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Perceptions and Use of Alcohol and Medical Cannabis among Canadian Military Veterans Living with PTSD

RESEARCH

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ABSTRACT

Posttraumatic stress disorder (PTSD) is a common psychiatric diagnosis among Canadian military veterans, and alcohol and medical cannabis are commonly used by this group to cope with PTSD symptoms. This paper is part of a larger study that examined a cohort of 5 veterans, over a 1-year period, who used both medical cannabis and alcohol and were matched with a PTSD service dog. This paper compares the perceptions and use of alcohol and medical cannabis among the veterans to cope with their PTSD symptoms and outlines key implications. Semi-structured interviews offer insight into similarities and differences between the veterans' perceptions and use of the two substances. Both substances are used by the veterans to manage their PTSD symptoms, typically worsening them if used in excess. Medical cannabis is a prescribed medication; however, it is perceived by the veterans to be associated with a negative discourse and in particular stigma. This is not the case for alcohol. The veterans identified alcohol use as more influenced by social norms and perceived it as more of a concern for addiction compared to medical cannabis. This did not, however, appear to impact the level of alcohol use. These findings offer unique insight into the military culture's general acceptance of alcohol but not medical cannabis use. This has possible implications for veterans' use of alcohol and/or medical cannabis to help manage their PTSD symptoms.

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Operational Stress Injury (OSI), a psychological struggle resulting from operational duties, is a serious health concern among Canada's veteran population (Veterans Affairs Canada [VAC], 2018). Posttraumatic stress disorder (PTSD) is the most common form of OSI experienced by veterans (VAC, 2018). The rate of PTSD among Canadian veterans varies between research studies and is found to be higher than that of the general population (VAC, 2018). Canadian studies have identified rates of PTSD among veterans as ranging from 8% to 20% (Jin, 2017), and up to 67% (Sterniczuk & Whelan, 2016). This is similar to studies from the United States (Richardson et al., 2010; United States Department of Veterans Affairs, 2018) and elsewhere (Burri & Maecher, 2014). There has been a reported increase in PTSD and other anxiety disorders from 2002-2013 amongst Canadian Armed Forces personnel, and with higher rates of mental health disorders among veterans compared to active members of the Armed Forces (Statistics Canada, 2019; Zamorski, et al., 2016). As of March 2019, 71% of veterans receiving disability benefits from VAC were identified as living with PTSD (VAC, 2019).

Self-medicating behavior is prevalent among individuals diagnosed with PTSD, with the Canadian Mental Health Association (n.d.) acknowledging that people often turn to licit and illicit substances as a coping mechanism. Coping mechanisms are considered any adjustment or change in behavior that decreases tension and anxiety in a stressful situation (American Psychological Association [APA], 2020). Recent research has identified that veterans diagnosed with PTSD frequently use licit and/or illicit substances to cope (Banducci et al., 2019; Jarnecke et al., 2019; Silins et al., 2016). A Canadian study found that male veterans from regular and reserve duty forces of the military and diagnosed with PTSD scored higher on a measure of alcohol use disorders compared to those with subthreshold or no PTSD (Fetzner et al., 2013). Veterans with PTSD, compared to their non-PTSD diagnosed counterparts, report significantly increased use of cannabis to cope (Boden et al., 2013). Furthermore, increased PTSD symptom severity has been associated with higher rates of cannabis use to cope, cannabis use problems, and the severity of cannabis withdrawal (Boden et al., 2013).

Cannabis is used both as a non-medical social substance as well as a medication for physical and mental ailments. While there are hundreds of chemicals found in the cannabis plant, two main chemicals are the most researched: delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) (Canadian Centre of Substance Use and Addiction [CCSA], 2020). THC is known to cause psychological effects used for both medical and non-medical purposes. In contrast, CBD does not produce psychological effects and is currently being researched for medical purposes related to pain relief and anxiety (CCSA, 2020). Cannabis use for medical purposes, as directed by a medical professional, has been legal in Canada since 2001 through the Marihuana Medical Access Regulations, which has since been replaced by the Cannabis Act (Government of Canada, 2021). There have been few veteran-specific studies in medical cannabis use. Michael L. Blais (2019), president and founder of Canadian Veterans' Advocacy, estimates that approximately 10,000 veterans are prescribed medical cannabis for a variety of medical ailments including but not limited to PTSD and pain management. Veterans Affairs Canada's expenditure on cannabis for medical purposes has increased dramatically from $5.2 million in 2014 to $74.6 million in 2019, and is expected to increase to $85 million by 2020 (VAC, 2019). In 2018, non-medical cannabis was legalized in Canada, and the number of Canadians accessing both non-medical and medical cannabis has increased (Cox, 2018; Rotermann, 2020).

Understanding the effectiveness of medical cannabis for managing PTSD symptoms is currently limited but is emerging. Medical cannabis has been prescribed to treat both the mental and physical symptoms of PTSD and it has been found to be a source of relaxation, aid in sleep, decrease symptoms of PTSD and anxiety, and possibly decrease alcohol and nicotine use (Loflin et al., 2019; Sterniczuk & Whelan, 2016; Jin et al., 2017). The long-term impacts of medical cannabis on PTSD and its side effects, especially when used with other medications, is unclear (Kalant & Porath-Waller, 2016; Loflin et al., 2017; Loflin et al., 2019; Lucas et al., 2012; Sterniczuk & Whelan, 2016). The use of medical cannabis at a high dosage is a documented concern, along with its use in place of opiates given the lack of understanding of long-term side effects and dearth of evidence of efficacy when replacing traditional pain medications (Bonn-Miller & Rousseau, 2017; Hager, 2018).

