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Characteristics and Patterns of Marijuana Use in Community-Dwelling Older Adults

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Abstract

OBJECTIVES: To understand patterns of marijuana use in community-dwelling older adults in Colorado.

DESIGN: Anonymous survey.

SETTING: Two academic geriatric primary care clinics.

PARTICIPANTS: English-speaking individuals.

MEASUREMENTS: We assessed self-reported characteristics and patterns of marijuana use and effect on targeted symptoms. Survey analysis focused on current users, defined as individuals who had used marijuana in the past 3 years.

RESULTS: Three hundred forty-five individuals completed the survey (55% response rate); 113 (32%) had used marijuana in the past, of whom 55 (16%) had used since legalization. More than half of current users were aged 75 and older, and one-quarter were aged 85 and older. Most current users were white women. Of current users, 44% used marijuana products at least weekly for common conditions including chronic pain, depression, anxiety, and insomnia, and most found marijuana helpful for these conditions. Most respondents reported obtaining marijuana recreationally (67%) without a prescription. Nine respondents reported negative side effects attributable to marijuana use.

CONCLUSION: To our knowledge, this is the first study to characterize marijuana use of older adults in a state in which it is legal for medical and recreational use. Marijuana was used for

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article.

several common geriatric conditions, and respondents reported few side effects. The small number of survey respondents, the lack of generalizability in states where marijuana sales are illegal, and participation bias were the main study limitations. Further research is needed to better understand useful or harmful effects in this population.

Keywords

Marijuana; Older Adults; Legalization; Recreational; Cannabis

Attitudes in the United States toward legalizing marijuana have shifted, particularly in individuals aged 65 to 79.¹ A 2016 study of 47,000 individuals aged 50 and older comparing the prevalence of marijuana use between 2006–07 and 2012–13 found a 58% increase in marijuana use in individuals aged 50 to 64 and a 250% increase in adults aged 65 and older.² A 2015 National Epidemiologic Survey on substance use demonstrated a similar increase in marijuana use in individuals aged 65 and older between 2001–02 and 2012–13.³ Despite these increases, only a few studies have specifically focused on marijuana use of individuals aged 65 and older.⁴

Marijuana has been suggested for a variety of chronic and neurological diseases common to older adults, including headaches, chronic noncancer pain, Alzheimer's disease, Parkinson's disease, insomnia, and glaucoma.^{5–13} An international survey of the use of marijuana that the International Association of Cannabinoid Medicine conducted found that, in adults aged 50 and older, the most common indications for marijuana use were chronic pain, anxiety, weight loss, depression, and disordered sleep,⁸ but little research has been conducted on the efficacy and adverse effects of marijuana in older adults despite evidence suggesting impaired bone health, hallucinations, impaired short-term memory, high blood pressure, dizziness, gastrointestinal distress, and hypersomnolence.^{4,10,14–16} There is also limited research on the epidemiology and health status of older marijuana users and even less information comparing medicinal and recreational users. A recent study that compared nonmedical with medical marijuana use had a limited number of participants aged 65 and older.¹⁷

To our knowledge, a specific study assessing medical and recreational marijuana use in individuals aged 65 and older has not been performed. Thus, the objective of our study was to better understand patterns of marijuana use in community-dwelling older adults from 2 ambulatory geriatric primary care clinics in Colorado.

METHODS

Study design, setting, and participants

We conducted an anonymous voluntary survey of adults at 2 academic primary care clinics in Colorado that serve individuals aged 65 and older. The University of Colorado Health (UCHealth) Seniors Clinic at Anschutz Medical Campus serves a multicultural, multilingual, urban population, whereas the UCHealth Seniors Clinic at Lone Tree is a suburban clinic serving a predominantly white population. Clinic staff offered paper surveys during check-in for scheduled clinic appointments. Individuals were asked to return their

surveys, even if left blank, to enable determination of a response rate. To maintain anonymity, clinic staff placed returned surveys in a secure location. Non-English-speaking individuals and those with significant cognitive impairment were excluded based on inability to complete the survey independently. Surveys were distributed from October 31, 2016, to January 31, 2017. Participation was voluntary, and per approval from the Colorado Multiple Institutional Review Board, voluntary participation in the survey indicated informed consent.

Survey

The multidisciplinary author team, who collectively have expertise in primary care (internal medicine and geriatric medicine), geriatric pharmacy, and palliative care developed the 14-question survey (Supplementary Appendix S1), which collected basic demographic information, including age, sex, race, marital status, and highest level of education achieved, and data about lifetime marijuana use, including use of marijuana products since legalization of recreational marijuana in Colorado (January 1, 2014). Those who had used marijuana since recreational legalization were asked about their pattern of marijuana use, including frequency of use (daily, weekly, monthly, yearly), source of marijuana acquisition (recreational, prescription, from family or caregiver, other), method of use (edibles, smoking, creams, oils, patches), and any symptoms targeted for marijuana use. Those currently using marijuana for medical purposes (whether obtained medicinally or recreationally) were asked to rate perceived benefit from marijuana for each condition (extremely, somewhat, minimally, not at all helpful). Finally, respondents were asked to comment on adverse effects they felt were attributable to marijuana use. The survey was designed to be completed in less than 10 minutes.

