

Attitudes toward medical cannabis among family physicians practising in Ontario, Canada: a qualitative research study

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Abstract

Background: Medical cannabis has been legally available in Canada since 2001, but its benefits and harms remain uncertain. We explored attitudes toward medical cannabis among family physicians practising in Ontario.

Methods: Between January and October 2019, we conducted a qualitative study of Ontario family physicians using semistructured telephone interviews. We applied thematic analysis to interview transcripts and identified representative quotes.

Results: Eleven physicians agreed to be interviewed, and 3 themes regarding medical cannabis emerged: reluctance to authorize use, concern over harms and lack of practical knowledge. Participants raised concerns about the limited evidence for, and their lack of education regarding, the therapeutic use of cannabis, particularly the harms associated with neurocognitive development, exacerbation of mental illness and drug interactions in older adults. Some participants thought medical cannabis was overly accessible and questioned their role following legalization of recreational cannabis.

Interpretation: Despite the increasing availability of medical cannabis, family physicians expressed reluctance to authorize its use because of lack of knowledge and concerns regarding harms. Family physicians may benefit from guidance and education that address concerns they have surrounding medical cannabis.

Cannabis has been legally available for select medical conditions in Canada since 2001.¹ Until recently, however, regulations made access to medical cannabis difficult, limiting its use by patients. On Oct. 17, 2018, the *Cannabis Act* came into effect, legalizing the sale and use of recreational cannabis across Canada.² Licensed health care practitioners can provide authorization for patients to acquire medical cannabis, who can then register with Health Canada to produce a limited amount of cannabis for personal use, designate another individual to produce their medical cannabis or acquire cannabis for medical purposes through a licensed producer.³

The number of Canadians authorized to use medical cannabis increased from 23 930 in June 2015 to 377 024 by September 2020.⁴ The increased use of medical cannabis was likely the result of the easing of regulations,⁵⁻⁷ greater availability given the growing numbers of producers and cannabis clinics⁸⁻¹⁰ and reduced stigma around the use of cannabis for therapeutic purposes.¹¹⁻¹⁴ One online patient resource now lists 100 medical cannabis clinics in Ontario alone.¹⁵

Market data from 2017 to 2019 show that Ontario ranks the highest among all provinces with respect to the amount of medical cannabis sold to clients and the total number of client registrations.¹⁶ Patients increasingly seek guidance from physicians regarding the benefits and harms of therapeutic cannabis;

however, physicians receive minimal education on cannabis use during their training. Moreover, the evidence for medical cannabis is limited and often conflicting.^{17,18} For example, the most common indication for medical cannabis is chronic pain.¹⁹ The National Academies of Sciences, Engineering, and Medicine concluded that patients treated with cannabis are more likely to have a clinically significant reduction in pain symptoms,¹⁹ but the National Institute for Health Care and Excellence has made a strong recommendation against the use of cannabis for chronic pain.²⁰ In 2019, the Canadian Medical Association issued its policy on medical marijuana, stating that although cannabis may offer patients relief when conventional therapies fail, a lack of evidence surrounding the risks and benefits of its use makes it difficult for physicians to advise patients properly.²¹ The purpose of this qualitative study was to investigate attitudes toward medical cannabis among family physicians practising in Ontario.

Competing interests: None declared.

This article has been peer reviewed.

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CMAJ Open 2021. DOI:10.9778/cmajo.20200187

Methods

Study design

We conducted a descriptive qualitative research study²² and used thematic analysis²³ to explore attitudes toward medical cannabis among family physicians. We followed the consolidated criteria for reporting qualitative research (COREQ) checklist in reporting our findings.²⁴

Participants

We recruited family physicians practising in Ontario, Canada, between January and October 2019. We acquired our participants through snowball sampling.²⁵ One author (J.W.B.) reached out to a family physician to provide contact information of colleagues who held variable views toward medical cannabis. We then asked 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.²⁶ Before being interviewed, each participant was sent an information letter and a consent form outlining the purpose of the study and how confidentiality would be maintained.

