

The Underdiagnosis of Cannabis Use Disorders and Other Axis-I Disorders Among Military Veterans Within VHA

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ABSTRACT Recent evidence suggests that rates of cannabis use disorders are significantly lower among military veterans within the Veterans Affairs Health Care System (VA) than the general U.S. population. However, prevalence rates obtained from the VA rely on clinician diagnosis, which have been shown to be underrepresentative of actual disorder rates. The present study utilized structured clinical interviews to assess a sample of 84 military veterans with a cannabis use disorder and compared Axis-I disorder diagnosis rates to those obtained through a retrospective electronic medical record chart review. Findings indicated that cannabis use disorders, as well as posttraumatic stress disorder and other anxiety disorders, were significantly underdiagnosed within this military veteran population. In contrast, rates of other substance use disorders as well as mood disorders were overdiagnosed within this VA population. Findings are discussed in relation to the improvement of screening and repeated structured assessment of military veterans within the VA.

INTRODUCTION

The present study aimed to determine whether current (i.e., “active”) cannabis use disorders (CUD) and other substance use disorders (SUD), as well as anxiety and mood disorders, were accurately recorded in the electronic medical records (EMR) of a population of military veterans.

Potentially due to the implementation of annual screenings, aimed at improving disorder detection and treatment, for posttraumatic stress disorder (PTSD), alcohol misuse, and depression within primary care clinics in the Veterans Health Administration (VHA), rates of CUD, PTSD, and other disorders have shown significant increases among military veterans within the past decade.^{1,2} Indeed, rates of CUD diagnoses among military veterans have increased over 50% between 2002 and 2009¹ and rates of PTSD diagnoses among military veterans increased approximately 60% between 2002 and 2007.²

However, recent empirical investigation has found that rates of CUD diagnoses among military veterans within VHA are significantly lower than prevalence rates of CUD observed in the general U.S. population.^{1,3} Here, rates obtained from VHA are based on clinician diagnosis, at times without the use of structured clinical assessment, whereas population rates have been inferred from structured assessments (which may be more accurate⁴) among population samples.^{1,3} It remains unclear whether rates of CUD are indeed lower among military veterans, or whether rates of

CUD among military veterans are only lower than the prevalence observed within the general U.S. population because of an underdiagnosis of CUD by clinicians within VHA. Consistent with this idea, other empirical work has found underdiagnosis of PTSD and other Axis-I disorders among other military veteran populations (e.g., females, those in primary care) within VHA.^{5,6}

METHOD

Participants

Participants were 84 (96.4% male; $M_{age} = 51.85$, standard deviation [SD_{age}] = 9.31) military veterans with a CUD recruited from mental health clinics (including specialty SUD clinics) within a Veterans Affairs Health Care System (VA) Medical Center. Participants with CUD were specifically recruited, as the present study was part of a larger investigation of CUD among military veterans. Study inclusion criteria involved (1) being a U.S. veteran, (2) having a CUD, and (3) being motivated to make a serious cannabis self-quit attempt. Study exclusion criteria included (1) limited mental competency and the inability to give informed, voluntary, written consent to participate, and (2) a significant change (decrease of >25%) in amount of cannabis smoked per day during the previous month.

Measures

Prevalence of current Axis-I diagnoses, including cannabis dependence but excluding PTSD, was determined by the Structured Clinical Interview-Non-Patient Version for DSM-IV (SCID-I-N/P⁷). The Clinician-Administered PTSD Scale (CAPS⁸) was used to assess the intensity and frequency of DSM-IV PTSD symptoms, and thus identify individuals meeting criteria for PTSD. The SCID-I-N/P and CAPS were administered by trained research staff. In terms of training, before administering the SCID-I-N/P or CAPS in the context of the study, each trainee was required to (1)

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view 3 to 4 videotaped or live SCID-I-N/P and CAPS administrations by senior interviewers at the National Center for PTSD, with the comparison of the trainees ratings to those of the senior interviewer, and (2) administer 6 to 10 SCID-I-N/P and CAPS interviews in the presence of the senior interviewer with the requirement that the trainees diagnosis (SCID-I-N/P & CAPS) match those of the senior interviewer on at least 4 of 5 consecutive administrations. Additionally, all interviews were audio-recorded and diagnoses were confirmed by the first author following a review of recorded interviews. Both the SCID-I-N/P and the CAPS demonstrate excellent reliability and validity in a variety of populations, including military veterans.^{7,9}

