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Trends in Cannabis Use Among Older Adults in the United States, 2015-2018

With the legalization of cannabis in many states for medical and/or recreational purposes, there is increasing interest in using cannabis to treat a variety of long-term health conditions and symptoms common among older adults. The use of cannabis in the

Figure. Trend in Prevalence of Past-Year Cannabis Use Among Adults 65 Years and Older in the United States, 2015 to 2018
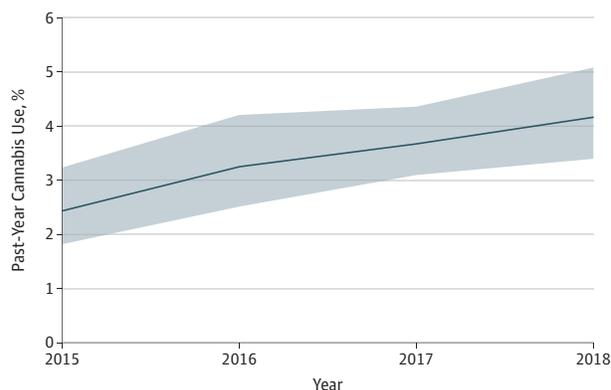
The shading indicates 95% CIs.

past year by adults 65 years and older in the United States increased sharply from 0.4% in 2006 and 2007 to 2.9% in 2015 and 2016.[1,2] This study examines the most recent national trends in cannabis use to determine whether cannabis use has continued to increase among older adults and to further examine trends in use among subgroups of older adults.

Methods | We performed secondary analysis of adults 65 years and older from the most recent 4 cohorts (2015-2018) of the National Survey on Drug Use and Health, a cross-sectional nationally representative survey of noninstitutionalized individuals in the United States.[3] We estimated the prevalence of past-year cannabis use across cohorts and estimated prevalence stratified by each level of sex, race/ethnicity, educational attainment, household income, marital status, chronic disease, tobacco and alcohol use, mental health treatment, and all-cause emergency department use. Cannabis use was ascertained by asking about marijuana, hashish, pot, grass, and hash oil use either smoked or ingested.[3] We calculated the absolute and relative change in prevalence between 2015 and 2018. Using logistic regression, we estimated whether there was a log-linear association between cannabis use and time, and interactions were examined to determine changes across subgroups. Statistical significance was defined as a 2-sided P value less than .05. We used sample weights (provided by National Survey on Drug Use and Health) to account for the complex survey design, selection probability, nonresponse, and population distribution. This secondary analysis was exempt from review by the New York University's institutional review board. Analyses were conducted using Stata/SE version 13 (StataCorp).

Results | Of 14 896 respondents 65 years and older, 55.2% were men and 77.1% were white. The prevalence of past-year cannabis use among adults 65 years and older increased significantly from 2.4% to 4.2% (P = .001), a 75% relative increase (**Figure**). The **Table** presents prevalence trends stratified by participant characteristics. There were significant increases among women, individuals of white and nonwhite races/ethnicities,

Table. Trends in Prevalence of Past-Year Cannabis Use by Sociodemographic, Chronic Disease, Health Care Use, and Substance Use Characteristics Among Adults 65 Years and Older in the United States, 2015-2018[a]

