A peer-run cannabis substitution program: Experiences and outcomes over the first year

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In conjunction with **SOLID Outreach**

Research Funding Acknowledgement: Bernie Pauly's Island Health Scholar in Residence Award provided partial funding for this evaluation (2018/2019).

Updated September 8, 2019





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Summary

High rates of overdoses in BC and elsewhere in North America over the past few years have made plain the shortcomings and lack of preparedness of health and social service systems for addressing the needs of people who use drugs. In response to these and other concerns, peer-run organizations are playing a lead role in shaping harm reduction and other support services in their communities. One example is the development and implementation of grassroots Cannabis Substitution Programs (CSP) – dispensing cannabis for therapeutic use by their members to substitute for the use of other drugs. SOLID Outreach, a non-profit peer-run harm reduction organization in Victoria, BC, has been operating a CSP since December 2017. As part of an ongoing program of research conducted in collaboration with SOLID Outreach, we undertook an evaluation of the CSP in 2019. We conducted a secondary analysis of program records on participant experiences and their perceptions of positive and negative effects on their health and wellbeing, collected over the first year of program operations. The analysis identified a number of themes in people's experiences of the program; primarily, participants reported accessing the CSP because they were interested in reducing their use of other substances, and many reported positive effects in this area. As peer-run organizations continue to shape community responses to substance use and overdoses, opportunities to evaluate the implementation and outcomes of such grassroots efforts should not be lost. While additional work is needed to investigate the differential effects of various cannabinoids and products, results from this evaluation add to a growing body of research pointing towards cannabis as a promising substitution agent in this population.

Introduction

Overdose deaths have been escalating in North America for over a decade (Rudd, Aleshire et al. 2016, National Institute on Drug Abuse 2019, Special Advisory Committee on the Epidemic of Opioid Overdoses 2019). The illicit drug overdose crisis in North America has had devastating impacts on individuals, families and communities including premature loss of life and even lowering life expectancy (Haskins 2019, Office of The Provincial Health Officer 2019). There were 11 500 opioid-related deaths in Canada between 2016-2018, of which 94% were deemed to be accidental (Government of Canada, 2019). The province of British Columbia (BC) is experiencing the highest rate of overdose deaths in the country with 1525 deaths in 2018. The province saw a dramatic rise in overdoses from 5.9 per 100,000 in 2012 to 30.3 per 100,000 in 2017 (British Columbia Coroner's Service May 15, 2019) prompting the BC Provincial Health Officer to declare a public health emergency in April, 2016 (BC Centre for Disease Control 2017, BC Ministry of Health April 14, 2016). Three years later, this state of emergency remains in effect. The high rate of overdose deaths continues unbated with an estimated four deaths per day in BC. Overdoses are the top cause of unnatural death in the province with illicit fentanyl detected in 87% drug overdose deaths in BC (British Columbia Coroner's Service May 15, 2019). Victoria, BC is one of the top three townships in the province impacted by overdose deaths.

For decades, people who use drugs have taken action to implement harm reduction measures in order to save lives and to improve health and well-being for members of their community (Friedman, de Jong et al. 2007). Collins et al (Collins, Clifasefi et al. 2012) describes two approaches to implementing harm reduction: top down and bottom up. There are many examples internationally, nationally and regionally where people who use drugs have driven harm reduction innovations through grassroots and drug user activism. For example, the establishment of harm reduction services to prevent HIV and overdoses by people who use drugs include needle exchange, supervised and assisted injection (Wood, Kerr et al. 2003, Kerr, Oleson et al. 2004, McNeil, Small et al. 2014). In response to the current overdose epidemic, grassroots activism and drug user organizing established "pop-up" unsanctioned sites in a few major cities in BC prior to legal sanctioning by the Ministry in 2016 (Wallace, Pagan et al. 2019). Zero deaths have occurred at any OPS and there is emerging evidence of deaths averted by harm reduction interventions (Irvine M, Kuo M et al. in press). It is anticipated that without such measures the rate of overdose deaths would be even higher. However, additional measures are needed to reduce the rate of overdose deaths. There have been calls by BC Provincial Health Officer for urgent decriminalization (Office of Provincial Health Officer, 2019) and the Health Officers Council of BC (2017) and Vancouver Police (2017) for safer supply initiatives.