Alcohol use is embedded in Canadian military culture, with the majority of military and specific substance use research focusing on it (Ames & Cunradi, 2004; Fetzner et al. 2013; Neighbors et al., 2014; Jones & Fear, 2011; Richer et al. 2016; Skomorovsky & Lee, 2012). A 2016 report of regular members of the Canadian Armed Forces found that, based upon the Alcohol Use Disorders Identification Test (AUDIT), nearly 20% self-reported hazardous and harmful drinking (Thériault et al., 2016). The 2016 Life After Service Survey reported that 27% of veterans identified as a heavy drinker (defined as 5 or more drinks per occasion, at least monthly in the past year for males and 4 or more for females), and this figure has not significantly changed since 2010 (VAC, 2017). The use of alcohol and its associated problems among veterans can be amplified with concurrent use of other licit and illicit drugs (Seal et al., 2012).

Veterans tend to delay treatment for OSIs, including PTSD, because of perceived and experienced stigma (Harnish et al., 2016). This stigma is a well-documented barrier to accessing health care and can contribute to existing difficulties with mental health and substance use (Public Health Agency of Canada [PHAC], 2019; Williamson, 2012). By the time veterans and others with PTSD seek assistance, they have often adopted harmful coping strategies, including substance abuse (Harnish et al., 2016; Keane & Wolfe, 1990). Treatment options for veterans diagnosed with PTSD continues to evolve and include less traditional options. One area in which veterans seem to be increasingly seeking assistance for their PTSD is with service dogs, often after exhausting more traditional treatment options or in conjunction with other treatment methods (Dell et al., 2017; Krause-Parello & Morales, 2018; O'Haire & Rodriguez, 2018).

This paper examines a cohort of five veterans, over a 1-year period, who use both medical cannabis and alcohol and are matched with a PTSD service dog. Our original patient-oriented study examined the benefits of a service dog on the veterans' wellbeing (including problematic use of substances), recognizing that seeking the assistance of a service dog indicates a desire by the veterans to manage their PTSD symptoms (Williamson et al., 2021). During the interview process, while focused on the bond between the participant and their service dog the conversations also included participant wellbeing, including changes in PTSD symptoms and substance use patterns. Medical cannabis and alcohol use were topic areas frequently mentioned during the interviews. This paper investigates the perceptions and use of alcohol and medical cannabis among the participants to cope with their PTSD symptoms and outlines key implications. The vast majority of research currently being generated in the field of substance use and veterans' health is quantitative (Boden et al., 2013; Fetzner et al., 2013; Jin et al., 2017; Loflin et al. 2017; Loflin et al., 2019; Sterniczuk & Whelan, 2016). This study is unique within the substance use field in relation to veterans' health in that it employs qualitative, semi-structured interviews to gain insight into veterans' perceptions and use of alcohol and medical cannabis.

METHODS

PARTICIPANTS

The Human and Animal Research Ethics Boards at the University of Saskatchewan each approved this research (#17-371 and #20170114). The participants of this study include five veterans who were diagnosed with PTSD, problematically used at least one substance (i.e., alcohol, cannabis, other drugs), and had their primary mental health professional agree to support them throughout the study. They were recruited through a Canadian-based service dog organization. Participants self-identified as having experienced problematic substance use, which is defined as when an individual "uses drugs or alcohol in a harmful way that has negative effects on their health and life" (Government of Canada, 2019). Examples of negative effects that may indicate problematic use include physical or mental health effects, financial stress and/or strain on relationships (Government of Canada, 2019). All participants in this study used alcohol and were medically prescribed cannabis to treat their PTSD symptoms, pain, and/or sleeping difficulties. All of the participants had a self-reported history of problematic alcohol use (e.g., binge drinking, relationship impact, self-injury during intoxication) and their use would be considered problematic by the abovementioned definition. Four of the five veterans, however, did not perceive their alcohol use during the study as problematic, yet all identified it as a coping mechanism for their PTSD symptoms. The participants had a mean age of 43 years (range of 36 to 51 years) and provided a full year of research data. They identified as Métis (n = 2), Caucasian (n = 2), and First Nations (n = 1). The participants had been employed with either the Canadian Military or Navy with years of service ranging from 4.5 to 34 years. By the end of the project, each veteran was on medical leave or retired, with one retiring at the 9-month time point of the study. Throughout the project, the participants signed consent forms and were reminded of the principle of informed consent.

PROCEDURE

Data collection took place at six time points from May 2018 to May 2019: baseline, and 1, 3, 6, 9, and 12 months. Non-medical cannabis became legal at the mid-point of the interviews (October 2018). At each data collection period, two researchers (a social worker and addictions specialist) interviewed the participants more generally about their experiences of having a PTSD service dog with whom they were matched at the start of the study as well as their substance use. These interviews were, on average, 1 hour in length. Although the focus of the original study was not centered on medically prescribed cannabis, the participants paid particular attention to the reasons for their medical cannabis use compared to other medications and drugs, including alcohol, associated concerns with their use, and their perceptions.

The transcripts were de-identified, and participants were assigned a participant number to ensure confidentiality of their responses. A neutral research consultant transcribed the interviews, which were then independently analyzed by two research team members using Braun & Clarke's (2013)

coding guide. The themes presented in this paper were expressed multiple times and by a minimum of three participants. The data was examined for patterns over time and across the five participants.

RESULTS

SUBSTANCES USED

The participants all reported a considerable number of prescription medications they used to manage anxiety, depression, panic disorders, and non-PTSD-related health ailments. All participants reported problematic use of opioids, and modes of consumption varied. All participants, to differing extents historically, and from their own perspective, problematically used alcohol, and with only one participant considering his use problematic during the study. At the beginning of the project, two of the participants were regularly consuming medical cannabis, while the other three began to use prescribed medical cannabis during the data collection period, and all were regularly consuming medical cannabis as prescribed by their medical professional by the end of the project. Participants who initiated medical cannabis use during the project did so because they left active duty and were able to pursue medical cannabis options or were newly prescribed cannabis from their medical professional. None of the participants perceived their medical cannabis use as problematic during this study. Minimal non-medical cannabis use prior to receiving a medical prescription was noted by only one participant.