Characteristic	Weighted % (95% CI)				% Change From 2015 to 2018		Linear Trend P Value
	2015	2016	2017	2018	Absolute Change	Relative Change	
Overall past-year cannabis use	2.4 (1.8-3.2)	3.3 (2.5-4.2)	3.7 (3.1-4.4)	4.2 (3.4-5.1)	1.8	75.0	.001
Sex							
Male	3.6 (2.4-5.3)	5.1 (3.8-6.9)	4.6 (3.5-5.9)	5.7 (4.6-7.1)	2.1	58.3	.05
Female	1.5 (1.0-2.2)	1.8 (1.1-2.7)	3.0 (2.3-4.0)	2.9 (2.1-4.1)	1.4	93.3	.01
Race/ethnicity							
Non-Hispanic white	2.8 (2.1-3.8)	3.1 (2.3-4.1)	3.5 (2.9-4.3)	4.0 (3.2-4.9)	1.2	42.9	.02
All other races/ethnicities[b]	1.1 (0.6-2.0)	3.8 (2.4-6.2)	4.2 (2.8-6.2)	4.8 (3.0-7.9)	3.7	336.4	.01
Education							
High school or less	2.3 (1.4-3.7)	2.6 (1.7-3.9)	2.1 (1.5-3.0)	2.7 (1.9-3.8)	0.4	17.4	.71
Some college	2.1 (1.1-4.1)	3.7 (2.5-5.3)	5.0 (3.5-6.9)	4.0 (2.9-5.5)	1.9	90.5	.02
College or more	2.9 (1.8-4.7)	3.8 (2.6-5.6)	4.7 (3.2-6.9)	6.2 (4.3-8.8)	3.3	113.8	.01
Total family income, $							
<20 000	3.7 (2.0-6.6)	4.6 (2.7-7.6)	4.8 (3.2-7.0)	4.3 (2.8-6.5)	0.6	16.2	.67
20 000-49 999	1.3 (0.9-2.0)	3.5 (2.4-5.1)	3.3 (2.4-4.6)	3.1 (2.1-4.6)	1.8	138.5	.02
50 000-74 999	3.6 (1.9-7.0)	3.3 (2.0-5.3)	1.7 (0.9-3.3)	3.7 (2.4-5.8)	0.1	2.8	.75
≥75 000	2.4 (1.5-4.1)	2.1 (1.1-3.8)	4.8 (3.2-7.0)	5.5 (3.7-8.0)	3.1	129.2	.003
Marital status							
Married	2.1 (1.4-3.2)	2.3 (1.6-3.2)	3.1 (2.3-4.1)	4.2 (3.1-5.6)	2.1	100.0	.004
Unmarried	2.9 (2.0-4.2)	4.7 (3.3-6.6)	4.6 (3.6-6.0)	4.2 (3.1-5.6)	1.3	44.8	.15
Chronic disease							
Heart disease	2.2 (1.2-4.2)	2.9 (1.7-4.8)	2.5 (1.5-4.2)	4.6 (3.4-6.1)	2.4	109.1	.06
Diabetes	1.0 (0.5-2.1)	2.2 (1.4-3.7)	2.1 (1.2-3.6)	2.8 (1.7-4.7)	1.8	180.0	.02
Hypertension	2.1 (1.3-3.4)	3.0 (2.0-4.4)	3.3 (2.5-4.5)	3.6 (2.4-5.4)	1.5	71.4	.08
Cancer	3.3 (1.6-6.6)	3.2 (1.8-5.5)	3.4 (2.1-5.5)	4.4 (3.0-6.2)	1.1	33.3	.49
Chronic diseases[c]							
≥2	2.4 (1.4-4.2)	3.0 (2.1-4.5)	2.7 (1.8-4.0)	3.1 (2.1-4.7)	0.7	29.2	.54
<2	2.4 (1.8-3.2)	3.4 (2.6-4.5)	4.2 (3.5-5.0)	4.7 (3.6-6.2)	2.3	95.8	<.001
Mental health treatment in the past year	2.8 (1.3-5.9)	8.7 (5.9-12.6)	9.0 (5.6-14.1)	7.2 (4.8-10.5)	4.4	157.1	.02
Substance use in the past year							
Tobacco use	5.9 (3.8-9.1)	10.3 (7.2-14.6)	9.0 (6.1-13.1)	10.2 (7.6-13.8)	4.3	72.9	.13
Alcohol use	2.9 (2.2-4.0)	4.8 (3.7-6.1)	5.7 (4.7-7.0)	6.3 (5.0-8.0)	3.4	117.2	<.001
All-cause emergency department use in the past year	2.8 (1.6-4.7)	2.5 (1.5-4.3)	4.0 (2.9-5.5)	4.7 (3.4-6.4)	1.9	67.9	.05

[a] Data from the 2015-2018 US National Survey on Drug Use and Health among respondents 65 years and older (n = 14 896).

[b] Owing to response sizes less than 10 in 2015 for certain races/ethnicities, black, Hispanic, and other nonwhite races were combined into 1 category.