The ongoing high rate of overdose deaths in BC is associated with an unsafe drug supply associated with the presence of fentanyl. Providing alternatives to the current unsafe drug supply is critical to take further action on overdose deaths. Initiatives to address the unsafe drug supply include the provision of drug checking strategies to reduce consumption of contaminated drugs as well as substitution programs that allow for individuals to substitute safer drugs in the context of a contaminated supply. Cannabis, a newly legal substance in Canada, has potential as a substitute for currently illegal drugs and as a strategy to reduce overdose deaths (Wiese and Wilson-Poe 2018). Lucas (2017) suggests that the rationale for cannabis substitution during an overdose epidemic is threefold "1) prior to opioid introduction in the treatment of chronic pain; 2) as an opioid reduction strategy for those patients already using opioids, and 3) as an adjunct therapy to methadone or suboxone treatment in order to increase

treatment success rates" (p.1). A time-series analysis conducted by Bachhuber et al. (2014) showed that US states allowing for medical cannabis use had a 24.8% lower mean annual overdose rate compared with other states. In this paper, we provide background re the history of cannabis in Canada, therapeutic uses and harms of cannabis, cannabis substitution programs and then describe the SOLID cannabis substitution program and findings of this peer run cannabis substitution program as a harm reduction strategy to reduce overdoses.

Background

History of Cannabis Use

The therapeutic benefits of cannabis have been documented in various cultures for centuries, recorded in historical texts with physical evidence of use dating back thousands of years in different regions around the world (Russo, 2007). Century-old accounts describe the use of cannabis in religious practices and rituals as well as the medicinal properties of the plant as an analgesic, anti-convulsant, appetite stimulant, mood booster, and anti-inflammatory (O'Shaughnessy, 1843; Von Bibra, 1855).

Despite increased popularization of cannabis for medical use in the 19th century (Grinspoon and Bakalar, 1993), an era of drug prohibition led to outlawing of cannabis in Canada in 1923 (Riley, 1998). The Canadian era of drug prohibition began prior to 1923 with the passing of the Opium Act in 1908. The 1908 Opium Act, was a race-based policy rooted in xenophobia used to target Chinese immigrants in British Columbia (Boyd, 2017). Criminalization of drugs became a tool of racial oppression, with harsh fines and lengthy sentences enforced by institutions with entrenched prejudicial values.

While research shows that cannabis use is similar across racial groups (National Survey on Drug Use and Health, 2013), Black and Indigenous peoples have historically been overrepresented in the prison system for possession across the country (Browne, 2018). Prior to cannabis legalization in Canada, a 2017 *Toronto Star* investigation found that despite the fact that White people represented over half of the population of Toronto, Black people were three times more likely to be arrested for possession of cannabis with no prior criminal record (Ranken and Contenta, 2017). Noting that discrimination leads to lack of access to private spaces creating higher visibility on the street, Gordon (2006) contends that drug enforcement of minority groups was a means of social control, and a tangible way to "other" certain social groups who are already racialized, potentially impoverished or marginalized in other ways.

In the past, scientifically inaccurate portrayals of cannabis as a gateway drug (leading to the use of "harder" drugs, like cocaine and heroin) have predominated (Kandel, 2003). Media campaigns based on the gateway narrative sensationalized cannabis use in an attempt to stigmatize behaviour (Yzer et al., 2003). The public health resistance to endorsing mainstream use of cannabis for recreational and medicinal purposes has long been a matter of political interest rather than policy borne out of scientific evidence linked to associated harms (Boyd, 1991). While there are still many unknowns, the available evidence points toward *both* benefits and harms associated with cannabis use that are based on an analysis of different situations and circumstances. As societies move toward more balanced approaches to policy and regulation of cannabis, misconceptions of cannabis use are being dismantled, creating new opportunities to better support communities that may benefit from its therapeutic properties.

Therapeutic Uses and Harms

A number of robust systematic reviews are available evaluating the evidence base for the therapeutic use and harms of cannabis use (for example, see National Academies of Sciences, 2017; World Health Organization, 2016). We provide a brief summary here to establish the context of the evaluation.