Data collection

We interviewed participants using an interview guide with open-ended questions (Appendix 1, available at www.cmajopen.ca/content/9/2/E342/suppl/DC1). We developed and tested our guide in accordance with McGrath and colleagues' method, which provides 12 recommendations for conducting qualitative research interviews (Appendix 2, available at www.cmajopen.ca/content/9/2/E342/suppl/DC1).²⁷ Furthermore, we consulted qualitative studies on related topics to inform our interview guide^{28–31} and engaged a family physician to review our interview guide for clarity and completeness.

For each participant, we collected demographic information including sex, age, specialization, years of practice, location of medical school training, location of residency training and site of practice (urban or rural). We also asked participants to state whether they authorized or prescribed medical cannabis.

Three authors (J.Y.N., K.G. or S.U.) conducted phone interviews with participants after they provided their informed consent to be interviewed. All interviews were audio recorded. The lead author (J.Y.N.) has training in qualitative interviewing and provided supervision and training to K.G. and S.U. We stopped recruitment when 3 members of our team (J.Y.N., Y.C. and J.W.B.) agreed that saturation of themes had been achieved. We did not return transcripts to participants, nor did we conduct follow-up interviews. Two authors (K.G. and S.U.) transcribed all interviews verbatim. We ensured participant anonymity by replacing names with an identification number in all transcribed documents and interview notes.

Data analysis

We analyzed all interview data by applying inductive thematic analysis, which has been shown to be effective in investigating and describing a range of experiences.³² We adopted

a realist approach whereby we assumed that participants would report truthfully about their beliefs and attitudes.³³

Two team members (J.Y.N. and Y.C.) read the interview transcripts and notes several times. Next, the same team members coded and aggregated transcribed text into meaningful themes and subthemes, and labelled constructs. We used an open coding process to establish the primary categories of information from each transcript, independently and in duplicate, and then connected the categories to derive main themes and subthemes. We resolved disagreements by discussion. Based on the codes generated from the analysis, the same 2 reviewers generated a set of theoretical propositions, independently and in duplicate, and achieved consensus. Lastly, all team members reviewed the results and confirmed the main themes and subthemes of our study findings, which were accompanied by supporting quotes. We used both manual coding and NVivo 12 software (QSR International).

Ethics approval

The Hamilton Integrated Research Ethics Board approved our study (project no. 5458).

Results

We contacted a total of 21 family physicians with the intention to stop recruitment once data saturation was achieved; 8 declined to participate, and 2 were found to be ineligible as they were not actively practising. The remaining 11 agreed to participate in our study. Our participants included 6 men and 5 women, who had been in practice for a median of 3.5 (range 1–33) years. Eight attended medical school in Canada, 3 abroad; all had completed their family medicine residency in Canada. One participant held additional specialization in public health and preventive medicine (Table 1). The interview time was about 30 minutes. We reached saturation after interviewing 11 physicians.

Main themes

We identified 3 main themes: reluctance to authorize medical cannabis, concern over harms associated with medical cannabis and lack of knowledge surrounding administration of medical cannabis. Each theme contained 4 subthemes; participant quotes supporting thematic analysis are shown in Table 2.

Reluctance to authorize medical cannabis

For the main theme “reluctance to authorize medical cannabis,” there were 4 subthemes: lack of evidence, indications for therapeutic use, discomfort with therapeutic use and openness to emerging evidence.

Lack of evidence

Eight physicians felt the evidence supporting the use of cannabis for medical purposes was limited. Specifically, they perceived that clinical trials were often poorly designed, followed patients for short time periods and did not inform long-term effects; benefits in trials showing statistical significance were typically modest. Two physicians felt more

