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ORIGINAL RESEARCH

Surveying Canadian Pain Physicians' Attitudes and Beliefs Regarding Medical Cannabis for Chronic Noncancer Pain: A Qualitative Study

Jeremy Y Ng [ID][1], Halton Quach [ID][1], Mark R Phillips[1], Jason W Busse [ID][1–4]

[1]Department of Health Research Methods, Evidence, and Impact, Faculty of Health Sciences, McMaster University, Hamilton, Ontario, Canada; [2]The Michael G. DeGroote Centre for Medicinal Cannabis Research, McMaster University, Hamilton, Ontario, Canada; [3]Department of Anesthesia, McMaster University, Hamilton, Ontario, Canada; [4]The Chronic Pain Centre of Excellence for Canadian Veterans, Hamilton, Ontario, Canada

Correspondence: Jason W Busse, Michael G. DeGroote Centre for Medicinal Cannabis Research, McMaster University, Hamilton, L8S 4K1, Canada, Tel +1-905-525-9140 x21731, Fax +1-905-523-1224, Email bussejw@mcmaster.ca

Background: Medical cannabis is commonly and increasingly used by Canadians to manage chronic pain. As of March 2021, Health Canada reported that approximately 300,000 Canadians who were authorized to access medical cannabis, which is more than a 1000% increase from the 24,000 registered in 2015. Physicians, however, receive limited information on therapeutic cannabis during their training, and their perceptions regarding this therapeutic option are uncertain. This study focused on exploring attitudes and beliefs of pain physicians regarding medical cannabis for the management of chronic noncancer pain.

Methods: This study utilized a focused ethnography approach. Pain management clinicians within the Greater Toronto and Hamilton Area were recruited through snowball sampling methods, and individually interviewed. We applied thematic analysis to interview transcripts and identified representative quotes. The Hamilton Integrated Research Ethics Board reviewed and approved this project.

Results: Thirteen physicians who focused their clinical practice on pain management agreed to be interviewed, and three themes regarding medical cannabis emerged: 1) evidence regarding medical cannabis, 2) medical cannabis as first-line therapy for chronic pain, and 3) barriers to accessing medical cannabis. Subthemes of the last theme included out-of-pocket costs, stigma by society and healthcare providers, and lack of knowledge among physicians.

Conclusion: Despite increasing use of medical cannabis for chronic pain among Canadians, pain physicians in our study expressed concerns regarding the evidence to support this therapy and acknowledged important barriers to access.

Keywords: medical cannabis, chronic pain, qualitative research, focused ethnography, pain management

Introduction

Between 2014 and 2017, the number of Canadians authorized to access therapeutic cannabis has tripled every year.[1,2] As a result, cannabis for chronic noncancer pain management has emerged as a major point of interest for the Canadian healthcare system. However, clinical practice guidelines (CPGs) have provided inconsistent recommendations. The most recent Canadian guideline (2018) made strong recommendations against cannabis for non-neuropathic pain or as first- or second-line therapy for neuropathic pain, and a weak recommendation for refractory neuropathic pain.[1] Additionally, a 2019 UK National Institute for Health and Care Excellence (NICE) guideline made strong recommendations against medical cannabis for any type of chronic pain,[3] and a 2021 BMJ RapidRec made a weak recommendation in favour of offering a trial of non-inhaled medical cannabis or cannabinoids if standard care is not sufficient.[4] However, the European Journal of Internal Medicine released an update from the National Academies of Sciences, Engineering and Medicine report regarding the therapeutic effects of Cannabis and cannabinoids in 2018. The report found substantial evidence regarding the therapeutic effect of cannabis or cannabinoids for pain in adults and several other disorders and conditions.[5] It was recommended that more research on this topic must be conducted to improve research quality and address research gaps and barriers regarding the therapeutic effects of cannabis and cannabinoids.[5] An international taskforce comprised clinicians with clinical experience working with medical cannabis from

