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Medical cannabis in schools: A qualitative study on the experiences of clinicians

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ABSTRACT

Objectives: Guidance is lacking for medical cannabis use in Canadian schools in both legislation and approach; the impact of ambiguous policy on patient care is unknown. A qualitative study was undertaken to explore the experiences of clinicians who care for school-aged children who take medical cannabis.

Methods: Semi-structured interviews were recorded and transcribed verbatim. Qualitative content analysis performed using the Dedoose qualitative software ascribed meaning units and codes, which were further consolidated into categories and subcategories.

Results: Thirteen physicians were interviewed virtually, representing seven provinces in Canada. The physicians provided care for between five and hundreds of school-aged children who took medical cannabis. The most common indications were refractory seizure disorders and autism. The interviews provided rich descriptions on perceptions of medical cannabis in schools, and in general. Five overarching categories were identified across both domains including variability, challenges (subcategories: lack of knowledge, stigma, lack of policy, and pragmatic challenges), potential solutions (subcategories: treat it like other medications, communication, education, and family support), positive experiences and improvements over time.

Conclusion: In Canada, cannabis-based medicine use in schools still faces important challenges. Effective education, communication, family support and policy refinements that allow cannabis to be treated like other prescription medications are recommended to improve the status quo. These findings will guide the C4T Medical Cannabis in Schools Working Group's future priorities and initiatives.

Keywords: Clinician; Medical cannabis; Perception; School.

The reported use of medical cannabis has increased in recent years, in part, stimulated by media attention and case reports of treatment success in some conditions (1–3). Although the evidence-based literature for cannabis in children is limited, a growing number of clinicians are authorizing it for specific indications. The most robust data is in drug-resistant epilepsy, where four randomized-controlled trials and several non-randomized studies report reductions in seizures (4). Other therapeutic areas in children include chemotherapy-induced nausea and vomiting, chronic pain, and autism spectrum disorder (5,6). The 2016 Canadian Paediatric Society (CPS)'s official position statement indicates that using cannabis for medical purposes in children should be evaluated on a case-by-case basis only by clinicians with condition-specific expertise, and always

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a comprehensive discussion of potential benefits and risks (7). Cannabis for the treatment of epilepsy in children should also be evaluated long-term, using well-designed research into developmental effects (7). A survey of paediatricians (Canadian Paediatric Surveillance Program (CPSP) (n = 877)) indicated half of all respondents have encountered patients who used cannabis for medical purposes in the previous year (8).

In 2018, Canada became the second country to federally legalize both medical and recreational cannabis creating a dual supply chain (9). Under the *Cannabis Act*, patients may obtain cannabis for medical purposes from a licensed producer with medical authorization from a clinician. In contrast, cannabis for recreational use can be obtained without medical authorization by adults, from retail stores or grown at home. Each province or territory can further regulate how cannabis can be sold and consumed. Except for two pharmaceutical grade products, Sativex® (nabiximols) (10) and Cesamet® (nabilone) (11), cannabis does not go through Health Canada's drug review and approval process or have a Drug Identification Number (DIN) (12). As such, caregivers of children who require medical cannabis and clinicians have reported barriers, including difficulties with access, cost, or stigma (2,13,14). Anecdotally, some physicians report barriers to having medical cannabis administered in schools, although these personal accounts are not substantiated by research.

The Canadian Collaborative for Childhood Cannabinoid Therapeutics (C4T) is an academic-led team of parents, doctors, pharmacists, youth, nurses and scientists studying medical cannabis use by children (15). The C4T 'Medical Cannabis in Schools' working group (16) performed a scoping review to identify policies and publications associated with medical cannabis in Canadian schools (17). The review highlights a lack of guidance and clarity, with some legislation prohibiting the use of cannabis in schools. The extent to which these policies (or lack thereof) have impacted patient care remains unknown. This study aimed to learn about the experiences of clinicians providing care for school-aged children who require medical cannabis.

MATERIALS AND METHODS

Population of interest and recruitment

The methodology used was qualitative description, which aims to explore a phenomenon of interest using participants in a particular situation (18,19). Clinicians who authorize or provide care for school-aged children and youth were recruited by way of a study invitation shared through websites and social medical channels expected to reach the target audience (e.g., the C4T and the Canadian Consortium for the Investigation of Cannabinoids [CCIC]). As well, members of these networks were encouraged to share recruitment materials, which linked to an online survey for potential participants to provide their contact information.