REASONS FOR USE AND OUTCOMES

The participants indicated that their primary reasons for both alcohol and medical cannabis use were to manage their PTSD symptoms and stressful life circumstances. They identified concerns with their use of both substances, but more so medical cannabis. They noted that excess use of both substances, and particularly alcohol, worsened the severity of their PTSD symptoms. For example, alcohol was noted as increasing feelings or irritability. They also indicated awareness that excess use could lead to addiction, with greater concern attached to alcohol. For both alcohol and medical cannabis, the participants identified negative impacts of impairment.

USING SUBSTANCES TO COPE WITH PTSD SYMPTOMS AND STRESSFUL LIFE CIRCUMSTANCES

Study participants associated their use of medical cannabis and alcohol with managing their varied PTSD symptoms, and frequently used alcohol in periods of stressful life circumstances or change. CBD was used to address pain and inflammation derived from physical injury, and THC products were used to minimize the impact of psychological stress, including nightmares and to increase the duration of restful sleep:

> One of the great things about [cannabis] is I always had my dreams but I didn't care. I could go out and have a little puff and come back in and go back to sleep whereas without [cannabis] and I go into a dream, I focus on it and think about that and I would never sleep. (Participant #4, 1 month time point)

Veterans referenced cannabis specifically as a medical tool, and only one mentioned it as a substance they had used recreationally prior to their medical cannabis prescription. While medical cannabis, specifically CBD-based products, was noted to aid in relaxation and decrease feelings of anxiety, the participants did not talk about increasing their use in stressful life circumstances as they did for alcohol.

Alcohol, while not medically prescribed, was likewise used to decrease feelings of stress and anxiety and aid in relaxation. Some participants noted that drinking alcohol was a part of a routine of relaxation:

> I just have one beer at the end of the day, it is my moment to just sit and 'okay the day is done.' I take a break, I take a beer and now I do…tasks inside the house and prepare the supper and [I] like to take my beer at the same time that I am preparing supper, so it is a relaxed moment for me. (Participant #5, 3-month time point)

Four of the participants noted their awareness of the counter-indications alcohol could have with their PTSD symptoms. All of the participants indicated that they used alcohol to cope with stressful situations, sometimes leading to overconsumption and negative repercussions such as physical injury, depression, and increased tension in personal relationships.

> **Participant #3:** "No, alcohol is still there sometimes when I get stressed, I am opening up the cabinet. I had a couple of drinks the last month because of what was going on; I was starting to really stress so I had a couple of drinks."
>
> **Interviewer:** "In excess at times, like over five?"
>
> **Participant #3:** "I think those two nights I was probably over five." (Participant #3, 1-month time point)

Addiction concerns

The study participants were aware of the risk of excessive alcohol and medical cannabis use leading to addiction. Each of the five participants noted some concern with their overuse of alcohol and/or medical cannabis. Alcohol, however, was more often noted for its addictive properties and the negative impacts of alcohol dependence. Cannabis was seen as a prescribed medication with a risk of addiction, much like prescribed opioids, and required careful monitoring and self-assessment to ensure safe use levels. Medical cannabis addiction, however, was not clearly defined or described as exemplified in this quote, "I reduced my quantity of cannabis because I don't want to get addicted" (Participant #5, 3-month time point). Participants referenced family history and the possible genetic connection to alcohol dependence as a primary concern when considering their alcohol consumption practices. Participant #1 at the 3-month time point stated "but [alcohol] really hits me hard that way because I shouldn't be drinking because of my genetics, like everybody is an alcoholic in my family." Alcohol use and overconsumption was often linked to the idea of a "slippery-slope," where overuse could lead to devastating effects for the individual; this was not noted for medical cannabis. Participant #3 noted this idea of a "slippery slope" at the 1-year time point:

> You felt more yourself in that moment [of drinking] and I like that but I also know if I go back there again then I am going to be slipping down a path that is going to put me on the street and I will be drinking out of a bottle that is wrapped in a paper bag and I really don't want to go that way. (Participant #3, 1-year time point)

Negative Impacts of Impairment

Study participants identified both medical cannabis and alcohol use as having potentially negative consequences to their wellbeing. They specifically identified that they did not like the experience of being impaired and out of control.

Specific to medical cannabis use, THC was noted as having an undesirable psychological effect (e.g., "felt foggy," "my mind was buzzing"). To avoid the negative effects, the participants experimented with changing their schedule for THC product use (e.g., only before bed) or stopped using it altogether. The impairment effects of both synthetic and natural THC products were noted, signifying that prescription synthetic cannabinoids were not a side-effect-free option. Overwhelmingly, the participants preferred using natural CBD products in the form of capsuled concentrates or vaping concentrates over THC products, synthetic cannabinoids, and smoking:

> They prescribed me Nabilone which is a synthetic THC, I really didn't like the effect that had and left me feeling just dopey and foggy the next day like there was no effect that day but the next day and it just felt everything was packed in cotton... CBD oil on the other hand I have found that has had a positive effect. (Participant #2, 3-month time point)

> I am not taking THC, I practically only take CBD, the THC that I take it is only for sleep at night because I do not like the stoned effect. (Participant #5, 3-month time point)

While producing a different effect on the participants in comparison to THC, all five participants also noted the different types of negative effects alcohol impairment had on them, especially when alcohol use was paired with their prescription pain medication:

> I used to use alcohol that way but with the drugs I am on if I take the alcohol it really knocks me on my ass and it gives me a horrible, horrible hangover. I haven't been drinking as much as I used to because of the opiates. (Participant #2, baseline interview)

Participants also noted the effects of alcohol can aggravate their PTSD symptoms and impact their mental health, sometimes for days at a time:

> I have only drank maybe between five and seven times since the [Service Dog] program started but for me that is quite a bit because it is tough on my system and my noodle because I will drink but then I will go for like three, four, five days with depression after. (Participant #1, 3-month time point)

This understanding did not appear to significantly impact their use of alcohol.

