



Trends in registered medical marijuana participation across 13 US states and District of Columbia[☆]



Brian J. Fairman*

Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, 624 North Broadway, 8th Floor, Baltimore, MD 21205, United States

ARTICLE INFO

Article history:

Received 14 September 2015

Received in revised form 21 October 2015

Accepted 14 November 2015

Available online 22 November 2015

Keywords:

Marijuana

Medical

Trends

Legalization

Adolescents

Sex differences

ABSTRACT

Background: Medical marijuana (MMJ) laws and policies have evolved rapidly over the past decade in the United States. Public health concerns over the impact of these laws might be influenced by the degree of MMJ participation, but little is known about changes to this population over time. Trends in registered MMJ participation are described for 13 states in the US and District of Columbia (DC) since 2001.

Methods: Numbers of MMJ participants were obtained from state MMJ patient registries. A subset of states reported differences by sex and age. Prevalence of MMJ participation per 1000 was calculated. Data from California and Washington were not available.

Results: MMJ participation was relatively low and flat from 2001 to 2008 (i.e., less than 5 per 1000 adults). Participation rose sharply in Colorado, Montana, and Michigan in 2009–2010, but not for other states. High rates can currently be found in Colorado, Oregon, and Montana (i.e., 15–30 per 1000) with the national average around 7.6 per 1000 adults. Two-thirds of participants are male, but sex differences may be decreasing over time. Less than 1% of MMJ registrants are under 18, but this segment is growing in Colorado and Oregon. Participants tend to be older (50s), but Colorado and Arizona have larger proportions of young adult (21–30) registrants.

Conclusions: Participation in MMJ programs varies considerably by state and within states over time. Trends are discussed within the context of federal and state policies, and the availability of marijuana via dispensaries.

© 2015 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

Since 1996, 23 states in the United States (US) and the District of Columbia (DC) afford a legal defense for the medicinal use of marijuana (i.e., cannabis) for specific qualifying medical conditions (Hasin et al., 2015). Passage of these medical marijuana (MMJ) provisions coincide with heightened public and scientific debate over the therapeutic potential of marijuana and its chemical constituents (Borgelt et al., 2013; Di Marzo et al., 2004; Rubens, 2014). However, the pace of evidence-based research into the safety and effectiveness of smoked marijuana or its cannabinoid derivative products for the treatment of certain medical conditions has lagged behind the pace at which these MMJ provisions have been enacted (Hill, 2015; Whiting et al., 2015). Further, passage of MMJ provisions have fueled concerns over the impact to the non-medical

(i.e., 'recreational') use of marijuana and its accompanying health risks, especially among adolescents (Anderson et al., 2014; Cerdá et al., 2012; Lynne-Landsman et al., 2013; Morris et al., 2014; Schuermeyer et al., 2014). Public health and policy issues surrounding access to MMJ could be enhanced with an understanding of trends in MMJ participation over time, but this information is currently lacking.

The size of the MMJ population has been estimated previously based upon data from state MMJ registry programs where qualifying patients are required to register in order to be issued ID cards that protects them from arrest or prosecution for marijuana possession, and registration may be required in order to purchase marijuana in states that allow dispensaries (Marijuana Policy Project, 2013). For example, Bowles (2012) briefly described the proportion of adult state residents registered in MMJ programs in 11 US states around June 2011, showing a relatively high level of participation in Montana (MT) and Colorado (CO; 4.1% and 3.3% of the adult population, respectively), but lower levels in Oregon (OR; 1.3%), and less than 1% for each of the remaining eight states. Sabet and Grossman (2014) also reported the number of state MMJ registrants as recently as 2012. However, their numbers

[☆] Supplementary material can be found by accessing the online version of this paper at <http://dx.doi.org> and by entering doi:10.1016/j.drugalcdep.2015.11.015.

* Corresponding author. Tel.: +1 410-955-3910.

E-mail address: bfairma3@jhu.edu

suggest substantial increases in MMJ registration in some states (e.g., Arizona had gained over 10,000 new MMJ participants), while others had declined (e.g., MT appeared to have lost 5000). Previous researchers have noted a sharp increase in the number of MMJ registrants over a short period of time in CO from 2009 ($N < 5000$) to 2010 ($N > 100,000$), but it is unclear whether these trends also apply to other MMJ states with mandatory registration programs (Ghosh et al., 2015; Salomonsen-Sautel et al., 2014; Schuermeyer et al., 2014).

The unique contribution of this report is to describe and compare trends in registered MMJ participation over time across 13 US states and DC with mandatory MMJ registration programs. For some states, registry data has been available since 2001, but the majority of states possess data covering the period of 2009–2015. This report has been able to include data from MMJ registries not previously covered by prior publications (e.g., DC, Hawaii, New Jersey, Massachusetts, and Minnesota). Three states with no or only voluntary MMJ registries are not included in the examination of trends (California, Washington, and Maine), while no data is presently available for three states that have yet to begin accepting MMJ participants into their registries (i.e., Maryland, New Hampshire, and New York). Trends in MMJ participation by sex and age are examined in a subset of states that collect and report this data.

