

november 2020 vol 1 • no 1

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SUBSCRIPTIONS: For subscription and circulation information: *Cannabis Science and Technology*, PO Box 457, Cranbury, NJ 08512-0457, or e-mail mmhinfo@mmhgroup.com. Delivery of *Cannabis Science and Technology* outside the United States is 14 days after printing.

CHANGE OF ADDRESS: Send change of address to *Cannabis Science and Technology*, PO Box 457, Cranbury, NJ 08512-0457; alternately, send change via e-mail to fulfill@mjhassoc.com or go to the following URL: <http://mmhpubs.mmhgroup.com/Welcome.aspx?pubid=CNST>

Allow four to six weeks for change.

Cannabis Science and Technology (Print ISSN: 2643-8844, Digital ISSN: 2643-8852) is published 9 times/year by MultiMedia Healthcare LLC, 2 Clarke Drive, Suite 100, Cranbury, NJ 08512.

POSTMASTER: Please send address changes to CANNABIS Science and Technology, PO Box 457, Cranbury, NJ 08512-0457. Return Undeliverable Canadian Addresses to: IMEX Global Solutions, P. O. Box 25542, London, ON N6C 6B2, CANADA. Canadian G.S.T. number: R-124213133RT001. Printed in the U.S.A.

C.A.S.T. DATA AND LIST INFORMATION: Contact Melissa Stillwell, tel. (218) 740-6831, e-mail MStillwell@mjhlifesciences.com.

REPRINTS: Reprints of all articles in this issue and past issues of this publication are available (500 minimum). Licensing and Reuse of Content: Contact Stephanie Shaffer about available usages, license fees, and artwork at SShaffer@mjhlifesciences.com for more information.

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from the editor

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Cannabis Patient Care: Cannabis Medicine Personalized



Megan L'Heureux
Editor-in-Chief

WELCOME TO THE INAUGURAL EDITION of *Cannabis Patient Care*—the new medical cannabis-focused publication brought to you by the publishers of *Cannabis Science and Technology*®. In the few short years that I've been entrenched in the cannabis industry one thing has become abundantly clear to me: Patients are finding relief with medical cannabis and passionately driving the science forward. The goal of this new publication is to help educate the key players in medical cannabis: patients, doctors, nurses, pharmacists, caregivers, researchers, and advocates. We plan to highlight a specific disease or condition in each issue for which medical cannabis has been shown to be an effective treatment by sharing patient stories, research updates, and perspectives from the medical community.

The focus of this first edition is post-traumatic stress disorder (PTSD) in veterans and how medical cannabis is being used and studied as a treatment option. In a fortuitous turn of events, I was introduced to Ann Brum of Joint Venture & Co. by a mutual friend toward the end of 2019. Ann passionately shared the work she had been doing with Dr. Marion McNabb of the Cannabis Center of Excellence and Stephen Mandile, a veteran and advocate, to conduct an anonymous study of veterans using cannabis. Their team also hosted a series of local community education events in Massachusetts called the Cannabis Advancement Series. The passion and earnest desire to help the veteran community is clear to anyone who knows Ann, Dr. McNabb, or Stephen, and we are honored and excited to share the work they've been doing in this edition along with some of their personal stories. This project has been a true collaboration and I want to thank them tremendously for their time, expertise, and insight.

Our first article in this issue (page 6), written by Dr. McNabb, discusses the data from her 2019 Veterans Health and Medical Cannabis Study, which was conducted in partnership with the University of Massachusetts (UMass) Dartmouth. Next, we learn about Stephen's personal journey to medical cannabis as a treatment for his PTSD and chronic pain after suffering a spinal cord injury during his service in

Operation Iraqi Freedom (page 20). His story is truly inspiring!

On the medical side, Dr. Staci Gruber, the Director of Marijuana Investigations for Neuroscientific Discovery (MIND) at McLean Hospital, shared her interest in medical cannabis. Dr. Gruber and her team at MIND are conducting fascinating research in medical cannabis focusing on veterans and other areas (page 24). In another article, Tracey Gregory, RN, shares her unique perspective as a hospice nurse working with veterans and how she has seen medical cannabis offer them comfort and relief (page 33).

Rounding out this special first edition are the stories of a Veteran Affairs (VA) caregiver—Jamie Pascua—offering support to her veteran husband (page 31) and that of two advocates—Ann Brum and Wayne Smith—whose passion for educating their communities and changing legislation for veterans to have access to cannabis is beyond impressive (page 37).

The term *personalized medicine* gets tossed around a lot, but I think it's important to understand that there is real meaning behind it and a focus on the individual patient. The people that use medical cannabis have amazing stories to share and those stories are shaping the future of access for the patients that come after them. Veterans hold a special place in our society as those who are willing to sacrifice themselves for the greater good and protection of our country. It's imperative that we offer them the best options for their care—whatever that may be. I am honored to present this special first edition of *Cannabis Patient Care* focused on veterans. I hope everyone reading this takes away something special from the veterans, researchers, advocates, and medical professionals that are working so hard to make a difference in this community—I know I certainly have and I thank each of them for sharing their stories and work with us.

The 2019 Veterans Health and Medical Cannabis Study

BY DR. MARION McNABB, STEPHEN MANDILE, DJ RITTER, ANN BRUM, RACHEL BACON, RANDAL MACCAFFRIE, DAWSON STOUT, DR. STEPHEN WHITE, ALEXANDER NICHOLAS REWEGAN AND ERICA TANGNEY

Dr. Marion McNabb and colleagues report on the findings from the anonymous 2019 Veterans Health and Medical Cannabis Study, which was a national and Massachusetts-focused research study led by McNabb, Stephen Mandile, leading Iraqi War Veteran and medical cannabis advocate, and Dr. Stephen White, Professor at UMass Dartmouth. The study's main objective was to collect anonymous, self-reported data from US military veterans regarding their current health conditions, conventional medical treatments, medical cannabis use, and its effectiveness with self-reported health conditions and symptoms, and issues related to access and stigma.

AS OF 2020, there are more than 18 million veterans in the United States, with over nine million veterans who access healthcare each year provided by the Department of Veterans Affairs (VA) (1). Every year, more than 200,000 veterans transition out of service (2).

US military service members and veterans often face particular and comorbid health issues more than their civilian counterparts because they are at risk for different injuries during their service. These could be combat or stress related, and many injuries are life-threatening or can cause long-term disability. Additionally, service members are also at higher risk for health problems related to exposure to environmental hazards such as contaminated water, chemicals, infections, and burn pits. Service members are also disproportionately at risk of developing a variety of mental health problems, including anxiety, post-traumatic stress disorder (PTSD), depression, substance use disorder (SUD), and suicide (3).

Research points to the early transition period for veterans as a critical time to support them with the readjustment period and its associated challenges (2). Vogt and colleagues conducted a five-year study with a nationally representative sample of more than 9500 US veterans during their first year after military service. The study assessed veterans' well-being over time related to health, work, and social relationships over three intervals. The study, published in March 2020, found that health concerns were the top issues, with 53% of veterans reporting chronic physical pain and 33% reporting chronic mental health conditions. The top conditions reported included: chronic pain, sleep problems, anxiety, and depression (4).

Veterans reported overall that they were less satisfied with their health than either their work or social relationships after returning home (4). Zone deployed veterans

reported more health concerns, and women reported more mental health concerns compared to their nondeployed and male peers (5).

The VA reports that veterans suffer from chronic pain, with around 60% of veterans returning from combat, and 50% of elder veterans reporting suffering from chronic pain. Nationally, 30% of Americans suffer from chronic pain (6).

The resulting and compounding health conditions that veterans face post-deployment comes with the need for healthcare, numerous prescription medications, and mental health interventions.

Nguyen and colleagues published a study in 2017 that looked into the prevalence of medication dispensing across VA and non-VA care providers among a group of veterans. The study included a cohort of more than 52,000 veterans and found that on average they were prescribed 40 medications per year, and 17.4% of them had medication use from non-VA sources, including antibiotics, antineoplastics, and anticoagulants. The non-VA and VA medication sources were not in the same health records, causing fragmented care and documentation of medications (7).

Another survey conducted in 2020 of 1700 US Iraq and Afghanistan veterans found that 46% were prescribed antidepressants, 35% anti-anxiety medications, 36% sleeping pills, and 32% opioids (8). An additional study led by the Defense Department found that nearly one in four active-duty members had at least one prescription for an opioid at some point in 2017. The study also noted that about one in four veterans had at least one opioid prescription, yet only one tenth of a percent (0.001%) of veterans were receiving care for a diagnosed opioid use disorder (9).

Based on our research and findings in the studies described above, we set out to conduct our own study in 2019 to discover how medical cannabis was helping veterans in Massachusetts and nationally. The study's main objective

was to collect anonymous, self-reported data from US military veterans regarding their current health conditions, conventional medical treatments, medical cannabis use, and its effectiveness with self-reported health conditions and symptoms, and issues related to access and stigma. Here we report on some of our findings from that study.

Before we delve into our own data, we'd like to provide some additional context for the various ailments facing veterans. Specifically, high addiction rates and PTSD are more common in veterans than the general public. Let's take a closer look at those two conditions, the available treatments, and the ways in which cannabis has been effective.

Addiction Rates

Military deployment is associated with smoking, unhealthy drinking, illicit drug use, and risky behaviors. There is a zero-tolerance policy for veterans that mandates random drug testing and often discourages veterans from seeking help. Service members can be dishonorably discharged and face criminal prosecution for a positive drug test.

According to the US National Institutes of Drug Abuse (NIDA) more than 1 in 10 veterans have been diagnosed with a substance use disorder (SUD), which is slightly higher than the general population. Veterans are also impacted by issues related to substance abuse, including pain, suicide risk, trauma, and homelessness (10).

In terms of substances, cannabis is the vast majority of illicit drug use among veterans. Historically, the VA has not recognized medical cannabis, and thus has recorded cannabis positive drug tests as cannabis use disorder (CUD). From 2002–2009, CUDs increased more than 50% among veterans treated at the VA (10).

Opioid and other prescription drug misuse is a major issue with the veteran community, post deployment. From 2001–2009 military physicians wrote nearly 3.8 million prescriptions of pain medications, with the percent of veterans in the VA who received an opioid prescription increasing from 17–24%, quadrupling the amount from 2001 (10). The opioid overdose rates of veterans increased from 14% in 2010 to 21% in 2016 (10).

More recently, self-reported use of prescriptions for pain have decreased. From 2011–2015 the percent of reported use of pain medications decreased by nearly half (10).

Among veterans who present for the first time for care with the VA, nearly 11% meet the criteria for an SUD. It is reported that about 20% of high-risk behavior deaths among veterans were attributed to alcohol or drug overdose (10).

Additionally, veterans who have an SUD also may have comorbid conditions such as PTSD, depression, and anxiety. In fact, veterans with SUDs are 3–4 times more likely to be diagnosed with PTSD or depression (10). Among recent Afghanistan and Iraq veterans, NIDA reports that 63% of those who were diagnosed with having an SUD met the criteria for PTSD (10).

“PTSD prevalence among veterans varies greatly by wars and eras.”

Veterans also face disproportionate rates of suicide compared to their civilian counterparts. In fact, in 2017, 16.8 veterans committed suicide per day and the suicide rate for veterans was 1.5 times the rate for non-veteran adults (1). In 2017, a VA-funded study of nearly 124,000 veterans found that those who received the highest doses of opioids were twice as likely to die of suicide than those receiving the lowest doses (10).

Post-Traumatic Stress Disorder

According to the American Psychiatric Association (APA), PTSD is a “psychiatric disorder that may occur in people who have experienced or witnessed a traumatic event such as a natural disaster, a serious accident, a terrorist act, war/combat, or rape or who have been threatened with death, sexual violence or serious injury.” PTSD can affect any person, any nationality, culture, or at any age. People with PTSD face disturbing thoughts and feelings related to their traumatic experience that can last a long time after the event. Events are relived through flashbacks, nightmares, and they may also feel sadness, fear, anger, or detached from other people. People with PTSD often avoid situations that remind them of the traumatic event and may have strong negative reactions to something as ordinary as an accidental touch or loud noise (11).

Several PTSD scales are commonly used to diagnose PTSD severity, including the PTSD checklist called the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) Post-traumatic Stress Disorder Checklist (PCL-5), which is a self-reported questionnaire required by the VA for veterans being treated for PTSD (12).

PTSD prevalence among veterans varies greatly by wars and eras. According to a study conducted by Reisman and colleagues of Iraq and Afghanistan veterans, 13.5% of deployed and nondeployed veterans screened positive for PTSD whereas other studies showed rates as high as 20% and 30% (12).

According to the national Veterans' Affairs, the number of veterans who suffer from PTSD varies by service era:

- Between 11–20% for those who served in Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF)
- 12% of those who served in the Gulf War (Desert Storm)
- 30% for those who served in the Vietnam War have had PTSD in their lifetime

“Eighty-three percent of veterans reported that the federal government should legalize cannabis.”

Another cause of PTSD in the military can be military sexual trauma (MST). According to the VA, 23% of women reported sexual assault when in the military, and 55% of women reported experiencing sexual harassment when in the military. Also, 38% of men report having experienced sexual harassment while in the military (13).

PTSD often has associated comorbidities, with depression being the most common. Data reported by Reisman and colleagues in a review of what's working for treatment of PTSD in veterans showed that major depressive disorder is nearly three to five times more likely to emerge in those with PTSD than not. Physical pain is also associated with PTSD. Veterans returning from Iraq and Afghanistan report chronic pain to be one of the most common symptoms, with 15–35% of patients with chronic pain reporting to also have PTSD (12).

Additionally, anxiety and substance abuse or dependence is also common among those who suffer from PTSD. The VA reports that more than 2 out of 10 veterans with PTSD also have an SUD, and almost 1 out of every 3 veterans seeking treatment for an SUD also has PTSD (13).

How Is PTSD Currently Treated?

Psychological interventions are the first line of treatment for PTSD among veterans, cognitive processing therapy (CPT) and prolonged exposure (PE) therapy are the most common approaches (12). Eye-movement desensitization and reprocessing (EMDR) is also recommended as an effective first-line treatment. Pharmacological interventions are common as a second- or first-line treatment approach. Antidepressant medications called selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) are the preferred class of medications, and studies show only 20–30% of patients achieve complete remission with using an anti-depressant (12).

There are currently four antidepressants that are recommended by the VA for those who suffer with PTSD: Sertraline (Zoloft), Paroxetine (Paxil), Fluoxetine (Prozac), and Venlafaxine (Effexor) (14). SSRIs have side effects including insomnia, drowsiness, nausea, dizziness, nervousness, agitation, dry mouth, headache, blurred vision, and sexual problems (15). The VA has a treatment decision aid application to help veterans find the right therapy or medication for managing their PTSD symptoms (16).

The economic consequences of having PTSD are high for veterans. The first-year treatment for Iraq and Afghanistan veterans treated through the VA is estimated to be \$8300 per

person. The healthcare costs, overall, are 3.5 times higher for veterans with PTSD than those without the disorder (12).

