

The perceptions and beliefs of cannabis use among Canadian genitourinary cancer patients

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Abstract

Introduction: The legalization of recreational cannabis in Canada in 2018 has led to many patients being curious about the benefits of taking cannabis in conjunction with their cancer treatment. We investigated the perceptions among genitourinary cancer (GUC) patients regarding cannabis use as part of their care plans.

Methods: A survey was created to explore current cannabis use behaviors, reasons for cannabis use, and the beliefs of cannabis usefulness towards cancer-related care, including cancer treatment, among GUC patients. The survey was distributed across Canada online via RedCAP through social media platforms, email, and patient advocacy groups. The survey was active from August to December 2020.

Results: Of eighty-five responses, fifty-two met inclusion for analysis. Participants included 11 bladder, 26 kidney, and 15 prostate cancer patients. Many (48.1%) participants used cannabis daily and 75% had been using it for more than one year. Cannabis was consumed through oil-based products, edibles, and smoking. The most common reasons for using cannabis were cancer-related anxiety, to prevent cancer progression, cancer-related pain, recreational use, and other non-cancer-related illness or symptoms. Participants believed cannabis improved their

sleep (70.2%), anxiety (65.9%), and overall mood (72.3%). Most participants were either unsure (38.3%) or neutral (31.9%) in the belief that cannabis might decrease their cancer progression.

Conclusions: GUC patients use cannabis for a variety of cancer- and non-cancer-related symptoms. Many patients believe cannabis has benefited their cancer-related symptoms. These findings highlight the importance of healthcare providers remaining familiar with current evidence on cannabis to support patient conversations about cannabis use.

Introduction

The cannabis plant is comprised of many phytocannabinoids, but two commonly known phytocannabinoids are Δ -9tetrahydrocannabinol (THC) and cannabidiol (CBD). These two phytocannabinoids have been widely researched for their therapeutic potential.¹ THC is the main psychoactive compound, while CBD is non-psychoactive. THC and CBD can bind to receptor sites (CB1 and CB2) in the body to initiate a response.² Responses vary depending on the dosage of THC: CBD.³

Cannabis has been available through medical authorization in Canada since 2001 and patients have been able to access it with authorization through a licensed producer since 2016.⁴ Clinically, cannabis has demonstrated varying levels of benefits for cancer-related symptoms such as pain, chemotherapy-induced nausea and vomiting, and cachexia.^{5,6} Currently, the literature still consists of mostly low quality evidence with inconsistencies on whether cannabis may increase the risk of developing any GUC,^{7–11} or if it has a therapeutic role.^{12,13,14} As such, cannabis is not currently recommended for cancer treatment but may be used for some cancer-related symptoms.^{6,24}

In 2018 the Canadian federal government legalized recreational cannabis, becoming only the second country in the world to do so. Despite the infancy of cannabis-based research in oncology, the rate of cannabis use in cancer patients has steadily increased over time.¹⁵ There have been an abundance of claims online that cannabis can “cure cancer”, despite the lack of robust clinical evidence.^{14, 16–19} Due to the new ease in accessibility, more patients may choose to use cannabis to treat their symptoms or their cancer without guidance from health-care providers.²⁰ As more GUC patients have become increasingly open to using cannabis, it is crucial to understand the reasoning and beliefs surrounding the therapeutic benefit of cannabis. Our primary objective was to explore the perceptions and beliefs about cannabis use for symptom management and cancer care among Canadian GUC patients who reported using cannabis.

Methods

To assess the perceptions surrounding cannabis as an effective treatment for symptom management and cancer care in GUC patients, a survey was created by authors ST, AK, MS, and CT. The survey included 32 closed-ended questions to explore current cannabis use behaviours, the reason and decision-making process to use cannabis, and the beliefs towards cannabis use

towards cancer-related care (Appendix A). The survey concluded with one open-ended question for GUC patients to provide any thoughts about cannabis pertaining to their cancer. Participation in the study was voluntary and no personal identifiers were collected. Eligibility criteria included participant location within Canada, confirmed diagnosis of kidney, bladder, prostate, testicular, or penile cancer, cannabis use in any form within the last year, and greater than 50% of questions completed. The survey remained active on RedCAP from August to December 2020. Ethics approval was obtained from the Hamilton Integrated Research Ethics Board (Project #7427).

