HHS Public Access

Author manuscript

Addict Behav. Author manuscript; available in PMC 2019 January 01.

Published in final edited form as:

Addict Behav. 2018 January ; 76: 223–228. doi:10.1016/j.addbeh.2017.08.010.

Recent Cannabis Use among Veterans in the United States: Results from a National Sample

Alan K. Davis[a], **Lewei A. Lin**[a], **Mark A. Ilgen**[a,b], and **Kipling M. Bohnert**[a,b]

[a]Addiction Center, Department of Psychiatry, University of Michigan, North Campus Research Complex, 2800 Plymouth Rd. Building 10, Ann Arbor, MI 48109, USA

[b]VA Center for Clinical Management Research (CCMR); VA Ann Arbor Healthcare System, North Campus Research Complex, 2800 Plymouth Rd. Building 14, Ann Arbor, MI 48109, USA

Abstract

Background—Compared to civilians, little is known about cannabis use among Veterans in the general United States (US) population. This study aimed to examine the prevalence and correlates of recent medical and non-medical cannabis use among this important US sub-population.

Method—Data came from the 2014 National Survey on Drug Use and Health. Bivariate and multivariable analyses were conducted that were weighted to account for the complex survey design.

Results—Approximately 9% of Veterans in the US reported past year cannabis use. Older, and female, Veterans had lower odds of past year cannabis use. Veterans who were unmarried, out of the work force, had greater functioning disability, nicotine dependence, heavy episodic alcohol use, alcohol use disorder, and drug use had greater odds of past year cannabis use. In states where medical cannabis was legal in 2014, approximately 41% of Veterans who used cannabis in the past year used *medically*. Those who used medically were older and *less* likely to engage in recent heavy episodic drinking or to meet criteria for alcohol abuse/dependence, compared to Veterans using non-medically.

Conclusion—Compared to non-Veterans in the US general population, recent cannabis use was similar or slightly lower among Veterans. However, among those with past year use, the proportion of those using medically was more than double that of the general population. Because only non-medical cannabis use was associated with higher rates of heavy episodic alcohol use and alcohol use disorder, it may be important to address problematic alcohol consumption among this high-risk group.

Corresponding Author: Alan K. Davis, Ph.D., University of Michigan Addiction Center, 2800 Plymouth Road, North Campus Research Complex, Building 16, 704-219-1733, alan.kooi.davis@gmail.com.

Contributions: The last author was responsible for study conceptualization and initial data analysis. First and last author were responsible for initial manuscript writing and data interpretation. All authors contributed to writing, editing and approved the article for submission.

Conflict of interest: Nothing to declare.

Keywords

marijuana; cannabis; medical; Veterans; non-medical

1. Introduction

Over the past decade, cannabis use has increased significantly among adults residing in the United States (US) (Azofeifa et al., 2016; Hasin et al., 2015; Han et al., 2017). Estimates from the National Epidemiologic Survey of Alcohol and Related Conditions (NESARC) suggest that the proportion of adults using cannabis in the past year more than doubled from 4% in 2001–2002 to 10% in 2012–2013 (Hasin et al., 2015), and more recent data from the National Survey on Drug Use and Health (NSDUH) indicate a past-year prevalence of 13% (Compton et al., 2017). Such documented increases in cannabis use coincide with the growing acceptability of and access to cannabis in the US (Pacula et al., 2015). As of this writing, 28 states and the District of Columbia (DC) have legalized use for individuals with qualifying biomedical or psychiatric conditions, and 8 US states and DC have legalized non-medical (i.e., “recreational”) use (Maii, 2013; National Conference on State Legislatures, 2016).

Given this changing landscape, it is important to continue to study the demographic, substance use, and health correlates of both medical and non-medical cannabis use among adults (e.g., Hall & Lynskey, 2016), as well as to identify subgroups that may be particularly affected by changes in legislation. Prior research by Lin and colleagues found that, among adults residing in states permitting medical cannabis, approximately 17% of those who used cannabis in the past year reported using for medical reasons (Lin et al., 2016). In addition, compared with those using cannabis non-medically, individuals who used medically had greater odds of only good or fair/poor health and daily cannabis use, and lower odds of alcohol use disorder and other illicit substance use in the past year (Lin et al., 2016).

