

Smoke and mirrors: who are medical marijuana users in California?

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Objectives

- Estimate the prevalence of medical marijuana use among adults in California
- Describe the demographic and socioeconomic characteristics of medical marijuana users
- Examine perceived satisfaction of medical marijuana to treat users' serious medical conditions
- Describe medical conditions related to use

Background

The United States Drug Enforcement Agency (DEA) classifies marijuana as an illegal Schedule 1 substance with no accepted medical use, in spite of a statement from the American College of Physicians and an Institute of Medicine report recommending that cannabis continue to be studied and used to treat patients who do not respond to conventional treatments for certain medical conditions (American College of Physicians, 2008; Joy, Watson, & Benson, 1999).

Marijuana contains over 400 compounds, and 66 are defined as cannabinoids due to their carbon structure. THC and CBD are the most commonly studied cannabinoids and have pharmacological effects such as appetite stimulation, muscle relaxation, and anti-inflammatory effects (Grant & Cahn, 2005; Pertwee, 2008). Evidence from randomized controlled trials suggests that cannabinoids can improve quality of life by improving sleep, increasing appetite, and reducing chronic pain for people with chronic conditions (Lynch & Campbell, 2011; Zajicek et al., 2012). Lab studies suggest that cannabinoids may be beneficial in treating symptoms of migraine and conditions associated with chronic pain such as chronic kidney disease and fibromyalgia (Davison & Davison, 2011; Russo, Guy, & Robson, 2007). Using a bioethics framework, some have suggested that maintaining marijuana as an illegal substance violates human rights because marijuana has been shown to be an effective treatment for some medical conditions (Clark, Capuzzi, & Fick, 2011).

In California, the Compassionate Use Act of 1996 (Proposition 215) approved the use of herbal medical marijuana when recommended by a physician for serious medical conditions or "for any other illness for which marijuana provides relief." In addition, the legislation added the following provisions to California's Health and Safety Code: 1) "patients and their primary caregivers who obtain and use marijuana for medical purposes upon the recommendation of a physician are not subject to criminal prosecution or sanction", and 2) "Notwithstanding any other provision of law, no physician in this state shall be punished, or denied any right or privilege, for having recommended marijuana to a patient for medical purposes." The legislation also protects individuals and caregivers from prosecution for possession or cultivation of marijuana, if it is to be used to treat a serious medical condition as recommended by a physician (California Department of Public Health, 2012).

While a synthetic form of tetrahydrocannabinol (THC), Marinol (dronabinol), is available via prescription in all states, only 16 states and the District of Columbia have legalized herbal medical marijuana from dried parts of the plant, *Cannabis sativa* (Clark et al., 2011; Lamarine, 2012). Several studies have described characteristics of medical marijuana users in California using convenience samples from clinics or groups of users who have applied for medical marijuana licenses (O'Connell & Bou-Matar, 2007; Sylvestre, Clements, & Malibu, 2006). To our knowledge, population-based data describing the prevalence of medical marijuana use and characteristics of users has not been presented before.

Using a representative sample of adults from the California Behavioral Risk Factor Surveillance System 2012, we present preliminary results of population-based surveillance data describing medical marijuana use and user characteristics.

Methods

Participants

The Behavioral Risk Factor Surveillance System (BRFSS) is an on-going, cross-sectional telephone survey established in 1984 by the Centers for Disease Control and Prevention (CDC) and is currently conducted in 50 states and multiple territories. The California BRFSS has been conducted continuously since 1984 and is an abundant source of data regarding health behaviors, preventive health practices, and disease prevalence among non-institutionalized adults in California who are 18 years and older. The CA BRFSS is a collaborative effort between the CDC, the California Department of Public Health, and the Public Health Institute.

For this analysis, California BRFSS data from 2012 were used. Data were collected from a random-digit-dial sample of California adults with landline and cellular telephones, and interviews were conducted in English and Spanish. Data are weighted in order to represent the California adult population according to 2010 California Department of Finance figures.

Measures

Participants were asked, "Have you ever used medical marijuana for a serious medical condition?" If a participant needed more information about what was considered a serious medical condition, interviewers referred to a list of serious medical conditions approved for treatment with medical marijuana in California.

Statistical Analysis

Overall prevalence of medical marijuana use was estimated. Prevalence was compared by age, gender, race/ethnicity, education, and region. Descriptive statistics of perception of utility of medical marijuana and specific conditions participants used it for were calculated. Age adjusted estimates are presented.

