ($p<0.0001$). No other significant associations were reported.

2.3.8 Barriers & Facilitators to the Pharmacist's Role in Medical Assistance in Dying

Only two studies reported on pharmacist perceived barriers towards their role in MAiD and no studies reported on facilitators.[27,34] The study conducted in the Netherlands was the only study that asked pharmacists why they were not willing to participate in MAiD and why pharmacists had refused to dispense prescriptions for MAiD.[34] The most commonly cited reason reported for unwillingness to participate was due to religious convictions and the most commonly cited reason for refusal to dispense a prescription was that the physician did not follow pharmacy practice guidelines.[34] The study by Montague et al. reported that pharmacists had concerns of legal or regulatory reprisal with being involved in MAiD, even if MAiD was legal.[27]

2.4 Discussion

2.4.1 Summary of the Main Findings

Our review found that almost all studies[28-40] were conducted prior to 2002 and the majority of studies[25,27-36,38-40] were conducted when MAiD was not legal or in jurisdictions where MAiD has never been legal. Overall, the majority of studies (8/12 studies) found over 50% of pharmacists were either supportive of MAiD and/or the legalization of MAiD. [25,27-30,32,34,39,40] Pharmacists' willingness to participate in MAiD

varied between studies, ranging from 21 to 95% of respondents willing to participate in MAiD if it was legal. [28,30-37,39] Only 50% of studies (5/10 studies) found the majority of pharmacists were willing to participate in MAiD. [28,30,32,34,35] The majority of pharmacists felt they should be permitted to opt-out of participating in MAiD and would like to know whether prescriptions they receive are for MAiD. [25,27,28,31,33,38] However, there was still a substantial percentage of pharmacists that did not want to know (25% to 39.4%) or were unsure (15% to 21.8%) whether they wanted to know whether a prescription they were dispensing was for MAiD.[32,33,36,40]

Religion was the factor most commonly and consistently associated with pharmacists' opposition to the practice of MAiD. [32-34,36,39,40] There were no consistently reported factors influencing willingness to participate. Lastly, our review identified a gap in the literature pertaining to pharmacists' perceived barriers and facilitators to their role in MAiD. Furthermore, when interpreting the findings, it is important to consider that the included studies generally received lower scores regarding generalizability of their findings to a wider population.

2.4.2 How This Study Fits In

To our knowledge this is the first systematic review specific to pharmacists on this topic and is a starting point for understanding, comparing and contrasting pharmacists' attitudes and willingness to participate across countries. An important finding identified in this study was that most studies were conducted prior to legalization of MAiD or in regions where MAiD has never been legal. [25,27-36,38-40] This is an important finding because there is now a growing number of jurisdictions around the world who have legalized MAiD. The legalization of MAiD introduces new contextual factors and

potentially changes in the attitudes of societies towards MAiD. Therefore, our review may demonstrate the need for new studies to capture present day views towards MAiD.

Our findings on pharmacists' attitudes towards MAiD appear to be similar with the findings of reviews on physicians as the reviews also appear to suggest variability in attitudes towards MAiD, especially across different countries.[3,13,14,42] The reviews on physicians included studies conducted around similar time frames as our study. [3,13,14,42]

Some of the variability in pharmacists' attitudes towards MAiD and participation in MAiD could be partially attributed to study heterogeneity. First, our study was international so different jurisdictions were included in our review and country of origin has been suggested to influence health care professionals' attitudes on MAiD.[42-45] This could be due to countries having different societal views towards MAiD. Secondly, published studies have found that responses to questions on end-of-life issues have differed due to wording and phrasing of survey items.[14,46] In this review, there were differences in survey item wording and phrasing in and between studies with some survey items providing additional contextual details (e.g., definitions, hypothetical eligibility criteria and scenarios) to assist pharmacists with their interpretation. Therefore, these differences could partially contribute to some of the variability seen in and between studies. These issues with heterogeneity also made comparability of results difficult. Reviews of nurses and physicians have also encountered issues with heterogeneity between studies on this topic (e.g., differences in question wording and phrasing, differences in the presence/absence of MAiD definitions).[13,14,42,43,45]

Religion was the factor most commonly and consistently associated with pharmacists opposing MAiD. A recently published systematic review on nurses and

physicians surprisingly did not find religion to be consistently associated with intention/or behavior; however, it did find psychological, sociodemographic, and specifically for physicians was patient variables to be the most consistently and significantly associated variables with willingness to participate/participation in voluntary euthanasia.[15] This review also reported that some methods used in studies may have been inadequate to assess for influence of religion.[15]

The role of the pharmacist has evolved over the years and with that evolution pharmacists became responsible and accountable for prescriptions they dispense. Therefore, in the present day it would be surprising to see that a substantial number of pharmacists do not want to know that a prescription they were dispensing was intended for MAiD. As a number of studies in this review were older and found a substantial number of pharmacists who did not want to know or were unsure whether they wanted to know a prescription was for MAiD, it would be important to assess whether these feelings are still present. If pharmacists do not know a prescription is intended for MAiD they cannot appropriately check that the medications are effective for MAiD and at doses effective for MAiD or provide appropriate counselling to the patient or health care provider picking up the medications.[47] Furthermore, knowing the intended use of the prescription provides pharmacists with the opportunity to accept or refuse participation.[47]

When it became legal for physicians in Oregon to assist eligible patients in dying it was not mandatory for Oregon physicians to inform pharmacists of prescriptions for assistance in dying.[47] This issue was brought up among the Oregon pharmacy community and the law in Oregon was later changed to make it a legal requirement for physicians to

inform pharmacists of MAiD prescriptions.[49,50] This requirement has also been adopted in some of the other jurisdictions (e.g., Canada) with legal MAiD.[1,10]

Despite MAiD now being legal in some jurisdictions for up to 21 years, almost all studies included in our review were conducted prior to legalization of MAiD. [29-31,35-39] As a result, there was a gap in the literature regarding pharmacist perceived barriers and facilitators to their roles in MAiD. The only study that provided actual barriers to participation was the study conducted in the Netherlands, because despite MAiD being illegal it had been occurring as physicians were rarely prosecuted for providing MAiD to requesting, consenting patients.[34]

A recently published multi-profession scoping review did however, map out health care professionals' challenges with MAiD.[9] The professional challenges for pharmacists identified in the scoping review included: "absence of clear professional guidelines, role ambiguity, lack of interprofessional collaboration, conscientious objection and ensuring safeguards are in place".[9] These challenges were identified from four articles.[9] As our review focused only on primary research, we only included one of the articles from the scoping review in our review as the other articles were either commentaries or reviews.[34] However, it is understandable that these challenges identified in the scoping review could be interpreted as challenges for pharmacists in the studies identified in our review as a number of the studies were conducted prior to MAiD legalization and therefore lacking guidance and understanding of their potential role in MAiD.

This multi-profession scoping review also identified emotional impact and lack of knowledge/training as challenges for other health care professionals.[9] Pharmacists may

also have similar concerns. Two Canadian studies[11,12] that could not be included in our review as pharmacists were not a clearly identifiable group, have found pharmacy staff members did have concerns that they lacked training/knowledge needed to assist them in participating in MAiD.[11,12] One of these Canadian studies also found the majority of pharmacy staff members who had concerns with dispensing MAiD medications had concerns about not knowing what to do if MAiD medications failed to cause death, unexpected side effects for the patient, and around 33% had concerns with the emotional impact of participation in MAiD.[11] It is important for more research to be conducted to identify barriers and facilitators to the pharmacist's role in MAiD to inform MAiD policy and practice.

2.4.3 Strengths & Limitations

Strengths included having two independent reviewers conduct the article search, apply the inclusion/exclusion criteria for article selection, assess study quality, and extract data to increase validity and reduce bias.

A number of limitations of this review were due to limitations of the included studies. First, when interpreting the results to this systematic review it is important to keep in mind that most studies were conducted prior to legalization of MAiD or in regions where MAiD has never been legal. Therefore, findings are predominately hypothetical and may be outdated and therefore not generalizable to present day. Second, results should also be interpreted with caution as a number of studies included in this review received lower quality scores. Common factors contributing to the low scores were inadequate descriptions of sampling and issues with the generalizability of their findings to a wider population. Furthermore, the statistically significant associations

between pharmacist characteristics and attitudes should also be interpreted with caution from the study by Vivian et al. as reporting of how this data was analyzed and p-values were absent. Third, there was heterogeneity between the studies, which included the presence or absence of actual or hypothetical regulatory framework for MAiD, differences in the form of MAiD studied and survey item wording and phrasing. These differences jeopardized the comparability of studies. Some survey items were also ambiguously worded and may overlap into different themes; therefore, caution should be applied when interpreting the results. Lastly, the lack of definitions for MAiD often meant that subjective decisions were made on eligibility and determining the type of MAiD studied.

2.4.4 Implications for Future Policy, Practice and Research

Our findings suggest that not all pharmacists will be willing to participate in MAiD and studies showed that the majority of pharmacists felt pharmacists/health care workers should be able to opt-out of participating. [25,27,28,31,33, 38] To date, in most jurisdictions with legalized forms of MAiD pharmacists are not obligated to participate.[10] In jurisdictions considering legalizing MAiD health policy makers should consider pharmacists' desire to be able to opt-out of participating in MAiD. Health policy makers may also wish to consider whether only a small number of pharmacists who are specialized in MAiD should assist in the MAiD process. Our review suggests that in jurisdictions where MAiD is legal, future research on pharmacists' perceived barriers and facilitators to their role in MAiD should be conducted and updated studies on pharmacists' attitudes and willingness to participate in MAiD are needed. These studies can help to further inform MAiD policy and pharmacy practice.

2.5 <u>Conclusion</u>

Our results demonstrate that in the majority of studies over 50% of pharmacists were supportive of MAiD and its legalization. However, there was variability between studies in pharmacists' willingness to participate and the majority felt pharmacists/health care professionals should be permitted to opt-out of participation. Religion was the most commonly and consistently associated factor associated with opposition to MAiD. The majority of these studies were conducted prior to 2002 and in regions where MAiD was not yet legal or has never been legal. Therefore, pharmacists' attitudes and willingness to participate were predominately hypothetical in nature and may be outdated and not generalizable to present day. Furthermore, more research is needed on pharmacists' perceived barriers and facilitators to their roles in MAiD.

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Appendix 2A Search Strategy

Information Sources

Articles will be searched from PubMed, EMBASE, PsycINFO, CINAHL, International Pharmaceutical Abstracts (IPA), and ProQuest Dissertations and Theses Global database. There is no restriction on dates.

Search

To build our searches we will use MeSH terms in PubMed, Emtree terms in Embase, CINAHL headings terms in CINHAL Plus, and Thesaurus terms in PsycINFO, in addition to free-text terms. In the International Pharmaceutical Abstracts (IPA) database and ProQuest Dissertations and Theses Global database we will use free-text terms.

PubMed:

The search was built in the "PubMed Advanced Search Builder" using MeSH terms and free-text to allow for identification of articles that have not been indexed with MeSH terms. Each search looked for the terms in "all fields".

1) Pharmacists[Mesh]

2) pharmacist*

3) 1 OR 2

4) "Suicide, Assisted"[Mesh]

5) (assist* AND (suicide* OR death* OR dying))

6) (4 OR 5)

7) "Euthanasia"[Mesh]

8) euthanasia

9) (7 OR 8)

10) "aid in dying"

11) "death with dignity"

12) (6 OR 9 OR 10 OR 11)

13) 3 AND 12

Embase

The search strategy was built using Emtree terms and free text to allow for identification of articles that have not been indexed with Emtree terms. Free-text terms were searched in the “quick search” field.

1) 'pharmacist'/exp

2) pharmacist*

3) #1 OR #2

4) 'assisted suicide'/exp

5) ((assisted AND (suicide* OR death* OR dying)) OR "aid in dying" OR "assistance in dying" OR "death with dignity")

6) #4 OR #5

7) 'euthanasia'/exp

8) euthanasia

9) #7 OR #8

10) #6 OR #9

11) #3 AND #10

CINAHL Plus

Searches were performed as an “Advanced Search” using CINAHL Headings terms and free text. The search mode was “Boolean/Phrase”.

S1) (MH "Pharmacists")

S2) pharmacist*

S3) S1 OR S2

S4) (MH "Suicide, Assisted")

S5) (assisted AND (death* OR suicide* OR dying)) OR "aid in dying" OR "assistance in dying" OR "death with dignity"

S6) S4 OR S5

S7) (MH "Euthanasia+")

S8) euthanasia

S9) S7 OR S8

S10) S6 OR S9

S11) S3 AND S10

<u>PsycINFO</u>

Searches were performed as an "Advanced Search" using thesaurus terms and free text. The search mode was "Boolean/Phrase".