Procedure

Interested military veterans, responding to flyers posted throughout a VA Medical Center, contacted the research team and were provided with a detailed description of the study via phone. Participants were then initially screened for eligibility, with those eligible scheduled for an appointment. Upon arrival to the laboratory, each scheduled participant provided written consent to participate in the research study. Next, participants were administered the SCID-I-N/P and CAPS by trained interviewers to assess diagnoses. At the conclusion of this appointment, participants were compensated \$75 for their efforts. Following, diagnoses obtained via SCID-I-N/P and CAPS were compared to those obtained from a retrospective EMR chart review (all comparisons conducted in December 2011). All laboratory interview ses-

sions were conducted between February 2010 and October 2011, whereas dates of most recent EMR diagnosis ranged from January 2001 to December 2011. All study procedures were approved by the Stanford University Institutional Review Board.

RESULTS

In terms of ethnicity, 36.9% of the sample was Caucasian, 39.3% Black/non-Hispanic, 1.2% Black/Hispanic, 11.9% Hispanic, 1.2% Asian, and 9.5% Other/Missing. Among those with a relevant diagnosis within their EMR ($N = 64$), the median time between the date of research diagnosis and the most recent date of receipt of VHA diagnosis was 177.50 days ($SD = 816.39$). Given that structured interviews occurred within 2 years of data analysis, most diagnoses were received before structured interview. Among those who had an individual clinical session with a VHA provider who either formally or informally assessed for at least one of the studied disorders (e.g., substance abuse; $N = 82$), the median number of days between research assessment and a clinical visit where a diagnosis could have been entered into the EMR was 14.00 days ($SD = 659.23$).

Figure 1 shows the comparison between rates of research structured interview-based diagnoses and those obtained from retrospective EMR chart review. McNemar’s tests revealed significant differences between rates of research structured interview and EMR diagnosis for cannabis abuse/dependence $\chi^2(1) = 62.02, p < 0.01$, other substance abuse/dependence $\chi^2(1) = 7.22, p = 0.01$, PTSD $\chi^2(1) = 5.33, p < 0.05$, other anxiety disorders $\chi^2(1) = 9.63, p < 0.01$, and mood disorders $\chi^2(1) = 7.76, p = 0.01$.

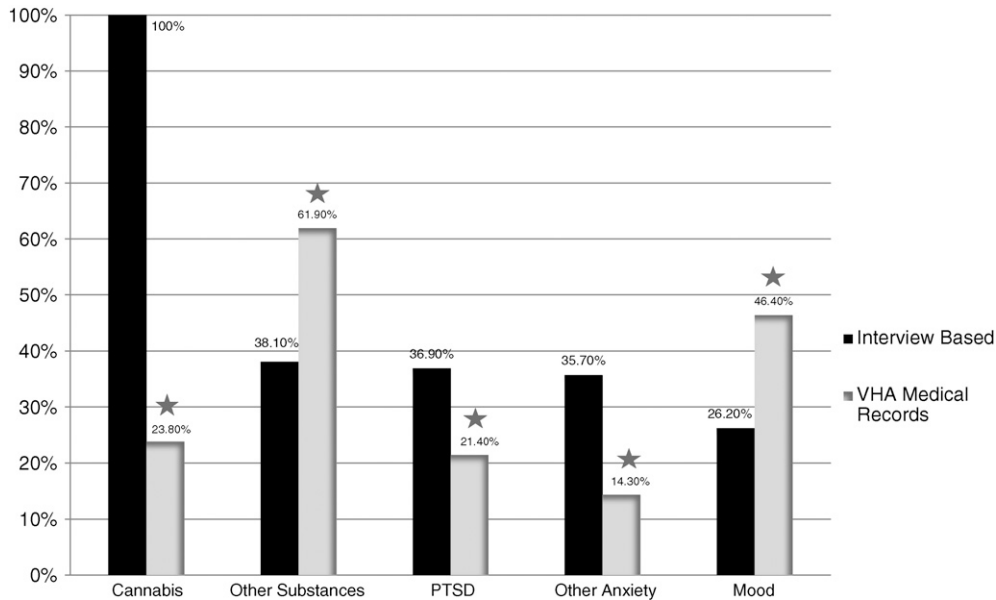


FIGURE 1. Comparison of disorder diagnosis rates between study clinicians and VA medical records. Note: * = $p < 0.05$; **Cannabis** = Cannabis Abuse or Dependence (305.20, 304.30). Additionally, within VHA EMR, we included individuals where cannabis was specified within a polysubstance diagnosis code ($N = 2$); **Other Substances** = Alcohol, Amphetamine, Cocaine, Hallucinogens, Inhalants, Opioid, Sedative, and/or Polysubstance/Other/Unknown Substance Abuse or Dependence (305.XX, 304.XX); **PTSD** = Posttraumatic Stress Disorder (309.81); **Other Anxiety** = Panic Disorder with/without Agoraphobia, Agoraphobia, Specific Phobia, Social Phobia, Obsessive-Compulsive Disorder, Generalized Anxiety Disorder, and/or Anxiety Disorder NOS (300.XX); **Mood** = Major Depressive Disorder, Mood Disorder NOS, Bipolar Disorders (296.XX), Dysthymic Disorder (300.4), and/or Depressive Disorder NOS (311, 799.9).