Medical Cannabis and PTSD

The use of medical cannabis to treat symptoms of PTSD has emerged as a possible alternative therapy, however, the evidence related to treatment efficacy is conflicting. A recent comprehensive literature review published in 2017 by Klimkiewicz and Jasinska looked at more than 10,000 peer-reviewed publications and reported that there is still a need for conclusive research related to the impact of cannabis for those who suffer with PTSD. The review noted that cannabis use does not appear to increase the likelihood of developing depression, anxiety, and PTSD (17).

As of 2018, 16 states had approved the use of medical cannabis for those who suffer with PTSD (18). However, there is currently a lack of population level data and controlled studies of cannabis use and PTSD in the US. Additionally, studies are reporting conflicting data as to the clinical benefits of medical cannabis for those with PTSD, and specifically veterans who have PTSD.

In 2015, Betthausen and colleagues conducted a literature review of the use of cannabis for PTSD among veterans. The search found 11 research studies pertaining to cannabis use by veterans who suffered from PTSD. Some studies reported a direct correlation between more severe PTSD symptomatology and increased motivation to use cannabis for coping purposes. Data from four small studies suggested that cannabinoid use was associated with global improvements in PTSD symptoms or amelioration of specific PTSD symptoms such as insomnia and nightmares (19).

One study by Jetly in 2015 found a significant positive effect of cannabis in reducing PTSD-associated nightmares (20). In addition, cannabis use as motivation to improve sleep in PTSD patients seems to be strongly correlated (21).

In 2018, Shishko and colleagues published a systematic literature review to understand the use of cannabis among those suffering with PTSD. The review found five studies that evaluated the use of cannabis for PTSD. Three studies were found to have a benefit, and two studies were found to have a statistically significant difference in worse PTSD outcomes (18).

However, more recently, in 2019 researchers Lake and colleagues in Canada conducted an analysis of health survey data from more than 24,000 Canadians and concluded that people who have PTSD but do not medicate with cannabis are far more likely to suffer from severe depression and have

suicidal thoughts more so than those who reported cannabis use over the past year (22). The authors noted that their study was the first nationally representative survey to show promising benefits of treating PTSD with cannabis and reducing severe depression and suicidal states. They reported that with such limited options for treating PTSD, many have taken to medicating with cannabis (22).

Other researchers in a US Department of Defense funded study found that cannabis use may increase suicidality in military personnel with elevated PTSD symptoms. In a study of 545 veterans in a one-year study, they found that cannabis use and PTSD symptoms increased suicidal behavior over an 11-month period (23).


O'Neil and colleagues in 2017 published a systematic literature review to understand the benefits and the harms of cannabis for PTSD. They found two systematic reviews and three observational studies that were deemed to have a high risk of bias, but noted there are several ongoing research studies to look at the efficacy (24).

LaFrance and colleagues analyzed data from 400 Strainprint (cannabis journaling mobile application) users and found the sustained reduction of symptoms of PTSD among cannabis consumers who self-reported PTSD diagnosis (25).

Cannabis research in the US is very difficult to conduct because cannabis is still federally illegal. This limits researchers and academic institutions that receive federal grants or funding from participating. To conduct a clinical trial with cannabis in the US,

researchers must use cannabis from only one approved source—the University of Mississippi. Often the cannabis produced from that source is not representative of the cannabis available widely on the market (17).


To date, there has only been one clinical trial completed in 2019 to evaluate the use of cannabis as a treatment for PTSD symptoms. The leading researcher, Dr. Sue Sisley of the Scottsdale Research Institute and the



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Multidisciplinary Association for Psychedelic Studies (MAPS), worked for 10 years from the start of the research design, through regulatory approval, and conducting the study. The results are being analyzed currently for publication (26).

Veterans Support for Medical Cannabis and Research

Despite the conflicting research findings, veterans are continuing to advocate for the use of medical cannabis as an alternative to the often-deadly cocktails of prescription medications and opioids they are currently prescribed.

In 2017, an American Legion study found that 92% of veterans supported research into medical cannabis and 82% reported wanting to have cannabis as a federally legal treatment. Eighty-three percent (83%) of veterans reported that the federal government should legalize cannabis (27). The American Legion has called for the VA to invest in research for cannabis to be an alternative treatment for PTSD (27).

Since 2018, the Disabled American Veterans (DAV) have included public pushes for medical cannabis use and research for veterans (28). Specifically, the DAV called for research into cannabis as an alternative pain relief option for those who suffer from PTSD, pain, and traumatic brain injuries (TBI) (28).

Iraq and Afghanistan Veterans of America's (IAVAs) most recent national survey showed that one in five members use medical cannabis. However, fewer than one third of veterans mentioned cannabis use to their VA doctor because of fear of loss of jobs or reprisal from the VA (29).

Methods

The anonymous 2019 Veterans Health and Medical Cannabis Study was a national and Massachusetts-focused research study led by Dr. Marion McNabb, CEO of Cannabis Community Care and Research Network (C3RN), Stephen Mandile, leading Iraqi War Veteran and medical cannabis advocate, and Dr. Stephen White, Professor at the University of Massachusetts (UMass) Dartmouth. The study's main objective was to collect anonymous, self-reported data from US veterans regarding their current health conditions, conventional medical treatments, medical cannabis use and its effectiveness with self-reported health conditions and symptoms, and issues related to access and stigma.

The research study utilized a 100+ question anonymous survey online and recruited US veterans to take the survey using a convenience sampling approach. The online survey was developed by Cannabis Community Care and Research Network, UMass Dartmouth, and Mandile. The survey questions were developed using standard scales found in the literature, with input from Dr. Staci Gruber from McLean Hospital and Harvard Medical School.

The study instrument was approved by the UMass Dartmouth Charlton College of Business Institutional Review Board. The survey was powered by SurveyMonkey and

participants were recruited through study partners. Study partners were provided their own unique links to share the survey through their respective social and email listservs. Press releases of data were sent to the local media for TV and print publication, promoting preliminary findings to drive policy change.

In addition to the research study, the team launched the Cannabis Advancement Series (CAS) together with Joint Venture and Co., leading six community education events in Massachusetts regarding veterans' access and highlighting the need for alternatives. Data from the study was reported at each of the events to promote community awareness and change for veterans in Massachusetts. Please refer to www.cannabisadvancementseries.org for the events and speakers who advocated in 2019 for veterans access. Nine primary study partners were recruited to support sharing and funding the study, however the study had more than 39 supporters.

Results and Discussion

Data collection lasted from March 3 through December 31, 2019, and a total of 565 US veterans completed the survey, of which 201 (36%) were from Massachusetts. Veterans reported from 48 states, including Puerto Rico and the District of Columbia.

Among all veterans who responded, 30% were rated as 100% disabled by the VA (the average disability rating is 56%), and 83% of total respondents were male. More than 50% of those who responded were above the age of 50, and 79% identified as white.

Of those who responded, 31% served in the War in Iraq (Operation Iraqi Freedom), 24% did not serve in a war, 21% served in the Vietnam War, 18% served in the Persian Gulf War, 14% selected "Other war," 13% served in the War in Afghanistan, and 8% served in Operation New Dawn. Please see **Table I** for additional data.

In terms of the branch of service, 50% of respondents were in the Army, 21% were in the Navy, 17% were in the Air Force, and 16% were in the Marines. Veterans reported being exposed to several toxins during deployment, with 33% exposed to burn pits, 25% asbestos, and 12% Agent Orange.

According to the VA Combat Exposure Scale, 52% of veterans reported moderate to heavy combat exposure, and 30% reported being homeless currently or in the past.

In terms of health conditions veterans were facing in our sample, 38% reported chronic pain as the top health condition, followed by 25% PTSD, and 9% anxiety.

Nationally, veterans reported using on average 4.1 medications a day to manage their conditions and spent \$98.40 a month out of pocket for prescription or over the counter medications. Only 16% of veterans in our sample reported not having any kind of health insurance. Nationally, 30% of respondents reported having over the counter or prescription medications at their home that they do not use and need to get rid of. In addition, 56% reported getting their

Table I: Demographics

Indicator		N (National)	% (National)	N (MA)	% MA
Branch of Service					
		N=565		N=201	
	Army	283	50.09%	108	53.73%
	Navy	121	21.42%	38	18.91%
	Air Force	94	16.64%	24	11.94%
	Marines	90	15.93%	38	18.91%
	Coast Guard	8	1.42%	2	1.00%
	Other	8	1.42%	2	1.00%
Gender					
		N=565		N=201	
	Male	469	83.01%	180	89.55%
	Female	87	15.40%	19	9.45%
	Prefer not to answer	6	1.06%	2	1.00%
	Prefer to self-describe	3	0.53%	0	0.00%
Age (years)					
		N=565		N=201	
	21–29	38	6.73%	12	5.97%
	30–39	128	22.65%	40	19.90%
	40–49	100	17.70%	32	15.92%
	50–59	105	18.58%	32	15.92%
	60–69	135	23.89%	52	25.87%
	70+	59	10.44%	33	16.42%
Race					
		N=565		N=201	
	Non-Hispanic White or Euro-American	444	78.58%	168	83.58%
	Prefer not to answer	47	8.32%	14	6.97%
	Latino or Hispanic American	33	5.84%	6	2.99%
	Black, Afro-Caribbean, or African American	23	4.07%	9	4.48%
	Native American or Alaskan Native	8	1.42%	1	0.50%
	East Asian or Asian American	5	0.88%	1	0.50%
	Middle Eastern or Arab American	3	0.53%	2	1.00%
	South Asian or Indian American	2	0.35%	0	0.00%
Self-Reported Cannabis Use					
		N=565		N=201	
	Medically indicated, self-determined	345	61.06%	120	59.70%
	Medically indicated, recommended by a licensed clinical provider	299	52.92%	100	49.75%
	Recreational user	197	34.87%	84	41.79%
	Other	37	6.55%	12	5.97%
	Religious	24	4.25%	4	1.99%

Table II: Top health conditions reported by veterans

Health Condition	N (National) N=565	% (National)	N (MA) N=201	% MA
Chronic pain	217	38.41%	75	37.31
Post-traumatic stress disorder (PTSD)	144	25.49%	49	24.38%
Anxiety	51	9.03%	20	9.95%
Depression	34	6.02%	11	5.47%
Insomnia	19	3.36%	8	3.98%
Cancer	17	3.01%	9	4.48%
Arthritis	15	2.65%	5	2.49%
Bipolar/manic depression	11	1.95%	5	2.49%
Cardiovascular disease	8	1.42%	4	1.99%
Diabetes	7	1.24%	2	1.00%
Gastrointestinal/digestive system disorders	7	1.24%	1	0.50%
Fibromyalgia/myositis	6	1.06%	2	1.00%
Respiratory problems	6	1.06%	2	1.00%
Hypertension	4	0.71%	2	1.00%
Multiple sclerosis	4	0.71%	1	0.50%
Obesity	4	0.71%	1	0.50%
Substance abuse/addiction	3	0.53%	3	1.49%
Attention deficit/hyperactivity disorder (ADHD)	2	0.35%	0	0.00%
Inflammatory bowel disease (IBD)	2	0.35%	0	0.00%
Reflux esophagitis	2	0.35%	1	0.50%
Allergies	1	0.18%	0	0.00%
HIV/AIDS	1	0.18%	0	0.00%

prescriptions mailed to them from the VA, and only 5% reported being diagnosed for an opioid use disorder in the past, with 1% currently diagnosed.

Among the symptoms veterans reported having, 68% reported depression, 68% sleep problems, 64% pain, 57% anxiety, and 37% attention deficit disorder.

In terms of cannabis use, 92% reported consuming medical cannabis, and 72% of veterans have consumed cannabis for 13 months to more than 10 years.

Among those who reported medical cannabis use, the top conditions they reported it being the most helpful for included: 37% chronic pain, 25% PTSD, 11% anxiety, and 7% depression.

Veterans were asked to identify all health conditions (in addition to the top condition) that they found cannabis helpful for. Overall, 70% reported it useful for pain, 64% anxiety, 57% depression, 53% PTSD, and 37% insomnia. Please see **Tables II–VI** for additional data.

In terms of side effects of medical cannabis use, 68% reported dry mouth, 35% increase energy, and 35% changes in appetite.

Nationally, 78% of veterans reported actively trying to reduce the use of unwanted over the counter or prescription medications with medical cannabis. See **Table VII** for additional data.

PTSD and Cannabis Use

Among those who reported PTSD as their top condition, 75% scored a PTSD positive score when completing the DSM-5 (PCL-5) checklist that the VA uses to clinically diagnose PTSD. A total score of 50 is considered to be PTSD positive in the military, and veterans in our sample had an average score of 59. In our national sample, 25% of veterans reported PTSD as their top condition (n = 144) for which cannabis was most helpful.

In our study, 144 veterans nationally identified PTSD as their top condition (n = 144) for which medical cannabis is helpful. Nationally, veterans reported spending an average dollars per week (N = 565) of \$85.77 or \$343.08/month on medical cannabis. This average was slightly lower than those who reported PTSD, who report spending \$91.99/week or \$367.96/month. Veterans with PTSD (N = 144) report

Table III: Top health conditions cannabis was reported as most helpful

Health Condition	N (National) N=565	% (National)	N (MA) N=201	% MA
Chronic pain	210	37.17%	73	36.32%
Post-traumatic stress disorder (PTSD)	143	25.31%	49	24.38%
Anxiety	62	10.97%	23	11.44%
Depression	39	6.90%	13	6.47%
Insomnia	32	5.66%	12	5.97%
Arthritis	20	3.54%	8	3.98%
Cancer	13	2.30%	8	3.98%
Bipolar/manic depression	9	1.59%	4	1.99%
Substance abuse/addiction	7	1.24%	3	1.49%
Fibromyalgia/myositis	5	0.88%	1	0.50%
Hypertension	5	0.88%	1	0.50%
Diabetes	4	0.71%	1	0.50%
Gastrointestinal/digestive system disorders	4	0.71%	2	1.00%
Attention deficit/hyperactivity disorder (ADHD)	3	0.53%	1	0.50%
Multiple sclerosis	3	0.53%	1	0.50%
Cardiovascular disease	2	0.35%	1	0.50%
HIV/AIDS	2	0.35%	0	0.00%
Inflammatory bowel disease (IBD)	1	0.18%	0	0.00%
Respiratory problems	1	0.18%	0	0.00%

spending \$85 a month on prescriptions compared to our national veterans' sample (N = 565), who report spending \$98 a month on prescriptions.

Among veterans with PTSD in our national sample, 35% report reducing antidepressants with the use of medical cannabis, compared to 26% of the national sample reporting reducing antidepressant use with cannabis. Additionally, among those with PTSD, 11% of respondents report reducing opioid use with cannabis, compared to 17% of the overall national sample reducing opioid use with medical cannabis.

For veterans with PTSD, 68% (n = 91) report using alcohol much less with the use of cannabis, 19% less, and 12% report about the same. In terms of quality of life, veterans with PTSD report 66% greater daily quality of life much more, and 31% more. In addition, 78% report using opioids much less now, and 43% reported using prior non-opioid medications much less now, 29% less now, and 28% about the same. Among those with PTSD, 50% reported smoking tobacco much less now, 29% about the same amount of use, and 17% less now.

Among veterans with PTSD, 94% reported cannabis helps them experience psychological symptoms (anxiety, stress, sadness) much less or less now. Additionally, 96% of veterans

with PTSD report they experience a greater or much greater quality of life due to their cannabis use.