Despite these important initial findings, there is limited information regarding cannabis use among important population subgroups in the US, including military Veterans (Bonn-Miller et al., 2012; Davis et al., 2016). A recent exception is a study of an online sample of cannabis using Veterans (Loflin, Earleywine, & Bonn-Miller, 2017). The study found that Veterans using cannabis for medical reasons reported greater combat exposure, greater PTSD symptoms, greater arousal, more days of cannabis use in the past month, a greater amount of cannabis consumed per month, and fewer days of alcohol use in the past month compared with those using recreationally. However, the study used a convenience sample recruited via a National Organization for the Reform of Marijuana Laws (NORML) listserv and may not generalize to all US Veterans (Loflin, Earleywine, & Bonn-Miller, 2017).

To the best of our knowledge, only one previous study has documented national-level information related to cannabis use among Veterans (Bonn-Miller et al., 2012), and it found that rates of cannabis use disorder diagnoses increased over 50% (i.e., from 0.66% to 1.05%) from 2002 to 2009 among patients in the Veterans Health Administration (VHA). Nonetheless, these estimates do not include those with recent cannabis use who do not have a cannabis use disorder diagnosis, nor do they include the larger population of Veterans who

do not access VHA services, limiting generalizability. Furthermore, articles in the popular press have cited Veterans groups, such as Veterans for Medical Cannabis Access, as major proponents of medical cannabis legislation (Benson, 2014). With the exceptions cited above, however, the extent of medical and non-medical cannabis use among US Veterans is largely unknown.

The dearth of information about medical and non-medical cannabis use among Veterans limits understanding of cannabis use among a substantial sub-population in the US. This study aimed to address this gap in the literature by examining the prevalence and associated features of recent (i.e., past year) cannabis use among Veterans from a nationally-representative household survey of US adults, and compare Veterans who used cannabis medically with those who used cannabis non-medically.

2. Method

2.1 Participants and procedures

Data came from the 2014 survey of the NSDUH, an annual nationally-representative cross-sectional survey of substance use and associated health concerns in the US (United States Department of Health and Human Services, 2014). The NSDUH uses a multi-stage probability sampling design to collect data from a representative sample of non-institutionalized individuals ages 12 years and older. Survey participants were interviewed using computer-assisted technology. The present study included data from a subset of adults ages 18 years and older who answered affirmatively to the following question: “Are you currently on active duty in the United States’ armed forces, in a reserves component, or now separated or retired from either reserves or active duty?” Participants who reported “Now separated/retired from reserves/active duty” (i.e., a US Veteran; n=2,587) at the time of assessment were included in analyses. For further information about the methods of the NSDUH please see SAMHSA (2014). This project was deemed exempt by the Institutional Review Board (IRB) at the University of Michigan.

2.2 Measures

2.2.1. Recreational and medical cannabis use—Participants were asked whether they had ever used cannabis in their lifetime (yes/no) and the number of days of cannabis use in the past year. For those participants who reported using cannabis in the past year, they were also asked whether any of their cannabis use was for medical reasons, (i.e., “recommended by a doctor”).

2.2.2. Other substance use and substance use disorders—Participants were asked about their lifetime and past year use of other substances (alcohol, nicotine, etc.). Using criteria based on the Diagnostic and Statistical Manual of Mental Disorder, Fourth Edition (DSM-IV; American Psychiatric Association, 2000), participants were also asked about whether they had experienced any of the symptoms (e.g., tolerance, withdrawal, negative consequences) for an alcohol use disorder. Responses to these questions were used to determine whether each participant met criteria for past year alcohol use disorder.

Additionally, each participant was assessed for Nicotine Dependence using the Fagerstrom Test of Nicotine Dependence (Heatherton et al., 1989).