Initially, the prospective study surveyed patients with GUC via in-person recruitment at two clinic locations in Hamilton, Ontario (Juravinski Cancer Centre and McMaster Institute of Urology). Due to public health considerations around COVID-19 and increasing use of virtual care, the study was moved online to survey eligible GUC patients across Canada using RedCAP. GUC patients were invited to participate in the study through social media platforms (Facebook, Twitter), email and leveraging community via patient advocacy and support groups, including Kidney Cancer Canada (KCC), Bladder Cancer Canada (BCC), prostate cancer support groups, and The Canadian Cancer Survivor Network.

Descriptive statistics were performed using Microsoft Excel and SPSS software. The Kruskal-Wallis test was used to compare the results of the Likert scale questions between groups based upon age, whether they were on any active systemic therapy and their GUC site. Statistical significance was defined as $p \leq 0.05$.

Results

Eighty-five participants accessed the survey and provided consent. Twenty-nine responses were excluded as the survey was not completed. Four responses were excluded as they were located outside of Canada or did not use cannabis within the past year. Forty-seven participants provided a completed survey and five partially completed surveys that met the inclusion criteria. A total of 52 participants were included in the final analysis.

Demographics

Participant characteristics are summarized in Table 1. The majority identified as male (75%) and Caucasian (94.2%). Fifty-nine percent of participants were in the age range of 56-70 years, 25% were < 56 years and 15.4% were > 70 years of age. Overall, 21.2% declared their primary GUC as bladder, 50% as kidney and 28.9% as prostate. One third (34.7%) identified having metastatic disease and 32.7% were on active treatment for their cancer.

Current cannabis use

As seen in Table 2, 48.1% of the participants used cannabis daily and 75% have been using it for greater than 1 year. Participants were asked how many grams of cannabis they have used within the last week, with 17.3% using none, 42.3% using less than 10 grams, 3.9% using 10 grams, 19.2% using greater than 10 grams, and 15.4% unsure. In terms of product constituent, 65.4% used a combination of THC: CBD products, while 21.1% used THC only, 11.5% used CBD only, and 1.9% unsure. Participants were asked to identify the methods they used for cannabis

consumption (Figure 1). In terms of product types, 26 participants used an oil-based product, 18 participants smoked, 14 used an edible, 14 used a vape, 4 used capsules, 4 used a gummy, 3 used a spray, 2 used a topical cannabis product, and 1 used other for their cannabis use. Thirty-four percent of participants obtained cannabis from a prescription, 36.5% from the dispensary, while some obtained it through a family member/friend (13.5%) or additional sources (e.g., online) (15.4%).

Reason and decision-making

Participants were asked to indicate the reasons for their cannabis use (Figure 2). The most common reasons were anxiety (n=22), to prevent cancer progression (n=18), cancer-related pain (n=13), recreational use (n=13) and for other non-cancer related illness or symptoms (n=14). Twelve participants were taking other medications for the same reason they were using cannabis. Ten participants reported experiencing side effects such as “light headedness”, “minor agitation”, and “increased appetite, relaxation, creative thought, sleepiness, rare paranoia, decreased procrastination” while using cannabis.

Of the 19 participants that responded as having been influenced or recommended to use cannabis, 9 by health care team, 6 by family, 8 by a friend, and 2 by an additional source. Participants reported the average cost of using cannabis per month, with 69.2% spending less than \$100 per month, 26.9% spending between \$100-500. Two participants reported growing their own cannabis and none identified having insurance coverage for their cannabis use.