1) DE "Pharmacists"

2) pharmacist*

3) S1 OR S2

4) DE "Assisted Suicide"

5) ((assisted AND (suicide* OR death* OR dying)) OR "aid in dying" OR "assistance in dying" OR "death with dignity")

6) S4 OR S5

7) DE "Euthanasia"

8) euthanasia

9) S7 OR S8

10) S6 OR S9

11) S10 AND S3

International Pharmaceutical Abstracts

Searches were performed as an “Advanced Search”. The search mode was “Boolean/Phrase”.

1) pharmacist*

2) ((assisted AND (dying OR death* OR suicide*)) OR euthanasia OR "aid in dying" OR "assistance in dying" OR "death with dignity")

3) S1 AND S3

ProQuest Dissertations & Theses Global

Searches were performed in the “basic search” tool bar.

1) all(pharmacist*)

2) (all("assisted suicide*") OR all("assisted death*") OR all("assisted dying") OR all("assistance in dying") OR all("aid in dying") OR all("death with dignity") OR all(euthanasia))

3) 1 AND 2

Appendix 2B: Definitions

Author & Publication	Definition or description of the type of Medical Assistance in Dying
Bilsen, J.[28]	PAS: Prescribing or supplying drugs to the patient for ending his/her ending his/her own life EUTH: Administering drugs to end the patient's life at his/her explicit request
Hackett, E. A.[32]	PAS: The writing of a prescription for drugs at a lethal dose, by a doctor, with the intention that the patient takes these drugs to hasten their own death, at the explicit request of the patient. VAE: The administration of drugs by a doctor, at a lethal dose, with the intention of hastening the patient's death, at the explicit request of the patient.
Hanlon, T. R.[33]	The following example was used to describe PAS: Janet Smith is a 50-year-old school-teacher. She is the mother of two teenage children. She has terminal cancer and is not expected to live for more than 12 months. After discussing the matter with her husband and family, she decides to ask the family GP to help her to die. Her GP agrees to prescribe enough barbiturates and a muscle relaxant for her so that she can die at a time and place decided by her. Janet goes to her local community pharmacy and obtains the prescription medicines from the pharmacist. She takes the prescribed barbiturates and the muscle relaxant and dies in the expected way. The physician does NOT administer the lethal dose in physician-assisted suicide as would happen in euthanasia.
Lau, H. S.[34]	PAS: Is the international helping a patient to terminate his or her life at his or her request. EUTH: Is the intentional termination of life, by someone other than the patient, at the patient's request. The following activities were not considered to be EUTH or PAS: Discontinuing or not starting a treatment at the explicit and earnest request of the patient, discontinuing or not starting a treatment that is medically futile, performing a medical act or administering a drug designed to alleviate unbearable suffering even if one of the side-effects is to hasten death.
Vivian, J. C.[39]	Suicide: The act of taking one's own life voluntarily and intentionally by an individual who is mentally capable of forming voluntary intent
EUTH = euthanasia, VAE = voluntary active euthanasia, PAS = physician assisted suicide	

Chapter 3: Co-Authorship Statement

Authors of the Survey: Abigail Turner (AT), Dr. Jason Kielly (JK), Dr. Maria Mathews (MM), Dr. Shawn Bugden (SB), and Dr. Erin Davis (ED)

I. **Design and identification of research proposal:** AT was the primary researcher on this study, and developed the research questions. (NL). AT, in consultation with ED, JK, and MM decided on conducting a survey of pharmacists in Newfoundland and Labrador. The study protocol was designed by AT and revised by ED, JK, and MM.

II. **Practical aspects of the research**

   a. **Ethics Application:** Prepared and submitted by AT and reviewed by ED and JK.

   b. **Survey Instrument Design:** AT designed the survey instrument in consultation with ED, JK, and MM. Feedback on the survey instrument was also received from two members of the public and a group of pharmacists.

   c. **Survey Distribution:** AT contacted the Pharmacists Association of Newfoundland and Labrador to distribute the survey link via email to pharmacists in NL.

   d. **Data Cleaning:** Performed by AT with guidance from MM.

III. **Data Analysis:** Performed by AT with guidance from MM.

IV. **Manuscript Preparation:** Prepared by AT and revised by JK, ED, MM, and SB.

Chapter 3

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

3.1 Introduction

In 2016, MAiD legislation was passed in Canada and MAiD became legal for adult Canadians who meet the specified eligibility criteria laid out in the Canadian Criminal Code.[1] MAiD is defined in the Criminal Code of Canada as "(a) the administering by a medical practitioner or nurse practitioner of a substance to a person, at their request, that causes their death; or (b) the prescribing or providing by a medical practitioner or nurse practitioner of a substance to a person, at their request, so that they may self-administer the substance and in doing so cause their own death."[2(p. 284-285)] Process (a) is becoming known as clinician-administered MAiD and process (b) as self-administered MAiD.[1]

According to Canadian federal legislation it is legal for pharmacists to assist physicians and nurse practitioners in the provision of MAiD.[2] Therefore, pharmacists working in community or hospital pharmacies may be asked to participate. Pharmacists will be involved in preparing and dispensing of prescriptions for MAiD in accordance with federal and provincial legislation and guidelines. Pharmacists are also responsible for ensuring the person picking up the MAiD medications, whether that is the patient, prescriber, or patient representative, has all necessary drug information regarding the preparation, stability, storage, efficacy, and administration of the medications.[3,4]

Pharmacists in Canada are not obligated to participate in MAiD if they have a conscientious objection to participation.[2] Conscientious objection in pharmacy practice is when pharmacists object to providing certain products or services because the provision of that service or product conflicts with the pharmacists' morality or religious beliefs, and the pharmacist believes their personal conscience will be harmed by providing the product or service.[3,5] Guidance on managing conscientious objection in pharmacy practice is provided through pharmacy regulatory bodies. The majority of pharmacy practice guidelines in Canada instruct pharmacists who object to participating in MAiD to provide practitioners with a referral to a non-objecting pharmacist; pharmacy; or where available, a third party that will then provide the practitioner with a referral to a non-objecting pharmacist (e.g., pharmacy regulatory agency, central coordinating service).[3,6-12] In NL, pharmacists are to inform pharmacy management of their objection to participate in MAiD and management is to accommodate the pharmacist's objection and develop a means to ensure medications are provided to the patient in a timely manner.[4]

The number of jurisdictions around the world with a legal form of MAiD are growing and a number of jurisdictions have had a legal form of MAiD for at least 2 years or more (up to 21 years).[13] Prior to completing this study we performed a systematic review of the literature to review pharmacists' attitudes and willingness to participate in MAiD and perceived barriers and facilitators to the pharmacist's role in MAiD.[14-28] Our review found that almost all studies were conducted prior to 2002, prior to the legalization of MAiD or in jurisdictions where MAiD is still not legal. A number of studies did not give context to MAiD such as defining the MAiD processes. As a result, data on pharmacists' attitudes and willingness to participate in MAiD may be outdated

and largely hypothetical in nature. We also found a gap in the literature on pharmacist perceived barriers or facilitators to their role in MAiD.

Three Canadian studies were identified that were not included in the systematic review.[3,29,30] Two of these studies were excluded from the review as the pharmacists surveyed were not a clearly identifiable group (i.e., both pharmacists and pharmacy staff [e.g., students, technicians] were surveyed).[3,29] One of these two studies was conducted in 2015, prior to the legalization of MAiD, and focused on pharmacists' and technicians' views towards legislation and conscientious objection.[29] However, it did not study pharmacists' personal attitudes or willingness to participate in MAiD.[29] The second study was conducted in June 2016, just after the legalization of MAiD, and it aimed to determine Ontario pharmacists', pharmacy students', and technicians' willingness to dispense prescriptions for MAiD.[3] The study found the majority of respondents were willing to participate in MAiD and that most respondents had concerns with aspects of MAiD.[3] It is important to determine if pharmacists in other provinces have similar concerns.

The third study was not included in the systematic review as it was published in 2019, which was after the review was completed.[29] This study surveyed Canadian hospital pharmacists, technicians, and assistants in 2017 on their attitudes and knowledge towards MAiD.[29] The study found 72% of hospital pharmacists were willing to participate in MAiD and 58% were willing to counsel patients and family members on the medications.[29] Furthermore, the study reported that the majority of hospital pharmacists had received no education on MAiD through their formal pharmacy education (99%) or through continuing education (75%).[29]

MAiD is a new practice area for pharmacists in Canada and not all health care professionals may be willing to participate. Since the legalization of MAiD in Canada, little is known about pharmacists' willingness to participate in MAiD, their perceptions of their preparedness to participate and concerns with MAiD. The objectives of this study are to describe the proportion of pharmacists in NL who are willing to participate in MAiD, identify potential barriers to pharmacists' participation in MAiD, and identify differences in pharmacists' willingness to participate in relation to their personal and professional characteristics.

3.2 Methods

3.2.1 Study Design

We conducted an exploratory, online survey. As there was no existing questionnaire, we created one for the purpose of this study (Appendix 3A). The questionnaire was developed based on our systematic review of the literature on pharmacists' attitudes and willingness to participate in MAiD and other literature relevant to MAiD.[3,4,15-29, 31] We pretested the questionnaire on a group of seven pharmacists and two members of the public. Pharmacists were asked to complete the questionnaire and provide verbal feedback with respect to the relevance of content to the study objectives, clarity of questions, and whether any content should be added, removed or modified. The two members of the public provided feedback on their overall perception of public interest in the project and completeness of survey content. We amended the questionnaire based on feedback. The final questionnaire had 32 items. The revised copy of the survey was mounted into the online survey tool, SurveyMonkey.[32]

The questionnaire captured pharmacists' views towards MAiD, willingness to participate in MAiD, factors contributing to unwillingness, level of willingness to participate in specific MAiD activities, concerns with participation, perceptions of their MAiD knowledge and skills, views towards MAiD education, views towards their ability to interpret and apply MAiD pharmacy practice guidelines, and pharmacist characteristics. The majority of responses were measured using categorical and ordinal scales (e.g., Likert-type scales). Participants were asked to respond to all applicable questions, however, a "prefer not to answer (PNA)" response category was available for all questions.

3.2.2 Study Population & Recruitment

The target population was licensed and practicing pharmacists in NL. Other pharmacy staff (i.e., technicians, assistants), retired pharmacists, or pharmacists working outside of NL were excluded. The Newfoundland and Labrador Pharmacy Board reported that there were 719 pharmacists practicing in NL at the beginning of 2018.[33] At our request, the Pharmacists' Association of Newfoundland and Labrador (PANL) distributed our survey invitation by email. PANL is an advocacy organization for pharmacy professionals working in NL. We chose to distribute the survey invitation through PANL because pharmacists in NL are required to be members of PANL, pharmacists are encouraged to provide up to date contact information to PANL, and PANL regularly disseminates information to all registered pharmacists through email.

The survey invitation discussed the aim of the study, what participation would involve, how long the study would take, information on the incentive for survey completion (i.e., a draw for five, $100 grocery gift cards), the survey link, information on

the researchers and ethics (Appendix 3B). The survey was available from May 25th to July 13th, 2018. To increase the response rate, as per the Dillman method, we had PANL email two survey reminder invitations.[34] Our reminder invitations were emailed on June 19th and July 10th 2018. The reminder invitations contained the same information as the invitation email (Appendix 3B). After the initial invitation email was sent, we had the Memorial University School of Pharmacy spread awareness of the survey through their Facebook page.

3.2.3 Data Analysis

We analyzed data using SPSS software (version 25). To be included in the study respondents had to consent to participate, had to be pharmacists working in NL, and had to complete the entire survey (i.e., not withdraw consent). The “prefer not to answer” (PNA) category allowed us to distinguish between those who quit the survey (i.e., withdrew consent) and those who completed the survey without answering all questions.

For most of the survey items a response of “PNA” was considered a “missing response” and was not included in the analysis of that survey item. As an exception to this rule, PNA responses were included in the analysis of the following survey items:

i. Pharmacists’ willingness to participate in MAiD,
ii. Factors contributing to their unwillingness, and
iii. Pharmacists’ perceptions of their knowledge, competency, and concerns related to MAiD.

In these survey items, the PNA responses either assist in providing a complete understanding of the results or may represent an alternative response to the existing options. See Appendix 3C for more details on data cleaning.

We used frequencies and percentages to describe sample characteristics, respondents' views towards MAiD, their willingness to participate, factors contributing to pharmacists' unwillingness to participate in MAiD, and pharmacists' opinions towards management of conscientious objection. We then compared three groups of pharmacists, based on responses to Q4 (i.e. *Are you personally willing to participate in MAiD?).* Group 1 included pharmacists who responded "yes" who we referred to as "willing pharmacists", group 2 included pharmacists who responded "no" who we referred to as "unwilling pharmacists", and group 3 included pharmacists who responded "prefer not to answer" who we referred to as "undeclared pharmacists". For the rest of this document where there are comparisons among these three groups, they will be referred to by the labels (i.e. willing, unwilling, and undeclared pharmacists). *A priori* we planned to only compare willing pharmacists to unwilling pharmacists. However, as there was a substantial number of undeclared pharmacists, we decided to compare all three groups.