2.2.3. Psychiatric and health-related functioning—Past year serious psychological distress was assessed using the Kessler-6 (Kessler et al., 2003), with a score of 13 or higher indicating significant distress. The Kessler-6 measures the frequency of feeling distressed (e.g., how often did you feel hopeless) from “None of the time” to “All of the time”, with past year psychological distress as the worst total score based on ratings for the past month or the worst month in the past year. Major depressive episode (MDE) was assessed using symptom criteria from the DSM-IV (APA, 2000). Participants endorsing 5 or more symptoms in the same two-week period, with at least one symptom related to anhedonia or depressed mood, were designated as meeting criteria for MDE. Overall health was assessed using one item from the Health-Related Quality of Life Scale (DeSalvo et al., 2006), wherein responses include “poor,” “fair,” “good,” “very good,” and “excellent.” Overall health-related functioning was evaluated using the World Health Organization Disability Assessment Schedule (WHODAS). Items on the WHODAS evaluate how much difficulty participants experience performing eight daily activities, and higher scores indicate greater disability (Ustun et al., 2010).

2.2.4. Demographics—Participants were asked their age, sex, race/ethnicity, marital status, employment, and education level.

2.3 Statistical Analyses

All study analyses were conducted via Stata version 14 (StataCorp, 2015), and used NSDUH-defined variables for stratification, clustering, and weighting. Specifically, Taylor Series methods (via the Stata “svyset” and “svy” commands) were used to take into account the complex survey design, and obtain appropriate standard error estimates for study analyses. We calculated the weighted proportion (i.e., prevalence) of past-year cannabis use among Veterans in the NSDUH, and weighted bivariate analyses (e.g., chi-square, t-tests) were conducted to examine differences between Veterans who used cannabis within the past year and those who did not. Next, a weighted multivariable logistic regression model was performed to estimate associations between the characteristics of interest and past-year cannabis use, simultaneously adjusting for all of the characteristics in the model. Among the subsample of Veterans with past year cannabis use who lived in one of the 20 states with medical cannabis legislation at the time of the survey (n=139), we estimated the weighted proportion of medical cannabis use, and conducted weighted bivariate analyses to compare Veterans with medical versus nonmedical cannabis use. We also estimated associations between characteristics of interest and the odds of medical cannabis use (versus nonmedical use) via separate weighted bivariate logistic regression models for each characteristic of interest.

3. Results

3.1 Prevalence and correlates of past year cannabis use among Veterans

Our sample included 2,587 NSDUH participants who reported being a US military Veteran. Overall, this sample comprised older (50+; 78%), male (92%), non-Hispanic white (80%) Veterans (all weighted %). Based on weighted analyses of this nationally-representative sample (Center for Behavioral Health Statistics and Quality, 2015), an estimated 9% (95% Confidence Interval [CI]=7%–10%) of Veterans used cannabis in the past year. Table 1 presents results from the weighted bivariate and multivariable analyses examining past year cannabis use. Weighted bivariate analyses revealed differences with respect to age group, race/ethnicity, marital status, employment status, functioning, past year serious psychological distress, past year nicotine dependence, past 30-day heavy episodic alcohol use, past year alcohol use disorder, and past year drug use. Results from the multivariable model were similar, and revealed that Veterans who were ages 50–64 and 65 or older had lower odds of past year cannabis use than those ages 18–25. Females also had lower odds of past year use. Being non-married, being out of the work force (e.g., retired, in school, disabled), having greater functioning disability, past year nicotine dependence, past 30-day heavy episodic alcohol use, past year alcohol use disorder, and past year drug use were all associated with greater odds of past year cannabis use among Veterans.