In terms of barriers to accessing medical cannabis among veterans in our national sample who have PTSD (n = 144), the largest barriers include (note that veterans could select all that apply): 57% money to purchase products; 46% access the right products; 36% stigma; 33% owning a firearm; 33% money to get a medical card; 28% workplace testing; 27% place to consume cannabis; 16% lack of knowledge; and 5% previous bad experience.

In terms of VA provider and policy related to medical cannabis use, as of VHA directive 1315 issued on December 8, 2017, it is VA policy that VHA providers and pharmacists should discuss cannabis use with veterans as it is relevant to their clinical care. They are however prohibited from being state-licensed cannabis providers, but still encouraged to discuss with their patients how cannabis can be used for their clinical care, including possible interactions with the medications they are taking and this information must be recorded.

In our sample, we found that the majority of veterans have reported medical cannabis use to their VHA provider, but 63% do not know if they support it.

With the VA mandating that the providers should discuss cannabis use with veterans, we found in our sample that

Table IV: Top symptoms reported that was cannabis most helpful for

Symptom	N (National) N=565	% (National)	N (MA) N=201	% MA
Sleep/insomnia	320	56.64%	101	50.25%
Pain	315	55.75%	102	50.75%
Depression/mood	293	51.86%	91	45.27%
Anxiety/panic attacks	270	47.79%	83	41.29%
Aggression	149	26.37%	48	23.88%
Headache	122	21.59%	32	15.92%
Inflammation	115	20.35%	35	17.41%
Attention/concentration	111	19.65%	29	14.43%
Appetite/weight	94	16.64%	30	14.93%
Spasms	90	15.93%	26	12.94%
Nausea/vomiting	64	11.33%	15	7.46%
Other (please specify)	33	5.84%	15	7.46%
Ocular pressure	21	3.72%	7	3.48%
Skin conditions	18	3.19%	3	1.49%
Mania/psychosis	16	2.83%	2	1.00%
Respiratory	12	2.12%	2	1.00%
Drug withdrawal	7	1.24%	2	1.00%
Seizures	6	1.06%	1	0.50%

this dialogue is not happening. Generally, veterans report finding out medical cannabis information from other informal, non-clinical sources, yet the majority of veterans in our sample (78%) report using cannabis currently or in the past as an alternative to other medications.

Discussion

The 2019 Veterans' Health and Medical Cannabis Study collected anonymous data nationally from veterans with a focus on Massachusetts. The community education arm, the Cannabis Advancement Series, was a collaboration with UMass Dartmouth, C3RN, Stephen Mandile, and Joint Venture & Co. The team conducted the research study and held local educational events to share data and findings to inform local policy change for veterans' access to alternatives, as part of the study design.

Through this study, investigators were able to document current health conditions faced by veterans and understand their medical cannabis use and its impact on health conditions and symptoms reported by veterans. The data in our study align with national reports of health conditions faced by veterans.

The top conditions reported in our study found that medical cannabis is useful for chronic pain, PTSD, and anxiety.

These findings are similar to other studies in the literature reporting relief with these main conditions.

An overwhelming majority of veterans are using cannabis as a harm reduction method to replace other lethal and more toxic substances. Approximately 78% of the veterans in our sample report actively or in the past having used medical cannabis to reduce prescription and over the counter (OTC) medications. Among those with PTSD, higher rates of reducing the use of anti-depressants with the help of medical cannabis was reported.

Given that anti-depressants are the most common form of treating PTSD, these findings are pointing to veterans preferring medical cannabis as a treatment. This is similar to the findings by Lake and colleagues who recently completed a nationally representative study in Canada, which reported that veterans are preferring medical cannabis to the existing PTSD treatments and prescription medications.

Despite its potential to improve the quality of life for many veterans, the top two barriers reported that veterans face for access are related to cost—thus limiting access. Nationally, veterans report spending \$98 a month on prescription medications, and an average of \$343 a month for medical cannabis. Medical cannabis is not covered by insurance and can be very costly for a veteran who is on disability.

Table V: Quality of life changes with cannabis consumption

Indicator		N (National)	% (National)	N (Mass)	% (Mass)
I experience a greater quality of life		N=554		N=194	
	Much Less Now	4	0.72%	1	0.52%
	Less	7	1.26%	3	1.55%
	About the Same	32	5.78%	13	6.70%
	More	207	37.36%	84	43.30%
	Much More Now	304	54.87%	93	47.94%
I experience physical symptoms (body pains, function, sensation)		N=531		N=185	
	Much Less Now	144	27.12%	35	18.92%
	Less	265	49.91%	103	55.68%
	About the Same	75	14.12%	32	17.30%
	More	29	5.46%	10	5.41%
	Much More Now	18	3.39%	5	2.70%
I experience psychological symptoms (anxiety, stress, sadness)		N=524		N=184	
	Much Less Now	158	30.15%	40	21.74%
	Less	288	54.96%	118	64.13%
	About the Same	48	9.16%	17	9.24%
	More	18	3.44%	7	3.80%
	Much More Now	12	2.29%	2	1.09%
I use opioids		N=169		N=55	
	Much Less Now	116	68.64%	35	63.64%
	Less	26	15.38%	9	16.36%
	About the Same	23	13.61%	11	20.00%
	More	4	2.37%	0	0.00%
	Much More Now	0	0.00%	0	0.00%
I use my prior medications (non-opioid)		N=409		N=151	
	Much Less Now	136	33.25%	31	20.53%
	Less	115	28.12%	49	32.45%
	About the Same	150	36.67%	70	46.36%
	More	4	0.98%	0	0.00%
	Much More Now	4	0.98%	1	0.66%
I use alcohol		N=337		N=118	
	Much Less Now	193	57.27%	60	50.85%
	Less	70	20.77%	26	22.03%
	About the Same	67	19.88%	30	25.42%
	More	6	1.78%	2	1.69%
	Much More Now	1	0.30%	0	0.00%

Table V: Quality of life changes with cannabis consumption (continued)

Indicator		N (National)	% (National)	N (Mass)	% (Mass)
I use tobacco		N=217		N=69	
	Much Less Now	94	43.32%	30	43.48%
	Less	43	19.82%	16	23.19%
	About the Same	73	33.64%	21	30.43%
	More	4	1.84%	2	2.90%
	Much More Now	3	1.38%	0	0.00%
I feel the quality of my daily life is		N=550		N=192	
	Much Less Now	1	0.18%	0	0.00%
	Less	8	1.45%	4	2.08%
	About the Same	68	12.36%	29	15.10%
	More	229	41.64%	90	46.88%
	Much More Now	244	44.36%	69	35.94%

Table VI: Preferred top method of cannabis consumption

Method	N (National) N=565	% (National)	N (MA) N=201	% MA
Smoke flower	265	46.90%	94	46.77%
Vape cartridges	87	15.40%	39	19.40%
Edibles (such as gummies, chocolate, lozenges, beverages, cooking oils)	85	15.04%	29	14.43%
Concentrates (such as rosin, shatter, wax, hash, kief)	41	7.26%	8	3.98%
Tinctures	34	6.02%	7	3.48%
Vape flower	32	5.66%	16	7.96%
Capsules	16	2.83%	5	2.49%
Salves/topicals	4	0.71%	2	1.00%
Transdermal patches	1	0.18%	1	0.50%

Medical cannabis use among veterans in our sample is reported effective for improving quality of life, improving clinical, physical, and psychological symptoms, and reducing the use of unwanted medications. Despite its effectiveness, veterans are currently in a difficult position to access a medical cannabis card, receive effective guidance from their VA provider, and access the funds needed to get the cannabis in the amounts they need for medical relief. With veterans being more likely to suffer from chronic health problems, suicide, and PTSD, there is a need to continue to not only conduct further research on the benefits, but also start to develop dosing guides and other clinical tools to integrate medical cannabis as an alternative treatment (15).

Conclusion

US Military veterans in our research study reported the use of medical cannabis for a variety of health conditions, including

chronic pain, PTSD, and anxiety. Veterans reported that the use of medical cannabis greatly improves their physical and mental health conditions, and an overwhelming majority of veterans are using cannabis as an alternative to prescription or over the counter medications. Barriers to use include cost and healthcare provider awareness. Further inquiry using more rigorous research study designs will help to further identify appropriate use of medical cannabis for a variety of health conditions veterans face.

Acknowledgements

The authors want to give a special thank you to all the veterans for your service and for sharing your anonymous results for this study to drive change in access to alternatives. This study would not have been possible without you. Thank you also for the support, sharing, and collaboration of the following primary study funding and in-kind support partners: Thorn

Table VII: Reduction of unwanted medications through cannabis use

Indicator		N (National)	% (National)	N (MA)	% MA
Actively reducing the use of the following medications with cannabis					
		N=565		N=201	
	Over the counter (OTC) medications (such as Ibuprofen, Acetaminophen, sleep aids, allergy medications, Tylenol)	168	29.73%	65	32.34%
	Antidepressants (such as Lexapro, Prozac, Wellbutrin, Effexor, Nortriptyline)	147	26.02%	53	26.37%
	I have reduced my prescription medication use in the past	133	23.54%	39	19.40%
	Marines I don't take any medications	103	18.23%	32	15.92%
	Narcotics/opioids (such as Percocet, Vicodin, Codeine)	98	17.35%	36	17.91%
	Anti-inflammatories	94	16.64%	39	19.40%
	Muscle relaxants	88	15.58%	32	15.92%
	Benzodiazepines (such as valium, Xanax, Klonopin, Ativan)	79	13.98%	27	13.43%
	I'm not trying to reduce any medication use	74	13.10%	39	19.40%
	Mood Stabilizers/Anticonvulsants (e.g. Lamictal, Gapapentin, Keppra, Topzmax)	63	11.15%	27	13.43%
	Other (please specify)	39	6.90%	7	3.48%
	Statins (such as Lipitor, Crestor)	29	5.13%	11	5.47%
	Sedatives/hypnotics	25	4.42%	10	4.98%
	Stimulants (such as Adderall, Vyvanse, Concerta, Ritalin)	24	4.25%	7	3.48%
	Steroids, including steroid creams	22	3.89%	6	2.99%
	Beta Blockers	21	3.72%	7	3.48%
	Antimigraine	19	3.36%	5	2.49%
	Antihypertensives	18	3.19%	7	3.48%
	Antipsychotics (such as Abilify, Seroquel)	15	2.65%	7	2.99%
	Proton pump inhibitors	10	1.77%	5	2.49%
	Barbiturates (such as Floricet)	9	1.59%	4	1.99%
	Insulin	8	1.42%	0	0.00%
	Antiemetics	5	0.88%	1	0.50%
	Hormone replacement therapy (HRT)	3	0.53%	1	0.50%

Law Group, Giovanni DeCunto, Laer Realty, AmeriCann, Bask, Cannabis Creative Group, The Disabled American Veterans (DAV) Massachusetts Chapter, MCR Labs, Revolutionary Clinics, The Botanist, The Healing Rose, and Weedmaps. Additional thanks to Central Ave, Insa, and Good Chemistry for their support as study coupon partners.

Thank you to Dr. Staci Gruber from Harvard/McLean and to the DAV and the IAVA for their study collaboration. Thank you to the media partners who helped recruit participants: *Sensi Magazine*, *NECANN*, *Different Leaf Magazine*, *Weedmaps*, local MA press, and clinical partner Dr. Dustin Sulak, Healer.com.

References

- (1) U. Department of Veterans Affairs Office of Mental Health and S. Prevention, "2019 National Veteran Suicide Prevention Annual Report"
- (2) "Health ranks as top concern for Veterans immediately after military service." <https://www.research.va.gov/currents/0120-Health-ranks-as-top-concern-for-Veterans.cfm> (accessed Sep. 03, 2020).
- (3) "Veterans and Military Health," Accessed: Sep. 03, 2020. [Online]. Available: <https://medlineplus.gov/veteransandmilitaryhealth.html>.
- (4) D.S. Vogt *et al.*, "U.S. Military Veterans' Health and Well-Being in the First Year After Service," *Am. J. Prev. Med.*, vol. 58, no. 3, pp. 352–360, Mar. 2020, doi: 10.1016/j.jamepre.2019.10.016.
- (5) D. Vogt, B. N. Smith, A. B. Fox, T. Amoroso, E. Taverna, and P. P. Schnurr,