We used the Pearson chi-square test or where applicable the Fisher's exact test to compare the three groups of pharmacists' personal and professional characteristics, MAiD views, level of willingness to participate in specific MAiD activities, perceptions of their knowledge, competency, and concerns related to MAiD, views towards MAiD education, their perceived ability to interpret and apply the MAiD practice guidelines. Where we identified statistically significant differences, we performed post hoc comparisons using the Pearson chi-square test to compare willing to unwilling, willing to undeclared, and unwilling to undeclared. We used a p-value of <0.05 for determining statistical significance. We accounted for small cell sizes by using the Fisher exact test where applicable.

To assess representativeness of our study sample we used the Pearson chi-square test to compare gender, age, years of practice, primary practice setting, and employment category of our sample to the 2018 population of practicing pharmacists in NL. The statistical data were from the Newfoundland and Labrador Pharmacy Board (NLPB).[35] Due to the unavailability of 2018 data on pharmacists' location of work, we used 2016 pharmacist population data from the Canadian Institute for Health Information to compare to our sample's location of work.[36]

3.2.4 Ethical Considerations

We received ethics approval for the study from the Health Research Ethics Board of NL (Reference # 2017.225) (Appendix 3D). The survey was anonymous and IP addresses were not collected. In order to further protect respondent confidentiality, we collapsed demographic codes of categories with small numbers of respondents. At the start of the survey respondents were provided with a cover letter explaining the study, consent, and how study data will be protected (Appendix 3A). We asked participants at the start of the study to select "yes" if they consented to participate. We presumed consent if "yes" was selected and respondents completed the entire survey. As previously described, incomplete surveys were considered withdrawn consent. Data were stored in password protected files on a password protected laptop only accessible to the research team. Respondents' names and contact information provided for the draw were obtained separately and kept separate from the survey responses.

3.3 Results

Two hundred and thirty pharmacists responded to the survey invitation (Figure 3.1). A total of 176 valid survey respondents were included representing about 24% (176/719) of pharmacists in NL.

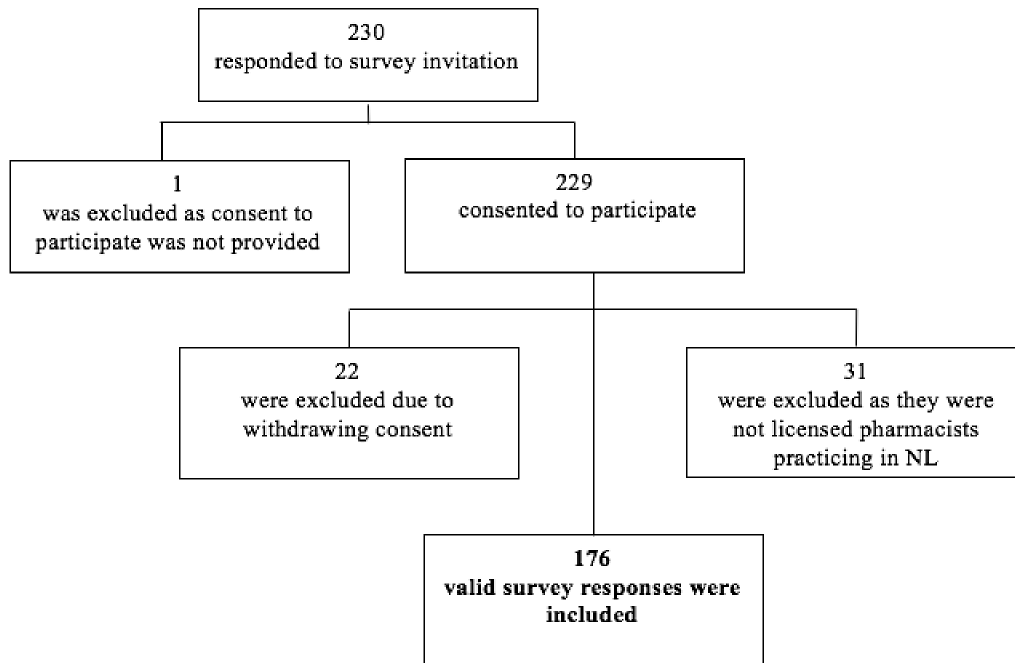

Figure 3.1: Survey Inclusion/Exclusion Flow Diagram

Over half of the pharmacists (56.1%) in the sample were women and 81.3% were practicing pharmacists for six years or more (Table 3.1). Roughly two - thirds of pharmacists were community pharmacists (70.6%) and worked in an urban setting (72.9%). A minority (16.5%) of pharmacists indicated that their religious background was a consideration in how they dealt with ethical issues in practice.

Table 3.1: Characteristics of Study Sample (n=176)

	n$^{\alpha}$ (%)		**n$^{\alpha}$ (%)**
Gender (n=173)		**Primary role as a community pharmacist$^{\chi}$ (n=117)**	
Man	76 (43.9)	Staff pharmacist	57 (48.7)
Woman	97 (56.1)	Relief pharmacist	12 (10.3)
Age (n= 167)		Pharmacist-in-charge	29 (24.8)
20-29	27 (16.2)	Pharmacy owner	13 (11.1)
30-39	62 (37.1)	Pharmacy Manager	6 (5.1)
40-49	39 (23.4)	**Employment category (n=172)**	
50+	39 (23.4)	Work full-time	151 (87.8)
Years of Practice (n= 171)		Work part-time	21 (12.2)
5 or less	32 (18.7)	**Dispensing role at primary work site (n=172)**	
6-15	65 (38.0)	Yes	151 (87.8)
16 or more	74 (43.3)	No	21 (12.2)
Educational background (n=171)		**Dispensing role at secondary work site$^{\varepsilon}$ (n=21)**	
College of Trades and Technology	26 (15.2)	Yes	8 (38.1)
BSc. Pharm or Pharm.D.	145(84.8)	No	13 (61.9)
Primary practice setting (n=170)		**Location of work site (n=155)**	
Community pharmacy	120 (70.6)	Urban	113 (72.9)
Hospital pharmacy and Long-term care	40 (23.5)	Rural	42 (27.1)
Other$^{\beta}$	10 (5.9)	**Religion and practice considerations (n=170)**	
Primary work setting in Community$^{\chi}$ (n=114)		Religion is a consideration for them in practice	28 (16.5)
Chain	59 (51.8)	Religion is not a consideration for them in practice	142 (83.5)
Banner	24 (21.1)		
Independent	29 (25.4)		
Other	2 (1.8)		

α. The total number of responses for each survey item may not equal 176 due to missing responses.
β. "Other" includes work settings such as academia and research.
χ. Only respondents working in community pharmacy answered these questions. The total responses do not equal 120 due to missing data.
ε. Only respondents without a dispensing role at their primary work site answered this question.

In comparison to pharmacist registration data from 2018, our sample did not differ with regards to gender, age, employment category, and primary practice setting (Appendix 3E).[35] The 2018 NL pharmacist population statistics from the NLPB did not have a specific category for pharmacists that worked in long-term care (LTC) facilities.[35] As a result, we combined LTC with hospital pharmacists as we felt their role was similar to hospital pharmacists. In comparison to the population of pharmacists in NL, our sample had a significantly larger proportion of pharmacists who were practicing for 6-15 years ($P=0.001$), and working in urban areas ($P<0.001$).[35,36]

Roughly 90% of pharmacists felt that patients are justified in wanting to end their lives (93.7%) and that MAiD is not morally wrong (88.5%) (Table 3.2). More than 90% of pharmacists supported the legalization of MAiD, felt that prescription drugs are an appropriate means for physicians to use when assisting a patient to die, and that it is appropriate for physicians to directly administer medications to patients to assist in their deaths. However, a smaller proportion (70.8%) of pharmacists felt it was appropriate for physicians to prescribe or provide medications to patients that the patient self-administers to cause his/her own death.

The majority of pharmacists (73.3%) were personally willing to participate in MAiD, 17% were not willing to participate and 9.7% preferred not to answer the question about their willingness.

Table 3.2: Pharmacists' Views Towards MAiD and their Willingness to Participate

	n^{α} (%)
Do you think patients are ever justified in wanting to end their own lives? (n=174)	
Yes	163 (93.7)
No	11 (6.3)
Are prescription drugs an appropriate means for physicians to use when assisting a patient to die? (n=171)	
Yes	158 (92.4)
No	13 (7.6)
Do you think it is appropriate for physicians to directly administer medications to patients, at their request, to assist in the patient's death? (n=171)	
Yes	154 (90.1)
No	17 (9.9)
Do you think it is appropriate for the physician to prescribe or provide medications to patients, at their request, so the patient may self-administer the medications to cause their own death? (n=168)	
Yes	119 (70.8)
No	49 (29.2)
Do you support the legalization of MAiD? (n=172)	
Yes	156 (90.7)
No	16 (9.3)
Do you personally believe MAiD is morally wrong? (n=165)	
Yes	19 (11.5)
No	146 (88.5)
Are you personally willing to participate in MAiD? (n=176)	
Yes	129 (73.3)
No	30 (17.0)
Prefer not to answer	17 (9.7)

α. The total number of responses for each survey item may not equal 176 due to missing responses

We asked pharmacists who were unwilling to participate in MAiD about factors that contributed to their unwillingness (Table 3.3). Among pharmacists, the most frequently cited factors contributing to their unwillingness were the beliefs that MAiD is immoral and that MAiD conflicts with their religious beliefs.

We asked all pharmacists to provide their opinion of how a pharmacist's conscientious objection to assisting in MAiD should be managed (Table 3.4). Regardless of whether pharmacists were willing, unwilling, or undeclared, the most commonly cited way to manage conscientious objection was for pharmacists to refer inquiring physicians

or patients to a central registry of participating pharmacist/pharmacies. Of all the pharmacists (i.e., willing, unwilling, undeclared) there was approximately 6% (11/174) that felt pharmacists should not be required to provide a referral. However, 20% (6/30) of the unwilling pharmacists felt pharmacists should not be required to provide a referral.

Table 3.3: Factors Contributing to Pharmacists' Unwillingness to Participate in MAiD (n=30)

	n$^{\phi}$ (%)
Factors contributing to pharmacists' unwillingness to participate in MAiD	
Belief MAiD is immoral	12 (40.0)
MAiD conflicts with religious beliefs	12 (40.0)
It is unethical for health care professionals to participate in MAiD	8 (26.7)
Personal belief life is valuable and should be preserved	3 (10.0)
Prefer not to be involved	3 (10.0)
Unsure about their willingness to participate	3 (10.0)
Lacking education/training	3 (10.0)
Favours palliative care	1 (3.3)
Concerns on slippery slope effect	1 (3.3)
Emotional impact for pharmacist	1 (3.3)
Other	1 (3.3)
Prefer not to answer	5 (16.7)

ϕ. The number of responses exceeds 100% as pharmacists were asked to select all factors that apply and provide any other factors contributing to their unwillingness.

Table 3.4: Pharmacists' Opinions Towards Managing Conscientious Objection in Practice (n=174)

	Willing (n=128) n$^{\gamma}$ (%)	**Unwilling (n=30)** n$^{\gamma}$ (%)	**Undeclared (n=16)** n$^{\gamma}$ (%)
In your opinion, if a pharmacist does not wish to participate in MAiD they should:			
Directly refer the physician to another pharmacist/pharmacy	84 (65.6)	15 (50.0)	9 (56.3)
Directly refer the inquiring patient to another pharmacist/pharmacy	74 (57.8)	14 (46.7)	9 (56.3)
Refer the physician to a central registry of participating pharmacists/pharmacies	96 (75.0)	20 (66.7)	12 (75.0)
Refer the inquiring patient to a central registry of participating pharmacists/pharmacies	90 (70.3)	20 (66.7)	11 (68.8)
Not be required to refer	5 (3.9)	6 (20.0)	0 (0.0)

γ. The total number of responses exceeds 100% for each category as respondents were asked to "select all that apply"

Compared to willing pharmacists (7.1%), a significantly (P<0.001) larger proportion of unwilling (51%) and undeclared (31.3%) pharmacists said that their religion influences how they handle ethical issues in practice. There were no differences between willing, unwilling, and undeclared pharmacists' in terms of gender, age, years of practice, educational background, primary practice setting, work setting in community, role as a community pharmacist, dispensing role at primary practice site, employment category, and location of work (Appendix 3F).

The views towards MAiD of both willing and undeclared pharmacists towards MAiD differed significantly from unwilling pharmacists. Compared to willing and undeclared pharmacists, a smaller portion of unwilling pharmacists felt patients are justified in wanting to end their own lives and that MAiD is morally acceptable. Similarly, compared to willing and undeclared pharmacists, a smaller proportion of unwilling pharmacists supported the legalization of MAiD, felt that prescription drugs are an appropriate means for physicians to use when assisting a patient to die, felt it is appropriate for physicians to perform clinician administered MAiD, and felt it is appropriate for physicians to prescribe or provide medications to patients that the patient then self-administers to cause his/her own death (Table 3.5).