Beliefs of cannabis use

Several survey questions asked participants to what extent they agreed or disagreed with statements on the use of cannabis use for cancer care (Figure 3). Among the 47 participants that completed this section, 70.2% “strongly agree” or “agree” that cannabis has improved their sleep. Sixty-six percent of the participants “strongly agree” or “agree” cannabis has helped their cancer-related anxiety, while 72.3% “strongly agree” or “agree” that cannabis has improved their mood. Eight percent of participants “strongly agree” or “agree” that cannabis has helped decrease their cancer progression, while 38% were unsure and 31.9% were neutral.

The Kruskal-Wallis test showed potential statistical relationships with regards to improved perceived benefits in younger (≤ 60) compared to older ($61 \geq$) participants for statements relating to mood ($H=5.386$, $p=0.02$, $df=1$), concentration ($H=4.036$, $p=0.045$, $df=1$), and daily activities ($H=6.917$, $p=0.009$, $df=1$). No statistical difference was found in any statements when comparing participants on active systemic therapy for their GUC and participants who were not.

There was statistical significance between GUC sub-types for statements relating to anxiety ($H=5.987$, $p=0.050$, $df=2$), mood ($H=6.558$, $p=0.038$, $df=2$), sleep ($H=6.771$, $p=0.034$, $df=2$), and appetite ($H=11.320$, $p=0.003$, $df=2$) with kidney cancer patients benefiting the most.

Eleven of the kidney cancer participants were unsure if cannabis helped decrease their cancer progression compared to five prostate cancer participants and two bladder cancer

participants (Figure 4). When asked if cannabis should only be used under the guidance of a physician (Figure 5), 55.3% of the participants “disagreed” or “strongly disagreed” with the statement.

Discussion

To our knowledge, this is the first study assessing the perceptions of cannabis use in symptom management and cancer care among Canadian GUC patients. Our results shed light into the motivations that GUC patients have to consume cannabis, and their beliefs in the effectiveness of symptom management and cancer care.

These results are consistent with and build upon prior studies.^{17,20,21} We found that several participants indicated using cannabis for a specific cancer-related symptom including pain or anxiety. However, many of these participants also reported improvements in other symptoms, such as anxiety, pain, sleep, depression and overall mood. These results may suggest that once participants began using cannabis, they experienced benefits in other aspects relating to their quality of life. These results are in concordance with a recent qualitative study that found cannabis decreased symptoms of pain, anxiety, nausea and insomnia and increased appetite and feelings of relaxation.⁵

Among the participants, 18 reported one of the reasons to start using cannabis was to prevent cancer progression, but when asked if cannabis was successful in decreasing their cancer progression, 11 were either neutral or unsure. These findings are comparable to Mousa et.al findings in which 31% (n=4/13) of cannabis users believed it may directly treat their prostate cancer.¹⁷ This belief among patients is concerning given the lack of clinical evidence that cannabis may prevent or decrease cancer progression.^{6,14,22} This may be attributed in part by patients consulting with internet articles, blogs and anecdotal evidence¹⁶ beyond their health-care team to aid in their decision-making.

In our study cohort, roughly half of the participants believed that cannabis does not need to be taken under the guidance of physicians. Previous investigations have found that physicians are often not knowledgeable about cannabis use, creating a barrier for patients from discussing it.^{1,21,23} As cannabis is now easily accessible in Canada, patients may feel less inclined to consult their oncologist, which could result in self-prescribed dosages that could be harmful. In our study cohort, many participants reported accessing cannabis through unregulated sources, instead of a licensed producer. While 18 participants obtained cannabis through a prescription, only 9 had it recommended to them by their health care team. As many participants indicated using cannabis for other non-cancer related symptoms, it is unknown if a provider outside of their oncology team provided a prescription.

