Background/Intro/Literature Review: CCC Veterans Health and Medical Cannabis Study

United States veterans face several unique and formidable health challenges. Consequence of the intense conditions of service and the often-difficult adjustment of return, this vulnerable population is afflicted physically, emotionally, and cognitively. Both in quality and quantity of life, veteran status is strongly correlated to negative health indicators. The census bureau identifies 21% of veterans as suffering from a service-connected disability making them eligible for compensation (Velez, 2017). This includes physical disabilities affecting ambulation and self-care such as amputation, chronic pain as a result of endured physical trauma in combat, or the immediate exposure to toxins or carcinogens as well as severe mental health conditions like PTSD and depression.

However, this federally recognized status only illustrates a small portion of the most severe adverse health effects incurred through service. Evaluation of veterans of our most recent wars in Iraq and Afghanistan found over 30% met the criteria for a mental health or psychosocial disorder (Hague, Horton, Mickwitz, & Ahrens, 2019); the most common conditions being PTSD, anxiety disorder, adjustment disorder, depression, and substance abuse. The comorbidity of these illnesses further complicates and endangers. Severity of substance abuse has been shown to follow severity of conditions such as PTSD and veterans are an especially vulnerable population for dependence on opioid and painkillers **INSERT CITATION DOWNLOD THOSE STUDIES**. Considering the risk opioids pose in initiation of other more illicit drug behaviors (Banerjee et al., 2016), the potential harm associated with un- or under-addressed mental illness is steep.

Service also increases risk of homelessness. Within the homeless population, 8.2% are of veteran status and service men and woman are at a disproportionately high risk of becoming homeless in their lifetime (Fargo et al., 2012). These complex health and social factors work in tandem and contribute to the decreased in life expectancy for veterans (Veterans Affairs, 2017). This culminates in the startling prevalence of suicide for service men and women with over 6,000 veterans taking their own life every year; over 16 deaths per day in 2017 (U.S. Department of Veterans Affairs, 2019).

*Access to care*

Considering the many health challenges faced by our veterans, one would assume health benefits and coverage is effective and comprehensive, however, this is not consistently the case and there exist clear inefficiencies in the system now. As it stands, veterans receive care through a variety of sources. The census bureau in 2017 found roughly 60% of working age veterans are insured through their employer. About a third are covered by the VA’s health care; about 5% are uninsured. Not all veterans are eligible for receiving health care through the VA. Eligibility is dependent on income, service-connected disability, and other factors. Typically, only the most vulnerable cases are seen by the VA. Of working age veterans, three in every 10 have multiple sources of insurance which can help fill in lapses in coverage. For those above 65, service members reliably receive health insurance through Medicare.

As with most private and public insurance and although the VA has recently improved its coverage and administration since the mid-90s, major hurdles still exist within this bureaucracy. Sometimes this manifest in lack of knowledge or incorporation to afforded coverage: of the 5.5% of uninsured veterans, about a quarter would be eligible for VHA care **(Census, 2017).** However, the barriers to health care do not stop once part of the system. Public critique of the VA often focuses on its inefficiencies, long wait times, and lapses in coverage (Cheney et al., 2018). To this last point and representative of larger systemic failures, the VA and other health insurance providers have been criticized for their handling of mental illnesses – one of the greatest health issues facing veterans.

Nationally, behavioral health coverage still lags far behind medical or surgical with patients consistently more likely to go out of network for mental health care (*Addiction and mental health vs . physical health : Analyzing disparities in network use and provider reimbursement rates A quantitative approach to investigating nonquantitative treatment*, 2017). Within the VA, the situation remains similar. A major reports by the national academy of science, engineering, and medicine in 2018 recognized the “substantial unmet need for mental health services” for our most recent war veterans, citing lack of awareness, confusing in applying for care, and complex eligibility criteria as some of the greatest barriers in receiving care (“Eval. Dep. Veterans Aff. Ment. Heal. Serv.,” 2018). Considering the startingly rates of suicide in this population as well as the dependence on opioids and other pain killers, the effective reform of this aspect of health is paramount.

The wholistic recognition of behavioral health’s importance is relatively recent and still evolving. Because of this as well as the inherent complexity of behavior, treatments for mental illness, substance abuse, and management of chronic conditions too are still developing and not always readily incorporate into our lumbering and dogmatic systems of medicine. Coverage for these “alternative” medicines and treatments is not consistently comprehensive or even available despite their proven clinical potentials. **Here add study on 1) effectiveness of meditation or acupuncture etc. 2) veterans interest in trying this.** One of the most exciting and legally complex of these treatments is medical cannabis.