Compared to willing pharmacists, a smaller proportion of undeclared pharmacists thought it is appropriate for physicians to directly administer medications to patients to assist in their deaths. There were no other differences in the views of willing and undeclared pharmacists towards MAiD.

Table 3.5: MAiD Views of Willing, Unwilling, and Undeclared Pharmacists

	Willing (n=129) n^η (%)	Unwilling (n=30) n ^η (%)	Undeclared (n=17) n^η (%)	P value
Do you think patients are ever justified in wanting to end their own lives?				<0.001^ι,κ
Yes	128 (100.0)	19 (65.5)	16 (94.1)	
No	0 (0.0)	10 (34.5)	1 (5.9)	
Do you think prescription drugs are an appropriate means for physicians to use when assisting a patient to die?				<0.001^ι,κ
Yes	129 (100.0)	14 (53.8)	15 (93.8)	
No	0 (0.0)	42 (46.2)	1 (6.3)	
Do you think it is appropriate for physicians to directly administer medications to patients, at their request, to assist in the patient's death?				<0.001^ι,φ, κ
Yes	125 (99.2)	15 (51.7)	14 (87.5)	
No	1 (0.8)	14 (48.3)	2 (12.5)	
Do you think it is appropriate for the physician to prescribe or provide medications to patients, at their request, so the patient may self-administer the medications to cause their own death?				<0.001^ι,κ
Yes	102 (82.3)	7 (25.0)	10 (62.5)	
No	22 (17.7)	21 (75.0)	6 (37.5)	
Do you support the legalization of MAiD?				<0.001^ι,κ
Yes	128 (100)	15 (50.0)	13 (92.9)	
No	0 (0.0)	15 (50.0)	1 (7.1)	
Do you personally believe MAiD is morally wrong?				<0.001^ι,κ
Yes	1 (0.8)	18 (62.1)	0 (0.0)	
No	124 (99.2)	11 (37.9)	11 (100)	

η. For each survey item, the total number of responses may not equal 129 for the willing category, 30 for the unwilling category, or 17 for the undeclared category due to missing responses
ι. Statistically significant ($p<0.05$) difference between willing and unwilling
φ. Statistically significant ($p<0.05$) difference between willing and undeclared
κ. Statistically significant ($p<0.05$) difference between unwilling and undeclared

All pharmacists were asked their level of willingness to participate in three specific MAiD activities (Table 3.6). Not surprisingly, compared to unwilling and undeclared pharmacists, a larger proportion of willing pharmacists were very willing/probably willing to dispense medications for MAiD and provide drug information to physicians. Compared to unwilling pharmacists there was also a larger proportion of willing pharmacists who were very willing/probably willing to respond to patient general inquiries about MAiD. There was no difference in willingness to respond to patient general inquiries about MAiD between willing and undeclared pharmacists.

Compared to unwilling pharmacists, a larger proportion of undeclared pharmacists were very willing/probably willing to participate in dispensing MAiD prescriptions and responding to patient inquiries. There were no differences in willingness to provide MAiD drug information to physicians between unwilling and undeclared pharmacists.

Notably, 23.3% of unwilling pharmacists said they had some level of willingness (i.e. very or probably willing) to dispense prescriptions for MAiD, and the majority of unwilling pharmacists had some level of willingness to provide MAiD drug information to physicians, and respond to patient inquiries about MAiD.

Table 3.6: Level of Willingness to Participate in Specific MAiD Activities of Willing, Unwilling and Undeclared Pharmacists*

MAiD Specific Activity:	Willing (n=129) n^{η} (%)	Unwilling (n=30) n^{η} (%)	Undeclared (n=17) n^{η} (%)	P value
Dispense prescriptions				$<0.001^{\iota,\varphi,\kappa}$
Very/probably willing	129 (100)	7 (23.3)	11 (78.6)	
Definitely/ probably unwilling	0 (0.0)	23 (76.7)	3 (21.4)	
Provide drug information to physicians				$<0.001^{\iota,\varphi}$
Very/probably willing	128 (99.2)	20 (66.7)	15 (88.2)	
Definitely/ probably unwilling	1 (0.8)	10 (33.3)	2 (11.8)	
Respond to patient general inquiries				$<0.001^{\iota,\kappa}$
Very/probably willing	121 (94.5)	15 (50.0)	15 (93.8)	
Definitely/ probably unwilling	7 (5.5)	15 (50.0)	1 (6.3)	

*For the purpose of this analysis, responses of very willing and probably willing were combined and responses of definitely unwilling and probably unwilling were combined

η. For each survey item, the total number of responses may not equal 129 for the willing category, 30 for the unwilling category, or 17 for the undeclared category due to missing responses

ι. Statistically significant ($p<0.05$) difference between willing and unwilling

φ. Statistically significant ($p<0.05$) difference between willing and undeclared

κ. Statistically significant ($p<0.05$) difference between unwilling and undeclared

All pharmacists were asked about their perceptions of their knowledge, competency, and concerns related to MAiD (Table 3.7). Across all categories of pharmacists (i.e., willing, unwilling, undeclared) the majority felt they lacked adequate knowledge about the oral and IV MAiD medications, and had concerns that they lacked knowledge about the MAiD process, knowledge needed to counsel physicians on MAiD medications (i.e., preparation, administration, efficacy, stability, or storage of MAiD medications), and knowledge of what information to give patients about MAiD.

Compared to unwilling and undeclared pharmacists, willing pharmacists felt more competent to prepare MAiD prescriptions for dispensing. However, there was still only 34.9% of willing pharmacists that felt competent to dispense prescriptions for MAiD. Compared to willing pharmacists, unwilling and undeclared pharmacists had more

concerns about their participation and the consequences resulting from their participation in MAiD. There were no differences in unwilling and undeclared pharmacists' perceptions of their knowledge, competency, and concerns related to MAiD.

Compared to willing pharmacists, a larger proportion of unwilling and undeclared pharmacists felt the concerns they identified in this study greatly affect their willingness and ability to participate in MAiD (Table 3.7).

Table 3.7: Perceptions of Willing, Unwilling, and Undeclared Pharmacists of their Knowledge, Competency, and Concerns Related to MAiD*

Pharmacist Perceptions and Concerns of their Knowledge and Skills related to MAiD	**Willing (n=129) n** (%)	**Unwilling (n=30) n** (%)	**Undeclared (n=17) n** (%)	**P value**
I have concerns that I lack knowledge about the MAiD process				0.186
Strongly Disagree/Disagree	26 (20.2)	4 (13.3)	1 (5.9)	
Strongly Agree/Agree	87 (67.4)	20 (66.7)	13 (76.5)	
Neutral	16 (12.4)	5 (16.7)	2 (11.8)	
Prefer not to answer	0 (0.0)	1 (3.3)	1 (5.9)	
I feel competent to prepare MAiD prescriptions for dispensing				0.004[ι,φ]
Strongly Disagree/Disagree	55 (42.6)	21 (70.0)	9 (52.9)	
Strongly Agree/Agree	45 (34.9)	2 (6.7)	2 (11.8)	
Neutral	29 (22.5)	6 (20.0)	5 (29.4)	
Prefer not to answer	0 (0)	1 (3.3)	1 (5.9)	
I feel I have adequate knowledge about the oral MAiD medications				0.102
Strongly Disagree/Disagree	74 (57.4)	21 (70.0)	11 (64.7)	
Strongly Agree/Agree	25 (19.4)	2 (6.7)	1 (5.9)	
Neutral	30 (23.3)	6 (20)	4 (23.5)	
Prefer not to answer	0 (0)	1 (3.3)	1 (5.9)	
I feel I have adequate knowledge about the IV MAiD medications				0.137
Strongly Disagree/Disagree	83 (64.3)	22 (73.3)	12 (70.6)	
Strongly Agree/Agree	27 (20.9)	3 (10.0)	1 (5.9)	
Neutral	19 (14.7)	4 (13.3)	3 (17.6)	
Prefer not to answer	0 (0.0)	1 (3.3)	1 (5.9)	
I have concerns I lack knowledge about the pharmacology of MAiD medications				0.011[φ]
Strongly Disagree/Disagree	40 (31.0)	6 (20.0)	1 (5.9)	
Strongly Agree/Agree	59 (45.7)	17 (56.7)	14 (82.4)	
Neutral	30 (23.3)	6 (20.0)	1 (5.9)	
Prefer not to answer	0 (0.0)	1 (3.3)	1 (5.9)	

Pharmacist Perceptions and Concerns of their Knowledge and Skills related to MAiD	**Willing (n=129)** **n** (%)	**Unwilling (n=30)** **n** (%)	**Undeclared (n=17)** **n** (%)	**P value**
I have concerns that I lack the knowledge needed to counsel physicians on MAiD medications				0.215
Strongly Disagree/Disagree	22 (17.1)	4 (13.3)	1 (5.9)	
Strongly Agree/Agree	91 (70.5)	21 (70.0)	14 (82.4)	
Neutral	16 (12.4)	4 (13.3)	1 (5.9)	
Prefer not to answer	0 (0)	1 (3.3)	1 (5.9)	
I have concerns that I lack knowledge about what information to give patients about MAiD				0.104
Strongly Disagree/Disagree	19 (14.7)	3 (10.0)	0 (0.0)	
Strongly Agree/Agree	95 (73.6)	21 (70.0)	15 (88.2)	
Neutral	15 (11.6)	5 (16.7)	1 (5.9)	
Prefer not to answer	0 (0.0)	1 (3.3)	1 (5.9)	
I feel there are adequate resources available to guide participating pharmacists in MAiD				0.070
Strongly Disagree/Disagree	51 (39.5)	15 (50.0)	8 (47.1)	
Strongly Agree/Agree	25 (19.4)	1 (3.3)	1 (5.9)	
Neutral	51 (39.5)	13 (43.3)	6 (35.3)	
Prefer not to answer	2 (1.6)	1 (3.3)	2 (11.8)	
Concerns about Participation and Consequences Resulting from Participation in MAiD	**Willing (n=129)** **n** (%)	**Unwilling (n=30)** **n** (%)	**Undeclared (n=17)** **n** (%)	**P value**
I have concerns about answering patient inquiries about MAiD				0.004[ι,φ]
Strongly Disagree/Disagree	49 (38.0)	4 (13.3)	1 (5.9)	
Strongly Agree/Agree	57 (44.2)	18 (60.0)	13 (76.5)	
Neutral	23 (17.8)	7 (23.3)	2 (11.8)	
Prefer not to answer	0 (0.0)	1 (3.3)	1 (5.9)	
I have concerns about unexpected S/E for the patient from MAiD prescriptions I dispense				0.328
Strongly Disagree/Disagree	30 (23.3)	2 (6.7)	1 (5.9)	
Strongly Agree/Agree	57 (44.2)	16 (53.3)	9 (52.9)	
Neutral	39 (30.2)	11 (36.7)	6 (35.3)	
Prefer not to answer	3 (2.3)	1 (3.3)	1 (5.9)	

Concerns about Participation and Consequences Resulting from Participation in MAiD continued	**Willing (n=129) n** (%)	**Unwilling (n=30) n** (%)	**Undeclared (n=17) n** (%)	**P value**
I have concerns about the emotional impact of participating in MAiD				<0.001[ι,φ]
Strongly Disagree/Disagree	63 (48.8)	2 (6.7)	0 (0)	
Strongly Agree/Agree	43 (33.3)	23 (76.7)	13 (76.5)	
Neutral	22 (17.1)	4 (13.3)	3 (17.6)	
Prefer not to answer	1 (0.8)	1 (3.3)	1 (5.9)	
I have concerns about the liability of participating in MAiD				<0.001[ι,φ]
Strongly Disagree/Disagree	58 (45.0)	5 (16.7)	0 (0.0)	
Strongly Agree/Agree	48 (37.2)	20 (66.7)	12 (70.6)	
Neutral	23 (17.8)	4 (13.3)	4 (23.5)	
Prefer not to answer	0 (0.0)	1 (3.3)	1 (5.9)	
Pharmacists Perceived Influence of Concerns on Participation	**Willing (n=129) n** (%)	**Unwilling (n=30) n** (%)	**Undeclared (n=17) n** (%)	**P value**
Do the concerns you identified above affect your willingness to participate				<0.001[ι,φ]
Greatly	7 (5.4)	14 (46.7)	10 (58.8)	
Somewhat	49 (38.0)	8 (26.7)	5 (29.4)	
Not at all	62 (48.1)	4 (13.3)	0 (0.0)	
I don't have any concerns	11 (8.5)	1 (3.3)	0 (0.0)	
Prefer not to answer	0 (0.0)	3 (10.0)	2 (11.8)	
Do the concerns you identified above affect your ability to participate				0.001[ι,φ]
Greatly	38 (29.5)	15 (50.0)	9 (52.9)	
Somewhat	56 (43.4)	5 (16.7)	5 (29.4)	
Not at all	27 (20.9)	6 (20.0)	1 (5.9)	
I don't have any concerns	8 (6.2)	1 (3.3)	0 (0.0)	
Prefer not to answer	0 (0.0)	3 (10.0)	2 (11.8)	

S/E = Side Effects

* For the purpose of this analysis, responses of strongly agree and agree were combined and responses of strongly disagree and disagree were combined

ι. Statistically significant ($p<0.05$) difference between willing and unwilling

φ. Statistically significant ($p<0.05$) difference between willing and undeclared

Pharmacists were asked their views towards MAiD education and provincial pharmacy practice guidelines (Table 3.8). Only a minority of all pharmacists had participated in MAiD education (29/173, 16%) or read the guidelines (62/167, 37%). However, 94.5% of willing pharmacists, 92.9% of undeclared pharmacists, and 55.2% of unwilling pharmacists were interested in taking part in MAiD education. Compared to unwilling pharmacists, a larger proportion of willing and undeclared pharmacists were interested in participating in MAiD education.