As the interest in cannabis grows amongst Canadians, health care providers should consult with consensus statements and e-learning modules to fill their knowledge gap. Currently, there is no consensus statement specific to genitourinary cancers. Interestingly, 2 Canadian consensus statements conclude that there is insufficient evidence to suggest cannabis as a treatment for cancer⁶ and while there is limited evidence to suggest cannabis as first or second-

line therapy for cancer-related symptoms, it may be considered as adjuvant therapy.^{6,24} Our findings support the need for more research exploring cannabis for cancer care and related symptoms, as well as educational materials to inform patients and health professionals about the current evidence.

These results need to be interpreted in the context of the study design. Despite recruiting through multiple patient organizations across Canada, the sample size of our participants was limited. This may either reflect an under-representation of true cannabis use or the relative lack of use in this patient population. We were unable to recruit patients with testicular or penile cancer, making it difficult to generalize our findings to all types of GUC. The survey captured if participants were on active treatment for their cancer but did not indicate if participants had active disease, or if treatment was for localized, or metastatic disease. As a result, many participants may have been in remission, especially given the fact that only a third of patients identified being on active therapy and about a third as having metastatic cancer. Consequently, the responses may not apply to a patient cohort with more advanced disease. Due to considerations around COVID-19 and moving to an online survey that leveraged patient advocacy outlets, the participants may not reflect the wider GUC population and thus there is a potential for sampling bias. Finally, this initial survey returned mostly Caucasian participants and did not capture information-seeking behaviours or types of resources GUC patients use to make decisions about cannabis for their cancer-related care. These questions could be addressed in future studies, inclusive of participants with diverse ethnic backgrounds, to determine how to best support GUC patients when making decisions related to cannabis use.

Conclusions

Our study demonstrated that genitourinary cancer patients use cannabis for a variety of cancer-related symptoms, non-cancer-related symptoms and to try to prevent cancer progression. Generally, patients believe cannabis has benefitted their cancer-related symptoms and recommend cannabis use to others with cancer. With growing interest in cannabis use, and spreading misinformation, health care providers must be familiar with the current evidence and research to best support their patients.

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Figures and Tables

Fig. 1. Methods of cannabis consumption.

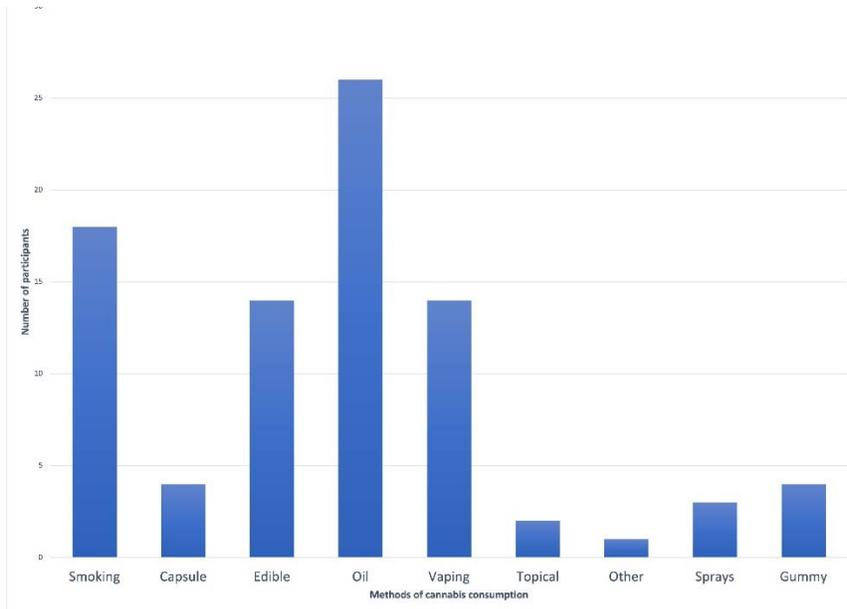


Fig. 2. Reasons for cannabis consumption.