3.2 Comparisons between Veterans who use cannabis medically versus non-medically

Of the 295 Veterans who used cannabis in this past year, 139 (weighted %=48%) lived in a state where medical cannabis was legal. Based on weighted analyses an estimated 41% (95% CI=31%– 53%) of these Veterans reported using cannabis for medical reasons. As Table 2 shows, weighted bivariate analyses revealed differences with respect to age group, employment status, past 30-day heavy episodic alcohol use, and past year alcohol use disorder. Furthermore, weighted bivariate logistic regression models indicated that Veterans who were 26–34 years and 65 years or older had greater odds of medical use compared with those ages 18–25 years. Veterans who had “other” employment, including being retired, had greater odds of medical use than those who were employed full-time. In addition, compared with Veterans who rated their overall health as “excellent”, those who rated their health as “very good”, “good”, and “fair/poor” had greater odds of using medically. Veterans with heavy episodic alcohol use in the past 30 days, as well as those who met alcohol use disorder criteria in the past year, had lower odds of medical cannabis use.

4. Discussion

Based on our analyses of the NSDUH, an estimated one in 11 US Veterans used cannabis in the past year. This estimated prevalence of cannabis use among Veterans (9%; 95% CI=7%, 10%) was slightly lower than what has been reported in the general US population (10%–13%; Hasin et al., 2015; Compton et al., 2017). Consistent with prior findings (e.g., Blanco et al., 2016; Lopez-Quintero et al., 2011), we found that Veterans who were older and female had lower odds of past year cannabis use, and those with nicotine dependence and alcohol use disorder had greater odds of past year cannabis use.

The findings from the present study also revealed that, among those with past year cannabis use, more than twice the proportion of Veterans reported *medical* use (41%) compared to non-Veteran adults in the general US population (17%; Lin et al., 2016). Veterans who used cannabis *medically*, as compared to those who used *non-medically*, were less likely to meet criteria for alcohol use disorder, less likely to engage in recent heavy episodic alcohol use, and were more likely to be 65 or older and not in the workforce (e.g., retired, in school, disabled). These findings are consistent with results observed in the general US population (Lin et al. 2016), where those who used cannabis medically had lower odds of alcohol use disorder and other illicit substance use in the past year, and consistent with a recent study that indicated that Veterans using cannabis medically had significantly fewer drinking days in the past month compared with those using non-medically (Loflin et al., 2017).

Taken together, the findings from this study suggest that being older and married might buffer against cannabis use among Veterans. Moreover, findings highlight differences between Veterans who consume cannabis medically versus non-medically, suggesting that using alcohol, perhaps especially when such use is heavy, differentiates whether a Veteran is using medical or non-medical cannabis. Because cannabis use has been associated with the development of psychiatric disorders, including alcohol use disorders (Blanco et al., 2016), more work is needed to determine whether the specific type of cannabis used (medical vs. non-medical) is a factor that may differentiate those Veterans with a problematic substance use or psychiatric trajectory. In the meantime, treatment providers working with Veterans who report *non-medical* cannabis use may want to consider a broader discussion of service needs, such as those designed to reduce risky alcohol consumption (O'Donnell et al., 2014) and recognize that they may be less likely to have a supportive partner or significant other at home and to be using other substances, potentially complicating their ability to access and engage in care.

These results should be interpreted within the context of several limitations. For example, the NSDUH relies on self-report, which is subject to social-desirability and retrospective recall biases. In addition, because of the cross-sectional study design, temporality and causality cannot be inferred. Moreover, the use of a single question in the NSDUH to assess medical cannabis use (i.e., "recommended by a doctor") may not necessarily reflect those who possessed a medical cannabis card or those who use non-medical cannabis for medical reasons. Moreover, the NSDUH lacks a comprehensive assessment for Post-Traumatic Stress Disorder or branch/status of military service, both of which are of particular interest in this population. Additionally, because Veterans were included in our analysis comparing medical and non-medical cannabis use only if they lived in a state where cannabis was approved for medical use at the time of survey, these findings may not generalize to the broader population of Veterans in the entire US.