2. Methods

Data for this report come from publically available statistics provided by local governmental agencies responsible for administering their MMJ registry program. Statistics were collected mainly from published reports on governmental websites, and in a few instances from direct email request. Of the 23 US states and DC that as of 2015 that have passed some form of MMJ provision, recent registry data from 16 states and DC are represented: Alaska (AK), Arizona (AZ), Colorado (CO), Connecticut (CT), Delaware (DE), Hawaii (HI), Massachusetts (MA), Michigan (MI), Minnesota (MN), Montana (MT), Nevada (NV), New Jersey (NJ), New Mexico (NM), Oregon (OR), Rhode Island (RI), and Vermont (VT). Three of these states (MA, MN, and DE) had available data at only one time point, and therefore only 13 states and DC were examined for trends over time. Three additional states (NH, MD, and NY) had only recently passed MMJ laws with registry provisions (2013–2014) and have not yet begun to register participants. One state's MMJ registry program (IL) was in its pilot phase, and had only reported approximate numbers. Patient registries in California and Maine have been characterized as voluntary or optional, and therefore the number of registered MMJ participants reported here are for completeness and comparison purposes. No numbers are available for Washington state, which has no registry as of 2015 (Marijuana Policy Project, 2013).

The main outcome of interest was the prevalence of adult MMJ registration in each locale calculated as the number of MMJ participants per every 1000 adult residents. The number of adult residents (age 18 and older) in each locale was based on year-specific US Census estimates (US Census Bureau, 2012, 2014). In order to accurately reflect the prevalence of MMJ participation in the adult population, it was assumed that the total number of MMJ participants reported largely reflected the number of adult MMJ participants, even if the number contained a small proportion of minor participants under age 18 years. This was done because minors make up a small fraction of the total number of MMJ participants (<1%), but are large proportion of the total population (Bowles, 2012). Age-specific prevalence of MMJ participation (per 1000 residents) was similarly calculated by dividing the number of MMJ participants in each age group by the size of the population within that age group. Age categories were determined by the reporting agency, and therefore, cut-points between states could differ. The number

of minor MMJ participants were so few (i.e., no more than 500 in any locale), that estimates for this age group were rescaled as the number of minor participants per 100,000 (100K) minor residents. Finally, differences by sex were calculated as the proportion of MMJ participants that were male.

Registered MMJ participation per 1000 adult residents was plotted graphically over time for the 13 states and DC. Variability in the US Census estimates of the state population compared to numbers based on actual counts is low (<1%), and therefore, its contribution to variation in the prevalence of registered MMJ participation was not reported (Cohn, 2011). The proportion of male MMJ participants in five states and DC are presented for each year in June (or closest available month) from 2012 to 2015. Trends for minor MMJ participation are plotted over time for eight states from 2009 to 2015, including two states (AK and VT) where only one time point was available. The distribution of MMJ participation by age is presented for eight states as of their most recent available time point (2014 or 2015), and in terms of both the proportion (%) and age-specific prevalence of MMJ participation per 1000 residents.

3. Results

3.1. Availability of medical marijuana registry data and current levels of participation

Details on 23 US states and DC that have MMJ provisions, including date of passage, existence of a MMJ registry, and the availability of registry statistics for this study are shown in Table 1. Ten states and DC passed MMJ provisions within the past five years (2010–2015), eight states passed provisions during the 2000s, and the remaining five states passed provisions prior to 2000. All but three states have mandatory MMJ registration requirements. Two states (CO and HI) had registry statistics dating back to 2001, while a few states (e.g., AK, NV, and OR) lacked information during the early years of MMJ enactment. Some states had month-by-month statistics (e.g., AZ, CO, MT, and NV), but others had only annual or biennial data (e.g., MI and RI).

Sixteen states and DC had recent information on the number of registered MMJ participants (Table 1). Four states with the largest MMJ populations were Colorado ($N = 114,713$), Michigan ($N = 96,408$), Oregon ($N = 71,191$), and Arizona ($N = 70,190$). Adjustment for differences in the size of the state's adult population revealed high MMJ participation in Colorado (29 per 1000 adults) and Oregon (23 per 1000). Moderate levels of participation in the range of 10 to 15 per 1000 were found in AZ, HI, MI, MT, and RI. All other states and DC had relatively low levels of less than 10 per 1000. Presently, there are approximately 441,279 registered MMJ participants currently in the US (including states with voluntary registry programs), and an estimated 7.6 registered MMJ participants for every 1000 adults (excluding states with voluntary registries; data not shown in table).

3.2. Trends in medical marijuana participation

Prior to 2009, MMJ participation was relatively low (i.e., less than 10 per 1000) and flat, therefore only trends since 2009 are depicted in Fig. 1 (see Supplementary Fig. 1 for the full time trend¹). In January 2009, six states (AK, CO, HI, MT, RI, and VT) had fewer than 5 MMJ participants per 1000 adults, while Oregon had 8 per 1000. Participation rose sharply beginning in early 2009, especially in Colorado and Montana, where levels reached 10–11 per 1000 by January 2010, and then peaked at 34 and 41 per 1000, respectively,

¹ Supplementary material can be found by accessing the online version of this paper at <http://dx.doi.org> and by entering doi:10.1016/j.drugalcdep.2015.11.015.

Download English Version:

<https://daneshyari.com/en/article/7504241>

Download Persian Version:

<https://daneshyari.com/article/7504241>

[Daneshyari.com](https://daneshyari.com)