Over 80% of willing (85.3%), unwilling (92.3%) and undeclared pharmacists (100%) felt pharmacists willing to participate in MAiD should be required to complete a MAiD education program. Furthermore, the majority of willing (61.4%), unwilling (88%) and undeclared pharmacists (86.7%) felt pharmacists should be certified to participate in MAiD. However, compared to willing pharmacists, a larger proportion of unwilling pharmacists felt pharmacists should be certified to participate in MAiD.

Of the pharmacists who had read the provincial pharmacy practice guidelines, 18% (11/62) provided comments about the guidelines. The most consistently identified theme from the comments was that pharmacists would like supplemental MAiD information and education. Pharmacists noted they would like information and education on the MAiD process, appropriate MAiD medications/protocols and doses, and information on compounding.

Table 3.8: Views Towards MAiD Education & Guidelines of Willing, Unwilling, and Undeclared Pharmacists

	Willing (n=129), n^{η} (%)	Unwilling (n=30), n^{η} (%)	Undeclared (n=17), n^{η} (%)	P value
Have you participated in any MAiD education for pharmacists?				0.137
Yes	25 (19.4)	4 (14.3)	0 (0.0)	
No	104 (80.6)	24 (85.7)	16 (100)	
Would you be interested in participating in MAiD education?				$<0.001^{\iota, \kappa}$
Yes	120 (94.5)	16 (55.2)	13 (92.9)	
No	7 (5.5)	13 (44.8)	1 (7.1)	
Education method preferences				0.955
Online program for professional development	54 (45.0)	6 (37.5)	6 (46.2)	
Live program	55 (45.8)	9 (56.3)	6 (46.2)	
Webinar	11 (9.2)	1 (6.3)	1 (7.7)	
Do you feel willing pharmacists should be required to complete an education program?				0.177
Yes	110 (85.3)	24 (92.3)	16 (100)	
No	19 (14.7)	2 (7.7)	0 (0.0)	
Do you feel pharmacists should be certified to participate in MAiD?				0.009^{ι}
Yes	78 (61.4)	22 (88.0)	13 (86.7)	
No	49 (38.6)	3 (12.0)	2 (13.3)	
Have you read the provincial pharmacy practice guidelines for MAiD?				0.312
Yes	49 (38.9)	11 (37.9)	2 (16.7)	
No	77 (61.1)	18 (62.1)	10 (83.3)	
I feel I can interpret the provincial MAiD practice guidelines as written$^{*\mu}$ (n=62)				0.502
Strongly Disagree/Disagree	2 (4.1)	1 (9.1)	0 (0)	
Strongly Agree/Agree	38 (77.6)	6 (54.5)	1 (50.0)	
Neutral	9 (18.4)	4 (36.4)	1 (50.0)	
I feel I can apply the provincial MAiD practice guidelines as written$^{*\mu}$ (n=62)				0.073
Strongly Disagree/Disagree	2 (4.1)	2 (18.2)	0 (0)	
Strongly Agree/Agree	34 (69.4)	5 (45.5)	0 (0)	
Neutral	13 (26.5)	4 (36.4)	2 (100)	

*For the purpose of this analysis, responses of strongly agree and agree were combined and responses of strongly disagree and disagree were combined

η. For each survey item, the total number of responses may not equal 129 for the willing category, 30 for the unwilling category, or 17 for the undeclared category due to missing responses

ι. Statistically significant ($p<0.05$) difference between willing and unwilling, κ. Statistically significant ($p<0.05$) difference between unwilling and undeclared

μ. Only pharmacists that selected "yes" to the question *"have you read the provincial pharmacy practice guidelines?"* responded to these two questions. The total number of responses for the willing category was 49, the unwilling category was 11, and the undeclared category was 2.

3.4 Discussion

3.4.1 Pharmacists' Willingness to Participate in MAiD

The majority (73.3%) of pharmacists in our sample were personally willing to participate in MAiD. Since our study included all pharmacists (i.e., hospital and community) and only pharmacists, it is not directly comparable to other Canadian studies that have assessed hospital pharmacists' or pharmacy community members' willingness to participate in MAiD.[3,30] However, despite the differences, NL pharmacists' willingness to participate in MAiD (73%) was similar to a survey conducted in 2016 of Ontario pharmacists', pharmacy students' and technicians' willingness to participate in the dispensing of MAiD medications (68%)[3] and similar to a survey conducted in 2017 of Canadian hospital pharmacists' willingness to participate in "the procurement, preparation, and dispensing of medications for use in MAiD" (72%).[30(p.18)]

Generally, unwilling pharmacists were not willing to be directly involved in dispensing MAiD medications, but 66.7% had a degree of willingness (i.e., very or probably willing) to participate indirectly in MAiD by providing drug information to physicians and 50% had a degree of willingness to respond to patient general inquiries about MAiD. Overall, our results suggest pharmacists' unwillingness to participate in MAiD was largely motivated by their moral and religious beliefs. This was consistent with other studies that have found religion to be a contributing factor to pharmacists' unwillingness to participate.[20, 22,30]

The only difference we found between willing, unwilling, and undeclared pharmacists with respect to their practice and personal characteristics was that compared to pharmacists who were willing, there was a larger proportion of unwilling and

undeclared pharmacists who felt their religious background was a consideration in how they deal with ethical issues in practice. A survey of Canadian hospital pharmacists conducted in 2017 found those who were more familiar with MAiD policy and legislation were more supportive of MAiD.[30] We did not find a significant difference in willingness to participate in MAiD among those who had or had not read the provincial practice guidelines.

A notable proportion of the sample (9.7%) were undeclared in their willingness to participate in MAiD. There appears to be a link between undeclared pharmacists and a self-reported lack of knowledge and education about MAiD and its components, and concerns about the consequences of participating (i.e., emotional impact, fears of liability of participating). None of the undeclared pharmacists felt MAiD is morally wrong. Their views towards MAiD and interest in MAiD education were generally similar to willing pharmacists and differed from unwilling pharmacists. In addition, the majority of undeclared pharmacists felt the concerns they identified in this study (e.g., lack of knowledge about aspects of MAiD, concerns about consequences of participation) greatly impacted their willingness and ability to participate. Furthermore, undeclared pharmacists were more inclined to answer questions about their willingness to participate in specific MAiD activities. We found a large proportion were willing to dispense prescriptions for MAiD (78.6%), provide MAiD drug information to physicians (88.2%), and respond to patient inquiries about MAiD (93.8%). These findings suggest undeclared pharmacists may need more information on the role of the pharmacist in MAiD, and their willingness to participate may depend on the specific activity.

Regardless of whether pharmacists were willing, unwilling, or undeclared, we found pharmacists were less supportive of self-administered MAiD compared to clinician-administered MAiD. This is a unique finding of our study as no other studies in Canada specifically studied pharmacists' views towards the two types of MAiD. Pharmacists views opposing self-administered MAiD could have implications on their willingness to participate. Currently there have been very few cases of self-administered MAiD in Canada.[37] However, with improved access to secobarbital the number of self-administered MAiD requests may increase. If this occurs it will be important to revisit pharmacists' views towards self-administered MAiD to determine if their views will influence the accessibility of this service.

3.4.2 Managing Conscientious Objection

Other Canadian studies have found the majority of pharmacy community members felt those unwilling to participate directly in MAiD should provide a patient or health care provider with a referral to another pharmacist.[15,29,30] Our results suggest unwilling pharmacists favoured the option of providing patients or physicians inquiring about MAiD with a referral to a central registry of participating pharmacist/pharmacy compared to providing the physician or patient with a direct referral to another pharmacy/pharmacist. However, there was still a notable 20% of unwilling pharmacists who felt there should be no requirement for objecting pharmacists to provide a referral.

Currently in NL there is no such registry or requirement for a referral to another pharmacist.[4] The NLPB MAiD practice guidelines indicate that pharmacists should inform management, who are then responsible for managing the pharmacists' objection and ensuring the patient receives care in a timely manner.[4] Some provinces (e.g., Ontario,

Saskatchewan, Nova Scotia, Prince Edward Island) in Canada have implemented a requirement for pharmacists to provide a patient or physician with a referral to another pharmacist or to a third party that could assist in providing a referral to the physician or patient (e.g., health authorities, pharmacy board, care coordination service).[6,7,11,12]

Some pharmacists who object to participating in MAiD may feel the requirement for them to provide a physician or patient with a referral to another pharmacist/pharmacy may be morally equivalent to participating in MAiD.[38] As a result, requirements for health care providers with a conscientious objection to provide a referral to another health care professional or third party has caused some debate in Canada. Recently the Superior Court of Justice heard a case between a group of Christian Doctors and the College of Physicians and Surgeons of Ontario (CPSO).[39] The group of Christian doctors challenged CPSO's requirement for physicians who have an objection to MAiD to provide patients inquiring about MAiD with a referral to another health care professional or a third party.[39,40] The Court, however, upheld CPSO's referral requirement.[39,40]

3.4.3 Pharmacists' Perceptions of their Knowledge, Competency, and Concerns Related to MAiD

We asked all pharmacists about their perceptions of their knowledge, competency, and concerns related to MAiD to assist in identifying potential barriers to participation. We found the majority of pharmacists noted they lacked education and knowledge about MAiD (e.g., knowledge on the medications, MAiD process, and information to provide patients). The majority of pharmacists in our survey also desired MAiD education and noted that they felt pharmacists willing to participate in MAiD should be required to complete an education program before participating. Furthermore, our results were

consistent with the survey, conducted just after the legalization of MAiD in June 2016, of Ontario pharmacists, pharmacy students, and technicians as we also found a noteworthy number of pharmacists had concerns about the emotional impact participating may have on a pharmacist, unexpected side effects that may result from MAiD prescriptions they dispense, and liability with participating.[3] These concerns, lack of education and perceived lack of knowledge on MAiD could limit pharmacists' ability to participate.

Overall, our results further support the authors findings from the Ontario pharmacy survey, conducted in June 2016, which recommended that additional supports outside of what is provided by the pharmacy regulatory bodies may be needed to facilitate pharmacists' participation in MAiD.[3] Our study suggests NL pharmacists may require supports in the form of education and training. Pharmacists in NL would like to receive education in the form of an online program for professional development or live education program. Furthermore, our results suggest pharmacists may also require psychosocial supports for those who have participated and support in the form of legal advice.

It is, however, important for provincial health policy makers to take into consideration NL pharmacists' perceived lack of knowledge and education coupled with MAiD being a rare event. As MAiD is currently a rare event in NL, it may be difficult for pharmacists to maintain competencies in MAiD. These findings could drive provincial policy makers to consider whether a broad range of pharmacists need to be educated and trained in MAiD or whether only a small number of pharmacists need to be trained to specialize in MAiD while all other pharmacists would be educated on providing referrals to the MAiD specialists.

3.4.4 Implications for Future Research

Our study fills a small gap in the literature on pharmacists and MAiD. Therefore, to further inform health policy and pharmacy practice in MAiD future research should focus on surveying or interviewing pharmacists who have participated in MAiD. Research should also focus on examining the best method to train and implement MAiD training and education to pharmacists.

3.4.5 Limitations

There are some limitations to this study. First, the survey was conducted in only one province where there have only been a small number of MAiD cases in NL. Most pharmacists in NL would not have participated in the MAiD process. As a result, pharmacists' responses to how they would behave if confronted with MAiD and their perceptions of their knowledge, competencies and concerns are somewhat hypothetical. Responses may also be influenced by social desirability bias. However, as we offered the response category of "prefer not to answer" for all questions, this may have helped minimize this bias as pharmacists were not forced to answer any of the survey questions. This may have allowed them to answer more truthfully.