To the best of our knowledge, this is the first study to evaluate medical and non-medical cannabis use among Veterans from a nationally-representative sample of adults in the US. Because *non-medical* cannabis use was associated with higher rates of alcohol use disorder among Veterans, it may be important to address problematic alcohol consumption in this high-risk population (O'Donnell at al., 2014). Moreover, a larger proportion of Veterans in the US report using cannabis for medical reasons compared to non-Veterans (Lin et al.,

2016). Consequently, it may be important for medical providers to assess and consider potential treatment implications of medical cannabis use in this population. To this end, further research should examine whether medical cannabis use interferes with treatment engagement, adherence, or outcomes when such use occurs during other pharmacological or psychosocial treatments. Nonetheless, before such research is completed, providers should consider the implications of medical cannabis use when developing and evaluating treatment plans and recommendations among their Veteran patients. For policy-makers, it is important to know that medical cannabis use is already common in Veterans so they are likely to be disproportionately affected by any changes in the legal status of medical and/or recreational cannabis use.

Acknowledgments

Role of funding sources: During his work on this study, Dr. Davis was supported by a NIAAA T32 Institutional Training Grant (#007477). During his work on this study, Dr. Bohnert was supported by a Department of Veterans Affairs Health Services Research and Development Service Career Development Award (CDA 11-245) and by a VA Investigator-Initiated Research (IIR) grant (# IIR 15-348). The funding sources had no role in the design, data collection, analysis or interpretation of results.

References

American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: Author; 2000. text rev

Azofeifa A, Mattson ME, Schauer G, McAfee T, Grant A, Lyerla R. National estimates of marijuana use and related indicators - National Survey on Drug Use and Health. MMWR Surveillance Summary. 2016; 65:1–28. DOI: 10.15585/mmwr.ss6511a1

Benson, T. PTSD and Pot: The fight to get veterans some weed. Rolling Stone. 2014 Dec 9. Retrieved from http://www.rollingstone.com/politics/news/ptsd-and-pot-the-fight-to-get-veterans-some-weed-20141209

Bestrashniy J, Winters KC. Variability in medical marijuana laws in the United States. Psycolh Addict Behav. 2015; 29:639–642. DOI: 10.1037/adb0000111

Blanco C, Hasin DS, Wall MM, Florez-Salamanca L, Hoertel N, Wang S, Kerridge BT, Olfson M. Cannabis use and risk of psychiatric disorders. JAMA Psychiatry. 2016; 73:388–395. DOI: 10.1001/jamapsychiatry.2015.3229 [PubMed: 26886046]

Bonn-Miller MO, Harris AH, Trafton JA. Prevalence of cannabis use disorder diagnoses among veterans in 2002, 2008, and 2009. Psychological Services. 2012; 9:404–416. DOI: 10.1037/a0027622 [PubMed: 22564034]

Center for Behavioral Health Statistics and Quality. 2014 National Survey on Drug Use and Health: Methodological summary and definitions. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2015.

Compton WM, Han B, Hughes A, Jones CM, Blanco C. Use of marijuana for medical purposes among adults in the United States. JAMA. 2017; 317:209–210. DOI: 10.1001/jama.2016.18900 [PubMed: 27992636]

DeSalvo KB, Bloser N, Reynolds K, He J, Muntner P. Mortality prediction with a single general self-rated health question. J Gen Intern Med. 2006; 21:267–275. DOI: 10.1111/j.1525-1497.2005.00291.x [PubMed: 16336622]

Fearn NE, Vaughn MG, Nelson EJ, Salas-Wright CP, DeLisi M, Qian Z. Trends and correlates of substance use disorders among probationers and parolees in the United States 2002–2014. Drug Alcohol Depend. 2016; 167:128–139. DOI: 10.1016/j.drugalcdep.2016.08.003 [PubMed: 27515722]

Hall W, Lynskey M. Evaluating the public health impacts of legalizing recreational cannabis use in the United States. Addiction. 2016; 111:1764–1773. DOI: 10.1111/add.13428 [PubMed: 27082374]

Han BH, Sherman S, Mauro PM, Martine SS, Rotenberg J, Palomar JJ. Demographic trends among older cannabis users in the United States, 2006–2013. Addiction. 2017; 112:516–525. DOI: 10.1111/add.13670 [PubMed: 27767235]