DISCUSSION

Findings indicate that CUD is underdiagnosed within VHA, with underdiagnosis also observed for PTSD and other anxiety disorders. These findings are consistent with prior work showing a wide discrepancy between rates of CUD among military veterans as compared with the general U.S. population^{1,3} and suggest that actual rates may be similar between both populations or even possibly higher among military veterans. The present findings also extend prior work that has found an underdiagnosis of PTSD and other Axis-I disorders among certain military veteran populations (e.g., females), and extend these findings to CUD, PTSD, and other anxiety disorders in a sample of military veterans with CUD.^{5,6}

In contrast, other SUD and mood disorders were overdiagnosed among military veterans with CUD in VHA, inconsistent with prior work.⁵ Supported by the amount of time before the study that a relevant diagnosis was received, this overdiagnosis is most likely due to the significantly long amount of time that disorders remain listed as “active” within a military veteran’s medical record, potentially indicating no later reassessment. Interestingly, as other SUD were overdiagnosed within VHA, it is also possible that clinicians are only entering the diagnosis for the most troublesome substance used by those with polysubstance use, potentially explaining at least some of the observed underdiagnosis of CUD.

The present findings support the usefulness of national VHA initiatives mandating repeated structured assessment-based treatment planning within specialty mental health programs, so as to provide accurate and up-to-date diagnostic profiles and determine care needs. Indeed, VHA is in the process of rolling out initiatives that require at least quarterly (i.e., 90-day) structured clinical assessments of mental health disorders and problems, particularly PTSD, SUD, and depression. Future study is needed to determine whether these initiatives improve the accuracy of EMR diagnoses among military veterans in VHA.

Although the present study was among a relatively small sample of military veterans with a CUD, they are nonetheless noteworthy. Future studies would benefit from examining these associations among larger and more diverse samples. For example, a similar investigation among a significantly

larger sample including both those who use cannabis and those who are nonusers seems prudent. Additionally, the examination of CUD diagnosis disparity among samples of military veterans with other disorders (e.g., PTSD) would be a particularly interesting extension of the present findings.

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REFERENCES

1. Bonn-Miller MO, Harris AHS, Trafton JA: Prevalence of cannabis use disorder diagnoses among veterans in 2002, 2008, and 2009. *Psychol Serv* (in press). 2012 May 7. [Epub ahead of print].
2. Rosen CS, Greenbaum MA, Fitt J: Demand for and utilization of VA outpatient mental health care for PTSD: 2001–2007. Paper presented at the Annual VA Health Services Research & Development Conference, Baltimore, MD, February 2008.
3. Substance Abuse and Mental Health Services Administration. Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD, Substance Abuse and Mental Health Services Administration, 2011.
4. Miller PR, Dasher R, Collins R, Griffiths P, Brown F: Inpatient diagnostic assessments: 1. Accuracy of structured vs. unstructured interviews. *Psychiatry Res* 2001; 105: 255–64.
5. Grossman LS, Willer JK, Stovall JG, McRae SG, Maxwell S, Nelson R: Underdiagnosis of PTSD and substance use disorders in hospitalized female veterans. *Psychiatr Serv* 1997; 48: 393–5.
6. Magruder KM, Frueh BC, Knapp RG, et al: Prevalence of posttraumatic stress disorder in Veterans Affairs primary care clinics. *Gen Hosp Psychiatry* 2005; 27: 169–79.
7. First MB, Spitzer RL, Gibbon M, Williams JBW: Structured Clinical Interview for Axis I DSM-IV Disorders. New York, New York Psychiatric Institute, Biometrics Research Department, 1994.
8. Blake DD, Weathers FW, Nagy LM, et al: The development of a Clinician-Administered PTSD scale. *J Trauma Stress* 1995; 8: 75–90.
9. Weathers FW, Keane TM, Davidson RT: Clinician-Administered PTSD Scale: a review of the first ten years of research. *Depress Anxiety* 2001; 13: 132–56.