Secondly, we did not adjust statistical tests to account for multiple outcomes. As a result, we risk a type 1 error; that is, we may have identified significant differences where they do not exist in real life. Furthermore, the sample size in each group of pharmacists (i.e. willing, unwilling, undeclared) is small. This may also have impacted our ability to detect statistically significant differences between the groups.

Thirdly, our sample was not representative of the population of pharmacists with regards to years of practice, and geographical location of pharmacist practice sites (i.e.

rural versus urban practice setting). Overall, this impacts the generalizability of our results. Our sample appears to under represent pharmacists practicing for 5 years or less and therefore may not accurately capture the views of the newer generation of pharmacists. Our sample also appears to under represent pharmacists working in rural areas. As a result, we may not know the full impact pharmacists' willingness to participate in MAiD may have on accessibility in rural and remote areas of NL. However, our sample was representative of the population of pharmacists with respect to gender, age, and primary practice setting.

Lastly, at the time the survey was conducted nurse practitioners were not permitted to provide MAiD in NL. As a result, we did not ask pharmacists about their views towards nurse practitioners providing MAiD. Therefore, it is possible some pharmacists may feel differently about assisting nurse practitioners with MAiD compared to physicians.

3.5 Conclusion

Overall, the majority of pharmacists in NL were willing to participate in MAiD. We found approximately seven out of ten pharmacists willing to participate in MAiD, two out of ten were unwilling, and one out of ten undeclared. Religious and moral considerations were the most commonly cited factors contributing to pharmacists' unwillingness to participate in MAiD. For pharmacists who are undeclared they generally required more information and education before deciding whether they would participate. Pharmacists in NL need more supports in the form of MAiD education, training, psychosocial support, and legal advice to assist them in making a more informed decision about participating in MAiD and to assist willing pharmacists with participating in MAiD

activities. Unwilling pharmacists in NL may also require additional support systems to enable them to practice in accordance to their conscience and beliefs.

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Appendix 3A Survey Instrument

Dear Pharmacist,

We are pleased to invite you to participate in a research project being conducted by a master's student from Memorial University, School of Pharmacy. This research project is part of the student's thesis project. We kindly ask you to read this letter before starting the survey. This letter should give you an idea of what this project is about and what your participation will involve. It also describes your right to withdraw from the project, and potential risks and benefits.

Medical assistance in dying is now legal in Canada and pharmacists may be asked to participate. There is little data about how pharmacists across the country feel about participating, and none about pharmacists in Newfoundland & Labrador. The aim of the study is to describe the attitudes and perceptions of Newfoundland & Labrador pharmacists towards participating in, and preparedness for medical assistance in dying.

We are asking you to complete this online survey that should take about 5-10 minutes. At the start of the survey you will be asked to select "yes" to consent to participate. By selecting "yes" and starting the survey, you are giving your consent to take part. This means you understand the information about the study. You also give permission for us to share your responses on an unnamed basis. However, you will not be giving up your legal rights. Participation in this survey is voluntary. You do not have to answer any question that you do not wish to answer by selecting "prefer not to answer". You can stop at any time and your responses will not be used by the research team. However, it will not be possible to withdraw your responses once the survey is submitted. As the survey is anonymous there will be no way to retrieve the survey data you submitted. As a thank you for your time, we will be having a draw for five, $100, grocery gift cards. You can submit your name into the draw at the end of the survey. Your name and contact information will be kept separate from the survey responses.

It is not known whether this study will benefit you. Results may be used to influence provincial pharmacy practice guidelines or policy surrounding medical assistance in dying. In addition, the results may be used to provide education or support to help prepare pharmacists for medical assistance in dying. There is no risk to pharmacists who take part in this study. We will take all reasonable measures to ensure that your identity is kept confidential. Survey responses will be nameless. Employers will not know if you respond to the survey. You will not be identified in any reports or publications because all pharmacist demographic data collected will be collated. You may receive a reminder email from the Pharmacists' Association of Newfoundland and Labrador to complete the survey. This means pharmacists that have completed the survey may receive an unnecessary email.

The survey will be provided through SurveyMonkey. SurveyMonkey stores data on servers in the USA and is subject to USA privacy and security laws. To protect your identity IP addresses will not be collected. Data that is exported from SurveyMonkey to be analyzed, by the research team, will be stored in a password protected file on a laptop. Data may also be stored on a password protected USB stick. Dr. Erin Davis will store and protect the data. The laptop and USB stick will be stored in a locked drawer in Dr. Davis' private, locked office. The office is located at the Memorial University School of Pharmacy. The data will be stored for 5 years. After 5 years, the data will then be destroyed. The information for the draw will be deleted once the draw is complete. Results will be reported in Abigail's thesis. The thesis will be accessible to the public through Memorial University. The results may also be shared: in journals, at conferences, and with the provincial Pharmacy Board.

We sincerely thank you for your consideration in our research project!

The project is funded by the Seeds, Bridge, and Multidisciplinary Funds & Translational and Personalized Medicine Initiative/ NL SUPPORT Educational Fund

Questions?

If you have any questions about taking part in this study, you can contact the researcher who is in charge of this study, Abigail, or one of her supervisors:

Researcher:
Abigail Turner, BSc. Pharm, MSc. in Pharmacy Candidate
School of Pharmacy, Memorial University
T: (902) 314-9912 or by email at alt083@mun.ca

Supervisors:
Dr. Jason Kielly, BSc. Pharm, Pharm D
School of Pharmacy, Memorial University
T: (709) 777-7980 or kiellyj@mun.ca

Dr. Erin Davis, BSc. Pharm, Pharm D
School of Pharmacy, Memorial University
T: (709)-777-7232 or emdavis@mun.ca

Or you can also speak with someone who is not involved in the study but can advise you on your rights as a participant in this study.
This person can be reached at:

Ethics Office
709-777-6974 or by email at info@hrea.ca

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

INFORMATION AND CONSENT

By completing the survey, you are giving consent to take part. This means that you agree/understand the following:

- You have read the information about the research study
- You have had the opportunity to ask questions/to discuss this study
- You have received satisfactory answers to all of your questions
- You have received enough information about the study
- You understand that you are free to withdraw from the study at any time, without having to give a reason, and without penalty, however if you submit your survey the data collected from you will be retained and used by the researcher(s) for use in the research study
- You understand that it is your choice to be in the study and that you may not benefit
- You understand how your privacy is protected and your information is kept confidential

1. You have read this agreement and you freely consent to participate in this research study.

Select “yes” to consent to participate. If you do not wish to participate please select “no”, and exit the survey

◯ Yes

◯ No

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

DEFINITIONS

These may assist you in answering the survey questions.

Medical Assistance in Dying (MAiD)[1]:

a) the administering by a medical practitioner or nurse practitioner[2] of a substance to a person, at their request, that causes their death; or

b) the prescribing or providing by a medical practitioner or nurse practitioner[2] of a substance to a person, at their request, so that they may self-administer the substance and in doing so cause their own death.

Medical Practitioner ("Physician")[1]:
A person who is entitled to practise medicine under the laws of a province.

Rural[3]
We will be defining rural based on the second character of pharmacies postal codes. According to Canada Post a rural postal code has a "0" as the second character.[3]

1. NLPB: Standards Guidelines & Policies [Internet]. St. John's: Newfoundland & Labrador Pharmacy Board; c2016. Guidelines for Participating in Medical Assistance in Dying; 2016 Sept [cited 2017 Aug 30]. Available from http://www.nlpb.ca/pharmacy-practice/standards-guidelines-policies/

2. Please Note: The current scope of practice for nurse practitioners in NL does not authorize nurse practitioners to provide MAID (such as the administration or prescription of the substance(s) or obtaining the patient's informed consent).[1]

3. Canada Post: Addressing Guidelines. Canada Post [Internet]. Last updated Jan 16, 2017 [cited Sept 12, 2017]. Available from https://www.canadapost.ca/tools/pg/manual/PGaddress-e.asp

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Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

ELIGIBILITY

2. Are you a licensed PHARMACIST who is practicing in Newfoundland & Labrador?

◯ Yes

◯ No

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

3. Please answer the following questions:

	Yes	No	Prefer not to answer
Do you think patients are ever justified in wanting to end their own lives?	◯	◯	◯
Do you think prescription drugs are an appropriate means for physicians to use when assisting a patient to die?	◯	◯	◯
Do you think it is appropriate for physicians to directly administer medications to patients, at their request, to assist in the patient's death?	◯	◯	◯
Do you think it is appropriate for the physician to prescribe or provide medications to a patient, at their request, so the patient may self administer the medications to cause their own death?	◯	◯	◯
Do you support the legalization of medical assistance in dying?	◯	◯	◯
Do you personally believe medical assistance in dying is morally wrong?	◯	◯	◯
Is your religious background a consideration in terms of how you deal with ethical issues in practice?	◯	◯	◯

4. Are you PERSONALLY WILLING to participate in medical assistance in dying?

◯ Yes

◯ No

◯ Prefer not to answer

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Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

5. Please indicate whether any of the factors below contribute to why you are not willing to participate in medical assistance in dying: *Select all that apply*

- ☐ I believe medical assistance in dying to be immoral.
- ☐ Medical assistance in dying conflicts with my religious beliefs.
- ☐ I believe it is unethical for health care professionals to participate in medical assistance in dying
- ☐ Prefer not to answer

6. Please describe any other factors that contribute to why you are not willing to participate in medical assistance in dying.

- ◯ No comment
- ◯ Comments

7. If you were asked to participate in medical assistance in dying, are you willing to: *Select all that apply*

- ☐ Directly refer the physician to another pharmacist/ pharmacy
- ☐ Directly refer the inquiring patient to another pharmacist/ pharmacy
- ☐ Refer the physician to a central registry of participating pharmacists/pharmacies
- ☐ Refer the inquiring patient to a central registry of participating pharmacists/pharmacies
- ☐ I would not refer
- ☐ Prefer not to answer

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

8. How willing are you to participate in the following activities:

	Definitely not willing	Probably not willing	Probably willing	Very willing	Prefer not to answer
Dispensing prescriptions for medical assistance in dying	○	○	○	○	○
Providing drug information to physicians about medications used for medical assistance in dying (*e.g. Information on the preparation, administration, efficacy, stability or storage of MAiD medications*)	○	○	○	○	○
Responding to patient's general inquiries about medical assistance in dying	○	○	○	○	○

9. In your opinion, if a pharmacist does not wish to participate in medical assistance in dying they should: *Select all that apply*

☐ Directly refer the physician to another pharmacist/pharmacy

☐ Directly refer the inquiring patient to another pharmacist/pharmacy

☐ Refer the physician to a central registry of participating pharmacists/pharmacies

☐ Refer the inquiring patient to a central registry of participating pharmacists/pharmacies

☐ Not be required to refer

☐ Prefer not to answer

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

10. Please select your level of agreement with the following statements on medical assistance in dying (MAiD):

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Prefer not to answer
I feel competent to prepare MAiD prescriptions for dispensing	◯	◯	◯	◯	◯	◯
I feel I have adequate knowledge about the oral medications used for MAiD	◯	◯	◯	◯	◯	◯
I feel I have adequate knowledge about the IV medications used for MAiD	◯	◯	◯	◯	◯	◯
I have concerns about unexpected side effects for the patient that are a result of prescriptions I dispense for MAiD (*e.g. coma, discomfort*)	◯	◯	◯	◯	◯	◯
I have concerns that I lack the knowledge needed to counsel physicians on medications for MAiD (*e.g. Counsel on the preparation, administration, efficacy, stability or storage of MAiD medications*)	◯	◯	◯	◯	◯	◯
I have concerns about the emotional impact of participating in MAiD	◯	◯	◯	◯	◯	◯
I have concerns about answering PATIENT inquiries about MAiD	◯	◯	◯	◯	◯	◯
I have concerns that I lack knowledge about the pharmacology of medications used in MAiD	◯	◯	◯	◯	◯	◯
I have concerns that I lack knowledge about the MAiD process	◯	◯	◯	◯	◯	◯
I have concerns that I lack knowledge about what information to give patients about MAiD	◯	◯	◯	◯	◯	◯
I feel there are adequate resources available to guide participating pharmacists in MAiD	◯	◯	◯	◯	◯	◯
I have concerns about the liability of participating in MAiD	◯	◯	◯	◯	◯	◯

11. Do the concerns you identified above affect your **WILLINGNESS** to participate in medical assistance in dying?

Greatly	Somewhat	Not at all	I don't have any concerns	Prefer not to answer
◯	◯	◯	◯	◯

12. Do the concerns you identified above affect your **ABILITY** to participate in medical assistance in dying?

Greatly	Somewhat	Not at all	I don't have any concerns	Prefer not to answer
◯	◯	◯	◯	◯

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

13. Have you participated in any medical assistance in dying education for pharmacists?

- Yes
- No
- Prefer not to answer

14. Would you be interested in participating in medical assistance in dying education for pharmacists?

- Yes
- No
- Prefer not to answer

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

15. What education method would you prefer to participate in?

- ◯ Online programs for professional development
- ◯ Live program
- ◯ Webinar
- ◯ Prefer not to answer

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

16. Do you feel pharmacists willing to participate in medical assistance in dying should be required to complete an education program?