PERCEPTIONS OF USE

The study participants shared that beyond their primary reason for using alcohol and medical cannabis to cope with PTSD symptoms and stressful life situations, their perceptions of both alcohol and medical cannabis impacted their use. This included stigma attached to the substances with emphasis on medical cannabis, social norms associated with the substances, and associated discourses. Once again, there was a difference between the two substances.

Stigma

All five participants indicated some level of perceived negative societal judgement associated with both medical

cannabis and alcohol use, although in differing ways and to varying extents. The participants hesitated to use cannabis, even when medically prescribed, because they were concerned about how they may be perceived by their peers and society-at-large:

> Let's talk about the airport. So it was a rough time going through security it was just one thing after another and I looked like I was carrying a bomb by the time I went through, because I had so much anxiety because I didn't want to stay at people's houses and I barely just got on this flight, my backpack reeks of weed and I am just like 'fuck' and my eyes are like this [demonstrates rapidly shifting eye movements] so anyway we get through security finally and I am just sitting there in the waiting area just shaking. (Participant #1, 1 month time point)

Often these negative meanings did not come from a specific incident, but rather an internal dilemma from years of cannabis prohibition in the military and a pressure to remain abstinent from cannabis use generally. This is juxtaposed with a medical prescription condoning its use. Participant #3 shared during the baseline interview: "I still have a hard time with the stigma attached to [cannabis]. I have never done drugs in my life; marijuana is a drug."

This hesitation was greatly tied to the values within military culture to follow policy and obey normalized rules of military etiquette, including not using illicit substances:

> Stigma you know yes [cannabis] is legal now but like, I even came to realization in one of my groups. I realized the anger and everything I have, and a lot of it you have been beaten over the head to learn, accept, and understand the values, morals and ethics of being that solider. Okay when you get out this is how you do drills, this is how you do this, this is how you do paperwork, this is how you fill up your gas tank, there is etiquette for everything... God [cannabis] goes against everything you have learned and been taught and I think that is something that is going to be really, really difficult to ever take away. (Participant #3, 1-year time point)

In contrast, negative meanings surrounding alcohol were stated less directly and only seemed to reflect extreme situations of alcoholism. These extreme situations were ones the participants often distanced themselves from:

> Now [my father] is not drinking anymore but an alcoholic stays an alcoholic and I am not alcoholic because I have [disease] and some other problems and I take medication, but it would be easy for me to be an alcoholic ... I think that is the only good stuff with all my problems I have is the fact I am not alcoholic. (Participant #5, 3-month time point)

Contrary to cannabis, military culture was highlighted by the participants as being highly accepting of alcohol use and overuse. It was mentioned that life in the military allowed the participants greater access to alcohol than they had prior, and provided the income and time off and with social connections to use:

> I didn't do drugs, I didn't touch alcohol, I did nothing until I went into the military and ... there you get a $300.00 pay check, we were in [city] and that $300.00 went on alcohol. You find the crappiest rooms and you start drinking... (Participant #3, baseline interview)

Social Norms

Beyond using alcohol to address their PTSD symptoms and life stressors, the study participants identified their alcohol use as influenced by social norms, including those associated with the setting (e.g., social gathering). The participants' cannabis use, being a medication, was not influenced by such norms. All five participants noted that their usage patterns for alcohol were highly dependent on the context: where they were, who was around them, and the activities they were engaged in. This was not the case with medical cannabis. While social norms have the potential to impact the alcohol usage patterns of anyone in society, the participants had a more complex situation to navigate due to the interaction of substances with their medication and PTSD symptoms, as well as their desire to uphold social norms:

> If we are having a barbeque, we have got company over or I am across to the neighbors and we are swimming... I will not smoke pot at all... [cannabis is] medicine I don't have a problem with it, but as soon as you start mixing alcohol with it now it is for recreational use. (Participant #4, 3-month time point)

Desire for social connection was important to some participants, so much so that they indicated they would alter their prescribed medication routine (including medical cannabis) so they could consume alcohol, a substance seen as important to building social connections and relationships:

> My aim is to take care because if I take beer or I am a scotch/whiskey guy so if I drink at the same time I take the pills it knocks me completely so I need to take care of that. So if I go, for example, to a spot with friends I know I will drink I try not to take any pain killers before going just to make sure I can take some beer or a drink with friends. (Participant #5, baseline interview)

Veterans also reported occasions where they drank alone, either because they were lonely or they felt the need to hide their alcohol consumptions from others (e.g., their spouse).

Participants highlighted key settings where their alcohol use increased due to varying location-specific norms and pressures. Locations noted to have higher alcohol use included: during military training, attending university, during the summer, at sporting events or celebrations, and while on vacation.

> Mine was alcohol you know like I said, you go from the military and we drank like a fish and then when everything happened to me, I drank more and I went to university and it's what you do when you are at [university]? You go to [bar name], you go to [bar name], oh look there is a fraternity, I am going to join a fraternity. So you join the fraternity and what they do is they have boat races so you are drinking all the time you know, oh you are going to that and you are going to get drunk there, then go back to the party at [bar name] afterwards and your formals. (Participant #3, 3-month time point)

Discourse

The study participants' discourse about the use of alcohol and medical cannabis revealed a strong distinction between the participants' perceptions of the two substances. When referring to alcohol, few variations or slang terms were used, aside from specific drinks of choice. With medical cannabis, the noun used to describe the substance changed depending on the social context and purpose it was being used (e.g., cannabis vs. weed). The change in language reflected a moralistic view of use and was context specific (e.g., medical use versus social use). Medical use was seen by the participants as rational and understandable, whereas non-medical social use was viewed by the participants as potentially reckless, immature, and inappropriate. This can be seen in a quote from Participant #4 at the 3-month time point; "If we are having…a few beers I will not smoke pot at all because I don't believe in it for recreational use."