- "Consequences of PTSD for the work and family quality of life of female and male U.S. Afghanistan and Iraq War veterans," *Soc. Psychiatry Psychiatr. Epidemiol.*, vol. 52, no. 3, pp. 341–352, Mar. 2017, doi: 10.1007/s00127-016-1321-5.
- (6) "Survey shows veteran households support research of medical cannabis | The American Legion." <https://www.legion.org/veteranshealthcare/239814/survey-shows-veteran-households-support-research-medical-cannabis> (accessed Sep. 03, 2020).
- (7) K. A. Nguyen et al., "Medication use among veterans across health care systems," *Appl. Clin. Inform.*, vol. 8, no. 1, pp. 235–249, 2017, doi: 10.4338/ACI-2016-10-RA-0184.
- (8) "U.S. veterans with current prescribed selected medications 2020 | Statista." <https://www.statista.com/statistics/586712/iraq-afghanistan-veterans-with-current-medication-prescription/> (accessed Sep. 04, 2020).
- (9) "1 in 4 troops have an opioid prescription in a given year." <https://www.militarytimes.com/pay-benefits/2018/12/04/one-in-four-troops-have-an-oid-pid-prescription-in-a-given-year/> (accessed Sep. 04, 2020).
- (10) "Substance Use and Military Life DrugFacts | National Institute on Drug Abuse (NIDA)." <https://www.drugabuse.gov/publications/drugfacts/substance-use-military-life> (accessed Sep. 03, 2020).
- (11) "What Is PTSD?" <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd> (accessed Aug. 31, 2020).
- (12) M. Reisman, "PTSD Treatment for Veterans: What's Working, What's New, and What's Next," *P T*, vol. 41, no. 10, pp. 623–634, Oct. 2016, Accessed: Aug. 27, 2020. [Online]. Available: <http://www.ncbi.nlm.nih.gov/pubmed/27757001>.
- (13) "Substance Abuse in Veterans - PTSD: National Center for PTSD." https://www.ptsd.va.gov/understand/related/substance_abuse_vet.asp (accessed Sep. 04, 2020).
- (14) "PTSD Treatment Basics - PTSD: National Center for PTSD." https://www.ptsd.va.gov/understand_tx/tx_basics.asp (accessed Aug. 31, 2020).
- (15) "Veterans Struggle to Gain Access to Medical Marijuana." <https://www.natlawreview.com/article/veterans-struggle-to-gain-access-to-medical-marijuana> (accessed Aug. 27, 2020).
- (16) "PTSD : Decision Aid." <https://www.ptsd.va.gov/apps/decisionaid/> (accessed Aug. 31, 2020).
- (17) A. Klimkiewicz and A. Jasinska, "The health effects of cannabis and cannabinoids," *Psychiatry*, vol. 15, no. 2, pp. 88–92, Jun. 2018, doi: 10.12726/24625.
- (18) I. Shishko, R. Oliveira, T. A. Moore, and K. Almeida, "A review of medical marijuana for the treatment of posttraumatic stress disorder: Real symptom re-leaf or just high hopes?," *Ment. Heal. Clin.*, vol. 8, no. 2, pp. 86–94, Mar. 2018, doi: 10.9740/mhc.2018.03.086.
- (19) K. Betthausen, J. Pilz, and L. E. Vollmer, "Use and effects of cannabinoids in military veterans with posttraumatic stress disorder," *Am. J. Heal. Pharm.*, vol. 72, no. 15, pp. 1279–1284, Aug. 2015, doi: 10.2146/ajhp140523.
- (20) R. Jetly, A. Heber, G. Fraser, and D. Boisvert, "The efficacy of nabilone, a synthetic cannabinoid, in the treatment of PTSD-associated nightmares: A preliminary randomized, double-blind, placebo-controlled cross-over design study," *Psychoneuroendocrinology*, vol. 51, pp. 585–588, 2015, doi: 10.1016/j.psyneuen.2014.11.002.
- (21) M. O. Bonn-Miller, K. A. Babson, and R. Vandrey, "Using cannabis to help you sleep: Heightened frequency of medical cannabis use among those with PTSD," *Drug Alcohol Depend.*, vol. 136, no. 1, pp. 162–165, 2014, doi: 10.1016/j.drugalcdep.2013.12.008.
- (22) S. Lake et al., "Does cannabis use modify the effect of post-traumatic stress disorder on severe depression and suicidal ideation? Evidence from a population-based cross-sectional study of Canadians," *J. Psychopharmacol.*, vol. 34, no. 2, pp. 181–188, Feb. 2020, doi: 10.1177/0269881119882806.
- (23) N. P. Allan, L. Ashrafioun, K. Kolmogorova, A. M. Raines, C. W. Hoge, and T. Stecker, "Interactive effects of PTSD and substance use on suicidal ideation and behavior in military personnel: Increased risk from marijuana use," *Depress. Anxiety*, vol. 36, no. 11, pp. 1072–1079, Nov. 2019, doi: 10.1002/da.22954.
- (24) M. E. O'Neil et al., "Benefits and Harms of Plant-Based Cannabis for Posttraumatic Stress Disorder," *Ann. Intern. Med.*, vol. 167, no. 5, p. 332, Sep. 2017, doi: 10.7326/M17-0477.
- (25) E. M. LaFrance, N. C. Glodsky, M. Bonn-Miller, and C. Cuttler, "Short and Long-Term Effects of Cannabis on Symptoms of Post-Traumatic Stress Disorder," *J. Affect. Disord.*, vol. 274, pp. 298–304, Sep. 2020, doi: 10.1016/j.jad.2020.05.132.
- (26) "Medical Marijuana for PTSD in Veterans - Study Timeline - MAPS." <https://maps.org/research/mmj/marijuana-us/news> (accessed Aug. 27, 2020).
- (27) "Medical Marijuana Research | The American Legion." <https://www.legion.org/mmjresearch> (accessed Sep. 03, 2020).
- (28) "The Cannabis cure - DAV." <https://www.dav.org/learn-more/news/2018/the-cannabis-cure/> (accessed Sep. 03, 2020).
- (29) "Veterans Medical Marijuana and PTSD," *Healthline*. <https://www.healthline.com/health-news/why-are-veterans-still-being-denied-cannabis-for-ptsd-treatment#Veterans-group-supports-medical-cannabis> (accessed Aug. 27, 2020).

about the authors



Marion McNabb, DrPH, MPH is the President of Cannabis Center of Excellence, INC (CCOE) a 501c3 nonprofit organization that conducts citizen-science focused population studies and programs in the areas of community engagement, medical cannabis, adult-use cannabis, and social justice in the cannabis industry. The CCOE serves as a virtual resource and network of cannabis industry professionals, academics, policy makers, healthcare providers, consumers, and patients who aim to break the stigma and advance social justice in the cannabis industry. The CCOE, INC is currently running a COVID-19 cannabis patient and consumer study: www.cannacenterofexcellence.org. Dr. McNabb is the former CEO and cofounder of the Cannabis Community Care and Research Network (C3RN), a Massachusetts-based cannabis research company from 2018–2020 that aimed to improve the evidence-base related to medical cannabis therapies. C3RN, with UMass Dartmouth, led a two-year open cannabis consumer and patient research study to assess the impact on health, social, and economic outcomes. C3RN also led the Veterans Health and Medical Cannabis Research Study with UMass Dartmouth, and partners. C3RN was an approved qualified training vendor for the Massachusetts Cannabis Control Commission's social equity training program. Dr. McNabb also holds more than 15 years of global public health experience working in the areas of digital health, HIV/AIDS, maternal and child health, and family planning, working primarily in Africa and Haiti. She received her DrPH from Boston University School of Public Health and her MPH from the Johns Hopkins University School of Public Health.

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Research Presenter



Dr. Marion McNabb, DrPh, MPH
President
Cannabis Center of Excellence, Inc.

Veteran Panelists



Stephen Mandile



Dan Moynihan



Daniel Vela



Wayne Smith



Ellen Brown

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Cannabis Science & Technology

From Post-Traumatic Stress to Post-Traumatic Growth: How Medical Cannabis Is Helping Veterans with PTSD



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Event Overview

This special Veterans Day event will bring together researchers, veterans, clinicians, cannabis industry professionals, and advocates to discuss the state of the evidence related to medical cannabis access for veterans. Findings from the 2019 veterans health and medical cannabis study will be presented by Dr. Marion McNabb, with a highlight of those veterans who report that cannabis is helpful for treating PTSD. We will also feature a special panel discussion organized by veteran and advocate Stephen Mandile with a group of veterans from across the country to share their unique experiences with medical cannabis.

Key Learning Objectives

- Quality of life improvement with the access and choice to medical cannabis
- Education for a healthy, sustainable life with integrative health practices
- Public health and educational resources for veterans and those who take care of them
- Understand how veterans report using medical cannabis to manage their health conditions and symptoms from research findings, with a specific focus on PTSD
- Learn the perspective of veterans accessing medical cannabis under VA care, including barriers and facilitators
- Understand the role of veteran caregivers in alternative treatments including medical cannabis

Who Should Attend

- General public, Veterans, Families with Veterans, Researchers, Health Care Professionals, Legislators, Caregivers, Community Leaders, Cannabis Industry, Wellness Industry

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Gateway to Wellness: One Veteran's Story of Healing Through Medical Cannabis

BY MEGAN L'HEUREUX

Stephen Mandile—veteran, cannabis patient, and advocate—shares his personal experience with medical cannabis and how it has given him a new mission to help other veterans gain access to this plant.

POST-TRAUMATIC STRESS DISORDER (PTSD) is defined by the Mayo Clinic (1) as a mental health condition triggered by experiencing or witnessing a terrifying or life-threatening event. Symptoms can range from flashbacks and nightmares to severe anxiety and uncontrollable thoughts about the event. The Mayo Clinic states (1) that “PTSD symptoms are generally grouped into four types: intrusive memories, avoidance, negative changes in thinking and mood, and changes in physical and emotional reactions. Symptoms can vary over time or vary from person to person.” According to the American Psychiatric Association (2), PTSD affects approximately 3.5% of US adults every year, with an estimated one in 11 people being diagnosed with it in their lifetime.

Despite the high occurrence of PTSD in the general population, veterans of warfare are still more likely to experience symptoms of PTSD. The US Department of Veterans Affairs (VA) has a National Center for PTSD designed to lead research and assist veterans that are experiencing symptoms (3). The VA states that the percentage of veterans who experience PTSD varies depending on the service era. For example, according to the VA 11–20% of veterans that served in Operations Iraqi Freedom and Enduring Freedom are diagnosed with PTSD every year whereas 30% of veterans that served in Vietnam are estimated to have experienced PTSD at some point in their lifetimes (4).

While it is clear that PTSD is a problem for many veterans, there has been little change in treatment and medication for far too long. The typical medications prescribed for PTSD include antidepressants such as Zoloft, Paxil, Prozac, and Effexor. Studies have also shown that PTSD plays a role in veteran suicide (5), which according to the 2019 *National Veteran Suicide Prevention Annual Report* was as high as 17 (~16.8) veterans per day in 2017 (6).

When faced with PTSD, many veterans turn to their local VA for help. Stephen Mandile, a veteran of Operation Iraqi

Freedom and veterans' advocate, was faced with this challenge upon returning home from Iraq by medivac. Here, he shares his story to find alternative treatment with medicinal cannabis and how that led him down a road of advocacy work to help other veterans.

Mandile's Story

After suffering a spinal cord injury in Iraq, Mandile was sent back to the US by medivac and subsequently tested for PTSD. “I was having problems with aggression, alertness, depression, anxiety, and just being able to slow down,” said Mandile. “Everything felt like it was going 100 miles per hour.”

He tried a number of different medications to ease his pain and other symptoms. Ultimately, Mandile tried 57 different medications to give him relief from his PTSD and chronic pain but the effects made him feel numb to everything. Finally, Mandile's wife gave him an ultimatum to get off of the medications that were not helping. She suggested that he try medical cannabis, which was shocking to Mandile at first because of his own bias towards cannabis as a drug of abuse.

“At first my reaction was that ‘I’m not I’m not going to become a druggie.’ I’m taking the medicines that my doctors are telling me are good and safe for me,” said Mandile. “Why would I ever take cannabis? But her suggestion planted a seed to get me looking into the medications I had been taking such as fentanyl, oxycodone, Xanax, and Klonopin.”

After doing some research, Mandile decided that the opioids and benzodiazepines he was taking were not right for him and decided to give medical cannabis a try. His first experience with cannabis was not perfect, but it did open his eyes to new feelings. He explained that an hour after he tried cannabis, they had to take his 6-month-old daughter to the emergency room and that made him feel very paranoid.

“At the same time though, I was glad to be feeling anything at all because when I was on the other medications, I was just numb and I didn’t care,” said Mandile. “So just being aware



Stephen Mandile speaking at a Cannabis Advancement Series event in 2019. Photo credit: Dubside Photography.

dispensaries open to use it. Mandile turned to the illegal market at first, but he felt uneasy about coming off any of his prescription medications until he had access to a dispensary.

"I waited until June 2015 when the dispensaries first opened and knew I would have a reliable, consistent source of cannabis," said Mandile. "After that it was about five months from starting until I was off of all those other medications, which included Ambien, Xanax, Fentanyl, Percocet, and a few antidepressants."

Mandile has found a great alternative treatment for himself with medical cannabis, however, it was a path that he forged on his own. The VA and his other doctors were not guiding him in this treatment plan, so Mandile started doing his own research into different products and their effectiveness for his symptoms. In fact, Mandile states that even now—five years later—he is still experimenting with the right dose and products. "Although we do have access to a lot of great products, I go for what's most affordable because I'm going from medications that I had paid nothing for—and in fact I'd earned through my service—to now having to pay out of pocket," said Mandile. "I am on a fixed income with my disability benefits and Social Security, so I have to get what I can afford and I'm still trying to find the right method."

"It's pretty much trial and error," said Mandile. "I had been keeping a journal to keep track of which products I was finding the most helpful, but after a certain period of time it became more about what was most affordable."

Cost is a major obstacle for many veterans in situations like Mandile who live on fixed incomes and rely on the VA to help with their care after serving for their country. According to Mandile, current policy at the VA does not allow them to advise veterans on medical cannabis use. Mandile pointed out that this lack of information from reliable sources about the benefits of medical cannabis is another challenge. "I think many veterans are aware of the benefits, but there's so much work to do to make sure more people know," he said.

Mandile discussed how the VA in his area has become more receptive to cannabis lately. "In October, I spoke at a VA symposium on alternatives to healing and they specifically asked me to speak about the benefits of cannabis use," said Mandile.

"The VA's stance does vary from location to location though," explained Mandile. "Massachusetts, Rhode Island, and the Northeast are pretty open to it, but some other VA's will make you feel like you are making a huge mistake. You're breaking the law. You have morality issues. You can't be trusted. So, it does vary from facility to facility."

Another obstacle that Mandile faced was that PTSD was not listed as a qualifying condition for a medical cannabis patient card in his home state of Massachusetts. According to Mandile, Massachusetts is the only state in New England that does not have PTSD listed as a qualifying condition and one of only seven states in the US (out of 33 at the time

of my current state was something kind of shocking to me, like even the fact that I could feel paranoid was something I hadn't felt in 10 years."

Mandile also described how things started to feel more slowed down for him—a change from that 100-mile-per-hour feeling he mentioned earlier. He went from having no fuse and feeling like his anger went from zero to 100 in a second to having a few moments to catch himself and practice mindfulness. "Cannabis has allowed me to not think that the sky is falling because something happened," said Mandile. "Another way I try to explain it is that without cannabis I feel like I'm listening to 100 different songs at the same time. And then with cannabis, it's like putting on headphones and being able to focus on one specific song."

More than anything though, cannabis has renewed Mandile's sense of purpose and well-being. "Cannabis has helped my PTSD symptoms in so many ways: it's allowed me to find purpose, it's allowed me to find healing, and it's the best tool I have to help me with pain, both mentally and physically," he said.

Roadblocks to Medical Cannabis Access

Despite living in a state that had passed a medical cannabis law, Mandile's road to access was not easy initially. He was able to get a medical cannabis patient card, but there were no dis-

“Cannabis may not give you everything you want, but it may help **take the edge off**. It can be the **gateway to healing**.”

—STEPHEN MANDILE



of this publication) with medical programs that does not have it listed. As a way around this, doctors in Massachusetts have the option to write in a condition under the “other” category, which was how Mandile was granted his medical patient card. However, Mandile explained that if someone was just looking to get into the program and didn’t see their diagnosis listed it might prevent them from looking into it further. As such, Mandile took this as a call to action and in the previous Massachusetts legislative session, he had a bill proposed that was going to add PTSD and opioid use disorder to the list of qualifying conditions.

Another aspect of the bill that Mandile submitted was to allow veterans in Massachusetts to be able to submit their VA paperwork to the state instead of having to go see another doctor. “I found that in North Dakota and Illinois, this is already the practice,” he explained. “A veteran doesn’t have to go to a doctor. They just submit their VA paperwork to the state and the state enrolls them in the program.”

Unfortunately, Mandile said that his bill got sent to study. This means that the Joint Committee is authorized to sit during recess and study the bill as well as similar ones and file a narrative report of its findings. However, the majority of bills that are sent to a study receive no further activity from the Committee (7).

Despite this, Mandile is not deterred. “We will be submitting a bill again this session to get those conditions added because being able to see them listed will also help break down barriers and destigmatize cannabis,” said Mandile.

The stigma around cannabis is another roadblock facing many veterans, as Mandile experienced first-hand with his own initial bias. He thinks that the stigma from prohibition at the VA is something that creates fear for every veteran. “Too many veterans believe, and I think this is from actual occurrences, that they can lose benefits for using cannabis, which was the case at one point,” said Mandile. However, he said that current VA directives have changed so veterans won’t lose their benefits or medications because of cannabis use.