North America, Brazil, Europe, Australia, and Africa issued a new guideline which had recommendations for dosing and administering medical cannabis for chronic pain in 2020.[6] This task force stated that these recommendations were made in a timely manner due to limited knowledge on the medical use of cannabis. However, despite their recommendations for the dosage and administration of medical cannabis, they admitted that there was a huge knowledge barrier. This task force not only believed in the significant therapeutic effect of medical cannabis but also believed in the importance of making medical cannabis available and accessible to patients. However, due to the large knowledge gap, a conservative recommendation was made which suggests largely treating patients along a "routine" scale whereby starting patients on a low dose of CBD, and only introducing THC if patients do not respond to CBD and then increasing THC dosage accordingly.[6] While there are ongoing efforts to synthesize evidence to address gaps in knowledge for the use of medical cannabis for pain,[4] there is an important need for research to help understand the clinical attitudes, barriers, and beliefs regarding the possible implementation of medical cannabis as a pain management option.[7,8]

Understanding potential barriers to implementation in clinical practice is a core component in successful knowledge translation efforts,[9] as clinicians are possible drivers of treatment at the individual level. Part of the reason for the inconsistent suggestions from these guidelines regarding dosing, method of administration, and frequency is due to a considerable gap in physicians' knowledge in prescribing medical cannabis. Thus, this study can help partly fill in the current knowledge gap while addressing barriers to accessing medical cannabis which will ultimately benefit patients who experience positive therapeutic effects when taking medical cannabis. Beyond assessing the attitudes and beliefs of physicians, the value of this knowledge will not only help physicians but patients, caregivers, and family members in overcoming knowledge and access barriers regarding medical cannabis use. This can in turn positively alter or assist future clinical practice guidelines and policy efforts. This study aimed to provide detailed insights into the shared opinions, values, and beliefs of pain management clinicians regarding the use of medical cannabis for pain management, a treatment option that is a hot topic within the Canadian healthcare system.

Methods

We employed the Emphasis-Purposeful Sampling-Phenomenon of Interest – Context (EPPiC) framework for qualitative studies to structure our approach.[7] The EPPiC framework specifically helped to develop and revise our research question in supporting our qualitative study.[10] The phenomenon of interest was medical cannabis/cannabinoid use for chronic noncancer pain, and our emphasis was beliefs, attitudes, and practice patterns of physicians with clinical practice focused on pain management. We used a focused ethnography approach, which is appropriate for investigating specific beliefs and practices of particular healthcare processes, as held by patients and practitioners.[11] We followed the consolidated criteria for reporting qualitative research (COREQ) checklist for reporting our findings.[12] The employment of the COREQ checklist in our interviews improved the quality of the findings of this qualitative study as it promoted complete and transparent reporting and removed patient and consumer needs to ensure the improvement of the quality of health care.[12]

Sampling and Recruitment

Between February 2019 and December 2020, we recruited 10 pain physicians from a hospital-based clinic in Hamilton, and two community-based pain clinics in Ontario, Canada. In addition, one physician practiced in both settings. We used snowball sampling by asking participating physicians for contact information of colleagues we could approach to interview. This continued until we interviewed enough physicians to achieve saturation of themes and subthemes on perspectives regarding medical cannabis for chronic noncancer pain.[13,14] When data collection reached redundancy, with no novel information being provided from the inclusion of additional participants, recruitment was stopped. Each participant was provided with an information letter and a written consent form outlining the purpose of the study and how confidentiality would be maintained prior to being interviewed. All participants provided their signature on the written consent form prior to being interviewed.

Data Collection

We conducted one-on-one, in-depth, semi-structured interviews with all participants using an interview guide with open-ended questions (Supplementary File 1). However, we left the discussion open for participants to discuss any topics that they felt to be relevant and important.

The interview guide was informed by the literature and discussions with content experts in the field of medical cannabis and chronic pain. Two members of our study team with training in qualitative research (M.P., J.Y.N.) conducted all interviews, each of which lasted approximately 30 minutes.[15,16] Prior to each interview, participants provided demographic information.

All interviews were audiotaped and transcribed verbatim, with additional field notes included from the researchers to provide additional contextual information such as nonverbal cues, overall mood and attitudes. We reached code and meaning saturation after interviewing 13 participants.[14] To ensure confidentiality, all data were de-identified and each participant was assigned an identification number in all transcribed documents and interview notes. The Hamilton Integrated Research Ethics Board (HiREB) approved our study (project no. 5475).