Table 1: Participant demographic characteristics

Characteristic	No. (%) of participants* n = 11
Gender	
Male	6 (54)
Female	5 (46)
Age, median (range), yr	32 (27–74)
Specialization	
Family medicine only	10 (90)
Family medicine and public health/preventive medicine	1 (10)
Years in practice, median (range)	3.5 (1–33)
Location of medical school training	
Canada	8 (73)
Abroad†	3 (27)
Location of residency training	
Canada	11 (100)
Abroad	0 (0)
Location of medical practice	
Urban	11 (100)
Rural	0 (0)
Authorizes or prescribes cannabis	
Yes	4 (36)
No	7 (64)
*Unless indicated otherwise.	
†Two physicians attended medical school in the Caribbean and 1 attended medical school in the United States.	

research on effectiveness was needed before cannabis should be offered to patients. Participants noted evidence gaps regarding cannabis harms among certain populations (i.e., children, emerging adults and older adults), the effects of cannabis on the ability to drive and whether the net benefit-to-harm ratio was favourable for management of mental illness (e.g., posttraumatic stress disorder, anxiety).

Indications for therapeutic use

All participants thought that cannabis could be helpful for managing chronic pain, particularly neuropathic pain. Some physicians perceived a therapeutic role for cannabis in the treatment of anxiety, insomnia or muscle spasticity associated with multiple sclerosis, as well as for relief from chemotherapy-induced nausea and vomiting and for appetite stimulation. None of the participating physicians chose medical cannabis as the first line of treatment for any condition, and considered it only after other treatment options had failed or by patient request.

Discomfort with therapeutic use of cannabis

Six physicians avoided authorizing medical cannabis altogether, and 2 prescribed synthetic cannabis (i.e., nabilone).

Physicians who supported the therapeutic use of cannabis reported insufficient knowledge regarding what cannabis type to use, and how to pursue dosing and optimal monitoring; they preferred instead to refer patients to colleagues with an interest in cannabis.

Openness to emerging evidence

Despite the perceived lack of evidence and reluctance to authorize medical cannabis, 3 participants noted it was important to keep an open mind. They were willing to consider that cannabis may have a role in health care, acknowledged that patients were increasingly asking about medical cannabis and were aware of the need to address their own biases when engaging in discussions.

Harms associated with the use of cannabis

There were 4 subthemes, effect on neurocognitive development, harms in older adults, exacerbation of mental illness and concerns regarding cannabis clinics, in the main theme “harms associated with the use of cannabis.”

Effect on neurocognitive development

Four physicians raised concerns about the effect of cannabis on neurocognitive development and queried whether cannabis use among adolescents and young adults may predispose them to mental illness. Some physicians felt that setting the legal age for use of recreational cannabis at 18 years may give the impression that therapeutic use was safe at this age.

Harms for older adults

Two physicians raised concerns about cannabis use among older adults, including the potential for drug interactions given the common occurrence of polypharmacy in this population. They also raised concerns regarding adverse events associated with cannabis use, such as dizziness and sedation, and how this may affect older patients’ quality of life, ability to drive and capacity to care for themselves.

Exacerbation of mental illness

Three physicians expressed concern over the impact of cannabis use on people with preexisting, or at high risk for, mental illness. Participants noted that cannabis use may exacerbate patients’ symptoms of depression and anxiety or interfere with sleep, and acknowledged evidence to implicate cannabis use in early-onset psychosis among emerging adults.

Concerns regarding cannabis clinics

Although physicians largely referred patients who were interested in pursuing medical cannabis to practices that focused on this therapy, 3 participants raised concerns about the quality of care provided through cannabis clinics. Participants perceived that very few interested patients were denied cannabis, and that most patients were not provided with a detailed explanation of possible harms. One physician highlighted their experience that patients with comorbid mental illnesses, including substance use disorders, found it easy to access medical cannabis through these clinics.

Knowledge about medical cannabis

For the theme “knowledge about medical cannabis,” 4 sub-themes emerged during data analysis: inadequate training, continuing education, the physician’s role regarding medical cannabis and recreational versus medical cannabis.

Inadequate training

Five physicians described their knowledge of medical cannabis as insufficient in regard to clinical indications, dosing or monitoring. Older physicians were not exposed to information on medical cannabis in medical school or residency; more recent graduates received some lectures on medical

cannabis, but were not well versed on the topic. Our participants thought that acquiring training in the use of medical cannabis required them to seek out online courses and conferences.