Statistical analysis

Data from paper surveys were entered into a secure data management platform (Research Electronic Data Capture (REDCap)). Survey responses are described using number of respondents and percentages of the total sample. Current use was defined as use since legalization in Colorado (within the past 3 years) and compared with non-use (no use in past 3 years). Survey responses regarding marijuana helpfulness were collapsed into a dichotomous variable: helpful versus unhelpful. Demographic characteristics were compared using the chi-square test. Statistical analyses were conducted using SAS version 9.4 (SAS Institute, Inc., Cary, NC).

RESULTS

Of 630 surveys distributed, 345 were completed (55% response rate). Those who chose to complete the survey differed in age, sex, marital status, and educational level from those who were unable or chose not to complete the survey. A comparison of survey respondents with the overall clinic population is shown in Supplementary Table S1. Of 345 survey respondents, 235 (68%) reported having never used marijuana products, and 113 (32%) reported marijuana use at least once in their lifetime. Fifty-five reported marijuana use since legalization in Colorado and were deemed current users (16% of survey respondents). Table 1 details the demographic information of all survey respondents and those who were current or not current marijuana users. Current marijuana users were more likely to be female (54%

vs 47%; $p=.54$) and divorced (22% vs 13%; $p=.83$) and have a bachelor's degree or higher (55% vs 52%; $p=.83$), although these differences were not statistically significant. There were no significant differences in characteristics between survey respondents aged 65 to 74 and those aged 75 and older for marital status (Supplemental Table S2).

Table 2 describes marijuana use of current users, including frequency of use, source of marijuana acquisition, method of use, symptoms targeted with marijuana, and adverse side effects attributed to marijuana. Thirty-one percent of respondents reported daily marijuana use, and an additional 12% reported at least weekly use. Thirty-eight percent reported use monthly or less. Sixty-seven percent of respondents obtained marijuana recreationally on their own (49%) or with the help of a family member or caregiver (18%); 26% had a prescription for medical marijuana. Four respondents reported that they had obtained marijuana recreationally and with a prescription. Edible marijuana (42%) and smoking (29%) were the most common methods of marijuana. Marijuana lotions (27%) and oils (11%) were also commonly used. Pills (9.1%) and vaporizing (3.6%) were the least commonly used forms of marijuana. Of the 55 respondents, 20 (36%) reported multiple methods of marijuana use.

The most common symptom targeted was pain (64%), followed by sleep (38%), anxiety (24%), depression (22%), and appetite stimulation (18%). Less commonly, respondents reported marijuana use for subjective memory loss (16%), headaches (13%), gastrointestinal symptoms (13%), glaucoma (9.1%), symptoms related to Parkinson's disease (9.1%), posttraumatic stress disorder (11%), and seizures (7.3%). Forty percent of current users targeted multiple symptoms with marijuana use. Sixteen percent of respondents felt that they had experienced an adverse side effect attributable to marijuana; 66% reported no adverse effects. Five respondents described the adverse effect they had experienced, which included "loss of balance," "dizzy, strange feelings," "blurred vision and dry mouth from cookies," "anxiety and racing thoughts," and "I couldn't even read the newspaper."

Figure 1 shows how helpful or unhelpful current marijuana users perceived marijuana to be for a variety of conditions and symptoms. For target symptoms, respondents reported varying degrees of helpfulness. Specifically, respondents reported that marijuana was most helpful when used for anxiety (100%), depression (92%), sleep (86%), pain (83%), and appetite stimulation (70%). Marijuana was felt to be less helpful when used for memory (44%), gastrointestinal symptoms (43%), seizures (25%), Parkinson's disease (20%), glaucoma (20%), and headaches (14%). The same number of respondents found marijuana helpful as unhelpful for posttraumatic stress disorder. Of the 22 respondents who used marijuana for multiple symptoms, 20 felt it was helpful for 2 or more symptoms. On average, respondents felt marijuana was helpful for an average of 2.6 symptoms.