Several studies have found that the primary reason patients access medical cannabis is to treat chronic pain (Reiman, 2009; Haroutounian et al., 2016; Piper et al., 2017; Lucas and Walsh, 2017). There is evidence to suggest that cannabis is as, if not more, effective than opioids for pain, with the added benefit of less severe side-effects (Lau et al., 2014). Patients also report accessing medical cannabis for other concerns include anxiety, depression, and sleep problems, demonstrating a mounting interest in using cannabis to treat mental health conditions (Walsh et al., 2017). Cannabis has also been used as an effective appetite stimulant for people living with HIV and those undergoing treatment for cancer (Whiting et al., 2015).

While risks of overdose are minimal with cannabis, there are some potential harms associated with cannabis use. Individuals may experience temporary memory and psychomotor function impairment (Crean, Crane, and Mason, 2011) with potential for long term respiratory and bronchial problems when smoke inhalation is the primary method of administration (Tetrault et al., 2007). It should be noted that cannabis may not be suitable across all demographics and conditions, particularly for youth who are more susceptible to long-term cognitive impacts on the developing brain (Ammerman et al., 2015) and individuals with a pre-disposition to psychosis (Le Bec et al., 2009; Shah et al., 2017) as well as pre-existing respiratory problems when smoking is the main mode of consumption. While decreasing substance use of any kind is encouraged during pregnancy, literature surrounding cannabis use in pregnant women is contested, with mixed findings that while women report using cannabis to treat morning sickness, maternal cannabis use poses potential risks to the fetus (Mark and Terplin, 2017).

Cannabis Substitution Programs

The concept of substitution comes from economics theory describing how the availability of one product affects public demand for another as a result of decriminalization, increased availability and access (Hursh et al., 2005). In the context of substance use, substitution refers to “a conscious choice made by users to use one drug instead of, or in conjunction with another based on: perceived safety, level of addiction potential, effectiveness in relieving symptoms, access and level of acceptance” (p. 654, Lau et al., 2005). There is long history of therapeutic services that draw from substitution effects in the context of substance use, and a broad evidence base to support them. Examples include nicotine replacement therapy and opioid agonist therapy (predominantly buprenorphine/naloxone or methadone). There is growing interest and evidence supporting a role for cannabis as a promising substitution for other drugs, including alcohol and opioids.

The importance of evidence-based strategies for reducing harms of substance use cannot be overstated. On top of high levels of morbidity and mortality related to alcohol in Canada (costing Canadians an estimated $15 billion annually), BC and North America are experiencing high levels of overdoses associated with strong synthetic opioids in the illicit drug supply. While service providers and organizations have responded to open supervised consumption and overdose prevention sites, and to enhance the reach and distribution of naloxone, rates of death are not declining. With high morbidity and mortality associated with illicit drug use, cannabis has the potential to be an effective harm reduction strategy to support those who use drugs (Wiese and Wilson-Poe 2018).

As noted, there is growing evidence supporting the substitution effects of cannabis for other substances? A self-report survey from medical cannabis dispensaries in Canada found that 41% of respondents reported using cannabis in place of alcohol, and 36.1% reported substituting cannabis for illicit drugs (Lucas et al., 2013). Common reasons patients favoured cannabis over other substances included perceptions of better symptom management and minimal withdrawal (Mikuriya, 2004; Reiman, 2009). Rieman and colleagues (2017) found that 80% of medical cannabis users reported cannabis to be more effective than opioid-based pain medication for treating chronic pain conditions, and were able to use less opioids as a result. Interestingly, jurisdictions that have legalized cannabis appear to show substantial reduction in rates of prescription drug use (Bradford and Bradford, 2016).

As noted earlier, a time-series analysis conducted by Bachhuber et al. (2014) showed that US states allowing for medical cannabis use had a 24.8% lower mean annual overdose rate compared with other states. Additionally, population health studies illustrate benefits of legal cannabis for public health and safety, with demonstrated effects of reduced rates of suicide (Anderson, Rees, and Sabia, 2014), automobile fatalities (Santaella-Tenorio et al., 2017) and violent crime (Morris et al., 2014) associated with substitution of cannabis for alcohol and other harmful substances. Together, this emerging body of evidence points toward a potential role for cannabis as part of a broader strategy to support people who use other drugs.

