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Comparing adults who use cannabis medically with those who use recreationally: Results from a national sample

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HIGHLIGHTS

- 17% of adults who used cannabis in the past year used cannabis medically.
- Compared adults who use medical cannabis with those who use recreationally.
- Medical cannabis users had worse health and more daily use (vs. recreational users).
- Important to assess for risky use in both groups

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ABSTRACT

Objectives: Cannabis has been legalized for medical use in almost half of the states in the U.S. Although laws in these states make the distinction between medical and recreational use of cannabis, the prevalence of people using medical cannabis and how distinct this group is from individuals using cannabis recreationally is unknown at a national level.
Methods: Data came from the 2013 National Survey on Drug Use and Health (NSDUH). All adults endorsing past year cannabis use who reported living in a state that had legalized medical cannabis were divided into recreational cannabis use only and medical cannabis use. Demographic and clinical characteristics were compared across these two groups.
Results: 17% of adults who used cannabis in the past year used cannabis medically. There were no significant differences between those who used medically versus recreationally in race, education, past year depression and prevalence of cannabis use disorders. In adjusted analyses, those with medical cannabis use were more likely to have poorer health and lower levels of alcohol use disorders and non-cannabis drug use. A third of those who reported medical cannabis use endorsed daily cannabis use compared to 11% in those who reported recreational use exclusively.
Conclusions: Adults who use medical and recreational cannabis shared some characteristics, but those who used medical cannabis had higher prevalence of poor health and daily cannabis use. As more states legalize cannabis for medical use, it is important to better understand similarities and differences between people who use cannabis medically and recreationally.

1. Introduction

Cannabis is the most commonly used schedule I drug in the United States, and the prevalence of past-month cannabis use among those ages 12 years and older has risen steadily in the last decade (Substance Abuse and Mental Health Services Administration, 2014a). This rise in use has coincided with an increase in the number of states allowing cannabis to be legally recommended for qualifying medical conditions. Simultaneously, there has been a decrease in perceived risk of cannabis use by the general population (Pacek, Mauro, & Martins, 2015). Currently, twenty-four states and the District of Columbia have legalized cannabis for medical use. Although specific conditions covered vary from state to state, most states that have legalized use of medical cannabis require that a physician submits a signed form to the state and the state provides a card as verification that the patient qualifies to use medical cannabis. Legalization may be associated with effects such as decriminalization, but could also lead to a range of unintended consequences. To better understand the potential for

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broad consequences, it is important to understand the prevalence of recreational and medical cannabis use and the similarities and differences between people who use for medical reasons and those who use for recreational purposes.

Although there is now a distinction between medical and recreational use, little is known about those who use medical cannabis. Prior studies have found a number of risk factors and correlates for cannabis use in general, including male gender, psychiatric conditions (Hasin, Saha, Kerridge, et al., 2015a; Stinson, Ruan, Pickering, & Grant, 2006) and other substance use (Goldman, Suh, Lynch, et al., 2010). Nonetheless, there has only been limited research examining differences between those who use cannabis for medical versus recreational purposes. One recent study of patients seeking treatment at an urban safety-net medical center (Richmond et al., 2015), found that individuals with medical cannabis cards were more likely to screen as moderate risk for cannabis use, rather than low or high risk, and had lower use of other substances than cannabis users without medical cannabis cards. A secondary data analysis of a clinical trial that recruited adult primary care patients in Washington state who endorsed drug use asked participants using cannabis whether their use was "medical" (Roy-Byrne, Maynard, Bumgardner, et al., 2015). Those who reported "medical" use of cannabis had more medical problems, more days of cannabis use, and less use of other substances compared to people who used cannabis recreationally (Roy-Byrne et al., 2015). Although these studies provide important preliminary information regarding potential differences of medical cannabis users, further studies examining clinical and demographic characteristics from nationally representative samples are needed to understand the issue in the broader U.S. population.

As an important step to better understand similarities and differences between adults who use cannabis medically versus those who use for purely recreational purposes, we examine demographic and clinical correlates of these two groups. Data are from a nationally representative survey of non-institutionalized individuals living in the U.S., and we focus on adults ages 18 years and older who report past-year cannabis use and live in states with legalized medical cannabis.