Data Analysis

Three members of our study team (J.Y.N., M.P., H.Q.) used thematic analysis and drew upon an inductive thematic approach for the coding, with data collection and analysis occurring concurrently. The lead author (J.Y.N.) has training in qualitative interviewing and provided training and supervision to H.Q. Data were analyzed by using an open coding process where major categories from each transcript were identified. These categories were reviewed independently and then compared to the other identified categories from every transcript where main themes and subthemes eventually emerged. We grouped similar concepts into larger themes that emerged from the data, a typical approach of thematic analysis within qualitative research.[17] As new data was collected, the transcribed text was coded and grouped within the major themes and subthemes that arose throughout the data collection process.[17] When a consensus could not be reached on the themes, we resolved disagreements via discussion with the entire team. J.Y.N., M.P., and H.Q. then finalized each main theme and subsequent subthemes by reviewing and discussing the generated thematic map and ensuring we defined each theme clearly thereby creating our report of thematic analysis.[17] Data collection, recruitment, and data analysis were completed iteratively alongside one another. Data analysis was conducted using RQDA software (R version 3.5.0). To achieve trustworthiness of our results, member checking was conducted to ensure an accurate representation of participants' beliefs.[18] All team members reviewed the results and confirmed the main themes and subthemes of our study findings, which were accompanied by supporting quotes.

Results

Participants

We conducted interviews with 13 physicians from the Greater Toronto and Hamilton Area who routinely treated patients with chronic non-cancer pain. Our participants included 10 men and three women, who had been in practice for a median of 9 years (range, 2–39 years). Eight attended medical school in Canada, and five abroad. Four held specializations in anesthesiology, three in anesthesiology with fellowships in pain medicine, three in family medicine, two in physical medicine and rehabilitation, and one in general surgery. Most physicians practiced in an academic setting and authorised medical cannabis for their patients. We did not analyze the differences in attitudes or perspectives of physicians based on their demographic characteristics. The purpose of our study was to gain an insight into pain physicians' perceptions on the use of medical cannabis for chronic noncancer pain. Participant demographics are found in Table 1.

Themes

Three themes regarding medical cannabis for chronic pain emerged: 1) evidence regarding medical cannabis, 2) medical cannabis as first-line therapy for chronic pain, and 3) barriers to accessing medical cannabis. Representative quotes for all themes and subthemes are presented in Table 2.

Table 1 Participant Demographics

Characteristic	No. (%) of Participants*
Gender	
Male	10 (76.9%)
Female	3 (23.1%)
Years in Practice (Median, Range)	9 (1–38)
Specialization	
Anesthesiology	4 (30.7%)
Anesthesiology & Pain Medicine Fellowship	3 (23.1%)
Family Medicine	3 (23.1%)
Physical Medicine and Rehabilitation	2 (15.4%)
General Surgery	1 (7.7%)
Country where Medical Training was Completed	
Canada	8 (61.5%)
Bosnia and Herzegovina	1 (7.7%)
Greece	1 (7.7%)
India	1 (7.7%)
United Kingdom	1 (7.7%)
United States	1 (7.7%)
Pain Practice Affiliation	
Academic	10 (76.9%)
Community	2 (15.4%)
Both	1 (7.7%)
Medical Cannabis	
Authorized	8 (61.5%)
Referred	3 (23.1%)
Did not disclose	2 (15.4%)

Note: *Unless otherwise indicated.

Table 2 Participant Quotes Supporting Thematic Analysis

Theme/Subtheme	Representative Quotes
Theme 1: Evidence regarding medical cannabis	
Subtheme 1: Lack of evidence	"So that's when I say as a doctor, I am not comfortable prescribing marijuana regularly, as if we are going to be doing evidence-based medicine, we need more evidence and better data to give the patients." (P01) "Everybody is so hyped on cannabis for everything that they are being encouraged now, by their friends, by their family, etc…There really is a scant bit of evidence that medical cannabis may have some role to play in certain types of chronic pain, perhaps neuropathic pain, MS pain, spasticity, but really not much evidence, compared to other treatments." (P04) "The biggest issue is there's very little quality published evidence. The evidence that is there are various trials of very small numbers, often very short trials, they can be as short as… 30 minutes…and there's almost no randomized controlled trials." (P06) "I think one of the biggest issues is there's a lack of very high-quality, large-scale studies, which definitively show a benefit and that's why I think a lot of people were reticent to adopt it and use it in their practice at this point." (P12)

(*Continued*)

Table 2 (Continued).