The language used when referring to cannabis varied significantly between participants and depended upon the context in which the cannabis use occurred. Medicinal use was referred to with terms like: "cannabis," "medical marijuana," and specific chemical compounds, primarily "THC" and "CBD." Recreational or non-medical use, however, was referred to with slang terms such as "pot," "weed," and "getting stoned":

> I am using some pills from the doctor and medical cannabis but I am not taking THC, I practically only take CBD, the THC that I take it is only for sleep at night because I do not like the stoned effect. (Participant #5, 3-month time point)

Alcohol, alternatively, was rarely referred to in a slang-type manner, instead using terms such as "booze," and even drinking to the point of intoxication was rarely referred to as "getting drunk." For some of the Veterans, there seemed to be some denial or contradictions expressed related to their alcohol consumption. Phrases like "I never drink" were stated on occasion and then followed up with accounts of being intoxicated:

> **Interviewer:** Over the last two months any change in your use of substances so not prescription drugs but alcohol?
>
> **Participant #3:** No I don't drink; I haven't used a lot more but I think it happened after the last [interview], [goes on to tell story of overconsumption resulting in serious injury]. (Participant #3, 6-month time point)

DISCUSSION

The purpose of this study was to examine the perceptions and use of medical cannabis and alcohol among Canadian veterans in coping with their PTSD symptoms. The participants in this study used both alcohol and medical cannabis to manage their PTSD symptoms but spoke about the two substances differently. This difference was framed around a view of what constitutes "good" and "bad" substance use. Despite the fact that both substances are legal and medical cannabis was being used by and prescribed to all of the participants by a physician, alcohol use was overwhelmingly deemed more acceptable than cannabis use, possibly due to the idea that alcohol use is deemed acceptable within military culture. Throughout the interviews, the participants grappled with their use of medical cannabis and noted their military rooted values, beliefs, and morals as barriers to accepting their own use. The participants had shaped an identity of cannabis as a street drug for recreational purposes. The participants

could only medicalize the use of cannabis with substantial rationalization. Alcohol, in stark juxtaposition, was identified as a socially accepted relaxant that could be used frequently and in high doses, especially in social or stressful settings.

The stigma associated with cannabis, including medical cannabis, was also largely rooted in the study participants' military duty. Despite some diversity in the branches the participants worked, military culture reflects a respect for law and order, honor, authority, and integrity (Kuehner, 2013). Understanding this, the participants tended to associate illicit substance use, including medical cannabis use, as challenging this. Using cannabis, even for medical purposes, seemed to create strain for the participants. In their interviews, they often rationalized their use to themselves and the interviewer. The participants consistently reminded the interviewer that they were using less medical cannabis than prescribed by their doctor and that they only used for medical purposes and did not derive any "fun" from it. They appeared to want to ensure that their cannabis use was perceived within a medical framework and without overuse.

The study participants shared that alcohol was perceived differently in comparison to medical and non-medical cannabis within military culture. Its use was acceptable and reportedly a method of bonding and socialization amongst military personnel and is deeply embedded in social norms. The military culture of comradery, routine, times of heightened stress, and bonding has been identified as influencing the overuse or problematic use of alcohol (Jones & Fear, 2011). Each of the participants noted their time in the military and integration into the culture as an influence on their increased alcohol intake. Among the current sample, stigma was associated with alcohol use only when an individual was seen to be reflecting a stereotypical image of problematic alcohol use. The participants referred to their use of alcohol as non-problematic until they saw the potential of finding themselves going down a slippery slope or mimicking the actions of their "alcoholic relatives." It is was not clear though that this perception contributed to decreased use. Findings from the current study mirror past research that indicates military culture appears to play a role in increased alcohol consumption and overuse by participants (Ames & Cunradi, 2004; Jones & Fear, 2011; Neighbours et al., 2014).

There are several key implications from the findings of this study. First, there is a need for military decision-makers to recognize the social context that influences a veteran's access, understanding, perception, and uptake of medical cannabis. Multiple layers of stigma associated with substance use, mental health, and the occupational culture of the military may hinder a veteran's ability to speak openly about their interest in medical cannabis to address their PTSD symptoms and/or may affect their adherence to using it. Medical cannabis is being increasingly used by veterans to treat their PTSD symptoms and physical injuries, but the perception of the participants in this study reflects the lasting impacts of a Canadian Armed Forces system that does not support cannabis use during duty with the military. Sterniczuk and Whelan's (2016) study shows that 42% of veterans with PTSD who use medical cannabis only initiated use once they were released from duty. It also took some time for the veterans in Whelan's study to access medical cannabis upon release from the military. It is possible that veterans are delaying their access to medical cannabis treatment due to deeply ingrained, institutional military regulations and values. Furthermore, the stigma associated with medical cannabis use and social norms of military culture can impact veterans' ability to seek out this potentially helpful support. This was identified in a 2018 study in which American veterans reported that barriers in access to medical cannabis and stigma discouraged patients from initiating discussions about cannabis-based treatments with medical professionals (Metrik et al., 2018). Medical use of cannabis after service can also be impacted by policies and norms within veteran-focused organizations. For example, questions continue to be raised regarding the 2017 financial driven decision by Veterans Affairs Canada to reduce the reimbursable cannabis limit from 10 grams to 3 grams per day (Boden et al., 2013; Cullen & Zimonjic, 2016; Pinkerton, 2018).

The second key implication of this study is the need for military decision-makers to consider that military culture supporting alcohol use and overuse has potentially harmful and long-lasting impacts, including on PTSD health outcomes for veterans. Alcohol use appears to become a pastime for individuals in the military, a pattern which may continue past active duty and ultimately impact an individual's health. Due to the widespread use of alcohol within the military, it can become a coping mechanism for stressors as well as a necessity for socialization. These patterns may become routine or part of a coping mechanism in an individual, leading to potential negative long-term health outcomes (Verrall, 2012). Drinking patterns explained by the participants in this study suggest that Canada's Lower-Risk Drinking Guidelines (Butt et al., 2011) are not considered, and drinking is only labelled as problematic when reflecting a negative stereotype. Overuse, physical injury, impact on relationships, or other negative consequences of high-risk drinking were not considered problematic, seemingly due to the lack of negative reinforcement for overuse during military service. With high rates of alcohol use among veterans and harmful long-term impacts of use, there is a need to address the norms associated with high-risk alcohol use (Ames & Cunradi, 2004).