Veterans do have other concerns about admitting to cannabis use such as losing their Second Amendment right to carry arms. Mandile explained that he got his license to carry at the same time he received his medical cannabis card, but still did not have a dispensary to go to. “I was still on all my other medications and there was no place for that to be listed on the application to carry but there was a spot for cannabis,”



Mandile speaking on a panel at a Cannabis Advancement Series event in 2019. Photo credit: Dubside Photography.

said Mandile. “So, it was okay for me to be on fentanyl, Xanax, and Ambien and have a firearm, but it was not okay for me to be using medical cannabis and have a firearm.”

As many people know, cannabis is still considered federally illegal in the US and it is listed as a Schedule I drug by the United States Drug Enforcement Administration (DEA). A Schedule I drug according to the DEA is a drug with no currently accepted medical use and a high potential for abuse (8), both of which have been proven false for cannabis through research and on-going studies around the world. This classification of cannabis is a major part of the problem surrounding the stigma of its use. It also restricts the level of research that can be done in the United States. Many researchers and advocates are pushing to have cannabis fully legalized in the best-case scenario or at the very least de-scheduled. This classification of cannabis explains some of the fear that veterans, and the general population, have about being added to a medical cannabis registry.

As a way around using a registry, some people don’t apply for medical cards and instead wait for adult use laws to pass in their states. “Adult use creates another pathway to access, but it really also helps break the stigma around cannabis,” said Mandile. “A lot of people also prefer to not be on a registry with a medical cannabis card, so this allows them to find cannabis treatments and maintain their privacy.”

Advocacy Work

Mandile’s experience with cannabis had such a great impact on his life that he felt a sense of duty to share his knowledge

with other veterans and fight to make it more accessible. He related a story of one of his earliest experiences with cannabis that turned into an “aha” moment for him. Mandile was in his driveway in the winter after a snowstorm. He hadn’t shoveled or done snow removal of his driveway in a decade. This day, he decided to smoke a joint and go outside to see what he could do. He said he only wanted to shovel out or use his snow blower enough to get his truck out of the driveway. After an hour (and a second joint), he completed the whole driveway! “I couldn’t even get inside to tell my wife how amazed I was by it—I called her on my cell phone from the driveway and told her to look outside because I couldn’t believe what I just did,” said Mandile. “I thought, how is this possible? How is this not available? Why doesn’t everyone know about this?”

Mandile’s next thoughts went to all the sacrifices that his brothers and sisters in arms made. “It felt like my duty—my job—to help save the lives of my fellow veterans and make sure that they have every possible tool available to them,” he said. “If cannabis can help save one veteran’s life, then it is worth it. Cannabis is a tool that’s getting us to move in the right direction.”

From there, Mandile got to work and was able to get about a dozen medical dispensaries to start offering a 40% discount for veterans with a 100% disability rating. Another part of his work as a cannabis advocate led him to different cannabis events throughout Massachusetts. He had been continuously meeting with legislators as well as city and town officials for more than a year to share his story about how cannabis was so beneficial. He noticed that people were amazed by anecdotal stories such as his, but he felt that something was missing. He attended an event where Dr. Marion McNabb was speaking and realized that what he was missing was data.

After speaking with Dr. McNabb, they realized they could make a real difference working together. Mandile, Dr. McNabb, and Ann Brum formed the Cannabis Advancement Series to increase access to medical cannabis for veterans in Massachusetts. Dr. McNabb also led the charge for a data-driven study called the Veterans Health and Medical Cannabis Study (some of that data is presented in this special issue on page 6). Through this collaboration, the team presented their collected data and used it to drive the conversation at these curated community educational development events.

“It was eye opening for me to see how effective data is,” said Mandile. “People can say, ‘Yeah, that’s one person,’ when you’re telling your own personal experience, but when you have data on hundreds of veterans, your argument becomes that much greater. It’s not just hearts and minds. It’s numbers and actual statistics and research on it.”

Conclusion

Mandile describes his work as more than just advocacy—it has become his sense of duty and purpose, which for a long time

he felt he’d lost. “One more thing cannabis brought me besides mindfulness was my sense of purpose and my ability to continue my service to my fellow veterans, my community, and my country,” he said.

He is careful to not over promise to his comrades though. He urges veterans to look at the facts. “I’m never going to tell a veteran this is going to make you feel better. This is something that’s going to work for you. We are all different. It works differently for each individual,” said Mandile. “But people need to really look at the statistics of the side effects on some of the medications we are prescribed—look at the bottle of your VA medication, you see some side effects of suicidal thoughts, coma, or even death. None of those come with cannabis. There are no reported overdose deaths.”

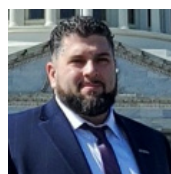
“Cannabis may not give you everything you want, but it may help take the edge off,” said Mandile. “It can be the gateway to healing.”

Mandile’s experience and dedication to helping others is inspiring. If nothing else, Mandile’s story and hundreds of others like him beg the question: Isn’t it worth investing time and research into medical cannabis as a treatment for the people that are willing to risk their lives for our country?

References

- 1) mayoclinic.org/diseases-conditions/post-traumatic-stress-disorder/symptoms-causes/syc-20355967.
- 2) <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd#:~:text=PTSD%20affects%20approximately%203.5%20percent,with%20PTSD%20in%20their%20lifetime>.
- 3) <https://www.ptsd.va.gov/>.
- 4) https://www.ptsd.va.gov/understand/common/common_veterans.asp.
- 5) https://www.ptsd.va.gov/understand/related/suicide_ptsd.asp#:~:text=Studies%20show%20that%20suicide%20risk,and%20poor%20control%20of%20impulses.
- 6) https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf.
- 7) <https://www.masslegalservices.org/content/legislative-process-massachusetts-0>.
- 8) <https://www.dea.gov/drug-scheduling>.

about stephen mandile



Stephen Mandile is an Operation Iraqi Freedom Veteran in long-term recovery who advocates for policy change federally and in Massachusetts that provides pathways to healing and post traumatic growth. He supports all treatment and methods which help combat the disease of addiction, mental health issues, and improve the quality of life for veterans and non-veterans alike. Stephen also serves as a Selectman for the town of Uxbridge, Massachusetts, co-founder of the Cannabis Advancement Series, and the 2019 Veterans Health and Medical Cannabis Study.

A Scientific Path to Discover the True Effects of Medical Cannabis

BY MEGAN L'HEUREUX

Dr. Staci Gruber, Director of the Cognitive and Clinical Neuroimaging Core, Director of Marijuana Investigations for Neuroscientific Discovery (MIND) at McLean Hospital, and Associate Professor of Psychiatry at Harvard Medical School discusses her interest in medical cannabis, the medical cannabis research areas that MIND is focusing on, and her interest in veterans and the 2019 Veterans Health and Medical Cannabis Study.

WHAT IS MEDICAL cannabis? How is it different from recreational or adult use cannabis? The answers to those questions can be confusing because of the state-level rules governing cannabis in the United States. Since cannabis is still illegal at the federal level, there is no clear distinction or guidance from the usual governing bodies, such as the Food and Drug Administration (FDA) who typically provide approval or oversight for medications. A common distinction between medical cannabis and adult use is the intended use by the consumer or patient; recreational users typically seek products high in tetrahydrocannabinol (THC) in order to feel high. Although medical cannabis patients may choose products high in THC, many patients do not want to feel a "high" or psychoactive effect. Therefore, they may choose products with less or even no THC, but with higher levels of other cannabinoids believed to have therapeutic effects, including cannabidiol (CBD). Interestingly, many who do not want to get high still chose products with low levels of THC given the idea that use of these "whole plant" products may have greater therapeutic effects at lower doses relative to single "purified" compounds from the plant.

One thing is clear in the medical cannabis field though: the patients are driving the issue and bringing it to the attention of medical professionals across the country. As of 2017, there were approximately 4.3 million registered medical cannabis users throughout the 33 states in which medical cannabis is legal, as well as in the District of Columbia (1). Whether it be anecdotal evidence from multiple patients or a demand for more information about the effects of medical cannabis and what it may or may not help with, medical professionals are starting to come around to the idea and they need more scientific research to provide guidance.

The type of research and clinical trials that medical professionals take seriously have been stalled in the US because of the Schedule I status of cannabis by the Drug Enforcement Administration (DEA). Dr. Staci Gruber, the director of the Cognitive and Clinical Neuroimaging Core and director of the

Marijuana Investigations for Neuroscientific Discovery (MIND) Program at McLean Hospital, and an Associate Professor of Psychiatry at Harvard Medical School, is one researcher taking the leap to find more information. She recently discussed her interest in medical cannabis, her role in the 2019 Veterans Health and Medical Cannabis study, and other medical cannabis research areas her group at MIND is focusing on.

The Science and Mission Behind MIND

According to the MIND website (2), the program is designed to address a series of questions regarding the effects of medical cannabis. Some of the questions MIND is designed to address include: How do recreational and medical cannabis use differ? What is the impact of medical cannabis on adults with regard to both short- and long-term use? As stated on their website (2), "MIND is designed to begin to address some of these questions as, thus far, little data is available regarding the short and long term impact of medical cannabis on measures of cognition, sleep, clinical state, quality of life, conventional medication use and brain-related measures."

In her role, Dr. Gruber has been working in psychiatry and trying to understand the neurobiological bases of different psychiatric disorders and conditions for many years. Part of her focus had been on the use of recreational cannabis and its impact on cognitive performance and measures of brain structure and function. She explained that she and her team have found consistent evidence of relationships between heavy recreational cannabis use and poorer cognitive performance, and that they have spent considerable time assessing the impact of earlier versus later exposure to cannabis (3–6). Her findings led to questions about medical cannabis use and if the same relationships existed there.

"Despite the fact that medical cannabis has been around since 1996 when it was first legalized in California, I could find nothing in the literature about the longitudinal, or long-term, impact of medical cannabis use on these same outcome measures—cognitive performance, clinical state, brain

Dr. Staci Gruber custom formulates cannabinoid study products for her clinical trials.



structure, brain function, sleep, quality of life, and so on,” said Dr. Gruber.

This lack of information related to medical cannabis use led Dr. Gruber to create the Marijuana Investigations for Neuroscientific Discovery (MIND) program, which is dedicated to looking at the impact of medical cannabis use on all of those different aspects. Dr. Gruber’s first study with MIND—which is still ongoing—is a longitudinal observational study of patients using medical cannabis for various conditions and indications.

“Basically, what we do is we enroll individuals who are interested in using medical cannabis but who have not yet started. That is a critically important part of this, they have not yet started using cannabis,” said Dr. Gruber. “They go through very comprehensive clinical, cognitive, and diagnostic assessments.”

Some of these measures are self-report while others are examiner-driven. Then, patients that are eligible also have multimodal neuroimaging done. Dr. Gruber explained that the neuroimaging techniques assess brain structure, brain function, and brain chemistry.

“Following this long, comprehensive assessment, we send them on their way,” said Dr. Gruber. “They begin their own medical cannabis treatment program, but we follow them and talk to them every other week.”

Dr. Gruber and her team keep track of what products the study subjects use, where they got it, when they use, and how much they use. For the most commonly used products, Dr. Gruber and her team have them analyzed by an outside laboratory for cannabinoid constituent profiles; in other words, these analyses tell them what is in each product.

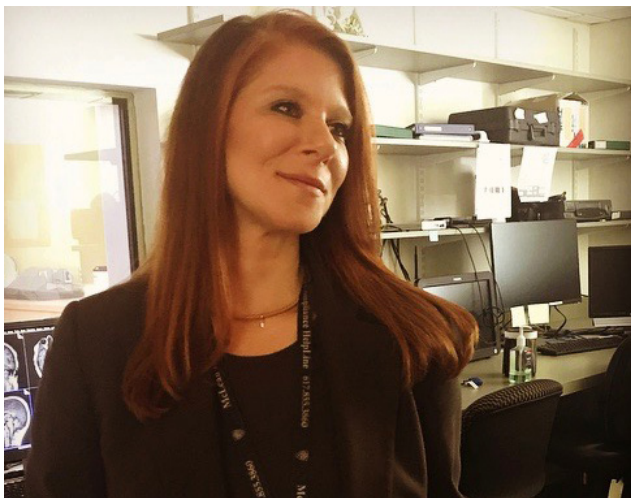
“We do the outside laboratory testing because I’m not

supplying the product like I do in my clinical trials,” she explained. “This way, we don’t have to guess what they’re really getting. Sometimes what the laboratory results say is exactly the opposite of what they’ve been told or what the label on the product says and sometimes the results are absolutely spot on.”

The study subjects come back into Dr. Gruber’s laboratory at three months, six months, 12 months, 15 months, 18 months, and 24 months for re-evaluations. She explained that time is the critical factor in studies such as this. They are trying to understand how medical cannabis affects different domains over time. This first study also includes a group of “treatment as usual” patients—these individuals have similar conditions and indications to the medical cannabis patients but have no plan or intention to use cannabis.

“Our first study is observational and it’s very challenging because with long term studies of people doing things on their own, you have to rely on them to come back in,” said Dr. Gruber. “You need a minimum of three months of treatment before they can even come back for their first follow up, so studies like this take a long time, which is why it’s still ongoing. The data has been quite stunning so far.”

Some of the data Dr. Gruber uncovered with this research was surprising even to her. She explained that in her studies of recreational cannabis she found relationships between higher cannabis use, earlier onset of use, and greater magnitude of use. For example, Dr. Gruber found that the younger people are when they start using recreational cannabis and the more cannabis they use, the poorer they perform on tests of cognitive function; they look a little less “able” than those



Dr. Gruber utilizes multiple research techniques, including magnetic resonance imaging (MRI) to examine how medical cannabis use may change brain structure, function, and chemistry

who aren't using cannabis. However, with medical cannabis use, Dr. Gruber is seeing the opposite trend.

"What we're seeing in the medical cannabis patients between baseline and three months, baseline and six months, and now we're looking at data at a year from baseline and beyond is actually very different," she said. "In these patients, who are primarily aged 50 and older, there is an actual *improvement* in a number of different cognitive areas, including measures of executive function which are tasks controlled by the frontal cortex. The very tasks that appear compromised in our recreational consumers who begin cannabis use early on (when the brain is still 'under construction') appear to be getting somewhat better over time in our medical cannabis patients. That's a surprise to most people. It actually makes sense though if you take a step back and realize two things—first, the medical cannabis patients not only started using medical cannabis later in life, after critical periods of brain development are complete, but also their goals for use are very different from recreational consumers, which drives the products they choose and how they use them. These factors likely make a real difference".

A natural next question would be what is causing these results—are there specific cannabinoids related to these outcomes? Dr. Gruber explained that the cannabis plant is made up of hundreds of constituents, not just THC and CBD, the two that get so much attention. "Some of the lesser known cannabinoids, as well as terpenoids and flavonoids, are actually very important, and we spend a fair amount of time on them in my laboratory," she said.

"For right now, we're actually looking specifically at what we call 'quantifiable exposure' to THC and CBD, because that's what the world is most interested in and most familiar with

at the moment," said Dr. Gruber. "And really THC and CBD are the two most predominant constituents in most products that people are using these days. Determining what the relationships are between THC and CBD and some of these things we assess in terms of mood versus cognitive measures is going to be very interesting."

MIND and Veterans

Dr. Gruber's research has led her to different collaborations including helping Dr. Marion McNabb with the 2019 Veterans Health and Medical Cannabis Study as well as her own study with a cohort of veterans.