Theme/Subtheme	Representative Quotes
Subtheme 2: Need for more research	"Oh, yeah. I think that there's enough evidence available to warrant further investigation." (P03) "So fundamentally I think cannabis falls into, presently at least, falls into the area where there is a potential. And the reason that we should probably continue to investigate whether it is useful is because its risks are not that big. So, I see from a point of risk benefit ratio from that perspective, I think we should probably continue to look for opportunities to investigate." (P13)
Theme 2: Medical cannabis as first-line therapy for chronic pain	
	"I mean I would have to admit, when I prescribed it, I thought of it as third line, but I often thought of it as second to last line, mainly for practical issues." (P01) "I've always considered them like last line of defense. Yeah, definitely like fourth or fifth… type options." (P09) "I think cannabis just serves as an additional tool to help with pain control and try to minimize the overall burden, but we don't feel any pressure to use it as the primary agent to accomplish that goal." (P12)
Theme 3: Barriers to access	
Subtheme 1: Lack of knowledge among physicians	"Yeah, I think I think that the vast majority, in my opinion of say, family doctors probably aren't interested and it's a lack of knowledge and the hassle factor, you know, fill out a form and talk to the patient and then have to troubleshoot." (P04) "Many don't have the necessary information that they should have, patients, and educating patients on cannabis I think it's crucial, more so patients who have those two extremes and naturally if somebody is not wanting to try that, I think it's futile." (P13) "There is no universality of doses, the same thing goes with CBD oil, how much of that is bioavailable… What's the concentration of CBD after ingested? I don't know." (P01)
Subtheme 2: Cost	"There's the financial barrier, which for many patients is a real problem, because it's not at this point covered by very many organizations. And so, it's out of pocket for the majority of people, which if they're low-income earners is often unreachable." (P06) "But if you can't afford said products, then that's the biggest challenge that I often see people facing with regards to even embarking on a trial because it's quite expensive." (P11) "I would say cost. So, I think that the one limitation that we hear from our patients is that if their drug plan does not cover it, the costs, especially for some of these people, their, their opioids or other medications are covered by ODSP or covered by their workplace insurance, whereas medical cannabis for them is not." (P12)
Subtheme 3: Stigma	"So, I think the number one barrier is getting over their own stigma and their own anxiety about bringing it up to a doctor." (P06) "I think there are still a number of barriers that make it more challenging for patients to seek it out. I mean, there's the societal judgment and the stigma that might be associated with it, which has been sort of ongoing for quite some time." (P11) "I mean, yeah it's [the] luck of the draw. You either find a doc[tor] who's willing to do it, or you have a doc[tor] who throws their hands up and says, 'I want nothing to do with that'." (P10) "I think there are elderly people who feel a certain degree of shame or that it's wrong. There has been a significant cultural shift. Younger people are even less bothered by it, but outside of smoked cannabis, I think the stigma [has] dramatically decreased." (P08) "I think older populations definitely have a bit more of a negative stigma, primarily because of [the] way it was portrayed prior to legalization." (P09)

Evidence Regarding Medical Cannabis

The physicians we interviewed provided comments about evidence that fell into two subthemes: lack of evidence and the need for more research on medical cannabis for chronic pain. Participants were particularly concerned with the lack of information regarding the long-term safety of medical cannabis. For example, one participant stated,

"I think one of the biggest issues is there's a lack of very high-quality, large-scale studies, which definitively show a benefit and that's why I think a lot of people were reticent to adopt it and use it in their practice at this point." (P12)

Most acknowledged some evidence of effectiveness for pain management, but also that most clinical trials had focused on chronic neuropathic pain. Many participants believed these limitations were not unique to medical cannabis and noted that high certainty evidence for benefits and harms of many commonly used therapies for chronic pain was often lacking. The need for additional research into cannabis for chronic pain was widely endorsed, with some noting the current disconnect between anecdote and evidence. One participant noted,