FUTURE RESEARCH

As highlighted, this study took place during the non-medical cannabis legalization process in Canada and therefore represents the experiences of veterans as they navigated a new cannabis regulatory framework. It will be important to continue to monitor the trends of medical cannabis use, and discourse of use amongst veterans as the legalization of non-medical use may impact the stigma associated with the substance generally, and medical cannabis in particular. Future studies should also reflect upon any changes to medical cannabis use and perceptions of use as younger generations of military veterans mature within the framework of non-medical cannabis legalization.

LIMITATIONS

This study has four key limitations. First, the small sample size of five veterans limits the generalizability of the findings (Vasileiou et al., 2018). However, each participant was interviewed at multiple time points and provided insights and accounts of their experiences that are not documented elsewhere in the literature. Second, the use of qualitative methods has inherent limitations, such as inability to determine causality or generalize results to wider populations (Queiros et al., 2017). Semi-structured interviews in this study, however, did provide insight into the social influences on medical cannabis and alcohol use that may not have otherwise been determined with a quantitative method. Third, while the main purpose of this study was not to collect detailed accounts of the participants' medical cannabis use as it was a subset of a larger study, cannabis and alcohol use emerged as important points of discussion for this sample. More specific and detailed questions could have elicited more insightful and detailed responses. Finally, all of the participants in this project identified as male. Although the research is limited, there is the possibility that female-identified veterans would have different experiences and perceptions of substance use (Fetzner et al., 2013). Related, three of the five participants identified as having Indigenous ancestry, and this too should be acknowledged for possible impact given the harmful role of alcohol in the colonial history of Indigenous people in Canada. This continues in current day with disproportional health impacts of alcohol and related stigma (McKenzie et al., 2016). This should be explored fully in any future research and with participants who acknowledge their Indigeneity as a part of their world experience.

CONCLUSION

This study's sample of Canadian veterans tended to view medical cannabis differently than alcohol. This appears to be due in large part to the values instilled in them during their time in the military. It is important that all military decision-makers consider the social context associated with medical cannabis and alcohol use and how associated stigma, values, beliefs, and identities could impact veterans' ability to communicate regarding use and accessing support.

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COMPETING INTERESTS

The authors have no competing interests to declare.

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REFERENCES

American Psychological Association. (2020). *APA dictionary of psychology*. *https://dictionary.apa.org/coping-mechanism*

Ames, G., & **Cunradi, C.** (2004). Alcohol use and preventing alcohol related problems among young adults in the military. *Alcohol Research & Health*, 28, 252–257. *http://pubs.niaaa.nih.gov/publications/arh284/252-257.pdf*

Banducci, A., McCaughey, V., Gradus, J., & **Street, A.** (2019). The associations between deployment experiences, PTSD, and alcohol use among male and female veterans.

Addictive Behaviors, *98*, 1–7. DOI: https://doi.org/10.1016/j.addbeh.2019.106032

Blais, M. (2019, October). Veterans and medical cannabis: Michael L. Blais CD president & founder Canadian Veterans Advocacy. *Esprit de Corps*, *26*(9), 19–20. https://link-galecom.cyber.usask.ca/apps/doc/A604003257/CPI?u=usaskmain&sid=CPI&xid=b61b02c9

Boden, M., Babson, K., Vujanovic, A., Short, N., & **Bonn-Miller, M.** (2013). Posttraumatic stress disorder and cannabis use characteristics among military veterans with cannabis dependence. *American Journal on Addictions*, *22*(3), 277–284. DOI: https://doi.org/10.1111/j.1521-0391.2012.12018.x

Bonne-Miller, M., Harris, A., & **Trafton, J.** (2012). Prevalence of cannabis use disorder diagnoses among veterans in 2002, 2008, and 2009. *Psychological Services*, *9*(4), 404–416. DOI: https://doi.org/10.1037/a0027622

Braun, V., & **Clarke, V.** (2013). *Successful qualitative research: A practical guide for beginners*. Sage Publications Ltd.

Burri, A., & **Maercker, A.** (2014). Differences in prevalence rates of PTSD in various European countries explained by war exposure, other trauma and cultural value orientation. *BMC Research Notes*, *7*, 407. DOI: https://doi.org/10.1186/1756-0500-7-407

Butt, P., Beirness, D., Stockwell, T., Gliksman, L., & **Paradis, C.** (2011). *Alcohol and health in Canada: A summary of evidence and guidelines for low-risk drinking*. Canadian Centre of Substance Use and Addictions. https://prod.ccsa.ca/sites/default/files/2019-04/2011-Summary-of-Evidence-and-Guidelines-for-Low-Risk%20Drinking-en.pdf

Canadian Centre of Substance Use and Addiction. (2020). *Cannabis*. https://www.ccsa.ca/cannabis

Canadian Mental Health Association. (n.d). *Post-traumatic stress disorder (PTSD)*. Canadian Mental Health Association: Post-Traumatic Stress Disorder. https://cmha.ca/documents/post-traumatic-stress-disorder-ptsd

Cox, C. (2018). The Canadian Cannabis Act legalizes and regulates recreational cannabis use in 2018. *Health Policy*, *122*, 205–209. DOI: https://doi.org/10.1016/j.healthpol.2018.01.009

Cullen, C. & **Zimonjiv, P.** (2016). *Ottawa bringing in stricter limits on medical marijuana for veterans*. CBC News, Politics. https://www.cbc.ca/news/politics/veterans-hehr-pot-policy-1.3861534

Dell, C., Arratoon, C., Lapointe, M., & **Lohnes, C.** (2017, April 3). Brighter days and calmer nights: The impact of service dogs in the lives of veterans who problematically use substances. *The 2017 International Working Dog Conference*, Banff, Alberta, Canada.