According to Dr. McNabb, Dr. Gruber provided high level technical assistance for the design of the 2019 Veteran's Health and Medical Cannabis Study tool prior to the launch. Dr. Gruber provided technical input to the survey and advice on the design and analysis of the data.

Dr. Gruber explained that her veteran's study is set up very similarly to the larger observational study of medical cannabis patients described above. However, all participants are veterans who chose to begin using a hemp-derived, high-CBD sublingual product after a baseline visit. The high-CBD product is provided at no cost from the product manufacturer (Charlotte's Web) as part of a veteran support program. In addition, there are two different groups of patients (called cohorts) in this study. One cohort of veterans have not used cannabis before—they are referred to as naïve veterans because they haven't been exposed to cannabis—and the second cohort are veterans that have already been using cannabis regularly. Both groups take the same product during the study period. Dr. Gruber said that study samples remain small so far and of course the COVID-19 pandemic has negatively impacted recruitment of additional study subjects.

"Basically, so far, this study echoes the larger findings in the observational longitudinal study, which is that we have these folks who have never used cannabis, who start using a full spectrum high CBD, low THC product that's available commercially," she said. "In general, what we see is that both groups appear to be getting better over time with regard to clinical variables," said Dr. Gruber. "That's important. Our goal is to increase sample sizes and look at potential changes in different areas such as cognitive performance, clinical state, sleep, quality of life, medication use, PTSD symptoms, and a number of related measures."

Dr. Gruber and her team also complete neuroimaging at baseline and again at the end of the trial for the cannabis-naïve veterans. "As we increase the sample size, we expect to see additional patterns emerge—this is a critical population to study as so many veterans are so desperate for anything to give them relief and empirically sound data will certainly help."

From Dr. Gruber's experience with these cohorts of veterans, she believes they are looking for help with sleep, anxiety,



LEFT TO RIGHT:
Gabriel Conde, Dr.
Marion McNabb,
Dr. Staci Gruber,
Ann Brum, Stephen
Mandile, and
Sydney (Syd)
at a Cannabis
Advancement
Series event. Photo
credit: Dubside
Photography.

and possibly even other issues. “I think that given the increasing numbers of people across the country and really around the world using cannabis, and especially our veteran population, who report having some symptomatic relief, the big question will be what the relationship is between symptom change and medical cannabis use,” she said.

Dr. Gruber gave the example that sometimes something like sleep will improve, and as a result of this improvement, people feel better and can think more clearly, thus they perform better on cognitive function tasks.

“Does that mean the cannabis is directly improving cognitive performance or is it indirectly improving cognitive performance? More research is needed to determine this relationship. For our veterans, it’s going to be very important to understand what products or product types can help with certain specific indications that they may be suffering from—not just sleep but, for example, PTSD or anxiety,” she said. “Not all cannabinoids are the same, and some are more likely to exacerbate rather than ameliorate issues or problems. So, we want to be mindful of that.”

Dr. Gruber stressed that cannabis is not one thing—it’s comprised of hundreds of compounds and they all exert different effects. “It’s important to have studies like this because we’re interested not just in the good, but also the bad and ultimately just the truth. It’s about figuring out what works,” she said.

The next steps for Dr. Gruber’s veterans’ studies are to increase their sample size and get a comprehensive picture of what veterans look like before and after treatment with different types of cannabis or cannabinoid-based products.

“I think the next logical steps are also to look at potential changes in these clinical and cognitive measures. For example, if we get large enough samples, we can actually really make informed decisions about what types of things might help versus what types of things may not be so helpful in veterans looking for relief,” she said. “We’re not all created equally. We don’t all have the same difficulties or problems, and that’s important to consider. So, what you use, want, or need for pain versus sleep versus anxiety versus PTSD will vary. And it will also vary as a function of the individual using it.”

“I’d like to see an expansion of the veteran’s program—a large expansion,” said Dr. Gruber. “Really, it would be great to have a center that was just focused on that type of investigation for our veterans. They deserve it.”

Patients Driving Medical Cannabis Science Forward

As stated earlier, a unique aspect of the medical cannabis community is that patients are pushing for more information and asking their trusted medical advisors about it (doctors, nurses, pharmacists). Then, these medical professionals are, in turn, seeking studies and scientific data to determine the merit behind the anecdotal evidence of medical cannabis use.

Dr. Gruber agreed, stating that the one thing that is different in the medical cannabis realm from other areas is that you basically have patients sharing information with their healthcare providers or friends. Then doctors and researchers start doing studies to see whether empirically sound data supports the anecdotal evidence, as opposed to the norm of

“Patients and consumers **are leading the charge here**, and they're informing their healthcare providers, **who are then forced to become more educated.**”

—DR. STACI GRUBER

”

a doctor informing a patient about a drug study and suggesting it as a treatment.

“Patients and consumers are leading the charge here, and they're informing their healthcare providers and other individuals who are then forced to become more educated and more familiar with the rather complex, but extraordinarily compelling world of cannabis,” said Dr. Gruber.

Despite the push from patients, the stigma surrounding cannabis is still evident even in the medical cannabis world—perhaps even more so. Dr. Gruber stressed that more research and education is incredibly important to help overcome the stigma and concerns about medical cannabis. She related a few patient stories that go against the stigma of using cannabis just to get “high.” “When I look at a 78-year-old who can't walk or a 53-year-old who's so anxious they can't sit at their kid's soccer game—those aren't people who are looking to get high,” said Dr. Gruber. “They're looking to live their life. I think more research and greater dissemination of some of these types of data will help change the perception of medical cannabis use.”

Dr. Gruber also explained that there are some legitimate concerns when it comes to medical cannabis. For instance, some raise concerns regarding exposure to medical cannabis in individuals with a predisposition or family history of psychosis, or with other potential comorbid conditions, or legitimate concerns about drug-drug interactions. “It's incredibly important for consumers and patients to understand the potential benefits and risks associated with use, which will be different for each person and will depend on products selected and use patterns”, she said.

Research Challenges

Despite the willingness and genuine interest of so many researchers, doctors, and other medical professionals in the US to study medical cannabis, it is still a road fraught with obstacles because of the Schedule I status. Dr. Gruber explained that observational studies are more straightforward because there are no concerns regarding administration of cannabis products, as patients take what they choose on their own. However, clinical trials, where patients are administered a drug or product, especially those that are double blind, are the gold standard in the medical community, but are much more difficult to conduct.

To conduct a clinical trial in the US, products that are

cannabis-derived currently have to be sourced from the National Institute on Drug Abuse (NIDA), explained Dr. Gruber. In order to even get these products from NIDA for a clinical trial, researchers must have a Schedule I license.

“In general, research with anything that is a Schedule I substance is more difficult than something that isn't,” said Dr. Gruber. “Cannabis has been a very complex and rather dynamic landscape. It's a difficult terrain to navigate very often because of the state versus federal laws not necessarily being commensurate with each other.”

“For example, you could be in compliance with your state and in violation of federal law,” she added. “You have to be very, very careful about how you approach these things because you want to maintain scientific rigor and maintain the ability to have what I would call ecologic or external validity—which ensures that the data are meaningful and can be applied to people in the ‘real world’—but you also have to stay within the confines of the law.”

There has been much debate about the quality of cannabis products coming from NIDA. An issue that another researcher, Dr. Sue Sisley has been tackling for a number of years (7). However, Dr. Gruber said that the drug supply program at NIDA has expanded exponentially over the past 8–10 years. “That doesn't mean that they can supply researchers like me with products that our patients or veterans can avail themselves of at a dispensary,” said Dr. Gruber. “There's no such thing as a vape cartridge that you can get from NIDA or what we call concentrates.”

“Primarily NIDA offers varieties of cannabis flower, as well as a handful of cannabis extracts. Despite expanding the drug supply, NIDA's products don't necessarily resemble the profiles and types of products available to our recreational consumers and medical patients currently, which is an inherent limitation,” Dr. Gruber added. “We find ways around that as best we can.”

If the products used in these studies are not the same type or quality that can be found at a dispensary, does that mean research has to be done again in the future assuming that access to cannabis products changes? Dr. Gruber did not think that was necessarily the case. “Well, the thing is, it's not that you redo them, you simply add to them,” she said. “I think there's a huge difference between saying, I got this product from NIDA and even though it's not exactly what people are

Dr. Gruber's Advocacy and Expert Testimony

DR. GRUBER'S RESEARCH has also led her to some unexpected places, such as being a witness in the United States Senate's Caucus on International Narcotics Control (1). She explained that directing the MIND program and exploring the potential therapeutic benefits and downsides of medical cannabis using what she calls a multi-tiered approach—from observational studies and clinical trials to survey studies—has created a litany of information.

"I think all of these things give you the ability to have a much broader perspective on the issues that are actually more important to focus on with regard to moving the ball forward with research," said Dr. Gruber. "I think that you are in the best position as somebody who is called upon to provide expert testimony or perspective if you've actually had a fair amount of experience with these populations and these products. There really is no substitute for experience here."

Dr. Gruber sees every patient that comes through MIND, in every one of these studies. "I think without my ability to see these patients directly and conduct these studies, I wouldn't have the same perspective," she said.

Dr. Gruber added that working with patients the way she does has really forced her to take a look at medical cannabis and changed her perspective. "I'm the biggest cynic there is," she said. "I'm always saying 'Let me see, prove it,' which is why I love clinical trials, but there's no denying that there's something to this, at least for some. There are certainly

people whose entire worlds are different after using medical cannabis. It's rather humbling and quite stunning."

When Dr. Gruber provides her expert testimony, she said she mostly tries to point out the differences between medical and recreational cannabis use. "Medical and recreational cannabis use is not the same; these patients and consumers are not the same," said Dr. Gruber. "In addition, not all products are created equally, and we really need to focus on the ability to increase therapeutic outcome and decrease the likelihood of having a negative impact."

Dr. Gruber also shared a story of a medical cannabis patient that stuck with her. She had a young woman in her clinical trial, who was about to start graduate school. Due to crippling anxiety, this woman had never been able to take public transportation, and had a fair amount of other anxiety-related symptoms. "Let's just say this, after the four-week treatment, she was a different person and she continues to be a different person, now maintained on a different product from my study product," said Dr. Gruber. "People might think maybe it's placebo effect. But tell me why she's doing so well now. She travels, she goes on planes, she gives talks. Who is this person? That's amazing."

Reference

(1) <https://www.drugcaucus.senate.gov/content/marijuana-and-america%E2%80%99s-health-questions-and-issues-policy-makers>

using, I'm going to use it as it gives us information and, quite frankly, that's valuable."

Dr. Gruber added that they are not currently doing smoke inhalation studies in clinical trials like Dr. Sisley has been conducting; instead they are using other approaches, including sublingual oils. For some of Dr. Gruber's clinical trials, she has acquired cannabis extracts from NIDA, which have then been reformulated by her and her team to become a sublingual solution to be used as a study product. "We reformulate in order to make the extract into something that's analogous to what you would perhaps see being sold at a dispensary," she said. She also has clinical trials involving hemp.

Future Research Plans

Dr. Gruber has lot of ambitious goals for the MIND program in the future. Aside from expanding her veterans' research project, she has also launched several other important research initiatives. Dr. Gruber explained that the MIND program itself

has several areas of investigation, some of which are already underway and some of which are still in the planning stages. There is a program dedicated to women called the Women's Health Initiative at MIND (WHIM), which is focused on disorders that disproportionately or exclusively impact women such as perimenopause, menopause, or postmenopausal difficulties.

"We're also about to launch a study, the very first of its kind in patients with Alzheimer's, in terms of looking at agitation and anxiety," said Dr. Gruber. "We have other projects planned for individuals not just with chronic pain, but other types of inflammatory processes and other things going on such as mood disorders. We also have a sleep study in the works as well as several others."

"We have a fairly lengthy list of projects that are pending," Dr. Gruber added. "The goal is to really try to understand the potential therapeutic role of cannabis or cannabinoids in a range of conditions by utilizing potentially

“It's better when we work together... I always think **good collaborations** are really **critical**.”

—DR. STACI GRUBER

non-intoxicating compounds in conjunction with those that might be intoxicating to a lesser degree. That's the goal.”

Future of Medical Cannabis

Aside from her own research endeavors, Dr. Gruber has high hopes for the medical cannabis community in general and what she would like to see happen in the near future.

“I would certainly like to see increased ability for those of us conducting these types of studies to use what I would call ecologically valid products in our work,” said Dr. Gruber. “It would be great to be able to do a clinical trial of a product that patients are actually already using.”

Dr. Gruber also explained that since the US Farm Bill passed in 2018, so-called hemp derived products do not fall under the Controlled Substance Act and are not scheduled. That has caused things to change a little bit, but researchers are still not allowed to use commercially available hemp products in clinical trials.

“Imagine products that are widely available even through recreational or adult use dispensaries or let's say they are hemp derived, and you can order them and have them shipped to all 50 states. I can't do a clinical trial of those products,” said Dr. Gruber. “That seems crazy. You see your patients taking products for whatever they're taking it for. And those of us invested in trying to figure out if it's good or bad, can't study it. It's not that we won't. It's that we can't. So how do we guide people?”

“I think it'd be great to have increased ability to use products—‘real world’ products—in clinical trials,” she said. “I think some of these restrictions make it a little bit more challenging to conduct the studies that are actually most needed, so I'd like to see that change.”

Dr. Gruber would also like to see that kind of perspective be part of the mainstream. “We should be studying things that people are actually taking as opposed to formulating similar products and seeing what happens,” she said.

Conclusion

Despite first being legalized in 1996 in California, medical cannabis slowly made its way across the country over the course of the last two decades. However, the medical use of cannabis goes back to ancient times. There is evidence of medical cannabis dating back 5000 years ago and it was even included in the *United States Pharmacopoeia* in 1850 (8). The truth is that this plant deserves to be studied and medical professionals are willing to take on that work, if they are allowed to.

Dr. Gruber added that these research problems aren't going to be solved with just one approach, saying it will take a village. “I think the one other thing that's important in the world of cannabis research is that there are so many questions and so many areas to explore and really tackle,” said Dr. Gruber. “There's plenty for all of us to do. It's better when we work together as opposed to trying to reinvent the wheel. I always think good collaborations are really critical.”

“This is the most important work I think I've ever done or will ever do because there are so many people who are so desperately in need and anything that can be done to help the cause—whether it's exploring the good, highlighting the bad, or just getting to the truth—is really much more important than I ever imagined,” said Dr. Gruber.

The truth might be different for each patient. But perhaps that's why the term *personalized medicine* has some real meaning behind it—and medical cannabis could be the key for many but we won't know until further research is conducted.