Continuing education

Nine physicians expressed an interest in receiving education regarding medical cannabis. When asked what kind of training or education they wished to receive, answers were mixed and often related to their patient population. Some physicians expressed an interest in general topics, such as clinical indications for cannabis and dosing.

Table 2 (part 1 of 2): Participant quotes supporting thematic analysis

Theme/subtheme	Representative quote(s)
Reluctance to authorize medical cannabis	
Lack of evidence	I don't think most of the results of studies are that strong, they're not really well-designed studies for the most part ... (MC001) ... some studies show that it's really effective and some studies show that it's not very effective. I suspect we've reached the point where we're probably a little too liberal for the conditions we prescribe it for. (MC009)
Indications for therapeutic use	It's an okay adjunct, but it wouldn't be my first line for pain control at all. (MC002) ... it's more of a second- or third-line treatment ... certain patients will find it helpful. (MC004) There's very few things, if any, that I would go to medical cannabis as my first medication to treat. (MC008)
Discomfort with therapeutic use of cannabis	I'm not 100% comfortable prescribing it, I do feel it might be helpful for some conditions, but I'm just not sure of the entire process of how to go about prescribing it and monitoring its use. (MC001) I don't prescribe it at all, I usually refer it out to clinics who are specialized in that. (MC002) I would be happy if it went away, in terms of [the] physician's responsibility toward it. I do not want to be prescribing marijuana. (MC006)
Openness to emerging evidence	I think you have to keep an open mind, and you have to be attuned to what your patients are telling you ... if you're not willing to listen to what patients are telling you about what they're using, and you don't present an unbiased front, then people aren't going to tell you what they're doing. (MC009) I think that we need to make sure we are providing our patients with access to evidence-based treatment and addressing any financial barriers and any stigma that may exist around particular treatments. I think we need to be careful of that when we are thinking about prescribing medical marijuana. (MC011)
Harms associated with the use of cannabis	
Effect on neurocognitive development	There is so much research saying that the brain is still changing and the reality is we don't know what happens to kids' brains when they take marijuana at the age of 15. And you know, I have so many patients who are young, who are like, "oh well now that is legalized for the age of 18, [and] I'm 14 and I'm so close, I'm sure it is fine." And I think the fact that legalization, especially at such a young age, gives the message to a lot of people that it's safe. (MC010)
Harms for older adults	Maybe sort of looking at long-term effects on older people. All the medications we prescribe, there are certain geriatric populations that take various medications so I just want to know if there's anything in particular or things to watch for. (MC002) What is the effect of adding a cannabis product into a geriatric population that tends to be already medically more complex and already on lots of other medications and have multiple comorbidities? So, what impact does that have potentially, on their quality of life, ability to continue to drive a car, ability to continue to take care of themselves, and maybe dependence issues. (MC009)
Exacerbation of mental illness	Our patients have mental health issues, ranging from depression to anxiety to schizophrenia, and you know, you worry about harms for people especially for people who have [mental] illnesses. (MC006) So some of the [symptoms] I've noticed so far have been an increase in anxiety, difficulty with sleep, even cases of potential psychosis. (MC007)
Concerns regarding cannabis clinics	Cannabis clinics are fairly easy to access for most of these [patients]. (MC004) I would, for the most part, send patients to marijuana [clinics]; there are a couple in Hamilton. Everyone wound up getting it. Most people that did had addiction issues and mental health issues. (MC006) I've had patients who've come in and were prescribed medical cannabis and I would be like "oh you are so young, did the people go through the risks with you?" and they were like "no not really" and so I think that concerns me because it seems like even depending on which cannabis clinic certain people are referred to, they are not necessarily being presented with both the pros and the cons. (MC010)