Stigma and Access to Cannabis

Despite increasingly progressive policy, stigma surrounding cannabis use has persisted. The most commonly cited barriers to acquiring cannabis are stigma and cost, signifying a need for better access to a safe supply, particularly for those in lower income brackets (Belle-Isle et al., 2014). Qualitative research examining what patients like least about medical cannabis have yielded similar findings, with patients noting difficulties accessing cannabis when on a fixed income, and internalized concerns such as “feeling like a criminal” (p. 572, Piper et al., 2017). While there is a dearth of recent literature examining physician support for prescribing cannabis in Canada since legalization, US studies have found that patients report feeling a lack of physician support and concealing their cannabis use due to perceived judgement (Lau et al., 2015; Piper et al., 2017). In a 2015 Canadian needs assessment, physicians expressed desire for knowledge regarding dosing and treatment plans, suggesting gaps in clinical knowledge that could potentially inhibit patient access (Ziemianski et al., 2015).

Shifting the conversation around cannabis from one based solely on harms to a more balanced one that also incorporates therapeutic properties has the potential to improve public perceptions, increasing access and availability. For example, in a discussion about the remedies of ayahuasca, Tupper (2008) presented a metaphor considering drugs as tools to create space for policy that realistically assesses risks and benefits of a substance by shifting focus away from a deficit perspective which views all drugs as inherently dangerous. Conceiving of cannabis as an “exit drug” or a “gateway to healing” could open up the space for opportunities for improved individual and population health, supporting a compassionate approach to treating problematic substance use (Lucas, 2012). This puts into clear perspective the use of cannabis as a harm reduction strategy for people who are currently using illicit drugs.

SOLID Outreach’s Cannabis Substitution Program

As part of their broader role in outreach, advocacy, and health education in support of people who use drugs in Victoria, and in response to the ongoing public health emergency involving overdoses, SOLID Outreach started a CSP in December 2017. The program was initiated by SOLID Outreach as a community, peer-based approach to supporting the health and well-being of their community of people with lived/living experiences of substance use. The purpose of the program was to test cannabis's potential as a substitution for more harmful substances, to improve health outcomes and reduce the risk of overdose. It is run by peers for peers. SOLID approached cannabis suppliers to enlist support for the program, and to request a free supply of cannabis. The majority of SOLID members live in poverty, and many are homeless or at risk homelessness. Because of this it was very important to the success of the program that cannabis be offered free of charge to participants. Participating suppliers came from local, provincial, and national sources. Initially, the program was offered on weekends, and participants could access joints and edibles. By mid 2018, the program had expanded operations to 5 days/week, making cannabis available free of charge on weekdays. SOLID staff also refined the program and its eligibility, to maximize access to those who were using cannabis to replace other drugs.

Over the course of its first year of operations, participants were asked to complete questionnaires that asked about their history of drug use and previous experiences with cannabis. Forms also invited participants to comment on how the program has affected their drug use, other effects that they have noticed, and what they hope to gain from the program.

Early on in the development of the CSP, our research team, located at the Canadian Institute for Substance Use Research (CISUR), were consulted by SOLID Outreach to assist with design of an internal evaluation to support the implementation of the CSP and examine its effects. The evaluation consisted of a secondary analysis of data collected on program forms from 172 participants who accessed the CSP during 2018. We used mixed quantitative and qualitative analysis to characterise participants' reasons for using the CSP and their perceptions of positive and negative effects on their health and wellbeing. This research was approved by the Research Ethics Board at the University of Victoria.

Findings

Substance use and reasons for entering the program

Participants reported using a variety of substances when they entered the CSP, most commonly illicit opioids (including heroin, fentanyl, and a variety of prescription opioids), followed by amphetamines, cocaine, and alcohol (Table 1).

Table 1: Substances reported by CSP participants at intake

Substances	n
Opioids (excluding methadone/methadose)	70
Crystal methamphetamine or speed	69
Cocaine	51
Alcohol	46
Methadone/methadose	25

Anti-depressant/Anti-anxiety (Valium, Xanax, Mirtazapine, Trazodone, Aventyl, Paxil, Lorazapam, Venlafaxine, Prozac, Sertraline, Effexor)	19
Club Drugs (LSD, MDMA, PCP, Ketamine, GHB)	16
Anti-psychotic (Seroquel, Clopixol, Quetiapine)	7
Benzodiazepines (unspecified)	2
Adderall	2