"So that's when I say as a doctor, I am not comfortable prescribing marijuana regularly, as if we are going to be doing evidence-based medicine, we need more evidence and better data to give the patients." (P01)

Medical Cannabis as First-Line Therapy for Chronic Pain

All participants agreed that medical cannabis likely has a role in the management of chronic pain for some patients but largely felt that it should not be a first-line option. Regardless, many physicians advised they were increasingly seeing patients who requested medical cannabis for their pain, despite not having tried typical first-line pain management options. Such requests conflicted with the views of many of our participants who felt that medical cannabis should only be considered if standard care provided inadequate pain relief. For example, one participant stated,

"I've always considered them like last line of defense. Yeah, definitely like fourth or fifth… type options (P09)."

Barriers to Accessing Medical Cannabis

Our participants acknowledged they had not been exposed to information about medical cannabis during their medical training. Patients need to be referred to a physician who is willing to authorize or prescribe medical cannabis. For example, one participant stated,

"Many don't have the necessary information that they should have, patients, and educating patients on cannabis I think it's crucial, more so patients who have those two extremes and naturally if somebody is not wanting to try that, I think it's futile." (P13)

Unless they had taken it upon themselves to gain expertise, clinicians were unlikely to possess sufficient knowledge about appropriate use, dosing, and monitoring of medical cannabis for chronic pain. Without such knowledge, clinicians would be unlikely to offer a trial of medical cannabis to interested patients.

Adding to this challenge was the lack of standardized and metered dosing for cannabis that is available for other pharmaceuticals, and important differences in CBD and THC content across different medical cannabis products. One participant stated,

"There is no universality of doses, the same thing goes with CBD oil, how much of that is bioavailable… What's the concentration of CBD after ingested? I don't know." (P01)

Many participants described their decisions on dose as a "trial and error" method, where they slowly titrated patients up to higher levels of medical cannabis products to either achieve a net benefit or establish that cannabis was unlikely to be helpful. Due to concerns over pulmonary harms, participants typically recommended oils or capsules for medical cannabis consumption and cautioned against inhalation methods.

While it was noted that synthetic medical cannabis products are provided in standard doses, participants typically authorized plant-derived cannabis products (phytocannabinoids) due to patient preference and to reduce out-of-pocket costs. The physicians we interviewed unanimously believed that costs incurred by patients with chronic non-cancer pain were the greatest barrier to medical cannabis use. As an example, some participants described patients who wanted to explore use of cannabis to reduce their prescription opioid use but were unable to do so because their opioids were covered by a drug plan while medical cannabis was not.

Despite the decreasing stigma associated with the use of medical cannabis, many participants expressed stigma as a barrier to access to medical cannabis. Participants noted that patients may be affected by stigma surrounding medical cannabis. Some of their patients had reported anxiety over raising the topic of medical cannabis as a treatment option due to concerns of how such a request would be viewed by their physician. For example, one participant stated, "So, I think the number one barrier is getting over their own stigma and their own anxiety about bringing it up to a doctor (P06)." Participants held strong views towards medical cannabis, with some being enthusiastic about its use while others were very opposed. Participants expressed that stigma against medical cannabis seemed to be associated with older age and patients from more conservative communities.

Discussion

The purpose of this study was to identify pain management physicians' attitudes and beliefs towards medical cannabis use for chronic non-cancer pain. Most physicians in our study authorized or referred some patients for cannabis use. Despite this, they also acknowledged important limitations and the need for further research. Three major themes that emerged from this study include: 1) evidence regarding medical cannabis, 2) medical cannabis as first-line therapy for chronic pain, and 3) barriers to accessing medical cannabis. With regards to the evidence regarding medical cannabis, two subthemes emerged including a lack of evidence and the need for more research. Furthermore, despite increasing interest in therapeutic cannabis by people who live with chronic pain, three subthemes regarding barriers to access emerged, including a lack of knowledge among physicians, out-of-pocket costs, and stigma from some healthcare providers and the general public. While the key themes assessed within this study provide valuable insights into the current state of medical cannabis ideology within the pain management community, it is important to highlight some current literature and initiatives that aim to address these themes.