Data collection

Clinicians who participated were provided an option of a virtual (Cisco Webex) or telephone interview, which used a semi-structured interview guide (Supplementary Appendix A). The guide was created by the Medical Cannabis in Schools working group (parents of children who take medical cannabis, physicians, community health nurses, and a pharmacist, n = 10), and further reviewed by an external qualitative researcher. In the absence of previous literature, the questions were inductive and designed to elicit responses on the experiences, including facilitators and/or challenges. Self-reported demographic data (province, clinician specialty, practice, sex/gender, and ethnicity) was collected. The recorded interviews were conducted by HM, a researcher with experience in qualitative methodology, and continued until the topic was thoroughly discussed and the participant had nothing more to add. A $25 gift card was offered to the participants. The local Behavioural Ethics Board approved the study (Beh#2804), following best practice guidelines for undertaking qualitative research (20,21).

Data analysis

The interviews were transcribed verbatim by the Canadian Hub for Applied and Social Research (CHASR) and analyzed by two researchers experienced in qualitative analysis (HM and ZZ) using Dedoose software (22). Qualitative content analysis was chosen as the analytical approach, since the intent was to preserve the descriptive accounts of the participants closely aligning with the manifest, rather than analyzing the latent content for underlying meaning (23). In the first stage of the process (preparation), transcripts were reviewed thoroughly and meaning units were ascribed into sentences and statements (24). The second stage (organization) involved the process of abstraction, and open coding was used to label meaning units. The codes were organized according to categories and sub-categories iteratively throughout the analysis. The researchers collaborated throughout this process, meeting regularly to discuss code and category relabelling and refinement. The report produced during the last phase of the research was sent to the participants for an opportunity to provide feedback.

RESULTS

Thirteen physicians from seven provinces took part in the study between August-November 2021. Eleven interviews were conducted by video conference and two by phone; the interviews lasted between 15 and 51 minutes. Participants ranged in age between 35 and 67, and the most cited reasons for prescribing medical cannabis were seizure disorders and autism. Some, but not all physicians, authorized CBD-only products (Table 1).

Clinicians varied in their encounters with schools, depending on authorizing approach. Some physicians had several patients who required medical cannabis during the school day, whereas others scheduled the dose around school hours (e.g., twice daily). The interviews provided rich descriptions on perceptions of medical cannabis (a) in schools and (b) in general, and the results are reported according to these two domains. Figure 1 displays the overarching categories and subcategories. Supplementary Table S1 provides additional supporting quotes.

Variability

Some clinicians had very few encounters with the schools, whereas others had many. Some reported positive experiences collaborating with teachers and administrators, while others reported barriers and challenges. School structure, policy, and logistics lacked consistency across the jurisdictions. Even within

Table 1. Self-reported characteristics of study participants

Characteristic	Number (%)
Age	
30–39	3 (23.1%)
40–49	3 (23.1%)
50–59	4 (30.8%)
60–69	3 (23.1%)
Sex and Gender	
Male	9 (69.2%)
Female	4 (30.8%)
Province of residence	
British Columbia	3 (23.1%)
Alberta	1 (7.7%)
Saskatchewan	1 (7.7%)
Manitoba	1 (7.7%)
Ontario	5 (38.5%)
New Brunswick	1 (7.7%)
Nova Scotia	1 (7.7%)
Specialty	
Paediatric neurologist	3 (23.1%)
General practitioner/ family physician	5 (38.5%)
Internist	1 (7.7%)
Paediatrician	2 (15.4%)
Paediatric psychiatrist	2 (15.4%)
Race	
Caucasian	9 (69.2%)
Caucasian (Central Eastern)	1 (7.7%)
Latin American	1 (7.7%)
Jewish	1 (7.7%)
Metis	1 (7.7%)
Estimated number of children receiving authorization for medical cannabis	
5–15	3 (23.1%)
20–45	4 (30.7%)
100 +	6 (46.2%)
Indications*	
Treatment resistant seizure disorders	10 (76.9%)
Autism	10 (76.9%)
Other treatment resistant behavioural or mental health disorders	10 (76.9%)
Chronic pain, palliative care, cancer	3 (23.1%)
Other	2 (15.4%)
Experience dealing with schools	
None (doses exclusively around school hours)	3 (23.1%)
Limited (between one and a few encounters)	5 (38.5%)
Several (many encounters)	5 (38.5%)