Hasin DS, Saha TD, Kerridge BT, Goldstein RB, Chou SP, Zhang H, Jung J, Pickering RP, Ruan J, Smith SM, Huang B, Grant BF. Prevalence of marijuana use disorders in the United States between 2001–2002 and 2012–2013. JAMA Psychiatry. 2015; 72:1235–1242. DOI: 10.1001/jamapsychiatry.2015.1858 [PubMed: 26502112]

Heatherton TF, Kozlowski LT, Frecker RC, Rickert W, Robinson J. Measuring the heaviness of smoking: Using self-reported time to the first cigarette of the day and the number of cigarettes smoked per day. Br J Addict. 1989; 84:791–799. [PubMed: 2758152]

Kessler RC, Barker PR, Colpe LJ, Epstein JF, Gfroerer JC, Hiripi E, … Zaslavsky AM. Screening for serious mental illness in the general population. Arc Gen Psych. 2003; 60:184–189. DOI: 10.1001/archpsyc.60.2.184

Lin LA, Ilgen MA, Jannausch M, Bohnert KM. Comparing adults who use cannabis medically with those hwo use recreationally: Results from a national sample. Addict Behav. 2016; 61:99–103. DOI: 10.1016/j.addbeh.2016.05.015 [PubMed: 27262964]

Loflin M, Earleywine M, Bonn-Miller M. Medical versus recreational cannabis use: Patterns of cannabis use, alcohol use, and cued-arousal among veterans who screen positive for PTSD. Addict Behav. 2017; 68:18–23. DOI: 10.1016/j.addbeh.2017.01.008 [PubMed: 28088054]

Lopez-Quintero C, de los Cobos JP, Hasin DS, Okuda M, Wang S, Grant BF, Blanco C. Probability and predictors of transition from first use to dependence on nicotine, alcohol, cannabis, and cocaine: Results of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). Drug Alcohol Depend. 2011; 115:120–130. DOI: 10.1016/j.drugalcdep.2010.11.004 [PubMed: 21145178]

Maii. Re: Medical marijuana laws around the world [Web blog comment]. 2013 Jul 9. Retrieved September 25, 2015, from http://marijuana.cc/2013/07/09/medical-marijuana-laws-around-the-world/

O'Donnell A, Anderson P, Newbury-Birch D, Schulte B, Schmidt C, Reimer J, Kaner E. The impact of brief alcohol interventions in primary healthcare: A systematic review of reviews. Alcohol Alcohol. 2014; 49:66–78. DOI: 10.1093/alcalc/agt170 [PubMed: 24232177]

Pacula RL, Powell D, Heaton P, Sevigny EL. Assessing the effects of medical marijuana laws on marijuana use: The devil is in the details. J Policy Anal Manag. 2015; 34:7–31.

SAMHSA. Substance Abuse and Mental Health Services Administration (SAMHSA). Results from the 2013 National Survey of Drug Use and Health: Summary of National Findings. Substance Abuse Mental Health Services Administration; Rockville, MD: 2014.

Sullivan LE, Tetrault JM, Braithwaite S, Turner BJ, Fiellin DA. A meta-analysis of the efficacy of nonphysician brief interventions for unhealthy alcohol use: Implications for the patient-centered medical home. Am J Addict. 2011; 20:343–356. DOI: 10.1111/j.1521-0391.2011.00143.x [PubMed: 21679266]

United States Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. Center for Behavioral Health Statistics and Quality. National Survey on Drug Use and Health, 2014. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]; 2016 Mar 22. ICPSR36361-v1http://doi.org/10.3886/ICPSR36361.v1

Highlights

- 9% of US Veterans reported past year cannabis use
- Heavy episodic alcohol use is related to non-medical cannabis use
- Alcohol use disorder is also related to non-medical cannabis use
- 41% of Veterans using cannabis reported that they used cannabis medically

Table 1

Weighted demographic and clinical characteristics in veterans with and without past year cannabis use and weighted multivariable logistic regression model estimating associations between demographic, health-related functioning, and substance use/addiction and past year cannabis use (n=2,587).