Table 2 (part 2 of 2): Participant quotes supporting thematic analysis

Theme/subtheme	Representative quote(s)
Lack of knowledge surrounding medical cannabis	
Inadequate training	I'd say my knowledge of [medical cannabis] is pretty average ... average enough to know that I would refer someone else to [authorize] medical cannabis if I thought it would help. And also enough to say that it won't help with your kind of pain or your set of conditions. So, I would know enough about that, but in terms of dosing and things like that I am not as comfortable, but it's not something I sought to really train in. (MC002) I went to medical school 35 years ago, there was zero training about cannabis and anything I learned about cannabis has been through continuing education that consists of online courses and information, position statements and summaries, sessions at conferences... So, the training has been whatever I chose to participate in, there's nothing required of me. (MC005) We did have some lectures from physicians in residency, [and] we also read a few articles during that time as well. I definitely don't know all of the up-to-date research that's ongoing in marijuana, it's just the things that I'm coming across. (MC007)
Continuing education	I just don't know what the regulations are in terms of how that's monitored, so my [further] education would hopefully help me figure out where I can direct patients to, sort of more, reputable sources of marijuana once it's been prescribed. (MC002) Something that comes out from time to time, that would actually be very helpful to get updates about what's [new] with medical cannabis. (MC007)
Physician's role regarding cannabis	[Regarding medical cannabis], it is still not a prescription. A prescription includes the name of a substance, exactly what is in it, it includes a dosage, frequency, and duration. And it is dispensed by a pharmacist. None of those criteria are being fulfilled by cannabis. I am a little bit lost right now about what my form actually does for anyone. I think anyone and his dog can walk into a drug store and get whatever they want without approval from a physician. (MC004) Pretending that marijuana/cannabis is a prescription has been a joke ... There is nothing about dosing or actual content; the traditional approach to making cannabis accessible really has just been to say this person has a medical condition and I believe this person may benefit from medical cannabis ... Right now, it's very confusing why I have any role in making cannabis accessible to anyone. Whatever I write or say on a form does not decrease the cost of it. It does not make it funded, and it still does not provide any instructions that have to be followed ... I would love to see [the] medical profession removed from the transaction completely and to make [cannabis] more like alcohol. (MC005)
Recreational v. medicinal cannabis	I'm not sure how [recreational] products are regulated and if they know how much THC or CBD is in it, so I am not sure if [using recreational cannabis for therapeutic purposes] would be a good idea. (MC003) I think it's still helpful ... being prescribed medical cannabis because a lot of people are not sure what's the best time to take it for medical reasons. I still think there's a role for medical cannabis even if recreational cannabis is approved for use now. (MC004)
Note: CBD = cannabidiol, THC = tetrahydrocannabinol.	

Physician's role regarding medical cannabis

Two physicians expressed frustration regarding their role with medical cannabis because of the atypical nature of the intervention and the limited impact of their involvement. Specifically, medical cannabis does not have to be dispensed by a pharmacist, authorizing cannabis does not lower the cost for patients and physicians cannot control the composition of cannabis used for therapeutic purposes. One physician thought that there was no role for the medical profession after the legalization of cannabis for recreational purposes.

Recreational versus medical cannabis

Six physicians raised the issue of how the legalization of recreational cannabis affected its therapeutic use. Ten participants felt there was merit to preserving a separate stream for medical use, given the higher likelihood of more rigorous regulation for medical cannabis. Specifically, medical cannabis products would be required to be more consistent and adhere to higher safety standards.

Interpretation

Family physicians in our study were reluctant to authorize medical cannabis because of perceptions of limited supporting evidence, uncertainty regarding clinical indications and associated harms. Those willing to consider the use of medical cannabis typically referred interested patients to clinics that focused on this therapy, but were concerned that such clinics may provide cannabis indiscriminately without comprehensive discussion of the possible benefits and harms. One participant questioned whether there remained a role for medical cannabis after the legalization of cannabis for recreational purposes, but most physicians thought that medical cannabis would likely adhere to more rigorous quality standards. This belief requires confirmation through formal study. Participants were largely supportive of both research and continuing education to inform their views on the role of medical cannabis for their patients.