Comparative Literature

Due to the novelty of our qualitative approach to this study, the following section will consist of a comparative literature review that analyzes the major differences and similarities in findings. The sections below relate to our aforementioned three themes.

Relevance of and the Need for Evidence-Based Clinical Practice Guidelines and Evidence-Based Medicine for Medical Cannabis

Due to the increase in the number of countries (eg, Australia, the Netherlands, Italy, Israel, a number of states in the US, and Canada), which have moved to legalize medical cannabis over recent years,[19] and a lack of evidence and knowledge regarding medical cannabis among healthcare providers, it has been increasingly important to develop evidence-based clinical practice guidelines on this topic. Evidence-based clinical practice guidelines can be informed by evidence-based medicine and decision-making. Evidence-based medicine integrates the best clinical experiences along with patient values to use the best evidence possible in making the most well-informed decision for patients.[20] Evidence-based decision-making is based on the use of evidence of efficacy and safety, patient values and preferences, and the barriers and beliefs of relevant stakeholders regarding the implementation of the evidence.[20,21] Evidence-based clinical practice guidelines are important knowledge tools which use the best available evidence gathered from synthesized knowledge to reach a general consensus between experts in their respective fields.[21] In this case, it can be used to help physicians make informed decisions about medical cannabis regarding dosing regimens, indications, frequency, method of administration, etc. Physicians will also be able to use evidence-based clinical practice guidelines to help patients make appropriate decisions regarding medical cannabis.

Our participants' concerns regarding a lack of high-quality evidence for medical cannabis and chronic pain, and questionable generalizability for non-neuropathic pain, are supported by a 2018 Canadian guideline and the 2019 National Institute for Health and Care Excellence (NICE) guideline.[1,3] The Canadian guideline made strong recommendations against medical cannabis for headaches, rheumatologic conditions (including osteoarthritis and back pain), or as first- or second-line therapy for chronic neuropathic pain, and a weak recommendation for medical cannabis for

refractory neuropathic pain on the basis of low-quality evidence.[1] The NICE guideline made a strong recommendation against the use of medical cannabis for chronic pain as the average effect on pain fell below the minimally important difference (MID).[3] However, the National Academies of Sciences, Engineering and Medicine Report (2018) found evidence that the use of cannabis or cannabinoids for pain in adults was an effective treatment for pain.[5] Furthermore, the authors of a 2021 BMJ Rapid Recommendation made a conditional recommendation in favour of offering a trial of non-inhaled medical cannabis or cannabinoids if standard care was not sufficient, based on moderate-to-high certainty evidence.[4]

The differences between guidelines are based on alternate approaches to data analysis. The Canadian and NICE guidelines identified that some randomized trials of cannabis for chronic pain were at risk of bias, typically due to failure to report how their randomization sequence was generated or because of >20% missing outcome data. The BMJ guideline also acknowledged these issues but conducted subgroup analyses based on this risk of bias criteria and found no evidence of credible subgroup effects. As such, they pooled evidence across all trials and did not rate down the quality of evidence for risk of bias. As with the NICE guideline, the BMJ guideline reported a pooled effect of cannabis on pain that was statistically significant but below the MID (weighted mean difference of −0.50 cm on a 10 cm visual analogue scale [95% CI −0.75 to −0.25], MID is 1cm). However, the BMJ guideline converted this estimate to the risk difference of achieving the MID, which was 10% (95% CI 5% to 15%) and incorporated patients' values and preferences into their recommendation that established a 1 in 10 chance of important pain relief as likely important.[22]

There are several initiatives aimed at creating guidelines for medical cannabis use. While organizations such as the Canadian Family Physician have provided insights into available evidence through the publication of a CPG, they ultimately recommended the following:

> "We recommend against use of medical cannabinoids for most medical conditions owing to lack of evidence of benefit and known harms (strong recommendation) [1. (p112)]