*Percentage will not add up to 100 since some participants stated more than one answer.

the same district, physicians acknowledged each situation was school dependent. Participant 9 said, "*We rely on what the parents tell us each time. And it's always something different.*" As described by participant 1, "*One school refused to give cannabis oil to an eight-year-old and they had the 12-year-old sister come down to the office to administer the afternoon dose… So, it ranges from support, to complete lack of support.*"

Challenges

Challenges with accessing medical cannabis in schools and with cannabis in general were reported and are sub-categorized as 'lack of knowledge', 'stigma', 'lack of policy', and 'pragmatic challenges'.

Lack of knowledge

Lack of knowledge about medical cannabis was perceived to be prevalent within schools, the general public, and even the medical system. Participant 7: "*There's a lot of misunderstanding about the different cannabis products, the different ingredients, as well as the dosing. So, for the vast majority, it's not well understood.*" Participants commented on misconceptions, such as cannabidiol oil being intoxicating, rampant misinformation on the internet, and the knowledge gap with other health care providers. Participant 1: *"It used to, but doesn't anymore surprise me, how little healthcare professionals know about cannabis."*

Stigma

Some clinicians indicated stigma was not an issue, while others citied it as a barrier in their patient's medical treatment. Some participants described the impact of stigma from the school, community, or family.

> Participant 7: *"Sometimes my patients feel like they were really discriminated against and that can emotionally affect them. And that can be really frustrating as a clinician. Because I am trying to encourage a medicine, and I have people who don't have medical training or expertise or knowledge protecting their own biases on it, which could indirectly affect my patient and their health."*

Many clinicians acknowledged stigma exists within the medical profession, and some faced barriers such as prohibitive policies regarding cannabis authorization within their institution. Participant 10 said, *"I think there's still a stigma around it and in the medical profession… But hopefully with time, that is slowly getting better."* Others attributed stigma within the medical profession to the lack of randomized controlled trials. Participant 6 noted this is ironic, since many other medications are used off-label in paediatrics without scrutiny.

Lack of policy

Lack of polices for medical cannabis in schools was perceived to be challenging for teachers, administrators, patients, and physicians. According to participant 12, *"It's up to the director or principal of that school to decide how to proceed."* Some physicians described situations where cannabis was prohibited in the schools. Provisions had to be made, such as extending the dosing interval, or having the parent visit the school daily to administer the dose. These situations, while rare, cause significant challenges