* not mutually exclusive; one person could report multiple substances

People reported being interested in the CSP for a variety of reasons, most prominently to support them in ***reducing or stopping their use of other substances*** (Table 2). Commonly expressed sentiments were "I want to be opioid free" and "to keep me away from hard drugs." Some participants identified wanting to reduce their use of pharmaceuticals (prescribed or otherwise), believing cannabis to be a healthier, safer alternative. One participant stated, *"I think it's better for my body to put as little amount of prescription pills in my body as I can. Also to stop using any other drugs. I'd like to only be using cannabis."*

Table 2: Reported reasons for accessing CSP

Reasons	n
To get off drugs, reduce drug use/overdoses	75
Pain management	50
Improved health, better sleep and appetite	23
Reduce anxiety/depression symptoms	22
Save money	20
To find best way to consume	12
Be happier, more social, fewer mood swings	7
Reduce PTSD/ADD/ADHD symptoms	6
Reduce use of pharmaceuticals	6
Reduce stress	5
Get social support	5

* not mutually exclusive; one person could report multiple reasons

Interest in using cannabis to ***treat both physical and mental health conditions*** was also prevalent among participants. Fifty participants hoped cannabis would be an effective pain management strategy, with several participants listing some form of pain medication as part of their current drug use (as noted in Table 1). Similarly, nearly 10% of participants reported being prescribed an anti-depressant or anti-anxiety medication, with 22 participants hoping to relieve symptoms of anxiety and depression. A handful of participants reported wanting to reduce stress. Participants shared optimism in the program, stating *"to help me cope," "to maintain balance,"* and *"to be happy once again"* as reasons for wanting to join the CSP. To improve overall health including better sleep and appetite were also common responses.

Echoed among participants was the ***desire to save money***. One person stated, "*I'm on PWD [Persons with Disabilities support] so I cannot afford to supply myself with cannabis*." Others similarly shared "*no income"* and "*can't afford it"* as reasons for accessing the CSP. Some participants felt that using cannabis would help them to be happier, be more social, and have fewer mood swings, while others wanted to find the best way to consume and learn more about the therapeutic benefits of cannabis, expressing interest in cannabis as a form of treatment but having little knowledge about it.

Program outcomes

Participants were generally positive about their experiences in the program and perceived a variety of improvements to their health and well-being (Table 3). Participants were not unanimous in endorsing any given effect. Below, we summarize the diversity of outcomes that people reported over their involvement with the CSP.

Table 3: Reported program outcomes

Outcomes	n
Reduced use of other drugs	58
Better sleep	47
Better pain management	41
Better appetite, healthier eating	39
Less anxiety, less stress	15
Better mood, fewer mood swings	13
Better control of withdrawal symptoms	13
Fewer cravings	11
Reduced use of pharmaceuticals	6
Better general health	5
Better social interactions	3
More energy	3
Better money management	2
More creativity	1

* not mutually exclusive; one person could report multiple outcomes

Of the 71 participants who answered the question regarding ***changes in drug use***, 58 attributed a decrease in drug use to the CSP. While some participants found that their drug use declined minimally, others noted that it was eliminated entirely. One person stated, "*I have cut down on cocaine to once a week. I have been weaning down on Methadose…since the legalization of cannabis, it is not so stigmatized.*" Another shared, *"Over the years I have pretty much tried everything under the sun. My main choice is crystal meth and weed. But since starting the program, my meth use has gone way down to nothing.*" Others said, "*I have been clean for 5 days. This program works,"* and "*my drug use is down 100%."* Regarding withdrawal, several participants identified reduction in symptoms and described cannabis as an important aid in reducing their use of other drugs. As an effective pain management strategy, some participants noticed that they did not need to rely as much on their drug of choice. One person said that they *"reduced [their] alcohol use 2/3rds because of less pain*" while others stated, *"drinking has lessened, using less painkillers with no withdrawals physical or mental"* and *"I used to have*

to take Morphine 4 times daily. Now I am completely off Morphine. I would end up using again if it wasn't for cannabis. The edibles have been a big help." Others attributed their success in the program to a reduction in the use of pharmaceuticals after having regular access to cannabis. One participant stated, "*I have ceased self-medicating with side effect heavy pharmaceuticals and also resist peer pressure daily to consume illicit drugs."* While the vast majority of participants noted positive changes in drug use, one person found that cannabis use lead to increased consumption of alcohol.