This CPG did, however, provide some recommendations that were not consistent with the current beliefs of pain management clinicians.[1] The CPG recommends the use of synthetic cannabinoid products such as nabilone or nabiximols.[1] However, the participants of our study were generally not using these treatments over natural cannabis products like CBD oils. Pain management clinicians rarely considered smoked cannabis as the mode of administration and instead recommend oils or capsules.[1] A recent publication provided a detailed overview of all published systematic reviews assessing the efficacy, tolerability, and safety of medical cannabis for chronic pain management.[23] This overview provided a consistent assessment of the current state of medical cannabis use, as key conclusions suggested that there are inconsistent results within the medical cannabis pain management literature, and further high-quality evidence should be conducted to help elucidate these inconsistencies in the literature.[23]

Improving the Evidence-Based Resources on Medical Cannabis

There are numerous initiatives from academic groups that are attempting to provide better evidence, and subsequent educational material, regarding medical cannabis. Interest among Canadian healthcare providers for more education on medical cannabis has also been highlighted in a recent study of family physicians.[16] The Michael G. DeGroote Centre for Medicinal Cannabis Research at McMaster University has launched an initiative titled "MedicinalCannabis+", an online database that provides up-to-date access to high-quality medical cannabis research.[24] Efforts to synthesize and disseminate evidence may help clinicians and future CPGs to have a clearer understanding of benefits and harms associated with medical cannabis use, as well as more nuanced details such as prognostic factors, contraindications, and optimal dosing for medical cannabis use in chronic non-cancer pain.

Healthcare Providers' Perceived Value (or Lack Thereof) of Medical Cannabis as Therapy for Pain

A literature review conducted by Ronne et al in 2021 analyzed 21 articles from five different countries with differing medical cannabis laws.[19] They found that many physicians lacked knowledge regarding medical cannabis for clinical use including beneficial effects, adverse effects, and of offering advice to patients resulting in reluctance when prescribing medical cannabis. In fact, this study found that as many as 78% of the physicians felt uncomfortable prescribing medical

cannabis including dosing, method of administration, and frequency.[19] They concluded that more qualitative research must be done to understand barriers in prescribing medical cannabis.[19]

A number of survey studies have been published across different participant populations. One group of authors surveyed pain physicians' attitudes and beliefs regarding medical cannabis for pain management and found that pain physicians had a more favourable attitude in believing the benefits of medical cannabis for physical symptoms but were more skeptical to prescribing it solely for psychological benefits.[25] One study aimed to understand and identify the factors that guided physicians' decisions to prescribe and recommend medical cannabis to patients. They found that physicians were more likely to prescribe medical cannabis to cancer patients than patients with chronic pain.[26] Additionally, a 2019 survey of the knowledge, attitudes, and beliefs of healthcare providers regarding medical cannabis use found that most participants believed in the use of medical cannabis for clinical therapy. However, they concluded that more research such as clinical trial data is needed to determine how medical cannabis can improve a patient's quality of life.[27] Finally, a 2018 study reported surveying physicians in Israel who prescribe and administer medical cannabis in their daily practice for chronic pain.[28] Almost all physicians prescribed medical cannabis and the majority (63%) found medical cannabis to be moderately to highly effective. Overall, this study found that pain specialists considered the prescription and use of medical cannabis to be a safe and effective course of treatment for chronic pain.[28]

The aforementioned studies all utilized a survey design, except for that of Ronne et al which was a literature review. However, the findings of these studies are consistent with the themes that emerged from the present study. Almost all these studies were conducted in the United States, and one of them was conducted in Israel. While our study involved Canadian physicians, we found that across these different studies, certain level of agreements exists across different physicians, pain practitioners, and jurisdictions regarding attitudes and beliefs associated with the use of medical cannabis for pain management. Generally, most studies found that pain physicians believed that more research is needed to fill the prevalent knowledge gap of medical cannabis use including beneficial effects, adverse effects, and of offering advice to patients.[21,27] This is consistent with our theme that there is a lack of evidence and a need for more research.