◯ Yes

◯ No

◯ Prefer not to answer

17. Do you feel pharmacists should be certified to participate in medical assistance in dying?

◯ Yes

◯ No

◯ Prefer not to answer

18. Have you read the provincial pharmacy practice guidelines for medical assistance in dying?

◯ Yes

◯ No

◯ Prefer not to answer

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

19. Please select your level of agreement with the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Prefer not to answer
I feel I can interpret the provincial medical assistance in dying pharmacy practice guidelines as written	◯	◯	◯	◯	◯	◯
I feel I can apply the provincial medical assistance in dying pharmacy practice guidelines as written	◯	◯	◯	◯	◯	◯

20. Would you like to provide any comments to supplement the answers provided above?

◯ No comment

◯ Comments

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

21. Do you identify as:

22. What is your age (years)?

23. I have been a practicing pharmacist for:

24. What is your educational background?

25. I currently work ______ as a pharmacist:

- ◯ Part-time
- ◯ Full-time
- ◯ Prefer not to answer

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26. What is your PRIMARY practice setting?

- ◯ Community pharmacy
- ◯ Hospital pharmacy
- ◯ Research/Academia
- ◯ Industry
- ◯ Long-term care
- ◯ Prefer not to answer
- ◯ Other (please specify)

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

27. Please indicate your PRIMARY practice setting in community:

- ◯ Chain
- ◯ Banner
- ◯ Independent
- ◯ Prefer not to answer
- ◯ Other (please specify)

28. Please indicate your PRIMARY role as a community pharmacist:

- ◯ Staff pharmacist
- ◯ Relief pharmacist
- ◯ Pharmacist-in-charge
- ◯ Pharmacy owner
- ◯ Pharmacy manager
- ◯ Prefer not to answer
- ◯ Other (please specify)

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

29. Please indicate your practice setting within the hospital: *Select all that apply*

- [ ] Dispensary
- [ ] In-patient care
- [ ] Ambulatory care
- [ ] Prefer not to answer
- [ ] Other (please specify)

30. Do you have a dispensing role at your primary practice site?

- ◯ Yes
- ◯ No
- ◯ Prefer not to answer

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

31. Do you have a secondary practice site where you have a dispensing role? (*e.g. working relief or part-time in a community pharmacy*)

- ◯ Yes
- ◯ No
- ◯ Prefer not to answer

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

32. To determine whether you work in a rural area, please provide the first 2 characters of your primary practice site postal code.

- ◯ Prefer not to answer
- ◯ First 2 characters:

Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying

Your participation in this study is greatly appreciated.

Thank you!

If you would like to enter your name into the draw for one of five, $100.00, grocery gift cards, please click HERE.

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Appendix 3B Survey Invitations

Invitation Email

Dear Pharmacist,

You are invited to respond to a survey about your feelings towards participating in medical assistance in dying!

This research study is being conducted by a master's student, Abigail Turner, from Memorial University School of Pharmacy. The aim of the study is to describe Newfoundland & Labrador pharmacists' feelings towards participating in, and preparedness for medical assistance in dying. There is little data about how pharmacists across the country feel about participating in medical assistance in dying and none about pharmacists specifically in Newfoundland & Labrador.

We are asking you to **complete an online survey** that should take about **5-10 minutes**. You do not have to answer any questions you do not wish to answer. By completing the survey, you are giving consent to take part. The survey will be anonymous. As a thank you for your time we will be having a **DRAW FOR FIVE, $100, grocery gift cards**. You can submit your name into the draw at the end of the survey.

The survey may be accessed via the following link
https://www.surveymonkey.com/r/Pharm_MAiD

Please read the **letter** at the beginning of the survey carefully before starting. It provides further details about the project and how we will protect your privacy. Please contact the researcher, Abigail Turner, or one of her supervisors before you consent to participate if you have any questions about the study or if you want more information.

Researcher: Abigail Turner .
BSc. Pharm, MSc. in Pharmacy Candidate
School of Pharmacy, Memorial University
T: (902) 314-9912 or by email at alt083@mun.ca.

Supervisors: Dr. Jason Kielly
BSc. Pharm, Pharm D
School of Pharmacy, Memorial University
T: (709) 777-7980 or kiellyj@mun.ca

Dr. Erin Davis
BSc. Pharm, Pharm D
School of Pharmacy, Memorial University
T: (709)-777-7232 or emdavis@mun.ca

We thank you for your time and consideration of our study,

Sincerely,

Abigail Turner, Dr. Jason Kielly, and, Dr. Erin Davis

Reminder Email

Dear Pharmacist,

You are invited to respond to a survey about your feelings towards participating in medical assistance in dying!

If you have already responded to this survey, we kindly ask you to delete this email and only respond to the survey once. We thank you for your time and participation!

This is a gentle reminder that you are invited to take part in this research study. The research study is being conducted by a master's student, Abigail Turner, from Memorial University School of Pharmacy. The aim of the study is to describe Newfoundland & Labrador pharmacists' feelings towards participating in, and preparedness for medical assistance in dying.

We are asking you to **complete an online survey** that should take about **5-10 minutes**. You do not have to answer any questions you do not wish to answer. By completing the survey, you are giving consent to take part. The survey will be anonymous. As a thank you for your time we will be having a **DRAW FOR FIVE, $100, grocery gift cards**. You can submit your name into the draw at the end of the survey.

The survey may be accessed via the following link https://www.surveymonkey.com/r/Pharm_MAiD

Please read the **letter** at the beginning of the survey carefully before starting. It provides further details about the project and how we will protect your privacy. Please contact the researcher, Abigail Turner, or one of her supervisors before you consent to participate if you have any questions about the study or if you want more information.

Researcher: Abigail Turner .
BSc. Pharm, MSc. in Pharmacy Candidate
School of Pharmacy, Memorial University
T: (902) 314-9912 or by email at alt083@mun.ca.

Supervisors: Dr. Jason Kielly
BSc. Pharm, Pharm D
School of Pharmacy, Memorial University
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Dr. Erin Davis
BSc. Pharm, Pharm D
School of Pharmacy, Memorial University
T: (709)-777-7232 or emdavis@mun.ca

We thank you for your time and consideration of our study,

Sincerely,

Abigail Turner, Dr. Jason Kielly, and, Dr. Erin Davis

Appendix 3C Data Cleaning

Data Cleaning:

For most of the survey items a response of "PNA" was considered a "missing response". The exceptions to this was that PNA responses were included in the analysis of the following survey items: pharmacists' willingness to participate in MAiD, factors contributing to their unwillingness, and pharmacists' perceptions of their knowledge, competency, and concerns related to MAiD. We included the PNA responses in the analysis of survey item that asked pharmacists' their willingness to participate in MAiD, because we felt the PNA group was an important group to keep in mind, as it may capture pharmacists with uncertainties about participation in MAiD. We included the PNA response in the analysis of the survey item asking about factors contributing to pharmacists' unwillingness to provide a full understanding of results. We included the PNA responses in the analysis in the survey items asking about pharmacists about their perceptions of their knowledge, competency, and concerns related to MAiD because these survey items may not have been applicable to all respondents (i.e., unwilling pharmacists) and the PNA response category may capture their responses of not applicable.

To assess the number of cases with missing data, we counted the number of PNA responses, for each survey item where PNA was deemed missing data. Given the relatively small percentage of missing data (< 40%) in each individual survey, we did not exclude full surveys for having missed a substantial amount of survey items.

Recoding:

Survey items 5 and 6 on the questionnaire asked pharmacists about factors contributing to their willingness to participate in MAiD, so we combined the responses of these two survey items. If a respondent did not respond to both questions they were coded as PNA.

We recoded Likert scale questions because initial frequencies showed that responses to survey items $8_{a\text{-}c}$,$10_{a\text{-}l}$,$19_{a,b}$ were skewed. For survey item $8_{a\text{-}c}$ we combined “very willing” with “probably willing”, and “definitely not willing” with “probably not willing”. For survey items $10_{a\text{-}l}$ and $19_{a,b}$ we combined “strongly agree” with “agree”, “strongly disagree” with “disagree”, and we left neutral as an individual category.

We recoded primary practice setting into three categories of similar respondents (i.e., community pharmacy, hospital pharmacy & long-term care, and other) to protect respondent confidentiality when categories contained small numbers of respondents and to facilitate comparison with categories from the population statistics (i.e., pharmacists working in community, hospital, and administrative). We recoded respondents’ work postal codes into the category of rural or urban. According to Canada Post, a rural postal code has a “0” as the second character and an urban postal code has numerals from 1 to 9 as the second character.[ß] As a result, when a postal code had the second digit as “0” we coded it as “rural” and if the second digit was 1 to 9 we coded it as “urban”. For the open ended-question we grouped similar content into categories.

ß. Canada Post. Addressing Guidelines [Internet]. Ottawa, ON, Canada: Canada Post Corporation; 2019 Jan 31 [cited 2019 July 16]; 14p. Available from: https://www.canadapost.ca/tools/pg/manual/PGaddress-e.asp

Appendix 3D Ethical Approval

Ethics Office
Suite 200, Eastern Trust Building
95 Bonaventure Avenue
St. John's, NL
A1B 2X5

October 10, 2017

School of Pharmacy
Memorial University of Newfoundland

Dear Ms. Turner:

Researcher Portal File # 20180855
Reference # 2017.225

RE: "Attitudes and Perceptions of Newfoundland & Labrador Pharmacists Towards Participating in Medical Assistance in Dying"

Your application received a delegated review by a sub-committee of the Health Research Ethics Board (HREB). ***Full approval*** of this research study is granted for one year effective **October 11, 2017**.

This is your ethics approval only. Organizational approval may also be required. It is your responsibility to seek the necessary organizational approval from the Regional Health Authority (RHA) or other organization as appropriate. You can refer to the HREA website for further guidance on organizational approvals.

This is to confirm that the HREB reviewed and approved or acknowledged the following documents (as indicated):

- ☐ Application, approved
- ☐ Appendix E Research Proposal, approved
- ☐ Appendix B Survey Cover Letter, approved
- ☐ Appendix C Email Scripts, approved
- ☐ Appendix A Survey Draft, approved
- ☐ Appendix D Advertisement, approved
- ☐ Pharmacy Guidelines, approved
- ☐ Appendix F Budget, approved

MARK THE DATE

This approval will lapse on October 11, 2018 . It is your responsibility to ensure that the Ethics Renewal form is submitted prior to the renewal date; you may not receive a reminder. The Ethics Renewal form can be found on the Researcher Portal as an Event form.

If you do not return the completed Ethics Renewal form prior to date of renewal:

- ***<u>You will no longer have ethics approval</u>***
- *You will be required to stop research activity immediately*
- *You may not be permitted to restart the study until you reapply for and receive approval to undertake the study again*
- *Lapse in ethics approval* ***<u>may result in interruption or termination of funding</u>***

You are solely responsible for providing a copy of this letter, along with your approved HREB application form; **to Research Grant and Contract Services** should your research depend on funding administered through that office.

Modifications of the protocol/consent are not permitted without prior approval from the HREB. **<u>Implementing changes without HREB approval may result in your ethics approval being revoked, meaning your research must stop</u>**. Request for modification to the protocol/consent must be outlined on an amendment form (available on the Researcher Portal website as an Event form) and submitted to the HREB for review.

The HREB operates according to the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2), the Health Research Ethics Authority Act (HREA Act) and applicable laws and regulations.

You are responsible for the ethical conduct of this research, notwithstanding the approval of the HREB.

We wish you every success with your study.