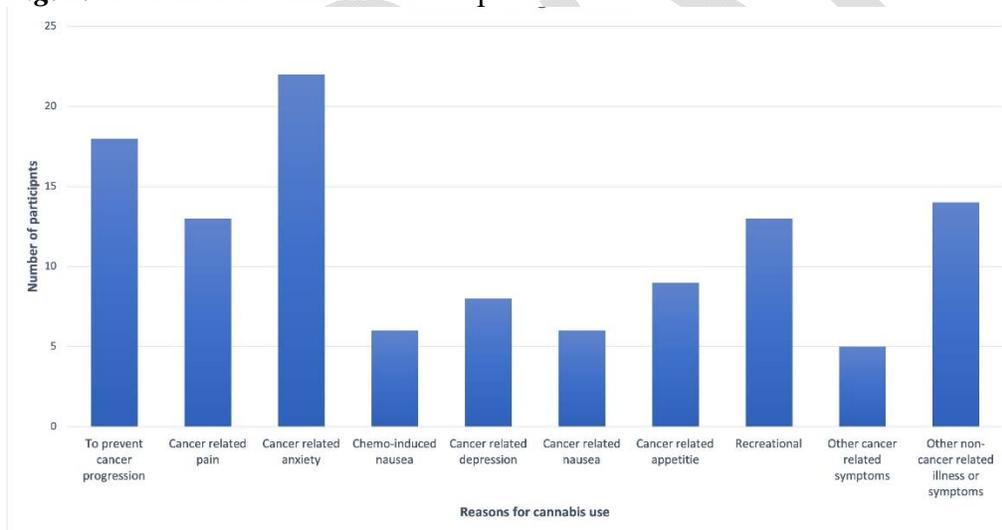


Fig. 3. Attitudes and beliefs surrounding cannabis use for cancer care.

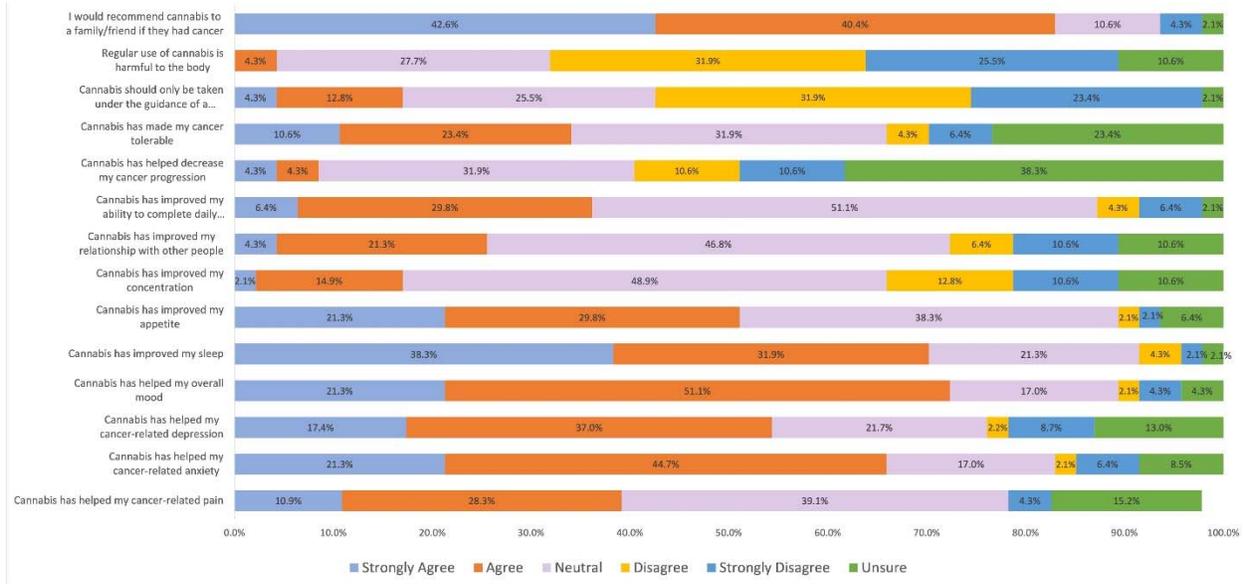


Fig. 4. Patients’ replies to statement, “Cannabis has helped decrease my cancer progression.”