References

- (1) <https://www.mpp.org/issues/medical-marijuana/state-by-state-medical-marijuana-laws/medical-marijuana-patient-numbers/>
- (2) <https://www.drstacigruber.com/mind>.
- (3) K.A. Sagar and S. Gruber, Interactions between recreational cannabis use and cognitive function: lessons from functional magnetic imaging, *Annals of the New York Academy of Science*, 1-29 (2018). doi: 10.1111/nyas.13990.
- (4) K.A. Sagar and S. Gruber, Marijuana matters: reviewing the impact of marijuana on cognition, brain structure and function, and exploring policy implications and barriers to research, *International Review of Psychiatry*, 1-17 (2018). doi: 10.3389/fphar.2017.00983.
- (5) S.A. Gruber, K.A. Sagar, M.K. Dahlgren, A. Gonen, R.T. Smith, A.M. Lambros, and S.E. Lukas, The Grass Might Be Greener: Medical Marijuana Patients Exhibit Altered Brain Activity and Improved Executive Function after 3 Months of Treatment, *Frontiers in Pharmacology*, 8 (2018). doi:10.3389/fphar.2017.00983.
- (6) S.A. Gruber and K.A. Sagar, Marijuana on the Mind? The Impact of Marijuana on Cognition, Brain Structure, and Brain Function, and Related Public Policy Implications, *Policy Insights from the Behavioral and Brain Sciences*, 4(1), 104-111 (2017). doi:10.1177/2372732216684851.
- (7) <https://www.cannabissciencetech.com/view/dr-sue-sisley-advocating-medical-cannabis-research-patients-and-reform>.
- (8) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5312634/>.

A Caregiver's Perspective

BY MADELINE COLLI



Jamie Pascua, VA Caregiver, understands the impact of PTSD from her experience as a caregiver for her disabled veteran spouse. Here she shares her unique perspective.

AFTER HONORABLY SERVING our country, many veterans face another battle upon returning home: post-traumatic stress disorder (PTSD). Mental health can sometimes be overlooked or forgotten, but military personnel are very familiar with PTSD. This disorder echoes the trauma of war and affects not only the individual, but also plays a role with their loved ones as well. Jamie Pascua, a United States Department of Veterans Affairs (VA) caregiver, understands the impacts PTSD has on veterans through her personal experience with her own husband. Pascua's spouse is a disabled veteran. Pascua's husband served in the The United States Marine Corps for 8 years and was deployed to Iraq four times. Not only is she the caregiver for her husband, but Pascua is also a peer support mentor. The peer support program provides an opportunity for caregivers like Pascua to receive guidance and a place to share their experiences, wisdom, skills, and passion with other caregivers.

Caregivers provide a crucial role of emotional support for those suffering from PTSD and other issues (1). Veteran's with

a 100% service-connected disability rating in need of assistance with daily life can apply for the aid of a caregiver. This job can be done by a spouse, child, parent, extended family member, or someone who lives full-time with the veteran.

The Road to Alternative Treatment

PTSD can often be treated using prescription medication as Pascua discussed with her husband's case. "When my husband began treatment for his PTSD he was prescribed a lot of different medications; mood stabilizers, anti-psychotics, anti-anxiety . . . the list went on and on," said Pascua. "I watched him transform from a sharp witted, hilarious, caring individual to a zombie. He was unable to focus or care about anything."

Pascua explained that her husband didn't like the way he felt while fully medicated, so he decided to wean himself off and seek alternative treatments. "We tried cannabis on an 'as needed' basis and found he slept better and was able to regain his original personality," said Pascua.



Jamie Pascua and her husband.

Pascua also explained that she had hippie parents and was a recreational cannabis user herself prior to getting married. She knew that given her husband's personality type, cannabis would be effective for him.

With the stigma surrounding cannabis use in general, many patients resort to conventional treatment options first or may not even be aware that the medical cannabis could be an option. By trying medical cannabis, Pascua's husband was able to replace his anxiety medications and use it as sleep aid leading him to suffer from fewer night terrors and wake up fully rested, which also has given her peace of mind.

"I can only speak from my own personal experiences, but I think that cannabis has helped my husband far more than the pharmaceutical treatments he was prescribed," she said. "He is in charge of his own dosage and can use it as needed, as opposed to a strict regimen that does not take changing moods into account. He is more like his 'old self' when using cannabis and it's wonderful to see."

Changing Laws and Access

With the rising popularity of cannabis, lawmakers are pushing for more regulation and open-access for patients. New legalization and regulations are enabling cannabis dispensaries to open and better serve their communities, such as the dispensary that recently launched in Pascua's area. She admits that she never thought she would see such laws about medical

cannabis pass in her lifetime. The availability of local access makes it convenient for her husband to receive the medical cannabis products that help his PTSD. "When my husband is using medical cannabis, I find him easier to relate to," said Pascua. "He laughs more and is able to release the stress I know he carries every day."

Even with increased availability to obtain medical cannabis, more still needs to be done to increase the eligibility and awareness so that others can benefit from this medicinal plant. The future of cannabis is unknown, but Pascua said that she hopes to see the VA sponsor a medical cannabis program in the future—one that targets cannabis not just as a replacement for pharmaceutical cocktails but also as a therapy tool.

"Even growing your own cannabis can be therapeutic, taking care of the plants is very relaxing and that feeling of pride, and knowing that they (the veterans) are in full control of their own medication would be so empowering," said Pascua. "I hope that VA doctors are someday able to advise their patients in the use of medical cannabis for their ailments."

Advice and Resources

Every day for Pascua looks different, but she strives for a routine, and had a pretty good one going until COVID-19 hit. Her biggest piece of advice to people that are new caregivers is not to give up. "It will be challenging at times, but the caregiver program is here to help," she said.

There are many resources out there regarding learning how to become a caregiver. One place to start that Pascua recommended was <https://www.vetscp.org>. With different regulations in every state, she also suggested using a Google search to see what options are available in your area for medical cannabis.

Medical cannabis is a growing sector that has the ability to aid many patients in treating their conditions and with its growth there will be constant changes to regulations, expanding the future care of users. It's important for caregivers to play an active role and stay up to date with available treatment options for their loved ones.

Closing Thoughts

Pascua explained that being able to use medicinal cannabis allowed her husband to have some control over how medicated he was. "He wasn't locked into a set schedule of drugs that kept him from being his whole self," she said. "I hope other caregivers are able to research medicinal cannabis for themselves, and that their veterans find the same measure of peace that mine did."

Reference

(1) <https://www.caregiver.va.gov/index.asp>.



On the Frontlines: A Nurse's Account of Medical Cannabis Treatment

BY MADELINE COLLI

A conversation with **Tracey Gregory, RN**, Quality Assurance/Staff Development and Education Coordinator Hospice of Western and Central MA, about her experiences with veteran patients with PTSD, her work with Hospice for Heroes, and more.

POST-TRAUMATIC STRESS DISORDER (PTSD) affects approximately 3.5% of the United States population (1). According to the U.S. Department of Veterans Affairs, 11–20 out of every 100 veterans have PTSD (2). Nearly 300,000 veterans that have returned from Iraq and Afghanistan are currently suffering from PTSD (3). With those currently suffering and others being newly diagnosed, there will always be a need for medical professionals who are there to help.

Nurses play an integral role in any patient's path to wellness, but perhaps even more so in the medical cannabis industry as nurses have been taking patient stories and their own experiences with cannabis to higher learning levels and raising awareness. There are many associations and groups dedicated to cannabis nursing and education, for example, American Cannabis Nurses Association (4) and the Cannabis Nurses Network (5).

One such nurse, Tracey Gregory, has been leading the charge for education and patient care in Massachusetts. Here, Gregory shares her personal experience with medical cannabis, veteran patients, and more.

A Nurse's Perspective

Tracey Gregory is a registered nurse (RN) with more than 20 years of experience in various fields ranging from geriatrics,

veteran education, special education, regulatory compliance, LGBTQ+ advocacy, and infection control. She first became interested in medical cannabis at a Hospice and Palliative Care of MA (HCPM) workshop several years ago, after which she did more research and became a patient herself. "I do believe that my first-hand knowledge of the effectiveness of cannabis and how it not only alleviated my symptoms but allowed me to drastically reduce, and in some cases, cease using other pain related medications, has provided me with the ability to provide more comprehensive education to patients," said Gregory.

For the last 7 years, Gregory has been working at a hospice agency—Hospice of Western and Central MA—where she is responsible for quality assurance, staff education, and development. She was inspired to learn more about the specific needs of veterans during end of life when she became the lead person for the National Hospice and Palliative Care Organization (NHPCO) "We Honor Veterans" program. Gregory explained that the goal of the program is to provide hospice and community education and resources to address the unique needs of veterans and provide the best possible care at the end of their lives for those who served their country. Her agency currently has a 5 star level, which is the highest level available and a true testament to their dedication to veteran care.

Tracey Gregory, RN, participating in a panel discussion at a 2019 Cannabis Advancement Series event. Photo credit: Dubside Photography.



Medical Cannabis Treatment Options

Although it is seen as a newer method to treat PTSD, some veterans are making the switch from conventional treatment options to medical cannabis. Gregory said that in so many cases, medical cannabis has helped her patients reduce the need for pain and anxiety medications. This allows the veterans to work through their problems and have conversations about difficult experiences related to military trauma, without the heightened anxiety and avoidance symptoms of PTSD. “Using fewer narcotics and psychiatric medications also has the benefit of fewer side effects, such as constipation and lethargy and the added benefit of increased appetite,” said Gregory.

Gregory also explained that some anti-anxiety medications, such as, Ativan, cause a paradoxical effect—producing more agitation than reduced anxiety and calmness. “This can be because the veteran has the ingrained responsibility to be aware and alert and protect those around them. Something in the environment may trigger them to ‘action,’” said Gregory. “When given an anti-anxiety medication, it typically makes one feel sedated. In the veteran’s mind, however, their mission has not changed, and they must fight harder to stay alert. What may seem like terminal agitation may actually be PTSD.”

Medical cannabis treatment plans offer the ability to provide closure without over medication for end of life care. Gregory shared a story that took place several years ago with one of her patients that would not have been possible with traditional medications. A young veteran with service-related end stage cancer was admitted in October and his wife wished

for him to survive long enough to have a last Thanksgiving. Gregory explained that because of the advanced stage of his cancer, he was not going to make it to Thanksgiving. Instead, his hospice nurse asked what his favorite holiday was and discovered that it was actually the 4th of July. So, they planned a family 4th of July picnic in October. “Using medical cannabis, he was able to sit with his wife on his porch and oversee his family and loved ones have a celebration,” said Gregory. “He was able to say his goodbyes individually while being comfortable and not sedated. Traditional medications such as morphine or Ativan would not have provided that opportunity, but medical cannabis did.”

The stigma surrounding medical cannabis deters some veterans from trying it. Generally, Gregory has seen the reluctance among their older World War II (WW2) veterans. To them, it is still viewed as a “drug” instead of a medication prescribed by a doctor. Among Vietnam-era veterans, some avoidance exists because of a history of substance abuse (which is a common coping mechanism for PTSD). When they try cannabis, veterans typically see a reduction in their pain and anxiety symptoms, which also encourages continual usage. Reluctancy doesn’t just involve veterans, doctors and nurses have shared concerns as well.

“When I first started to provide education to other medical professionals on the existence and the function of the endocannabinoid system, there was increasing awareness but still reluctance on the use for our patients,” said Gregory. “At the time, there were few people who had heard of even CBD, of which now everyone is aware of. I noticed that the more they

“Gregory has seen **that medical cannabis** has proven to be extremely **beneficial for her hospice patients**. Through her education and research, she has found that **high THC strains** from the cannabis Indica plant provide the **most relief**.”

saw first-hand the effectiveness of the alleviation of symptoms and reduction in traditional medication, the more they supported it.”

Hospice for Heroes

The hospice center that Gregory works for participates in a program called “Hospice for Heroes” and takes serving these heroes very seriously on every admission. She explained that when asking a veteran any questions about their experience, her staff always first requests permission to discuss their military experiences because quite often a veteran does not want to talk about their experiences yet because it is too painful. “We are finding this more often with Vietnam vets. For example, it took one veteran almost 2 years before he felt safe enough to discuss his experiences with his social worker,” said Gregory. “The questions include branch of service, whether or not they saw combat, war served (if known) and other factors, including if they have a diagnosis of PTSD.”

Learning a veterans personal story is crucial to being able to best serve them at end of life. The information provided is often reviewed when difficulties in veteran care arise. Gregory related a story of one veteran residing in a nursing facility that would become agitated whenever the curtains around his bed were pulled open. When this incident happened, they reviewed his history and the information listed revealed that he had served as a medic on helicopters, so when the bed curtains were pulled open, it triggered his memories of the helicopter blades.

Gregory’s hospice also has a very robust Vet to Vet volunteer program in which fellow veterans offer assistance because not everyone may open up to a civilian for fear of judgement or knowing that only another veteran may be able to relate to their experiences. Hospice for Hereos also distributes framed certificates of gratitude to every veteran with a branch specific pin, thanking them for their service, which includes a personalized ceremony occasionally presented by a veteran volunteer. They also provide pet therapy and other holistic practices.

All staff and volunteers at the hospice receive veteran specific and PTSD specific training as well as how to actively listen to best provide support and healing at end of life. “I have recently added education based on Professor Brene Brown’s research on toxic shame,” said Gregory. “In veterans with shame surrounding their actions in service, staff are taught that being able to share these stories is not an indicator of weakness but of courage. When veterans share their painful experiences, we must respond in an appropriate way to not inadvertently further their shame but allow them to own their stories. It is a privilege to hear their stories.”

Gregory also started a special program with a late Vietnam veteran staff member called “Santa for Soldiers” with the mission to provide items at the holidays for veterans without families. “Many veterans with PTSD do not have family support due to their trauma and the effect on interpersonal relationships,” explained Gregory. “Our staff donate personal care items, clothing, and entertainment items such as puzzle books and DVDs.” In this program, the social worker or activities director at a facility decides who needs these gifts, which provides anonymity. The gifts can also be given to veterans that are not currently on their hospice service.

Cannabis, Veterans, and PTSD

Battling in warzones throughout American history, every war brings a different experience. The technology changes, the war tactics, and landscapes continue to transform over time. The true number of how many veterans suffer from PTSD is hard to quantify with 100% accuracy because of those who do not know they have it and those who do not seek help on a diagnosis. In hospice, Gregory has seen that there is an increasing population of Vietnam veterans suffering from some level of PTSD. At end of life, PTSD can be triggered by numerous different factors. One common trigger is the feeling of helplessness, which has been a main contributing component. “As their terminal condition advances, they find themselves experiencing increased helplessness. They may become unable to be mobile, unable to express themselves verbally, become incontinent, and find

Gregory sharing her insights at a 2019 Cannabis Advancement Series event. Photo credit: Dubside Photography.



themselves in a nursing facility where they have no control over who provides care for them,” said Gregory. “It may feel like they are actually back in the traumatic event because of the trigger of helplessness, even if they can’t connect it to the actual memory.”

Gregory has seen that medical cannabis has proven to be extremely beneficial for her hospice patients. Through her education and research, she has found that high tetrahydrocannabinol (THC) strains from the *Cannabis Indica* plant provides the most relief. Usually the products recommended are smoked, but if their conditions prevent that, such as those seen in respiratory conditions, edibles are generally used.

Since she works for an agency that receives federal payments and also because of federal regulations, Gregory’s hospice is not allowed to suggest or assist in the use of cannabis. Her facility is instead able to provide education to patients and families on how cannabis works. With that knowledge, she is able to review products found at their local dispensaries and offer recommendations on what might work or medical conditions and concurrent medications that may not be ideal for their situations. Gregory stated that although cannabis is a wonderful type of medicine, it should be treated as such and is not the right fit for every patient.