Variable	Total (n=2,587) Weighted %	No Past Year Cannabis Use (n=2,292) Weighted %	Past Year Cannabis Use (n=295) Weighted %	AOR	95% C.I.	P-Value
Age**						
18–25 Years	1.4%	1.1%	4.7%	Referent		
26–34 Years	5.7%	5.0%	13.6%	0.61	(0.27, 1.36)	0.222
35–49 Years	15.5%	14.6%	24.3%	0.57	(0.29, 1.10)	0.093
50–64 Years	27.8%	27.0%	35.7%	0.38	(0.20, 0.71)	0.003
65 or Older	49.7%	52.3%	21.7%	0.13	(0.06, 0.29)	<0.001
Sex						
Male	92.4%	92.3%	93.3%	Referent		
Female	7.6%	7.7%	6.7%	0.46	(0.24, 0.88)	0.021
Race/Ethnicity*						
Non-Hispanic White	80.0%	80.7%	72.5%	Referent		
All Others	20.0%	19.3%	27.5%	1.12	(0.70, 1.81)	0.629
Education						
High School or Less	40.5%	40.5%	40.9%	Referent		
Some College or Greater	59.5%	59.5%	59.1%	1.18	(0.82, 1.68)	0.368
Marital Status**						
Married	66.6%	68.8%	42.9%	Referent		
Non-Married	33.4%	31.2%	57.1%	2.28	(1.58, 3.28)	<0.001
Employment*						
Employed Full-Time	38.3%	37.5%	46.6%	Referent		
Employed Part-Time	10.2%	10.3%	9.7%	1.63	(0.72, 3.72)	0.239
Unemployed	2.0%	1.8%	4.3%	1.04	(0.44, 2.47)	0.933
Other (e.g., retired, in school, disabled)	49.5%	50.5%	39.4%	1.83	(1.08, 3.11)	0.025
Overall Health						
Excellent	17.9%	18.4%	12.6%	Referent		
Very Good	33.1%	33.2%	32.0%	1.31	(0.70, 2.47)	0.388

Variable	Total (n=2,587) Weighted %	No Past Year Cannabis Use (n=2,292) Weighted %	Past Year Cannabis Use (n=295) Weighted %	AOR	95% C.I.	P-Value
Good	30.7%	30.5%	33.5%	1.33	(0.67, 2.65)	0.404
Fair/Poor	18.3%	17.9%	21.9%	1.24	(0.57, 2.66)	0.581
Functioning Disability (Mean; Range 0–24) *	2.7	2.5	4.7	1.04	(1.00, 1.09)	0.048
Past Year Serious Psychological Distress **						
Yes	6.2%	5.5%	14.1%	0.74	(0.35, 1.54)	0.408
No	93.8%	94.5%	85.9%	Referent		
Past Year Major Depressive Episode						
Yes	4.9%	4.7%	6.8%	0.62	(0.29, 1.31)	0.202
No	95.1%	95.3%	93.2%	Referent		
Nicotine Dependence (FTND) **						
Yes	12.1%	10.5%	29.2%	2.06	(1.25, 3.37)	0.005
No	87.9%	89.5%	70.8%	Referent		
Past 30 Day Heavy Episodic Alcohol Use **						
Yes	21.6%	19.3%	45.4%	1.84	(1.18, 2.88)	0.009
No	78.4%	80.7%	54.6%	Referent		
Past Year Alcohol Use Disorder **						
Yes	6.0%	4.7%	19.6%	2.04	(1.17, 3.55)	0.013
No	94.0%	95.3%	80.4%	Referent		
Past Year Drug Use (Excluding Cannabis) **						
Yes	3.5%	2.0%	19.7%	5.72	(3.18, 10.30)	<0.001
No	96.5%	98.0%	80.3%	Referent		

* $p < .05$,

** $p < .001$

Table 2

Weighted bivariate comparisons between Veterans who use cannabis medically versus non-medically and weighted logistic regressions estimating associations between characteristics of interest and odds of medical use among Veterans with past year cannabis use living in states with medical cannabis laws (n=139)