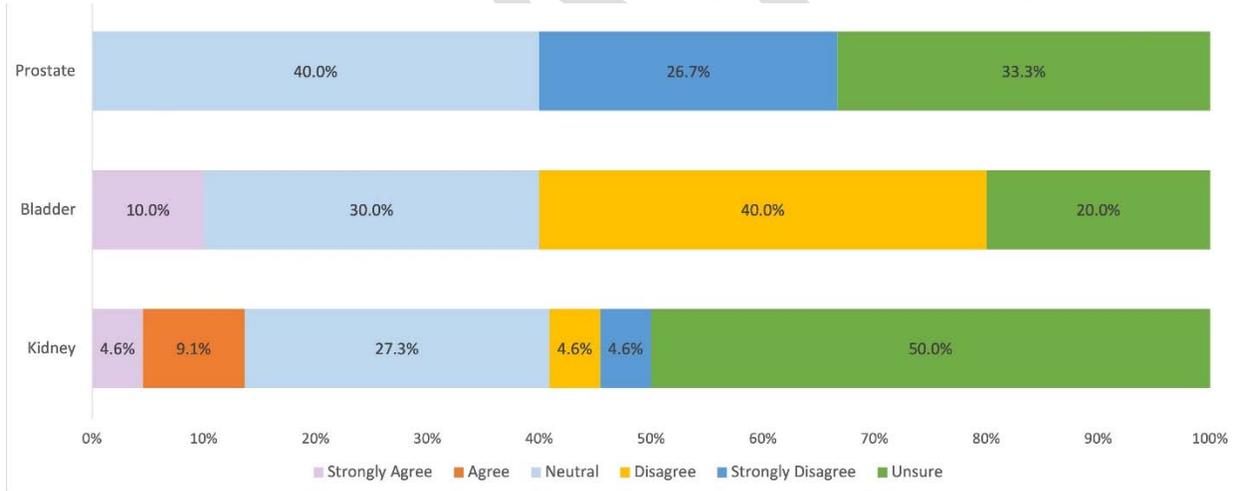
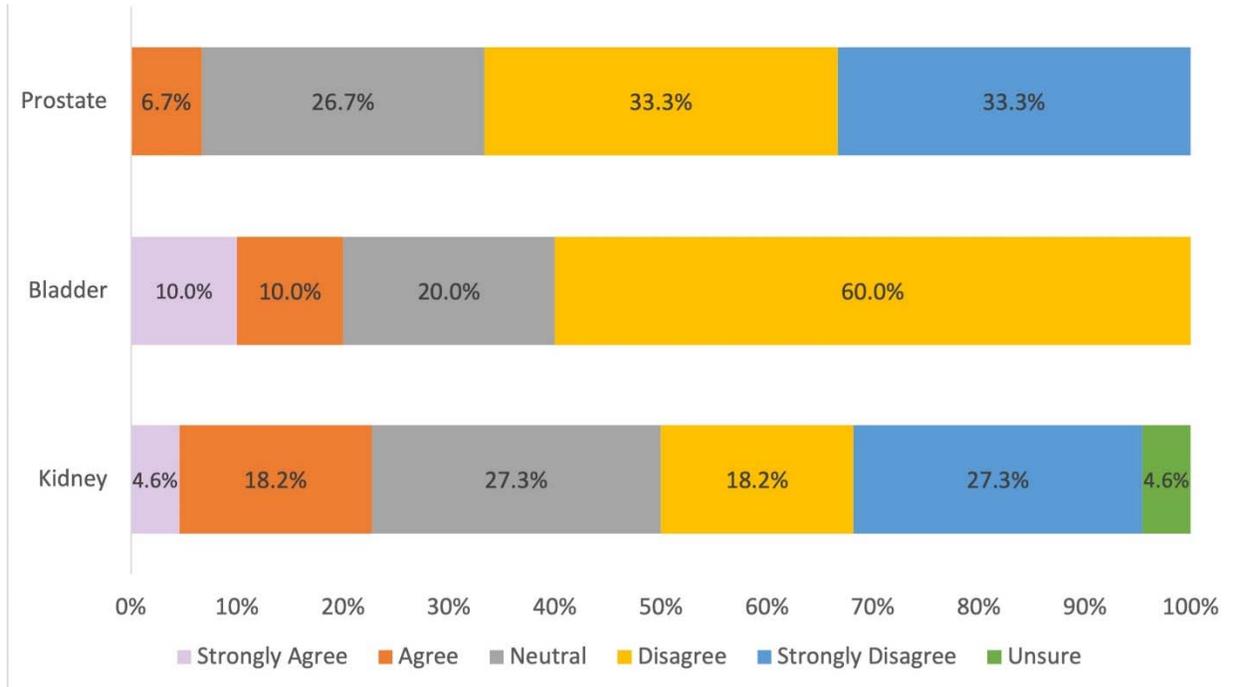