Several participants commented on ***improvements in the length and quality of their sleep*** upon being in the CSP, reducing the need for use of other drugs. One participant explained "*it can give me a better alternative than opioids to help get and stay asleep. Also helps calm my nerves and anxiety I get from lack of proper sleep."* Similarly, another respondent stated, *"sleeping is better so less use of pain meds."* In addition to reduction in drug use, adequate sleep resulting from cannabis use appeared to help participants in other domains of their life. For instance, one participant noted, *"I am able to sleep 8 hours successfully - insomnia is regulated. This helps with work, social, and progress."* Some participants identified having sleep conditions with symptoms that cannabis was able to alleviate; for instance, insomnia and sleep apnea became less severe for those who used cannabis at night.

Many participants noticed ***changes in their appetite and diet*** as a result of using cannabis. Common responses involved being able to eat on a regular schedule, regulating weight, and having a stronger appetite. One person with an abdominal hernia that caused nausea reported that cannabis helped them to sustain a healthy intake of food. For others, cannabis was found to improve diet and consumption of healthy food. Cannabis also was perceived to help with low appetite caused by depression and prescription medication containing side effects of nausea.

Others cited ***improvements in mental health*** and reduced use of psychiatric medications (perceived as a positive outcome). It was noted that cannabis eliminated the need for prescription drugs, with statements such as, *"I don't need to take a benzodiazepine drug every time I have a panic attack; I just keep smoking and eating cannabis and it works better*" and, *"I no longer take any anxiety meds and I'm also on a taper off Methadone.*" While some participants noticed no change in their mental health, many reported improvements to their overall wellbeing, with a reduction in the intensity of their depression and/or anxiety. One participant found that daily cannabis use helped them cope with PTSD triggers and resulting emotional pain. General stress was eased, with participants indicating that cannabis had a relaxing effect on mood. Some participants identified that certain strains had more positive effects than others, with a desire to learn about the nuances of THC and CBD dosing. One patient reported having an episode of psychosis initiated upon smoking cannabis.

Better overall mood was described by participants, with some perceived cognitive improvements such as enhanced memory, logical thinking and decision-making abilities. Participants reported having a clearer mind and more positive social interactions, with fewer mood swings or bouts of anger. Some participants found that the community at SOLID and their involvement in the program provided solace, as a result of feeling connected to others in similar life circumstances. The weekly check-ins were seen as a positive way to process emotions. Improvements in mental health lead to major life improvements in some cases, exhibited by one person who stated, *"I am able to keep housing, and am now holding down up to 10 hours of work, volunteer or community work. I am stabilizing my friendships and building community."* One person noted that they felt using cannabis helped stimulate their creativity.

For participants who reported struggling with chronic conditions or various physical ailments, cannabis was perceived to ***help substantially with pain management***. Headaches, back pain, joint pain, pressure

from hernias, pain from nerve damage, and general body aches and discomfort were assuaged with the use of cannabis. Participants reported higher energy levels, with more time spent being active and productive.

Finally, a number of participants reported ***reduced financial stress***. One person stated, "*Being of PWD, I usually don't have much money by month end, so being able to access THC daily is a relief"* while another shared "*Cannabis really helps me with my depression and ADD. I am on Disability so I don't have money."* Having access to free cannabis meant being able to prioritize both health and food necessities for one participant who stated, "*with cheaper and some free-of-charge cannabis, I have already started to buy better food. It is a bit of a toss-up between being in pain or being hungry sometimes*." A few participants noticed that having access to free cannabis meant that they did not need to spend money on other drugs, resulting in less financial strain associated with reduced use of illicit substances.

Discussion

SOLID Outreach's CSP was developed in response to the national overdose epidemic which has seen hundreds of lives lost in recent years. To better support PWUD, SOLID Outreach sought to bring free cannabis to a community of people with fixed incomes, many of whom are homeless, to ensure low-barrier access to a safe supply. The purpose of the program was to test cannabis's potential as a substitution for more harmful substances, to improve health outcomes and reduce the risk of overdose. Collectively, participants had an extensive history of illicit drug use over time, exacerbated by the effects of mental illness, poverty, homelessness, racism, and stigma associated with drug use. The CSP provided a reprieve, with most participants reporting a reduction in their drug use ranging from minimal to no longer using. Reductions in drug use may be attributable to participants' having fewer cravings and withdrawal symptoms associated with their drug of choice, and experiencing alleviation of other health conditions that have been linked to drug use (such as chronic pain and poor sleep). Several participants reported improved sleep which created a domino effect of improvements in other areas of their life, in addition to having a healthier appetite and diet. Changes in mental health were seen with many participants experiencing less anxiety, depression, and PTSD, as well as better mood. Such improvements for some meant no longer needing to rely on pharmaceuticals for mental health conditions, a finding that warrants further attention to assess effects in the longer term.