Fetzner, M. G., Abrams, M. P., & **Asmundson, G. J. G.** (2013). Symptoms of posttraumatic stress disorder and depression in relation to alcohol-use and alcohol-related problems among Canadian forces veterans. *The Canadian Journal of Psychiatry*, *58*(7), 417–425. DOI: https://doi.org/10.1177/070674371305800707

Government of Canada. (2019). *About problematic substance use*. Government of Canada. https://www.canada.ca/en/health-canada/services/substance-use/about-problematic-substance-use.html

Government of Canada. (2021). *Cannabis Act*. Justice Laws Website. https://laws-lois.justice.gc.ca/eng/acts/C-24.5/

Hager, M. (2018). *Cannabis use among veterans soars as Ottawa cuts paybacks*. https://www.theglobeandmail.com/canada/british-columbia/article-number-of-veterans-using-opioids-declines-significantly-as-cannabis/

Harnish, A., Corrigan, P., Byrne, T., Pinals, D., Rodrigues, S., & **Smelson, D.** (2016). Substance use and mental health stigma in veterans with co-occurring disorders. *Journal of Dual Diagnosis*, *12*(3–4), 238–243. DOI: https://doi.org/10.1080/15504263.2016.1245066

Jarnecke, A., Allan, N., Badour, C., Flanagan, J., Killeen, T., & **Back, S.** (2019). Substance use disorders and PTSD: Examining substance use, PTSD symptoms, and dropout following imaginal exposure. *Addictive Behaviors*, *90*, 35–39. DOI: https://doi.org/10.1016/j.addbeh.2018.10.020

Jin, S., Wan, B., Chan, S., Smith, P. A., Blake, A., Wolt, A., Zhang, L., Lam, H. H., Deangelis, C., Slaven, M., Shaw, E., Ganesh, V., Zaki, P., Drost, L., Lao, N., Malek, L., & **Chow, E.** (2017). The effect of medical cannabis on alcohol and tobacco use in veterans with post-traumatic stress disorder (PTSD). *Journal of Pain Management*, *10*(4), 407-413. http://cyber.usask.ca/login?url=https://www.proquest.com/scholarly-journals/effect-medical-cannabis-on-alcohol-tobacco-use/docview/2190034852/se-2?accountid=14739

Jones, E., & **Fear, N. T.** (2011). Alcohol use and misuse within the military: A review. *International Review of Psychiatry*, *23*(2), 166–172. DOI: https://doi.org/10.3109/09540261.2010.550868

Kalant, H., & **Porath-Waller, A. J.** (2016). Clearing the smoke on cannabis: Medical use of cannabis and cannabinoids. *Canadian Center on Substance Use*. https://www.ccsa.ca/sites/default/files/2019-04/CCSA-Medical-Use-of-Cannabis-Report-2016-en.pdf

Keane, T. M., & **Wolfe, J.** (1990). Comorbidity in post-traumatic stress disorder: An analysis of community and clinical studies. *Journal of Applied Social Psychology*, *20*(21), 1776–1788. DOI: https://doi.org/10.1111/j.1559-1816.1990.tb01511.x

Krause-Parello, C. A., & **Morales, K. A.** (2018). Military veterans and service dogs: A qualitative inquiry using interpretive phenomenological analysis. *ANTHROZOÖS*, *31*(1), 61–75. DOI: https://doi.org/10.1080/08927936.2018.1406201

Kuehner, C. (2013). My military: A navy nurse practitioner's perspective on military culture and joining forces for veteran health. *Journal of the American Academy of Nurse*

Practitioners, *25*(2), 77–83. DOI: https://doi.org/10.1111/j.1745-7599.2012.00810.x

Loflin, M., Earleywine, M., & **Bonn-Miller, M.** (2017). Medicinal versus recreational cannabis use: Patterns of cannabis use, alcohol use, and cued-arousal among veterans who screen positive for PTSD. *Addictive Behaviors*, *68*, 18–23. DOI: https://doi.org/10.1016/j.addbeh.2017.01.008

Loflin, M. J. E., Babson, K., Sottile, J., Norman, S. B., Gruber, S., & **Bonn-Miller, M. O.** (2019). A cross-sectional examination of choice and behavior of veterans with access to free medicinal cannabis. *The American Journal of Drug and Alcohol Abuse*, *45*(5), 506–513. DOI: https://doi.org/10.1080/00952990.2019.1604722

Lucas, P., Reiman, A., Earleywine, M., Mcgowan, S. K., Oleson, M., Coward, M. P., & **Thomas, B.** (2012). Cannabis as a substitute for alcohol and other drugs: A dispensary-based survey of substitution effect in Canadian medical cannabis patients. *Addiction Research & Theory*, *21*(5), 435–442. DOI: https://doi.org/10.3109/16066359.2012.733465

McKenzie, M., Fornssler, B., & **Dell, C.** (2016). Understanding addictions among Indigenous people through social determinants of health frameworks and strength-based approaches: A review of the research literature from 2013 to 2016. *Current Addiction Report*. 1–9. DOI: https://doi.org/10.1007/s40429-016-0116-9

Metrik, J., Bassett, S. S., Aston, E. R., Jackson, K. M., & **Borsari, B.** (2018). Medicinal versus recreational cannabis use among returning veterans. *Translational Issues in Psychological Science*, *4*(1), 6–20. DOI: https://doi.org/10.1037/tps0000133

Neighbors, C., Walker, D., Rodriguez, L., Walton, T., Mbilinyi, L., Kaysen, D., & **Roffman, R.** (2014). Normative misperceptions of alcohol use among substance abusing army personnel. *Military Behavioral Health*, *2*(2), 203–209. DOI: https://doi.org/10.1080/21635781.2014.890883