Fig. 5. Patients’ replies to statement, “Cannabis should only be taken under the guidance of a physician.”



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Table 1. Demographics		
	n	(%)
Age		
18–20	1	1.9%
21–25	1	1.9%
31–35	1	1.9%
36–40	2	3.9%
41–45	2	3.9%
46–50	3	5.8%
51–55	3	5.8%
56–60	10	19.2%
61–65	11	21.2%
66–70	10	19.2%
71–75	5	9.6%
76–80	3	5.8%
Gender		
Male	39	75%
Female	12	23.1%
Other	1	1.9%
Province		
Alberta	4	7.7%
British Columbia	15	28.9%
Manitoba	1	1.9%
New Brunswick	3	5.8%
Nova Scotia	1	1.9%
Ontario	24	46.2%
Prince Edward Island	1	1.9%
Quebec	1	1.9%
Saskatchewan	2	3.9%
Marital status		
Common-law	5	9.6%
Divorced	1	1.9%
Married	38	73.1%
Single	5	9.6%
Widowed	3	5.8%
Ethnicity/race		

Caucasian	49	94.2%
Middle Eastern	1	1.9%
Mixed racial	2	3.9%
Primary cancer		
Bladder	11	21.2%
Kidney	26	50%
Prostate	15	28.9%
Metastatic disease		
Yes	18	34.6%
No	34	65.3%
Alcohol usage (per day)		
0 drinks	23	44.2%
<2 drinks/day	19	36.5%
2 drinks / day	4	7.7%
>2 drinks/ day	6	11.5%
Smoking history (tobacco)		
Never smoked	14	26.9%
Current user	11	21.2%
Used to smoke but quit	27	51.9%

Table 2. Cannabis usage		
	n	(%)
Frequency of cannabis use		
Monthly	5	9.6%
A few times per month	9	17.3%
Weekly	2	3.9%
2–3 times per week	5	9.6%
4–6 times per week	4	7.7%
Daily	25	48.1%
More than 4 times per day	2	3.9%
Last time cannabis was used		
Today	21	40.4%
Last 2–3 days	14	26.9%
Within the last week	6	11.5%

2V3 weeks ago	6	11.5%
A month ago	4	7.7%
Other	2	3.9%
Quantity of cannabis used within the last week		
None	9	17.3%
<10 grams	22	42.3%
10 grams	2	3.9%
>10 grams	10	19.2%
Don't know	8	15.4%
Type of cannabis		
CBD only	6	11.5%
THC only	11	21.2%
A combination of THC: CBD	34	65.4%
Didn't know	1	1.9%
Duration of cannabis consumption		
>1 year	39	75%
7-9 months	5	9.6%
6 months	2	3.9%
<6 months	4	7.7%
Other	2	3.9%
Cannabis is obtained by		
Prescription	18	34.6%
Through a friend/family	7	13.5%
Dispensary	19	36.5%
Other	8	15.4%