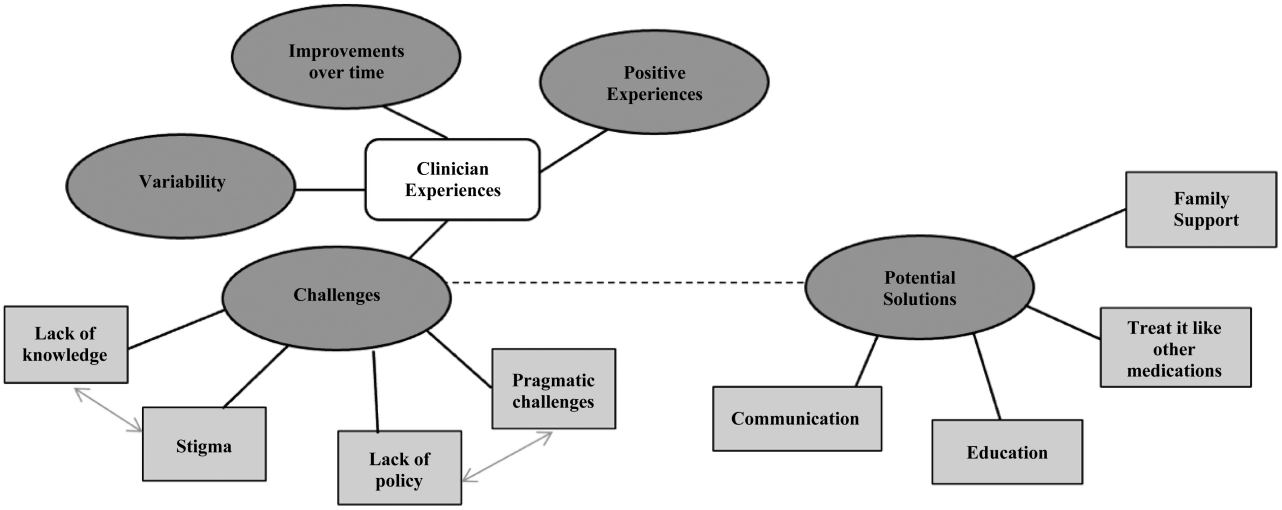

Figure 1. Overview of categories and subcategories pertaining to clinician perceptions with medical cannabis at schools.

for the family. According to participant 1: *They [the experiences with schools] tend to be more toward neutral or positive… But the problem is, those negative situations really highlight the difficulties… patients have to kind of skirt around the regulations or rules that are in that institution."*

Pragmatic challenges

Pragmatic challenges were identified with medical cannabis administration. These included availability of a responsible person for administration during the school day, safe and secure storage of medical cannabis, and extra paperwork. Other challenges, which did not pertain specifically to schools, include its prohibitive cost, issues with obtaining a consistent product from a reputable supplier, challenges with the dosage form, and the lack of compensation for extra physician time. According to participant 8, *"I've got a couple of kids who tried it. It worked really well, but their parents can't afford it."*

Potential solutions

Clinicians offered insights on addressing the challenges.

Treat it like other medications

Clinicians unanimously agreed medical cannabis ought to be treated like any other medication within the school system and in general. Some lamented over the difference in regulations with cannabis (e.g., lack of DIN) and indicated that problems would be solved if regulators, the medical system, and the cannabis industry were required to treat cannabis like a normal medication. Participant 10*: "Consistency, availability, are the two biggest things… if the medical cannabis industry wants to be considered like a drug company, like a pharmacy - they need to set themselves the same standards."*

Communication

Communication between parents and teachers and the medical team was perceived to be essential for navigating medical cannabis in schools. Participants discussed the importance of both verbal and written communication for identification of barriers, solutions, and processes.

Education

Education was perceived to be an important strategy for solving challenges and decreasing stigma. Some participants indicated that standardized education for teachers and administrators would be of benefit and offered insights on the nature of such education (Table 2).

Support for families

Participants emphasized that families require support to navigate medical cannabis in schools and in general. A knowledgeable practitioner, who is willing to take the time to educate, provide support, and advocate on behalf of the patient was considered important by all, and a referral to a clinic or practitioner who specializes in cannabis medicine was cited by some. Peer to peer support was also mentioned as a valuable resource.

Positive experiences

Despite the variability in experiences, several participants described positive encounters with schools. According to participant 10: *"I think there are schools that have been very accepting of it [medical cannabis]"* and participant 1: *"Many schools are supportive."*

Some clinicians also commented on the effectiveness of cannabis-based medicine in their practice. Participant 10: "*I think there's so much more to learn, but what is clear is that some children really benefit from this therapy and that we shouldn't let stigma or biases prevent the kids from getting that benefit.*"

Improvements over time

Nearly all participants (12/13) described how significant improvements have occurred both in school-related experiences, and in those related to cannabis in general. Clinicians described advancements in knowledge and acceptance of cannabis medicine, and improvements in policies, practices, and stigma.

> Participant 6: *"I've been doing it for a while [authorizing cannabis] and it was like a salmon swimming upstream for years and years and years across all sorts of dynamics. My colleagues, the*

Table 2. Information about medical cannabis that participants deemed 'important for schools to know'

Important principles for cannabis education	-Educate both teachers and school administrators about cannabis-based medicine due to a general lack of knowledge about this topic -Education may help to decrease stigma and improve processes -Education in schools for children should focus on recreational and medical cannabis -Introduce medical cannabis education at a younger age to decrease stigma -The right people should educate about cannabis education (e.g., clinicians who authorize cannabis to children and are knowledgeable in the area)
Important information for teachers and school administrators	-What cannabis is -How cannabis works -Where cannabis comes from -Basic education about cannabinoids and the endocannabinoid system -The different cannabis products with their different chemical compositions and therapeutic qualities -The basic differences between tetrahydrocannabinol (THC) and cannabidiol (CBD) -The abuse potential of medical cannabis is very low -What cannabis is used for medically -The process of medical cannabis authorization -Practical management tips such as when and how to give cannabis medically for a child -Potential side effects of cannabis and how to monitor for them and manage them -Signs of intoxication -How to safely store cannabis

nursing association, the long-term care facilities. Now, it's so much less resistance and I would put schools in there as well."