Education and Advocacy

At her in-house community presentations for “Hospice for Heroes,” she goes over in detail the use and benefits of medical cannabis and PTSD. “Past community education includes a co-presentation at the HFCM with Ann Brum and Steven Mandile about the use of cannabis for PTSD and the process of

obtaining a medical card,” said Gregory. “I was fortunate to be invited to serve on a panel at the Cannabis Advancement Series conference representing the needs of veterans with PTSD at end of life.”

In addition, to better serve their veterans Gregory provides a cannabis 101 presentation for all new hires and also to serve as ongoing education for staff. For nurses interested in exploring medical cannabis as a treatment option, Gregory recommended the American Cannabis Nurses Association as a platform for information and other resources (6).

Conclusion

Cannabis’s legalization is spreading across the United States. Although its popularity is rising, there are many states where it is still marked illegal. Where cannabis is not legalized, access to medical cannabis can be limited. Although the future status of cannabis is unknown, Gregory hopes to see that change in the future. “Currently, only our home patients can freely use medical cannabis, so I would love to see it come off the federal regulatory level so that those veterans that live in Assisted Living and Nursing Homes can have legal access,” she said.

References:

- (1) <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd>.
- (2) https://www.ptsd.va.gov/understand/common/common_veterans.asp.
- (3) <https://www.cohenveteransbioscience.org/post-traumatic-stress/>.
- (4) <https://www.cannabisnurses.org/>.
- (5) <https://www.cannabisnursesnetwork.com/>.
- (6) <https://cannabisnurses.org/resources-and-links>.

Cannabis Activism: The Fight for Veteran Access

BY ALISSA MARRAPODI

Ann M. Brum, founder and CEO of Joint Venture & Co., and Wayne Smith, veteran and veterans' advocate, discuss their roles as cannabis advocates fighting for reform and veteran access to medical cannabis.

POST-TRAUMATIC STRESS DISORDER (PTSD) is defined by the American Psychiatric Association (1) as a psychiatric disorder that may occur in people who have experienced or witnessed a traumatic event such as a natural disaster, a serious accident, a terrorist act, war or combat, rape, or who have been threatened with death, sexual violence, or serious injury.

Although the American Psychiatric Association said PTSD affects approximately 3.5% of US adults every year, war veterans are more likely to experience symptoms of PTSD. As such, inside the US Department of Veterans Affairs (VA) is the National Center for PTSD, a research and educational center for PTSD and traumatic stress (2).

Many have heard the horror stories of soldiers returning from war with PTSD. According to an article published in *Dialogues in Clinical Neuroscience*, “The late and delayed effects of combat exposure in the form of PTSD were a significant source of suffering and disability among veterans in the United States. An estimated 700,000 Vietnam veterans—almost a quarter of all soldiers sent to Vietnam from 1964 to 1973—required some form of psychological help” (3).

However, hearing it from the point of view of Wayne Smith, a former combat medic in Vietnam and advocate for peace and justice, offers an intimate, raw, and vulnerable look at PTSD and his fight for veterans’ access to medicinal cannabis. In this article, Smith shares his personal journey with cannabis and his advocacy work. In addition, we spoke with Ann M. Brum, founder and CEO of Joint Venture & Co., to learn how she became interested in medicinal cannabis and her journey towards advocacy for veterans and medicinal cannabis access. Along the way, Brum and Smith joined forces to help educate their local communities, legislate laws in Washington, D.C., and fight for veteran access to medical cannabis.

Smith's Story: Veteran Turned Advocate

A child of the 60s and the Civil Rights Movement, Smith was introduced to marijuana in high school. “The war in Vietnam was raging, and every young man was faced with the inevitability of do they go, or do they avoid service?” he explained. “Marijuana was introduced, and it was a period of young people shaking

off the martini hours and the pattern of our parents who had a drink to get the same kind of relief that we got from marijuana.”

In 1969 in Vietnam, drugs like marijuana were popular, as alcohol wasn’t often used as a form of relief, relaxation, or even sociability. Smith and other soldiers would smoke marijuana after completing their assigned duties.

“We needed to wind down from the loss of friends and buddies; the horror of death was always with us—the stress was so enormous,” he said. “I never forgot how even in a combat zone, even in some of the greatest horrors that are indescribable to civilians, marijuana helped us feel more normal.”

But when Smith and other veterans arrived home from the war, it wasn’t a warm welcoming. PTSD wasn’t defined by the American Psychological Association until 1979, so Smith said veterans were left to their own devices to heal, treat, and process.

“Our country fully betrayed us,” Smith said. “The government sprayed carcinogenic toxins—Agent Orange—on us, so veterans were developing serious physiological health problems. There were high rates of depression among returning veterans, suicide was off the charts, and the VA was openly hostile to us.”

Veterans started forming self-help organizations in their neighborhoods and states. In Providence, Rhode Island, Smith and others formed a group called the Vietnam Era Veterans Association. And in 1977, Smith got his degree in psychology. Finally in 1979, the U.S. government created a series of programs called the Vietnam Era Veterans' Readjustment Assistance Act of 1979 with the VA to help returning veterans.

“I saw the kind of healing that was needed, and I was in the right place at the right time,” he said. “I was counseling veterans, and we were just helping one another, trying to come to terms with the trauma that we had experienced, trying to find meaning to life, and it was enormously difficult. But for those of us that used marijuana, it made a great difference.”

The problem was, men who used marijuana in the military and post-war were getting serious prison sentences. “They were sent to jail for having a couple joints, so marijuana wasn’t something we could openly talk about, but we used it very aggressively and copiously.”



Wayne Smith in a field of cannabis plants.



Smith speaking at a 2019 Cannabis Advancement Series event. Photo credit: Dubside Photography.

Cannabis is still considered federally illegal in the United States, and it is listed as a Schedule I drug by the United States Drug Enforcement Administration (DEA). According to the DEA, a schedule I classification means that a drug has no currently accepted medical use and a high potential for abuse. This status for cannabis is highly disputed because of the medicinal benefits that have been well-documented and scientifically proven.

“There are no cases of suicide or overdose from cannabis,” Smith said. “Instead, there is a wealth of first-person accounts and science on cannabis’ ability to enhance and help one’s ability to cope, relax, and enjoy life versus the lethal effects of alcohol.”

California was the first state pushing for change and legislation to legalize marijuana and make it accessible, and many Vietnam veterans were involved in pushing for legislation. “My involvement with the Iraq and Afghanistan Veterans of America has been one of the most rewarding ventures because this is a generation that understands the struggles Vietnam veterans had to go through—we had to kick in doors, demonstrate, and fight to have a hearing on alternatives to the powerful psychotropic drugs the VA gives out like candy.”

It’s not only taken a lot to change the country’s views on cannabis, it’s taken a lot to change how Vietnam veterans are viewed too. Smith and other veterans have worked hard to change people’s perspectives, which is something he’s very proud of. “Americans were able to finally separate the war from the warrior,” he said. “They looked at the individual soldiers and saw that after the shooting stopped, they came home and had real struggles to be like they used to be, and that meant getting help and treatment.”

Brum’s Story: Citizen Turned Veteran Advocate

Brum was first exposed to medicinal cannabis while working in hospice and end-of-life care. The agency used complementary therapies for veterans such as Reiki therapy, massage therapy, aromatherapy, singing therapy, and pet therapy—she was amazed by the patients’ relief. And one of her last patients was a former nurse who talked about how cannabis had helped her.

Fast forward to late 2015, through a vertically integrated medical operator, Brum was able to meet patients in the Medical Use of Marijuana Program in Massachusetts, which registers qualifying patients, personal caregivers, registered marijuana dispensaries (RMD), and RMD agents.

“Veterans were part of that patient population,” she said. “I received a lot of feedback from veterans on different types of products, dosing, their preferred method of administration, titration, and different cultivars that provided relief.”

A few years later, Brum was recruited to a medical patient provider that hosted, *Honor Those Who Serve*. During the event, cannabis leaders and professionals educated attendees on cannabis. The patient card provider gave qualifying veterans complimentary patient cards for the state cannabis

program. From there, Brum launched a boutique growth agency, Joint Venture and Co., an organization dedicated to leaders who create industry movements with their teams and within the market.

Through various mediums, Brum connected with Tracey Gregory, an RN, and Stephen Mandile, an Iraqi war veteran and cannabis advocate, and the three of them presented at the Hospice and Palliative Care Federation of Massachusetts (2018 HPC FM) annual education conference on PTSD at end of life with veterans.

From there, Brum was introduced to Dr. Marion McNabb, DrPH, MPH—the CEO and co-founder of the Cannabis Community Care and Research Network (C3RN), a Massachusetts-based cannabis research company—who was eager to gather data on cannabis and veterans to present to legislators, industry, and the public. Shortly after, the Veterans Health and Medical Cannabis Study was born in collaboration with Brum, Mandile, and Dr. McNabb. The Veterans Health and Medical Cannabis Study is a comprehensive study, funded by various industry and media partners, that surveyed 565 veterans, both nationally and in Massachusetts, about various factors including age, wars served, military branch, symptoms, PTSD, treatments, medications, cannabis use, and more.

“It was the first time I was involved in an extensive study,” Brum said. “I’ve done surveys before but never at this scale in partnership with UMass Dartmouth for Institutional Review Board approval and future academic publications.”

In order to get the attention of legislatures, industry, consumers, veteran organizations, academics, regulators, and more, they founded the Cannabis Advancement Series as an awareness channel for the study in which the data was presented at curated community education development events.

“It was an incredible experience to collaborate with the founders Steven and Marion and curate important content, share veterans’ stories, and see their participation in the community, advocacy in cannabis, and entrepreneurship,” Brum said.

Smith was asked to be a keynote at the fourth installment of the Cannabis Advancement Series. The two met while Smith was presenting on a panel at the New England Cannabis Convention.

Both Smith and Brum continue to advocate for cannabis reform.

Going to Capitol Hill

The findings from the Veterans Health and Medical Cannabis Study paved the way for Brum and others to advocate and petition for Bill H4274 at the Massachusetts State House. Their bill included two additional qualifying medical conditions for veterans and the general public: opioid use disorder and PTSD. PTSD is not considered a qualifying condition for a

medical cannabis patient card in Massachusetts. It is one of only seven states with a medical program that does not have it listed.

Using the data from the study, Brum and others testified in January 2020 about their project and advocated for veterans to have a streamlined process to become a patient in Massachusetts.

“In terms of reform, we are only at the beginning of seeing the systemic impact these findings will have to inform legislators and constituents,” she said. “My hope is that moving forward, by legislative mandate, medical cannabis programs have a compassionate-use program that covers the costs for veterans to pay for their entry into the program with a patient card and offer an allotment or allowance to cover the cost of product—the barrier of entry and the barrier of cost are two complementary findings from our research and study findings.”

And for those veterans who received prison sentences for marijuana use, Smith, as part of his role as membership



Smith walking to a village in Vietnam during his service.



Smith (front, middle) and fellow soldiers in Vietnam after returning from a firefight.



Ann Brum kicking things off at a 2019 Cannabis Advancement Series event. Photo credit: Dubside Photography.

director of Vietnam Veterans of America, lobbied Congress for mental-health treatment methods and reduced sentences for veterans incarcerated for marijuana.

But still, Smith said the biggest misconception among Americans is ignorance. "People just don't know. Those who tend to be opposed to cannabis legalization and especially medical cannabis don't know about its benefits," he said. "The VA is one of the largest consumers and dispensers of pharmaceuticals because they have the largest healthcare system in the country, over 250 hospitals. The biggest challenge continues to be the groundwork we are doing in Massachusetts and informing the American people to not be afraid, but to understand that cannabis has medicinal value, and it has changed and saved people's lives."

Not the Last Act

As veterans and non-veterans alike advocate together, progress and change are happening, and they are inspiring others to get involved.

"We have helped to inform and inspire larger veterans' communities, and they have come around in a very big way," Smith said. "Stephen and Dr. McNabb were in Massachusetts blazing trails. I can't tell you how proud I am, as are other guys like me, old guys, who've been in the trenches for a long time, to see this next generation of leaders informed and using science. Stephen put his body on the line to help the people of Massachusetts understand that there are alternatives to gaining better control over their mental health and over their lives, to provide support and meaningful happiness to their families."

Brum said she is always looking for opportunities to support those who are actively engaged like Mandile and Smith. "I'll do anything I can to help support and raise awareness for veterans to have the access and choice of medical cannabis," she said. "I will also continue to advocate at the Massachusetts State House and provide public testimony for the veteran community and policy around medical cannabis, as well as show up and support veteran organization initiatives such as the Massachusetts Disabled American Veterans Chapter and vote in local and state elections."

Informing local communities and educating politicians, business leaders, and educators helps to diminish the stigma and fear around cannabis. "We have work to do at the state and federal levels. We need to push state legislatures that are less progressive than Massachusetts to come into the 21st Century," Smith said. "And we will continue to lobby Congress and the White House to support practical, safe, and affordable treatment."

What Can You Do?

"Show up and care enough to check in with veteran organizations, veterans, caregivers, and families" Brum urged. "There are amazing local, regional, and state organizations, as well as at the national level to participate and support. It's about walking the walk and talking the talk. Show up, listen, learn, support, advocate, and vote. You've got to vote."

Smith said people can get involved by supporting the work they do. "Contact Stephen Mandile or Dr. Marion McNabb. But more importantly, I hope every person who reads



2019 Cannabis Advancement Series, 4th Installment at the Lynn Museum in Lynn, MA. Photo credit: Dubsides Photography.

this calls their senator, congressperson, or state representative and asks two simple questions: Are you a supporter of medical cannabis? If so, thank you. If not, why not? It's our civic duty," said Smith. "We are asking people to stand with us to change the ignorance and to help educate people on the facts. We want to change public policy at the local and state level and change the government's opposition to doing the right thing and making medical cannabis available to every citizen who needs it."

Conclusion

Brum, Smith, and many others continue to empathize, advocate, and educate for cannabis reform in hopes that current and future veterans and the general public can have access to cannabis' medicinal benefits.

"I know suffering sucks; I've seen way too much with the loss of my father who was a foreign veteran from Portugal, serving on the islands of Azores," Brum said. "I wish I had known about access or the benefits of cannabis or hemp in 2002 for his comfort and care."

And Smith agreed. "It makes me wish that when I came home from Vietnam, there was a Stephen Mandile and a Dr. Marion McNabb. I think of how much better my life and the lives of so many other veterans that I've worked with over the years would be."

References

- (1) <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd#:~:text=PTSD%20affects%20approximately%203.5%20percent,with%20PTSD%20in%20their%20lifetime.>
- (2) <https://www.ptsd.va.gov/>
- (3) M.-A. Crocq, MD and L.Crocq, MD, *Dialogues Clin Neurosci.* **2**(1), 47–55 (2000).



Brum and Dr. Marion McNabb at a Cannabis Advancement Series event. Photo credit: Dubsides Photography.



Left to right: Randal MacCaffrie, Dr. Marion McNabb, Brum, Stephen Mandile, and Sydney (Syd) the service dog at a Cannabis Advancement Series event in Holyoke, MA. Photo credit: Dubsides Photography.

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