Sincerely,

Ms. Patricia Grainger (Chair, Non-Clinical Trials Health Research Ethics Board)
Dr. Joy Maddigan (Vice-Chair, Non-Clinical Trials Health Research Ethics Board)

CC: Dr. Erin Davis
Dr. Jason Kielly

Appendix 3E Comparison of Study Sample to the Population of Pharmacists in NL

Table 3E.1: Comparison of Study Sample to the Population of Pharmacists in NL

Characteristic	Population Statistic	Study Sample Statistic	P-Value
Gender*			0.258
Man	40%	43.9%	
Woman	60%	56.1%	
Age*			0.064
20-29	17.1%	16.2%	
30-39	28.4%	37.1%	
40-49	24.3%	23.4%	
50+	30.2%	23.4%	
Years of Practice *			0.001
5 or less	25.4%	18.7%	
6-15	26.3%	38.0%	
16 or more	48.3%	43.3%	
Primary practice setting *			0.073
Community pharmacy	77.7%	70.6%	
Hospital pharmacy and long-term care[τ]	17.8%	23.5%	
Other	4.45%	5.9%	
Employment category*			0.480
Work full-time	81.1%	87.8%	
Work part-time	11.6%	12.2%	
Location of work site **			< 0.001
Urban	54.7%	72.9%	
Rural	36.8%	27.1%	

*Population statistics from 2018 data[35]
**Population statistics from 2016 data[36]
τ. The population statistics did not have a specific category for pharmacists in LTC, as there was a small number of pharmacists in our sample working in LTC we combined them with hospital pharmacists

Appendix 3F Personal and Practice Characteristics of Willing, Unwilling, and Undeclared Pharmacists

Table 3F.1 Personal Characteristics of Willing, Unwilling, and Undeclared

	Willing (n=129) n[η](%)	**Unwilling (n=30) n[η] (%)**	**Undeclared (n=17) n[η] (%)**	**P value**
Gender				0.216
Man	57 (44.5)	15 (51.7)	4 (25.0)	
Woman	71 (55.5)	14 (48.3)	12 (75.0)	
Age				0.617
20-29	22 (17.6)	4 (14.3)	1 (7.1)	
30-39	44 (35.2)	11 (39.3)	7 (50.0)	
40-49	31 (24.8)	7 (25.0)	1 (7.1)	
50+	28 (22.4)	6 (21.4)	5 (35.7)	
Years of Practice				0.789
5 or less	25 (19.7)	5 (17.9)	2 (12.5)	
6-15	45 (35.4)	12 (42.9)	8 (50.0)	
16 or more	57 (44.9)	11 (39.3)	6 (37.5)	
Educational background				0.227
College of Trades and Technology	17 (13.5)	4 (14.3)	5 (29.4)	
B.Sc.(Pharm) or (Pharm.D)	109 (86.5)	24 (85.7)	12 (70.6)	
Religion and practice considerations				<0.001[ι,φ]
Religion is a consideration for them in practice	9 (7.1)	14 (51.9)	5 (31.3)	
Religion is not a consideration for them in practice	118 (92.9)	13 (48.1)	11 (68.8)	

η. For each question, the total number of responses may not equal 129 for the willing category, 30 for the unwilling category, or 17 for the undeclared category due to missing responses
ι. Statistically significant ($p<0.05$) difference between willing and unwilling
φ. Statistically significant ($p<0.05$) difference between willing and undeclared

Table 3F.2: Current Practice Characteristics of Willing, Unwilling, and Undeclared Pharmacists

	Willing (n=129) n^{η} (%)	**Unwilling (n=30)** n^{η} (%)	**Undeclared (n=17)** n^{η} (%)	**P value**
Primary practice setting				0.507
Community pharmacy	86 (68.3)	20 (71.4)	14 (87.5)	
Hospital pharmacy and long-term care	33 (26.2)	6 (21.4)	1 (6.3)	
Other	7 (5.6)	2 (7.1)	1 (6.3)	
Primary work setting in Community$^{\lambda}$				0.377
Chain	41 (50.0)	13 (68.4)	5 (38.5)	
Banner	20 (24.4)	2 (10.5)	2 (15.4)	
Independent	19 (23.2)	4 (21.1)	6 (46.2)	
Other	2 (2.4)	0 (0.0)	0 (0.0)	
Primary role as a community pharmacist$^{\lambda}$				0.451
Staff pharmacist	37 (43.5)	10 (52.6)	10 (76.9)	
Relief pharmacist	11 (12.9)	1 (5.3)	0 (0.0)	
Pharmacist-in-charge	22 (25.9)	4 (21.1)	3 (23.1)	
Pharmacy owner	10 (11.8)	3 (15.8)	0 (0.0)	
Pharmacy manager	5 (5.9)	1 (5.3)	0 (0.0)	
Dispensing role at primary practice site				0.705
Yes	112 (88.9)	25 (83.3)	14 (87.5)	
No	14 (11.1)	5 (16.7)	2 (12.5)	
Employment category				0.274
Work part-time	18 (14.3)	1 (3.4)	2 (11.8)	
Work full-time	108 (85.7)	28 (96.6)	15 (88.2)	
Location of work				0.321
Urban	89 (75.4)	16 (69.6)	8 (57.1)	
Rural	29 (24.6)	7 (30.4)	6 (42.9)	

η. For each question, the total number of responses may not equal 129 for the willing category, 30 for the unwilling category, or 17 for the undeclared category due to missing responses

λ. Only respondents working in community pharmacy answered these questions, but the total number of responses may not add up to 86 for the willing category, 20 for the unwilling category, or 14 for the undeclared category due to missing responses.

Chapter 4

Summary

4.1 Summary

The recent legalization of MAiD introduced a new and potentially controversial practice area for pharmacists in Canada. Since the legalization of MAiD, there has been little study on whether Canadian pharmacists are willing and feel prepared to participate in MAiD. There has also been little study of the potential barriers to Canadian pharmacists' participation in MAiD. To address this gap in the literature, two complementary studies were designed and presented in this thesis. The first study was a systematic review of the literature, while the second study was an exploratory survey of pharmacists in NL.

A number of jurisdictions around the world have legalized forms of MAiD or have considered legalizing MAiD.[1] Therefore, the first study (Chapter 2) aimed to summarize the literature from across countries and determine pharmacists' attitudes and willingness to participate in MAiD, factors influencing pharmacists' attitudes and willingness, and pharmacists' perceived barriers and facilitators to their role in MAiD. The systematic review found the majority of studies were conducted prior to 2002 and prior to the legalization of MAiD or in jurisdictions where MAiD is still not legal. As a result, pharmacists' published attitudes and willingness to participate in MAiD may be outdated and largely hypothetical in nature. Furthermore, differences in the wording of survey items made it difficult to compare results. Overall, the majority of studies in the systematic review showed pharmacists were either supportive of MAiD and/or the

legalization of MAiD.[2-10] Furthermore, pharmacists' willingness to participate in MAiD varied between studies, where 21 to 95% of respondents indicated they were willing to participate in MAiD if it was legal. [2,3,5,7,10-15] Religion was the factor most commonly and consistently associated with pharmacists' reported attitudes opposing the practice of MAiD.[5-7,10,12,14] There were no consistently reported factors influencing willingness to participate. Lastly, the review identified a gap in the literature pertaining to pharmacists' perceived barriers and facilitators to their role in MAiD.

The second study (Chapter 3) was an exploratory survey of NL pharmacists. The study aimed to describe the proportion of pharmacists in NL who are willing to participate in MAiD, identify potential barriers to pharmacists' participation in MAiD, and identify differences in pharmacists' willingness to participate in relation to their personal and professional characteristics. A total of 176 valid survey respondents were included, representing approximately 24% of pharmacists in NL. Most pharmacists (93.7%) felt patients are justified in wanting to end their lives and the majority of pharmacists (73%) were willing to participate in MAiD. With respect to practice and personal characteristics, there was a significantly (<0.001) larger proportion of unwilling and undeclared pharmacists than willing pharmacists who felt their religious background was a consideration in how they dealt with ethical issues in practice. Religious and moral considerations were the primary reasons contributing to pharmacists' unwillingness to participate in MAiD.

The majority of pharmacists felt pharmacists' conscientious objection to participation in MAiD should be managed by pharmacists providing the physician or patient with a referral to a central registry of participating pharmacists. A minority of

pharmacists had participated in MAiD education and across all pharmacists (i.e., willing, unwilling, undeclared) we found the majority noted they lacked education and knowledge about MAiD and its components (e.g., knowledge on the medications and knowledge needed to counsel on the medications, MAiD process, and information to provide patients). The majority of willing, unwilling, and undeclared pharmacists were interested in participating in MAiD education. Furthermore, over 30% of willing and the majority of unwilling and undeclared pharmacists had concerns about the consequences resulting from participation in MAiD.

The two studies in this review complement each other. The systematic review showed that updated studies on pharmacists' attitudes and willingness to participate in MAiD are needed in jurisdictions where MAiD is legal. The review also found a gap in the literature on pharmacist perceived barriers and facilitators to their role in MAiD. Therefore, the results of the systematic review supported the need for the survey. The study provides a step forward in research in this area as we conducted an updated study on pharmacists' willingness to participate in MAiD in an area where MAiD is legal. However, NL pharmacists' willingness to participate and potential barriers to participation are somewhat hypothetical as MAiD has been a rare event to date in NL and predominately confined to hospital pharmacy. As a result, only a small number of pharmacists would have actually participated in MAiD. The systematic review also assisted in developing the survey items for the second study.

Consistent with the majority of studies in the systematic literature review we found the majority of pharmacists were supportive of MAiD.[2-11] Furthermore, similar to other Canadian studies that assessed hospital pharmacists' and pharmacy community

members' willingness to participate in dispensing prescriptions for MAiD, we found the majority of pharmacists willing to participate in MAiD.[16,17] Our study on NL pharmacists adds to our systematic review by providing insight into pharmacists' concerns with MAiD and potential barriers to participation such as lack of adequate knowledge and comfort with components of MAiD. Therefore, the survey findings may facilitate pharmacists in their role by suggesting that NL pharmacists require additional supports in the form of education and training. Pharmacists may also require psychosocial supports for those who have participated and support in the form of legal advice.

4.2 Research and Clinical Implications

4.2.1 Health Services

The findings from this survey of NL pharmacists provides some important considerations for provincial health service policy makers. We found that while the majority of pharmacists would be willing to participate in MAiD, pharmacists were lacking education and knowledge with components of MAiD. To ensure competencies in this area, provincial policy makers should consider implementing mandatory education programs that pharmacists who are willing to participate in MAiD complete before participating. The findings in this thesis may also drive provincial policy makers to consider whether all pharmacists willing to participate in MAiD should be trained in the area or whether only smalls groups of pharmacists should be educated and trained to specialize in MAiD, while the rest of the pharmacists are educated on providing referrals to the specialized pharmacists.

Provincial policy makers in NL should consider developing a third party who can assist pharmacists objecting to participate in MAiD with managing their conscientious

objection. This third party could be in possession of a registry of pharmacists who are willing to participate in MAiD. Therefore, on behalf of the objecting pharmacists, this third-party could provide practitioners with referrals to a pharmacist who is willing to participate in MAiD. Additionally, a registry of participating pharmacists could help monitor the number and location of pharmacists trained and willing to participate in MAiD in the province.

4.2.2 Pharmacy Practice

The thesis findings suggest NL pharmacists need and desire more education and training in MAiD, including the majority of pharmacists who were unwilling to directly participate in MAiD. Our results further support the recommendations from the study conducted in June 2016 on the Ontario pharmacy community that additional supports (i.e., educational and psychosocial), outside of what is provided by the regulatory bodies, are needed to facilitate pharmacists' participation in MAiD.[16]

The results have implications for pharmacy advocacy agencies, university pharmacy program educators, and pharmacy owners and managers as they can use the research findings in this thesis to assist them in supporting pharmacists and developing educational material and training for pharmacists. Our results identify components of MAiD where pharmacists feel they lack knowledge and comfort. Therefore, the findings in this thesis provides insight into supports that may help to facilitate pharmacists in their role such as education and information on MAiD protocols (including information on the efficacy and administration of the medications and information on the stability, storage), more direction on interacting with patients, psychosocial supports for participating

pharmacists, easily accessible legal advice, and compounding information on the MAiD medications.

4.2.3 Research

The systematic review suggested there was a need for updated studies, conducted in regions with legal MAiD, to determine pharmacists' attitudes and willingness to participate in MAiD. Additionally, the review also identified a gap in the literature on barriers and facilitators to the pharmacist's role in MAiD. The survey of NL pharmacists provides a step forward in filling these gaps. Although our study performed an updated study on willingness, and potential barriers to pharmacists' participation in MAiD when MAiD was officially legal in Canada, MAiD is currently a rare event and few pharmacists would have participated. As a result, our findings on pharmacists' willingness to participate and potential barriers to their participation may still be somewhat hypothetical.

The results in this thesis suggest that to further inform provincial policy and practice in MAiD the next step in research in this area should be to survey or interview a purposive sample of pharmacists that have actually participated in MAiD regarding their experience with participation.

4.3 Conclusion

The thesis presents the results of two studies. The first study was a systematic review of the literature. This systematic review concluded that in the majority of studies over 50% of pharmacists were supportive of MAiD and its legalization. However, there was variability in pharmacists' willingness to participate. Religion was the factor most commonly and consistently associated with opposing attitudes towards MAiD. However, pharmacists' attitudes and willingness to participate were predominately hypothetical in

nature and may be outdated. Furthermore, more research is needed on pharmacist perceived barriers and facilitators to their roles in MAiD.

The second study was a survey of pharmacists in NL that found the majority of pharmacists in NL were willing to participate in MAiD. Religious and moral considerations were the most commonly cited factors contributing to NL pharmacists' unwillingness to participate in MAiD. Overall, NL pharmacists need more supports in the form of MAiD education, training, psychosocial support, and legal advice to assist them in making a more informed decision about participating in MAiD and to assist them with participating in MAiD activities. Unwilling pharmacists may also require additional support systems to enable them to practice in accordance to their conscience and beliefs.

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