DISCUSSION

To our knowledge, this is the first study to evaluate medical and recreational marijuana use in older adults residing in a state where both are legal. In survey respondents, marijuana use was relatively common, with 16% reporting use in the past 3 years. Most current users were white women aged 70 to 79, and most used marijuana at least weekly. Nearly one-quarter of

current users were aged 85 and older, and many had a high level of education. These data are contrary to other previously published studies in which individual marijuana users tended to be male, black, and less educated.^{18,19}

Although some respondents had a prescription for marijuana, most purchased it without a prescription for a variety of medical conditions common to primary care (pain, anxiety, depression, insomnia). Thus, in states with recreationally available marijuana, older adults may be using marijuana in addition to their prescribed regimens, so it is important to inquire about marijuana use regardless of age. Although few respondents reported adverse effects, those who did primarily mentioned central nervous system side effects, which could be problematic in frail older adults.

Our study has several limitations. First, it is likely that there was a response bias. Respondents completed surveys voluntarily, and 1 of 2 things may have happened; those who use marijuana regularly may have been more likely to complete a survey, or given potential stigma related to marijuana use, some may have been reluctant to acknowledge current (or even past) marijuana use. Second, participation bias limits the generalizability of our results. Both clinic populations serve individuals from a variety of backgrounds and cognitive ability, but surveys were available only in English and we did not optimize the survey for family member or caregiver report on behalf of individuals with cognitive or functional limitations. Third, these results may not be generalizable in states where recreational or medicinal marijuana remains illegal. Finally, although the number of users (N = 55) may be considered high for this age group, it is still a small number, which further limits the generalizability of our findings.

In conclusion, our survey of ambulatory older adults from Colorado demonstrated that marijuana use in this population was common. Respondents reported using recreational marijuana to target a variety of medical symptoms and conditions with few reported adverse effects. Thus, it is prudent for primary care providers of older adults to inquire specifically about marijuana use before considering prescription changes or additions. As recreational marijuana becomes more available in the United States, it will be increasingly important to understand the specific dose and route of marijuana used, as well as short- and long-term health effects. Thus, steps toward further understanding should include directed focus groups of active marijuana users and randomized clinic trials comparing marijuana with usual care for the most commonly targeted symptoms and conditions.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.

Respondent rating of effect of marijuana on various conditions and symptoms. GI = gastrointestinal complaints including nausea, vomiting, diarrhea, constipation; PD = Parkinson's disease symptoms; PTSD = posttraumatic stress disorder.

Table 1.

Demographic Characteristics of Survey Respondents According to Marijuana Use

Characteristic	Total, N = 345	Current Users, n = 55 n (%)	Nonusers, n = 290	P-Value
Age				.67
65–69	19 (5.5)	3(16)	16(84)	
70–74	79 (23)	14 (18)	65 (82)	
75–79	88 (26)	16(18)	72 (82)	
80–84	74 (21)	8(11)	66 (89)	
85–88	47 (14)	7(15)	40 (85)	
89	31 (9.2)	6(19)	25 (81)	
Sex				.54
Male	97 (28)	14(14)	83 (86)	
Female	165 (47)	30 (18)	135 (82)	
Missing	86 (25)	11 (13)	72 (87)	
Race				
White	299 (86)	49 (16)	249 (84)	.52
Black	28 (8.0)	5(18)	23 (82)	.77
Non-white, Hispanic	14(4.0)	1 (7)	13(93)	.36
Native American	4(1.1)	2 (50)	2 (50)	.06
Other, unknown	7 (2.0)	2 (33)	4 (67)	.24
Marital status				.16
Married	179 (51)	22 (12)	156 (88)	
Widowed	102 (29)	17(17)	84 (83)	
Divorced	51 (15)	12 (24)	38 (76)	
Single, never married	16 (4.6)	4 (25)	12(75)	
Education				.83
< High school	8 (2.3)	1 (13)	7 (88)	
High school or equivalent	66 (20)	10(16)	54 (84)	
Some college, associate's degree	92 (26)	13(14)	78 (86)	
Bachelor's degree	81 (23)	14(17)	67 (83)	
Graduate, advanced degree	99 (28)	16(16)	83 (84)	

Table 2.

Description of Marijuana Use: Frequency, Source, Method of Use, Targeted Symptoms, and Attributable Adverse Effects (N = 345)

Marijuana Use	%
Frequency	
Daily	31
Weekly	12
Monthly	16
Yearly	22
Missing	18
How Obtained	
Recreational	49
Prescription	26
Family or caregiver	18
Other	15
Method of use ²¹	
Edibles	42
Smoking	29
Lotion	27
Oil	11
Pills	9
Vaporizing	3
Symptoms targeted with use ^I	
Pain	64
Sleep	38
Anxiety	24
Depression	22
Appetite	18
Memory	16
Migraines	13
Gastrointestinal	13
Posttraumatic stress disorder	11
Parkinson's disease	9
Glaucoma	9
Seizure	7
Adverse effects attributed to use	
Yes	66
No	16
Unsure	4
Missing	15

^I Some respondents reported multiple sources of marijuana acquisition, methods of marijuana use, and symptoms targeted.