



## Short Communication

## Positive posttraumatic stress disorder screens among first-time medical cannabis patients: Prevalence and association with other substance use



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## HIGHLIGHTS

- One in four new medical cannabis patients screened positive for lifetime PTSD.
- Use of other substances is common among medical cannabis users with PTSD symptoms.
- An estimated one-third of PTSD-positive cannabis patients had recent sedative use.

## ARTICLE INFO

Available online 2 June 2014

## Keywords:

Posttraumatic stress disorder

PTSD

Medical cannabis

Medical marijuana

Prescription drug use

## ABSTRACT

Twenty-one states and the District of Columbia have passed legislation allowing for the use of medical cannabis for those individuals with qualifying medical conditions, which include posttraumatic stress disorder (PTSD) for a growing number of states. Little information is available regarding PTSD among medical cannabis patients. This study seeks to provide initial data on this topic by examining the prevalence and correlates of positive PTSD screens among a sample of patients seeking medical cannabis certification for the first time ( $n = 186$ ). Twenty-three percent (42/186; 95% confidence interval [CI] = 17%–29%) of the patients in the study sample screened positive for PTSD. Moreover, the group that screened positive for PTSD had higher percentages of lifetime prescription opioid, cocaine, prescription sedative, and street opioid use, as well as a higher percentage of recent prescription sedative use, than the group that screened negative for PTSD. These findings highlight the relatively common use of other substances among medical cannabis patients with significant PTSD symptoms, even when compared with other patients seeking medical cannabis for the first time. As a growing number of states include PTSD among the list of qualifying medical conditions for medical cannabis, additional research is needed to better characterize the longitudinal relationship between medical cannabis use and PTSD symptoms.

Published by Elsevier Ltd.

### 1. Introduction

Although cannabis is a schedule I controlled substance and illegal under federal law in the United States, 21 states and the District of Columbia have passed legislation allowing for the use of cannabis for those individuals with qualifying medical conditions (Berger, 2014). Qualifying medical conditions generally include cancers, human immunodeficiency virus infection/acquired immunodeficiency syndrome

(HIV/AIDS), severe and chronic pain, and multiple sclerosis. A notable between-state difference, however, is that a minority of laws include posttraumatic stress disorder (PTSD) as a qualifying condition. Moreover, there has been a recent trend to amend laws to incorporate PTSD, with Maine, Oregon, and Michigan having amended laws to include PTSD as an allowable condition within the past year (Brogan, 2013; Oosting, 2014; Zheng, 2013). Despite this recent trend, few studies have examined PTSD among medical cannabis users.

Previous research outside of the medical cannabis setting has documented associations between PTSD and cannabis use. For example, using data from a nationally representative survey, Cougle, Bonn-Miller, Vujanovic, Zvolensky, and Hawkins (2011) found that individuals with a lifetime history of PTSD had significantly greater odds of lifetime and past-year cannabis use, even after adjustment for other

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variables (Cougler et al., 2011). Another study reported that changes in PTSD symptom scores collected at PTSD treatment intake and discharge were associated prospectively with the frequency of post-treatment cannabis use, with lower levels of PTSD symptom change associated with greater cannabis use (Bonn-Miller, Vujanovic, & Drescher, 2011).

As a critical initial step in understanding how the existing general population and clinical research relates to settings that provide certification for medical cannabis, the present study seeks to estimate the prevalence of positive PTSD screens among individuals seeking medical cannabis certification for the first time. We use a cannabis clinic-based sample from Michigan before the amendment was passed allowing for PTSD as a qualifying condition, and examine differences between those with and without potential PTSD with respect to key sociodemographic, qualifying medical condition, and lifetime and recent substance use characteristics.

## 2. Materials and methods

### 2.1. Sample

This study uses a convenience sample of patients from one medical cannabis clinic in Michigan. Specifically, patients were approached by research staff in the waiting area of the clinic and asked to participate in a brief health survey (Ilgen et al., 2013). Of the 370 individuals aged 18 years or older who were approached, 348 (94.1%) consented to participate. The present study is focused on the subset of patients who were seeking medical cannabis certification for the first-time ( $n = 195$ ) to better characterize individuals at the outset of medical cannabis use. Nine of the 195 first-time patients did not complete the PTSD screening module. Therefore, the total sample size for the present analysis is 186 individuals. The study was approved by the University of Michigan Medical School Institutional Review Board.