For these analyses, survey data from the first half of 2012 were used. All estimates are preliminary. Final estimates are expected to be available in 2013.

Results

	Total (Denominator)	Medical Marijuana =Yes (Numerator)	Age- Adjusted ^b Percent	95% C.I.
Total	3,789	170	5.16	4.26-6.25
Demographic Characteristics				
Age				
18-24 years	189	19	8.72	4.65-12.80
25-34 years	407	26	6.06	3.45-8.68
35-44 years	563	21	4.85	2.52-7.19
45-54 years	705	40	5.17	3.07-7.26
55-64 years	747	36	4.18	2.47-5.89
65+ years	1,178	28	2.16	1.29-3.04
Sex				
Male	1,567	88	5.83	4.47-7.57
Female	2,222	82	4.50	3.41-5.93
Race				
White	2,489	127	7.99	6.26-10.14
Hispanic	863	22	2.91	1.83-4.59
African American	156	8	5.14	2.23-11.39
Asian, Pacific Islander, or Other ^c	281	13	4.03	2.18-7.33
Educational Level				
Less than High School diploma or GED	424	22	6.17	3.78-9.92
High School diploma or GED	683	42	7.28	5.16-10.19
At least some college	2,679	106	4.27	3.28-5.55
Region				
San Francisco Bay Area, California ^d	789	33	4.21	2.61-6.72
Greater Northern California ^e	899	60	9.31	6.82-12.58
Southern California	2,083	77	4.19	3.15-5.55
Marijuana-related Characteristics				
Did marijuana help your serious medical condition(s)?				
Yes	170	155	91.23	85.58-94.80
Medical marijuana used for:				
Chronic Pain	170	53	28.10	21.05-36.43
Arthritis	170	17	11.20	6.66-18.23
Migraine	170	14	8.50	4.51-15.44
Cancer	170	14	7.68	4.12-13.86

Abbreviations: CI = Confidence Interval

Percent and CI's are weighted. Denominator and numerator totals are unweighted counts.

^a Estimates use first half of data collected in 2012 and are preliminary.

^b Age-adjusted using the California Department of Finance 2010 population estimates.

^c Asian, Pacific Islander, and Other includes Alaska Native and American Indian

^d San Francisco Bay Area includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

^e Greater Northern California excludes San Francisco Bay Area.

All results presented are age-adjusted according to the California adult population, California Department of Finance 2010 estimates. Our analytic sample included 3,789 adults.

Marijuana-related Characteristics

Five percent of adults in California report ever using medical marijuana. Of these, most report that medical marijuana helped treat a serious medical condition (91%), and the most commonly reported conditions were chronic pain (28%), arthritis (11%), migraine (9%), and cancer (8%). Other conditions reported include: AIDS, glaucoma, muscle spasms, nausea, stress, and depression.

Demographic Characteristics

Prevalence of medical marijuana use was similar for men and women (5.8% versus 4.5%). Prevalence of medical marijuana use was higher among white adults (8%), compared to other race or ethnicity groups. Prevalence of medical marijuana use was higher among younger adults ages 18-24 years (9%), compared to middle-aged and older adults, although middle-aged adults (35-64 years) still reported medical marijuana use and prevalence ranged from 5% to 4% in this group. Medical marijuana use differed by region, and reported use was higher among those who live in the Greater Northern California region (9%), compared to the San Francisco Bay Area (4%) or Southern California (4%). Adults with a high school degree or GED had higher prevalence of medical marijuana use than adults who had completed at least some college or more (7% versus 4%).

Conclusions

Nearly 1 in 20 adults in California has used medical marijuana at least once, and most users believe that medical marijuana helped them treat or manage a serious medical condition. Our results are from a large dataset that is representative of the California adult population but are preliminary, and we plan to publish final results using the full 2012 dataset once it becomes available at the beginning of 2013.

As marijuana becomes a more accepted way to manage or treat serious medical conditions, the legal debate continues between state and federal medical marijuana policy. Patients should have a right to all treatments that have been shown to be beneficial, and if access is not provided to medical marijuana, it violates a patient's basic human rights (Clark et al., 2011). Randomized controlled trials have found marijuana is effective in treating and alleviating symptoms for some serious medical conditions. The Drug Enforcement Agency should consider classifying marijuana as a Schedule II substance, which would allow further scientific studies to be conducted. Researchers should continue to study the potential pharmacological benefits of *Cannabis sativa* and characteristics of medical marijuana users to better understand predictors of risk and benefits of use.

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