Another important area in which the CSP may exert its effects is in lowering the high levels of social exclusion and dislocation that is experienced by people who use drugs. This can be expected to translate into other tangible benefits to health and wellbeing, such as those named above. A few participants noted improved social interactions with less mood swings, and found the community at SOLID to be a critical source of social support and comradery. Encouraging interactions with supportive, non-judgemental staff at SOLID were found to be a positive aspect of the CSP.

One of the key strengths of the CSP, designed by peers for peers, is that it has successfully explored cannabis substitution within the context of the realities faced by people who use drugs and live in poverty. Such services and supports for those who experience numerous barriers to health have the potential to generate improvements in overall population health by reducing health inequities. Many participants reported homelessness and low income as stressors in their life, and found the CSP benefited them by eliminating the concern of being able to afford cannabis. By having access to a safe supply at no cost, participants were able to experience health benefits of cannabis use, reallocate their

earnings to things like food, and save money that would have otherwise been spent on illicit substances, resulting in less financial stress.

Participants exhibited incredible self-awareness in understanding what perpetuated their drug use. Trauma, anxiety, big life transitions such as homelessness, death of a loved one, or job loss were listed as reasons for using illicit drugs, and were associated with periods of higher use. Overwhelmingly, participants found that cannabis was an effective substitute for managing life stressors, and identified a preference of cannabis over other substances when given the choice. While some participants perceived cannabis use to be less stigmatized than other drugs, others expressed desire for changes in continued negative attitudes about cannabis consumption within a harm reduction context. Acceptance by the broader community was indicated as being an important part of access for some. Of participants that were asked about how the program could be improved, most said greater availability during the week.

This evaluation is not without limitations. Within the confines of this evaluation, we were unable to access a control or comparison group of people who did not access the CSP. As a secondary analysis of existing program data, we were limited to using what was available; repeated assessments of individuals to assess within-person changes over time was not possible with available data. Those who had negative experiences with the program would be more likely to drop-out, and not provide data. Further study of this program is warranted.

Despite these limitations, this evaluation generated valuable information that will be helpful to SOLID Outreach as the CSP evolves over time. More generally, as peer-run organizations continue to shape community responses to substance use and overdoses, opportunities to evaluate the implementation and outcomes of such grassroots efforts should not be lost. They contribute to the rapidly growing body of evidence on cannabis post-legalization in Canada, as well as to our knowledge of different approaches to responding to the high rates of overdoses. They generate hypotheses for further research and help to direct research into areas that are valued by the community.

Conclusion

This study demonstrates the effectiveness of a peer-run cannabis substitution program initiated as a harm reduction approach to support people who use illicit drugs and alcohol. Run by and for people who use drugs, the CSP is a unique, low-barrier community service offering cannabis at no cost in an accessible location. Participants involved in the study reported long-term substance use and related problems, made worse in the context of poverty, racism, and mental illness. Key reasons for accessing the CSP were to reduce drug use and risk of overdose, as well as to help with physical pain and mental health. Key outcomes of the program aligned with its primary objective to reduce drug use and risk of overdose. Impressively, the vast majority of participants found cannabis to be an effective substitute for illicit drugs and alcohol, as well as pharmaceuticals for some. Fewer cravings and better management of withdrawal symptoms were reported. Other health improvements were seen in conjunction with cannabis use, including effective pain management, better sleep and appetite, and improved mental health. Benefits of social support and positive engagement with staff were noted. Of concern was that one person experienced psychosis associated with cannabis use, and one person found that their drinking increased in combination with their cannabis use. Desire for greater availability during the week and changes in societal attitudes about cannabis use illustrate the value of the CSP to the community, as explicitly stated by those accessing the service. While additional work is needed to investigate the differential effects of various cannabinoids (e.g., THC, CBD) and products (e.g., edibles, concentrates,

dried herb), results from this evaluation add to a growing body of research pointing towards cannabis as a promising substitution agent in this population.

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