Variable	Past Year Recreational Cannabis Use (n=92) Weighted %	Past Year Medical Cannabis Use (n=47) Weighted %	OR	95% C.I.	P-Value
Age**					
18–25 Years	6.2%	1.1%	Referent		
26–34 Years	13.0%	15.5%	6.91	(1.60, 29.83)	0.011
35–49 Years	22.4%	12.1%	3.13	(0.69, 14.19)	0.136
50–64 Years	54.6%	31.0%	3.29	(0.45, 24.33)	0.236
65 or Older	3.8%	40.3%	62.27	(4.79, 810.13)	0.002
Sex					
Male	90.7%	95.2%	Referent		
Female	9.3%	4.8%	0.49	(0.11, 2.24)	0.347
Race/Ethnicity					
Non-Hispanic White	76.8%	63.3%	Referent		
All Others	23.2%	36.7%	1.91	(0.67, 5.44)	0.219
Education					
High School or Less	37.3%	55.0%	Referent		
Some College or Greater	62.7%	45.0%	0.49	(0.16, 1.47)	0.197
Marital Status					
Married	33.5%	55.8%	Referent		
Non-Married	66.5%	44.2%	0.40	(0.14, 1.12)	0.081
Employment***					
Employed Full-Time	67.3%	16.9%	Referent		
Employed Part-Time	6.9%	8.3%	4.75	(0.97, 23.29)	0.055
Unemployed	5.8%	1.1%	0.74	(0.10, 5.66)	0.769
Other (e.g., retired, in school, disabled)	20.0%	73.8%	14.67	(4.73, 45.47)	<0.001
Overall Health					
Excellent	15.3%	0.6%	Referent		
Very Good	30.7%	33.2%	26.76	(4.26, 168.30)	0.001

Variable	Past Year Recreational Cannabis Use (n=92) Weighted %	Past Year Medical Cannabis Use (n=47) Weighted %	OR	95% C.I.	P-Value
Good	38.1%	39.0%	25.34	(5.08, 126.43)	<0.001
Fair/Poor	15.9%	27.2%	42.35	(6.25, 287.07)	<0.001
Functioning Disability (Mean; Range 0–24)	4.5	4.6	1.00	(0.94, 1.07)	0.901
Past Year Serious Psychological Distress					
Yes	12.6%	12.9%	1.03	(0.21, 5.10)	0.968
No	87.4%	87.1%	Referent		
Past Year Major Depressive Episode					
Yes	2.2%	9.5%	4.69	(0.78, 28.33)	0.090
No	97.8%	90.5%	Referent		
Nicotine Dependence (FTND)					
Yes	33.2%	15.9%	0.38	(0.11, 1.34)	0.130
No	66.8%	84.1%	Referent		
Past 30 Day Heavy Episodic Alcohol Use *					
Yes	53.2%	25.5%	0.30	(0.12, 0.76)	0.012
No	46.8%	74.5%	Referent		
Past Year Alcohol Use Disorder *					
Yes	31.1%	7.9%	0.19	(0.05, 0.75)	0.019
No	68.9%	92.1%	Referent		
Past Year Drug Use (Excluding Cannabis)					
Yes	20.6%	7.1%	0.29	(0.07, 1.22)	0.090
No	79.4%	92.9%	Referent		
Days of Cannabis Use in Past Year					
1–11 Days	18.2%	10.6%	Referent		
12–49 Days	16.3%	20.6%	2.17	(0.29, 16.11)	0.441
50–99 Days	7.7%	6.6%	1.46	(0.08, 28.40)	0.798
100–299 Days	49.3%	39.9%	1.39	(0.22, 8.77)	0.721
300–365 Days	8.5%	22.4%	4.53	(0.64, 31.94)	0.127
Past Year Cannabis Use Disorder					
Yes	7.0%	14.5%	2.26	(0.50, 10.12)	0.280
No	93.0%	85.5%	Referent		

Author Manuscript

Author Manuscript

Author Manuscript

$^{*}p < .05$,
$^{**}p < .01$,
$^{***}p < .001$