O'Haire, M. E., & **Rodriguez, K. E.** (2018). Preliminary efficacy of service dogs as a complementary treatment for posttraumatic stress disorder in military members and veterans. *Journal of Consulting and Clinical Psychology*, *86*(2), 179–188. DOI: https://doi.org/10.1037/ccp0000267

Pinkerton, C. (2018). Senator questions revised marijuana reimbursement limit for veterans. *iPolitics*. https://ipolitics.ca/2018/05/24/senator-questions-reimbursement-limit-for-medical-marijuana-used-by-veterans/

Public Health Agency of Canada. (2019). *The chief public health officer's report on the state of public health in Canada 2019: Addressing stigma towards a more inclusive health system*. https://www.canada.ca/content/dam/phac-aspc/documents/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/addressing-stigma-what-we-heard/stigma-eng.pdf

Queiros, A., Faria, D., & **Almeida, F.** (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*, *3*(9), 369–387. DOI: https://doi.org/10.5281/zenodo.887089

Richardson, L. K., Frueh, B. C., & **Acierno, R.** (2010). Prevalence estimates of combat-related post-traumatic stress disorder: critical review. *The Australian and New Zealand Journal of Psychiatry*, 44(1), 4–19. DOI: https://doi.org/10.3109/00048670903393597

Richer, I., Lee, J. E. C., & **Born, J.** (2016). Patterns of alcohol use among Canadian military personnel and their associations with health and well-being. *Health Psychology*, *35*(7), 685–694. DOI: https://doi.org/10.1037/hea0000328

Rotermann, M. (2020). *What has changed since cannabis was legalized?* Statistics Canada, Health Reports. https://www150.statcan.gc.ca/n1/pub/82-003-x/2020002/article/00002-eng.htm

Seal, K. H., Shi, Y., Cohen, G., Cohen, B. E., Maguen, S., Krebs, E. E., & **Neylan, T. C.** (2012). Association of mental health disorders with prescription opioids and high-risk opioid use in US Veterans of Iraq and Afghanistan. *Journal of the American Medical Association*, *307*(9), 940–947. DOI: https://doi.org/10.1001/jama.2012.234

Silins, S., Watkins, K., & **Zamorski, M.** (2016, May 3). Examining age differences in the relationship between combat exposure, PTSD, and post-deployment alcohol use. *Military Mental Health Research Symposium*, Ottawa, ON, Canada. https://cimvhr.ca/conference/mhsymposium/documents/presentations/12-Silins.pdf

Skomorovsky, A., & **Lee, J. E.** (2012). Alcohol use among Canadian Forces candidates: The role of psychological health and personality. *Military Psychology*, *24*(6), 513–528. DOI: https://doi.org/10.1080/08995605.2012.736318

Statistics Canada. (2019). *Canadian Armed Forces members and veteran mental health follow-up survey, 2018*. https://www150.statcan.gc.ca/n1/daily-quotidien/190423/dq190423d-eng.htm

Sterniczuk, R., & **Whelan, J.** (2016). Cannabis use among Canadian Armed Forces veterans. *Journal of Military, Veteran and Family Health*, *2*(2), 43–52. DOI: https://doi.org/10.3138/jmvfh.3836

Thériault, F. L., Gabler, K., & **Naicker, K.** (2016). *Health and lifestyle information survey of Canadian armed forces personnel 2013/2014 – Regular force report*. Strauss, B. A. & Whitehead, J. (Eds.), Ottawa, Canada: Department of National Defense. https://www.canada.ca/content/dam/dnd-mdn/documents/health/health-and-lifestyle-survey-2013-2014.pdf

United States Department of Veteran's Affairs. (2018). *PTSD: National Center for PTSD*. https://www.ptsd.va.gov/understand/common/common_veterans.asp

Vasileiou, K., Barnett, J., Thorpe, S., & **Young, T.** (2018). Characterising and justifying sample size sufficiency in interview-based studies: Systematic analysis of qualitative health research over a 15-year period. *BMC Med Res Methodology*, *18*, 148. DOI: https://doi.org/10.1186/s12874-018-0594-7

Verrall, N. (2012). A review of military research into alcohol

consumption. *BMJ Military Health*, *157*(2):164–169. DOI: *https://doi.org/10.1136/jramc-157-02-08*

Veterans Affairs Canada (VAC). (2017). *Well-being of Canadian regular force veterans, findings from LASS 2016 survey.* Canadian Institute for Military and Veteran Health Research. *https://cimvhr.ca/vac-reports/data/reports/VanTil%202017_Well-Being%20of%20CAF%20Veterans%20LASS%202016.pdf*

Veterans Affairs Canada (VAC). (2018). *Mental health. http://www.Veterans.gc.ca/eng/news/vac-responds/just-the-facts/mental-health-facts*

Veterans Affairs Canada (VAC). (2019). *Facts and figures. https://www.veterans.gc.ca/pdf/about-vac/news-media/facts-figures/Facts-and-Figures-Mar-2019.pdf*

Williamson, L. (2012). Destigmatizing alcohol dependence: The requirement for an ethical (not only medical) remedy. *American Journal of Public Health*, *102*(5), e5–e8. DOI: *https://doi.org/10.2105/AJPH.2011.300629*

Williamson, L., Dell, C. A., Osgood, N., Chalmers, D., Lohnes, C., Carleton, N., & **Asmundson, G.** (2021). Examining changes in posttraumatic stress disorder symptoms and substance use among a sample of Canadian veterans working with service dogs: An exploratory patient-oriented longitudinal study. *Journal of Veterans Studies*, *7*(1), 1–13. DOI: *https://doi.org/10.21061/jvs.v7i1.194*

Zamorski, M. A., Bennett, R. E., Rusu, C., Weeks, M., Boulos, D., & **Garber, B. G.** (2016). Prevalence of past-year mental disorders in the Canadian armed forces, 2002-2013. *The Canadian Journal of Psychiatry*, *61*(Supplement 1), 26S–35S. DOI: *https://doi.org/10.1177/0706743716628854*

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