*Medical Cannabis*

Cannabis has seen recent and renewed interest as a potential treatment for a myriad of illnesses. **Short thing on what cannabis is, and the major compounds in MJ that make it effective.** The recreational and medical legalization of marijuana in numerous states has spurred new research into its therapeutic effects as well as increased curiosity by patients. The long federal embargo on funding of marijuana research has left somewhat of a hole in our medical understanding of the drug, however, emerging science highlight cannabis as a low risk treatment with numerous therapeutic effects (Abrams, 2018; Klimkiewicz & Jasinska, 2018). Veterans particular benefit from these research developments as a great deal of overlap exists between the conditions which ail them, and the conditions cannabis contends to correct.

“Chronic pain is the by far the most common condition cited by patients for the medical use of cannabis” (Klimkiewicz & Jasinska, 2018); good evidence supports its effectiveness as a treatment. One meta-analysis by Whiting, 2015 found cannabinoids were on average 41% more likely to decrease pain by 30% than placebo. This finding is consistent with other meta-analysis with THC appearing to be the primary contributing chemical factor and dose-dependent (Caudle, Yang, Mittendorf, & Kuerer, 2016; Snedecor et al., 2013). Nearly 10% of veterans experience severe pain – a startling high number when compared with the general population **(severe pain in Veterans).** Considering opioids as the current treatment for chronic pain, their strong potential for misuse, and veterans’ high risk for substance dependence and abuse, cannabis offers an effective, low risk alternative **(Studies you can’t download which you have identified down there)**. The ecological correlation established in several studies between marijuana legalization and decreased opioid overdose further bolsters cannabis’s potential to treat chronic pain (Bachhuber, Saloner, Cunningham, & Barry, 2014; Cesur, Sabia, & Bradford, 2013; Livingston, Barnett, Delcher, & Wagenaar, 2017).

**Talk about depression and anxiety transition sentence**. The underlying mechanism of cannabis as interacting with the endocannabinoid and dopaminergic systems, make it a good contender to treat such disorders (Fernández-Ruiz, Hernández, & Ramos, 2010; Scherma et al., 2018). Cannabis’s non-psychoactive component CBD has been identified as having strong potential for the reduction of anxiety in both animal and human trials (Blessing, Steenkamp, Manzanares, & Marmar, 2015). Studies on cannabis holistically also show promising results with self-reported outcomes in anxiety reduction consistently positive (Kamal, Kamal, & Lantela, 2018).

**Relate PTSD to anxiety, (type of anxiety disorder, underlying similar mechanism)** PTSD is another commonly cited condition mediated by marijuana. Depending on the war, between 15 and 20% of combat veterans suffer from PTSD according to the Vas own statistics. Despite and due to the historical lack of funding, studies clearly documenting the relationship between PTSD and cannabis use can be difficult to find. One good study by Jetly, 2014 found a significant positive effect of cannabis in reducing PTSD- associated nightmares (Jetly, Heber, Fraser, & Boisvert, 2015); cannabis use as motivation to improve sleep in PTSD patients seems to be strongly correlated (Bonn-Miller, Babson, & Vandrey, 2014). While a number of studies are currently underway, more should be done to identify the relationship between PTSD and cannabis considering its high use among veterans especially.

*Barriers to cannabis access*

Despite the growing support for legalization, the potential medical benefits, and the diminishing stigma around its usage, the complex legal situation of cannabis can make access difficult. Although cannabis remains a schedule one drug under federal law, 33 states have legalized the medical use of marijuana; 11 of them, including Massachusetts in 2016, have legalized recreational use for adult consumption **(NCSL,2018).**

How veterans now must access medical marijuana?

Illonios good

Half mass, half national trends

Stuff at the

<https://www.ncsl.org/research/health/state-medical-marijuana-laws.aspx> (NCSL stuff)

Opiods and veterans correlation:

18. Robins L. N., Helzer J. E., Hesselbrock M., Wish E. Vietnam veterans three years after Vietnam: how our study changed our view of heroin. Am J Addict 2010; 19:203–11.

19. Bray R. M., Hourani L. L. Substance use trends among active duty military personnel: findings from the United States Department of Defense Health Related Behavior Surveys, 1980–2005. Addiction 2007; 102: 1092–101.

20. McFall M. E., Mackay P. W., Donovan D. M. Combat-related posttraumatic stress disorder and severity of substance abuse in Vietnam veterans. JStud Alcohol 1992; 53:357––63.