Our findings are similar to other published studies that found physicians lack a consolidated perspective regarding

whether cannabis is a medicine and have concerns regarding the limited evidence base for medical cannabis.^{17–22,29,34,35} Regardless, many participants stressed the importance of keeping an open mind and considering patients' values and preferences. We found that physicians had multiple concerns associated with patient use of medical cannabis. There is evidence to suggest possible effects on neurocognitive development,^{36–38} drug interactions (particularly among older users),^{39–42} exacerbation of mental illness^{43,44} and insufficient standards and quality of care provided through cannabis clinics.^{45,46} Physicians thought their training in medical cannabis was lacking, and their interest in continuing medical education in this area is consistent with other surveys.^{28,29,31,34,47–50} Of note, some observational data have suggested that cannabis may be substituted for prescription medication, including opioids, anxiolytics and benzodiazepines, sedatives and antidepressants;^{51,52} however, this issue was not raised by our participants.

One of our participants questioned whether physicians should remain involved with medical cannabis after the legalization of recreational use. The Canadian Federation of Medical Students has released a position statement calling for increased cannabis education during medical training.⁵³ The increasing use of cannabis by Canadians suggests that family physicians may have an ongoing role in discussing medical cannabis with interested patients.⁵⁴ Open discussions may promote shared decision-making and provide opportunities to assist patients in differentiating evidence from hyperbole.⁵⁵

Our study highlights the importance of addressing the knowledge gaps of family physicians and their concerns surrounding medical cannabis. Research should further investigate the needs of family physicians, as well as medical students and residents, regarding cannabis education.^{34,56} Increased knowledge of the evidence for the benefits and harms of medical cannabis may improve physician comfort with discussing this topic with interested patients^{57–59} and reduce patient reliance on cannabis clinics that may not always provide impartial advice.⁹

Limitations

We interviewed a modest number of physicians to inform our qualitative study; however, we sampled to saturation and only stopped recruiting new participants when no additional themes emerged in our last interview. We used snowball sampling to recruit physicians, which is prone to sampling bias,⁶⁰ and we only captured the views of physicians practising in urban settings. Few of our participants authorized medical cannabis, and physicians against authorizing medical cannabis may have been overly represented in our sample. Participants may have censored their answers to appear as “good participants” (i.e., social desirability bias); however, many physicians we spoke with were forthcoming regarding their concerns about medical cannabis. Furthermore, no members of our study team had any motivation to encourage positive or negative answers. We did not implement member checking to verify our findings. To ensure the trustworthiness and rigour of our study results, 2 members of our team who are familiar with qualitative research methods conducted open coding and theme generalization, independently and in duplicate.

Conclusion

Family physicians in our study were uncertain of the therapeutic potential of medical cannabis. The exception was the use of medical cannabis for chronic pain, particularly neuropathic pain, for which all participants thought the evidence supported effectiveness. Most physicians did not provide therapeutic cannabis to their patients and expressed uncertainty regarding its harms and appropriate use. Family physicians may benefit from guidance and education that address concerns they have surrounding medical cannabis.

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Contributors: Jeremy Ng and Jason Busse conceptualized and designed the study. Jeremy Ng, Kevin Gilotra, Sana Usman and Yaping Chang collected the data, which Jeremy Ng, Yaping Chang and Jason Busse analyzed. Jeremy Ng drafted the manuscript, which all authors critically revised. All authors approved the final version of the work to be published and agreed to be accountable for all aspects of the work.

Funding: Jeremy Ng was funded by a Research Scholarship and Entrance Scholarship from the Department of Health Research Methods, Evidence and Impact, Faculty of Health Sciences at McMaster University.

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Data sharing: The authors have no further data to share beyond what is provided in the manuscript and appendix files.

Disclaimer: No members of the study team have used medical cannabis or have any financial or intellectual conflicts of interest in this area.

Acknowledgement: The authors gratefully acknowledge Dr. Nghi Phan for assistance in identifying study participants and reviewing the interview guide.

Supplemental information: For reviewer comments and the original submission of this manuscript, please see www.cmajopen.ca/content/9/2/E342/suppl/DC1.