Some participants acknowledged that there is still room to grow. Participant 4, "*I would say it has gotten better. But it's still not where it needs to be.*"

DISCUSSION

We interviewed 13 clinicians across Canada and their experiences with cannabis-based medicine in schools varied. Some described encounters where schools had refused to administer medical cannabis, while others highlighted a positive collaboration with educators. No consistent pattern was observed with respect to location (province or city), or type of school, and the participants confirmed that each situation was unique.

Despite mixed experiences, participants shared several similarities. All clinicians authorized medical cannabis for children, and some managed patients who were referred specifically for cannabis expertise. Participants described significant benefits with cannabis-based medicine but acknowledged that the primary role of cannabis is in refractory conditions. Throughout the dialogue it was evident that these participants acted as tireless advocates for their patients. Remarkably similar perceptions were illustrated in the subcategories of lack of knowledge, stigma, lack of policy, and pragmatic challenges. Interestingly, these subcategories may be interconnected. Ignorance about medical cannabis from the public and the medical community contributes to stigma, which in turn perpetuates misconceptions. The absence of school policies leads to pragmatic challenges within the avenues of cannabis administration and storage in schools; meanwhile the inability to obtain a consistent product from a reputable supplier or the absence of a DIN (pragmatic challenges) make it harder to implement policy.

The lack of data on Canadian children taking cannabis for medical purposes and in schools make it impossible to determine how many children are affected by these challenges. Our study was inductive in nature since no other literature exists on this topic. A qualitative study of paediatric neurologists (in which 58% of the cohort had authorized medical cannabis) identified some similarities, including lack of knowledge, issues with cost, importance of communication, and the need to treat cannabis like other medications (13). Our work provides a unique contribution by sharing the perspectives of clinicians highly experienced in cannabis-based medicine.

Several limitations of this study should be considered. Recruitment for this study was performed primarily by advertising through professional networks such as the C4T or CCIC that would reach clinicians who dealt with cannabis as a significant part of their practice, but other health care providers were likely missed. Despite recruitment from seven provinces, clinicians from all jurisdictions in Canada would be more desirable; since the support for cannabis and the legislation and policies surrounding its use vary geographically it is difficult to know if this sample is representative of physicians who authorize medical cannabis. Furthermore, we acknowledge that clinician perspectives are only one avenue for exploration. In progress is a follow-up study describing the experiences of caregivers of children who require cannabis in schools, while teacher's perspectives should be the focus of future work.

CONCLUSION

The culture around cannabis-based medicine for children in Canada is improving, but significant challenges about medical cannabis still need to be tackled. Effective education, communication, family supports, and policy refinements that allow cannabis to be treated like other medications are needed. These findings will help to guide future priorities within the C4T Medical Cannabis in Schools working group.

SUPPLEMENTARY DATA

Supplementary data are available at *Paediatrics & Child Health* Online by searching for pxac110.

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ETHICS APPROVAL STATEMENT

The Behavioural Ethics Board at the University of Saskatchewan approved the study (Beh#2804).

POTENTIAL CONFLICTS OF INTEREST

LEK holds funding from the Canadian Institutes of Health Research, the Canadian Cancer Society, and the SickKids Foundation for C4T. She holds a Mitacs Accelerate grant for a separate project in partnership with Canopy Growth who played no role in the design or funding provided to this project. LEK has no financial conflicts of interest. TL has received speaker's honoraria and/or consulting fees from Spectrum Therapeutics, Children's Hospital of Eastern Ontario, University of Ottawa, Syqe Medical, Aleafia Health, and Sanofi. JA has participated on an advisory board for Zyus Life Sciences Inc. The other authors have no relevant conflicts of interest to disclose. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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