### 2.2. Measures

#### 2.2.1. PTSD screening assessment

Participants were queried whether they had ever been exposed to a qualifying traumatic event. For those who had been exposed to a traumatic event, the seven-item Short Screening Scale for Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) PTSD was used to assess lifetime history of PTSD symptoms (Bohnert & Breslau, 2011; Breslau, Peterson, Kessler, & Schultz, 1999). Individuals who endorsed four or more of the seven items assessing lifetime symptoms were classified as screening positive, consistent with prior recommendations based on a comprehensive investigation of the scale's sensitivity, specificity, and predictive values (Bohnert & Breslau, 2011).

#### 2.2.2. Sociodemographic characteristics

Sociodemographic information was ascertained via standardized, self-reported questions regarding sex, age, race, education, relationship status, and employment.

#### 2.2.3. Qualifying medical conditions

Participants were asked to select the condition or conditions for which they were seeking medical cannabis from a list of qualifying medical conditions for Michigan.

#### 2.2.4. Substance use

Items from the World Health Organization's Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) were used to assess any lifetime and any past three-month use of alcohol, cannabis, prescription opioids, hallucinogens, cocaine, amphetamines, prescription sedatives, inhalants, and street opioids (WHO ASSIST Working Group, 2002). The prescription drug questions specifically queried non-medical use of prescription drugs and contained the phrase "without a doctor's prescription."

### 2.3. Statistical analysis

PTSD screen status (i.e., positive or negative) was calculated to estimate the prevalence of PTSD. Next, frequencies and percentages of sociodemographic, qualifying medical condition, and substance use characteristics were calculated for the overall sample, and by PTSD screen status. PTSD group frequencies were compared via chi-square and Fisher's exact tests. All analyses were conducted in SAS 9.

## 3. Results

Of the 186 patients seeking medical cannabis certification for the first time, 23% ( $n = 42$ ; 95% confidence interval [CI] = 17%–29%) screened positive for a lifetime history of PTSD. Table 1 displays sociodemographic characteristics of the sample, overall, and by PTSD screening group. Overall, 62% of the sample were male, the mean age was 40.1 (standard deviation = 12.8; not shown in the table), 82% were Caucasian, 45% had a high school diploma/certificate of high school equivalency or less, 46% were married/partnered, and 52% were unemployed. PTSD screening groups differed significantly by partner status and employment, with a lower percentage of married/partnered individuals and a higher percentage of unemployed individuals in the group that screened positive for PTSD than in the group that screened negative for PTSD.

Also shown in Table 1, 93% (171/184) of patients reported seeking medical cannabis certification for severe and chronic pain, either alone ( $n = 99$ ) or in combination with one or more other conditions ( $n = 72$ ; the majority of which included severe and chronic pain and muscle spasms [ $n = 27$ ] and/or nausea [ $n = 22$ ]). Seven percent (13/184) reported seeking certification for other qualifying conditions, which included: muscle spasms ( $n = 5$ ), seizures ( $n = 3$ ), cancer ( $n = 1$ ), glaucoma ( $n = 1$ ), Crohn's disease ( $n = 1$ ), and another condition ( $n = 2$ ). Two patients in the sample declined to answer the question. The PTSD screening groups differed significantly by percentages of qualifying medical conditions. Compared with the negative PTSD group, the positive PTSD group endorsed lower percentages of pain, only, and higher percentages of pain in combination with one or more other conditions.

Table 1 also presents information on lifetime substance use, overall, and by PTSD group. Nearly all first-time medical cannabis patients had a lifetime history of alcohol and cannabis use. Lower percentages of other types of lifetime substance use were reported by the sample. Moreover, several significant differences were noted for lifetime substance use between the group that screened positive for PTSD and the group that screened negative for PTSD. Specifically, the positive PTSD group had significantly higher percentages of prescription opioid, cocaine, prescription sedative, and street opioid use (i.e., 55%, 38%, 41%, and 17%, respectively), as compared with the negative PTSD group (i.e., 31%, 22%, 15%, and 6%, respectively).

With respect to more recent substance use, alcohol and cannabis use were reported by a majority of the sample (Table 1). Other substance use in the past 3 months was relatively infrequent. Nonetheless, 29% of the group that screened positive for PTSD reported recent prescription sedative use, which was significantly greater than the negative PTSD group (5%).

## 4. Discussion

A growing number of states have passed or modified laws to allow for PTSD as a qualifying condition for medical cannabis. Consequently, it is necessary to better understand the medical cannabis patient subgroup that has PTSD. The present study provides an initial description of patients who screened positive for PTSD among first-time medical cannabis patients from a clinic in Michigan, where PTSD was not on the list of allowable medical cannabis conditions at the time of study data collection but was recently approved by a state panel as a qualifying condition (Oosting, 2014). We found that 23% of new medical

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