2. Methods

2.1. Participants and procedures

Data come from the National Survey on Drug Use and Health (NSDUH), a nationally-representative cross-sectional survey in the U.S. that assesses drug use and related health concerns. The NSDUH uses a multistage area probability sampling design covering all 50 states, surveying non-institutionalized individuals ages 12 years and older. The present study used data from the 2013 survey, which was the first year that assessed the medical use of cannabis. For these analyses, we included adults ages 18 years and older with past year cannabis use ($n = 7835$) who reported living in a state at the time of the interview that had legally approved the use of medical cannabis ($n = 3200$).

Interviewers administered study questions using computer-assisted personal interviewing and audio computer-assisted self-interviewing, which provides participants with privacy to answer potentially sensitive questions such as those related to substance use. Participants were compensated with $30. Further information regarding survey methods have been reported elsewhere (Substance Abuse and Mental Health Services Administration, 2014a). The RTI Institutional Review Board (IRB) approved the data collection procedures, and this secondary data analysis was considered exempt by the University of Michigan IRB.

2.2. Measures

Participants reported whether or not they had ever used cannabis in their lifetime, how long it had been since their last cannabis use, and the number of days of cannabis use in the last year. Participants who reported using cannabis within the last 12 months were included in these analyses. Participants were asked "Earlier, you reported using marijuana in the past year. Was any of your marijuana use in the past 12 months recommended by a doctor?" Participants were then divided by whether or not they answered yes or no to this question, which was added to the 2013 NSDUH survey to assess for use of medical cannabis. For the present study, those who answered yes to this question were considered to have "medical cannabis use". Individuals categorized as those who used cannabis recreationally, used only recreationally (no medical use); those who had any medical use (but may have also used recreationally) were categorized into the medical cannabis use group.

Demographic characteristics included sex, race-ethnicity (non-Hispanic White as reference versus other races/ethnicities), age (18–25, 26–34, 35–49, 50 or older), education (less than high school, high school graduate, some college and college graduate), and employment (full time or part time, unemployed, and other including those not in the labor force). Categorization of variables reflected NSDUH-suggested categories to allow for comparison with other publications using NSDUH data.

Past-year alcohol abuse or dependence was defined according to questions that assessed use based on the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria (American Psychiatric Association, 2000). DSM-IV criteria were also used to define past year cannabis abuse or dependence, which was separately examined from all other drug abuse and dependence (excluding cannabis use) (American Psychiatric Association, 2000). Binge drinking was defined by drinking five or more drinks on one occasion. Daily cannabis use was defined as ≥360 days of cannabis use in the last year. A binary variable was created to indicate any past year use of heroin, cocaine, inhalants, tranquilizers, or hallucinogens and misuse of prescription pain medications, sedatives, or stimulants. Of note, cannabis use was excluded from this category. Past year nicotine dependence was assessed using the Fagerstrom Test of Nicotine Dependence; participants met criteria for nicotine dependence if they endorsed smoking in the past month and smoking <30 min after awakening (Heatherton, Kozlowski, Frecker, Rickert, & Robinson, 1989; Substance Abuse and Mental Health Services Administration, 2014b).

Past year depression was assessed using DSM-IV criteria (American Psychiatric Association, 2000). Participants who met criteria for major depressive episode endorsed experiencing five or more of the nine DSM-IV major depressive episode symptoms in the same two week period, with at least one of these symptoms being either anhedonia (loss of interest or pleasure in activities) or depressed mood (Substance Abuse and Mental Health Services Administration, 2014c). Overall health was assessed using an item from the CDC's Health-Related Quality of Life Scale asking about "overall health" and response options included excellent, very good, good, fair, and poor. Worse ratings on this single item have been significantly associated with functional decline and mortality (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006; Lee, 2000). Psychological distress was assessed using the Kessler-6, a questionnaire that provides a dichotomous measure of psychological distress with scores 13 or higher indicating significant distress (Kessler et al., 2003). Questions asked about frequency and level of feeling distressed, and past year psychological distress was a recoded variable based on data from the past month and the worst month in the past year. Overall functioning was assessed using the World Health Organization Disability Assessment Schedule (WHODAS), an abbreviated scale asking participants how much difficulty they experienced in doing eight daily activities in the past year. Participants were assigned values of 1 for "mild," 2 for "moderate," and 3 for each activity that they had "severe" difficulty performing. The assigned values were summed for a total score that could range from 0 to 24 with higher scores indicating greater disability (Substance Abuse and Mental Health Services Administration, 2014c).