Many studies also found that physicians were likely to prescribe medical cannabis, however, were at times skeptical of prescribing it and thus, did not consider it as a first line of defense.[19,25–27] This is consistent with the theme that emerged in our study that medical cannabis is not thought of as a first-line therapy for chronic pain. Two studies mentioned the importance of addressing and identifying ongoing barriers, knowledge gaps, and biases to prescribing medical cannabis.[19,27] Ronne et al describe how in their literature review of 21 studies, 19 of them were quantitative surveys while only two were qualitative, using an open-ended questionnaire and an interview.[19] They emphasized the importance and need for more qualitative studies to be conducted to better understand the attitudes, experiences, and beliefs of physicians to address the lack of current evidence and barriers regarding the use of medical cannabis.[19]

Barriers to Medical Cannabis Use

Most of the studies similarly concluded that there is a general lack of knowledge among physicians which is consistent with our theme that lack of knowledge is one of the barriers to access.[19,26–28] One 2021 study involved qualitative interviews and sought to understand family physicians' attitudes toward medical cannabis in Canada.[16] Some of their findings are consistent with the themes that emerged from our interview study. For example, they found that there was a lack of knowledge surrounding medical cannabis, there is a lack of evidence, and there is an openness to emerging evidence regarding medical cannabis use. However, they found that there was a reluctance among family physicians to authorize medical cannabis.[16] While many of the pain management physicians in our study agreed that they did not consider medical cannabis as a first-line therapy for chronic pain, they stated that they still would prescribe it based on patient preference. The main findings of the study conducted by Ng et al showed that many physicians do not know what the regulations are surrounding medical cannabis use and do not believe it is a real form of prescription as it does not have a set dosage, frequency, and duration which is consistent with our findings.[16]

The National Academies of Sciences, Engineering and Medicine conducted a systematic review on recent medical literature regarding the health effects of cannabis and cannabinoids. While they found that there is enough evidence to support the therapeutic effect for use of cannabis, they recommend that academic committees need to come together to address the research gaps and research barriers regarding the medical use of cannabis.[5] The known barriers associated

with costs have been documented in previous literature, making this an important consideration as the implementation of medical cannabis progresses within Canada.[29] While costs of medical cannabis for chronic non-cancer pain are not currently reimbursed by health insurance plans within Canada, recommendations from other countries have suggested that reimbursement is a key factor in the successful implementation of medical cannabis use due to the cost barriers that have been observed in Israel and Canada's experience.[30] Similarly, a survey of American patients living with chronic pain who used medical cannabis found that cost was the primary barrier to access,[31] and reimbursement has been acknowledged as a key factor in the successful implementation of medical cannabis.[30] Additionally, and in support of our findings, prior studies have identified that patients using medical cannabis often perceived stigma from others.[31,32]

Strengths and Limitations

Strengths of our study include a rigorous qualitative methodology to investigate the attitudes of physicians with practices focused on pain management towards medical cannabis, and recruitment of a range of participants to gather diverse perspectives. No members of our study team had any motivation to encourage positive or negative answers, thereby minimizing information bias during interviews. We implemented member checking to verify our findings, and two members of our team with training in qualitative research methods conducted open coding and theme generalization, independently and in duplicate, to promote trustworthiness of our results. Despite the strengths of this study, there are also several limitations to consider. Over three-quarters (77%) of the participants' affiliations were only academic, and as a result these findings may not be generalize to the larger healthcare or medical community. Limitations of our study include a modest sample size (n =13); while we sampled to thematic saturation, further interviews may have revealed additional themes.[33] Our study results are based on experiences and perspectives of pain physicians practicing in two Canadian cities and may have limited its applicability to different settings. However, previously published literature has helped to triangulate these findings with other investigations of beliefs and opinions of medical cannabis within Canada.

Conclusion

Despite increasing use of medical cannabis for chronic pain among Canadians, pain physicians in our study expressed concerns regarding the evidence to support this therapy. Financial burden, lack of knowledge among physicians, and stigma were acknowledged as important barriers to accessing medical cannabis. Clinical practice guidelines should consider these issues when making recommendations for medical cannabis and chronic pain.

Abbreviations

CPG, clinical practice guideline; EPPiC, Emphasis-Purposeful Sampling-Phenomenon of Interest – Context; NICE, National Institute for Health and Care Excellence, COREQ, consolidated criteria for reporting qualitative research; MID, minimally important difference.

Ethics Approval and Consent to Participate

This study was approved by the Hamilton Integrated Research Ethics Board (HiREB). Participants' informed consent included publication of anonymized responses.

Consent for Publication

All authors consent to this manuscript's publication.

Data Sharing Statement

All relevant data are included in this manuscript.

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically

reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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