[c] Chronic conditions include asthma, chronic obstructive pulmonary disease, cirrhosis, diabetes, heart disease, hepatitis, HIV/AIDS, hypertension, cancer, and kidney disease.

individuals with a college education, individuals with incomes of $20 000 to $49 000 and $75 000 or greater, and married individuals. In terms of chronic disease, among adults with diabetes, there was a 180% relative increase (1.0% [95% CI, 0.5-2.1] in 2015 vs 2.8% [95% CI, 1.7-4.7] in 2018; P = .02) in cannabis use. Individuals reporting 1 or less chronic diseases had a significant relative increase in cannabis use of 95.8% (2.4% [95% CI, 1.8-3.2] in 2015 vs 4.7% [95% CI, 3.6-6.2] in 2018; P < .001). Those who received mental health treatment also had a significant increase in cannabis use (2.8% [95% CI, 1.3-5.9] in 2015 vs 7.2% [95% CI, 4.8-10.5] in 2018; 157.1% relative increase; P = .02) as well as those reporting past-year alcohol use

(2.9% [95% CI, 2.2-4.0] in 2015 vs 6.3% [95% CI, 5.0-8.0] in 2018; 117.2% relative increase; P < .001).

Discussion | The use of cannabis continues to increase among older adults nationally. We determined that a number of key subgroups experienced marked increases in cannabis use, including women, racial/ethnic minorities, those with higher family incomes, and those with mental health problems. While we also found an increase in cannabis use among older people with diabetes, in general, it appears that the increase in cannabis use is driven largely by those who do not have multiple chronic medical conditions.

We also detected an increase in cannabis use among older adults who use alcohol. The risk associated with co-use is higher than the risk of using either alone, and a 2019 study of trends in alcohol and cannabis co-use following legalization in Washington state[4] found significant increases in simultaneous cannabis and alcohol use among adults 50 years and older. Future research is needed to monitor and educate older patients regarding co-use to minimize potential harms.

Limitations of this study include possible limited recall and social desirability bias. While more older adults use cannabis, the current clinical evidence to support its use in this population is limited.[5] Older adults are especially vulnerable to potential adverse effects from cannabis,[6] and with their increase in cannabis use, there is an urgent need to better understand both the benefits and risks of cannabis use in this population.

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COMMENT & RESPONSE

Effective Radiation Doses for Lung Cancer Screening Scans

To the Editor In response to the recently published Original Investigation by Demb and colleagues[1] regarding computed tomography (CT) radiation doses for lung cancer screening scans, I have concerns about the statements made about effective doses. The National Lung Screening Trial reported an average radiation effective dose of 1.5 mSv for CT scans performed in the trial.[2] Demb and colleagues state that "[the American College of Radiology] recommends that [lung cancer screening] scans have…an effective dose of 1 mSv or lower."[1(p1651)] This dose is 33% less than the dose in the National Lung Screening Trial, which validated this screening test. However, the pertinent American College of Radiology–Society of Thoracic Radiology practice parameter does not mention a 1 mSv effective dose goal.[3] The practice parameter notes a CT dose index (CTDIvol) target of 3 mGy, which only applies to a standard-sized patient (defined as a height of 170 cm and a weight of 70 kg). The American Association of Physicists in Medicine (AAPM) mentions effective doses and the value of 1 mSv but does not recommend an effective dose of 1 mSv as a patient, laboratory, or population target.[4] The 1 mSv figure cited by AAPM is not a recommendation for lung cancer screening, but rather a descriptive measure obtained by simply converting a CTDIvol of 3 mGy into the equivalent effective dose for an idealized standard-sized patient.

In their study,[1] Demb and colleagues do not provide data on the weight of patients studied. From National Center for Health statistics,[5] it is known that 39.8% of US adults are obese and another 31.8% are overweight (these percentages may be higher in older smokers). For most older smokers, a CTDIvol greater than 3 mGy would be acceptable to obtain adequate image quality. Finally, there is no mention of a 1 mSv effective dose goal in the Centers for Medicare & Medicaid Services decision memo about low-dose CT scans for lung cancer screening[4] or in any other Centers for Medicare & Medicaid Services document.

Although Demb and colleagues state that 65% of the 72 institutions studied had a median effective dose above American College of Radiology guidelines, based on my understanding of the relevant guidelines regarding low-dose CT performance and the AAPM's point regarding patient weight, this finding is incorrect.

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