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Prevalence of Behavioral Health Conditions Across Frequency of Cannabis Use Among Adult Primary Care Patients in Washington State

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INTRODUCTION

Cannabis is the third most commonly used drug in the USA, after alcohol and tobacco, and the prevalence of cannabis use and cannabis use disorders (CUD) has doubled in the last decade, due in part to increasingly legalized access.[1,2] Individuals who use cannabis have increased risk of behavioral health conditions, including depression, anxiety, and tobacco, alcohol, and other substance use disorders,[3–5] but little is known about the association between frequency of cannabis use and behavioral health conditions among primary care patients. This population-based study of primary care patients[6] reports on the prevalence of common behavioral health conditions across cannabis use frequency.

METHODS

Study details are described in a prior study of the prevalence of cannabis use in primary care.[6] Briefly, Kaiser Permanente Washington, a large health system in Washington State where medical and nonmedical cannabis use is legal, implemented annual behavioral health screening, including a single-item about the frequency of past-year cannabis use, in three primary care sites beginning March 2015. Data are from electronic health record (EHR) and claims. Patients were included if they were ≥ 18 years old, had an in-person primary care visit before mid-February 2016, and completed screening (74% of adults who visited).

Cannabis frequency was categorized into three levels of past-year use—none, less than daily use, and daily use. Other behavioral health conditions identified by screening included depression symptoms (Patient Health Questionnaire-2 [PHQ-2]; ≥ 2 points on either item), unhealthy alcohol use (Alcohol Use Disorders Identification Test-Consumption [AUDIT-C]; ≥ 3 points women; ≥ 4 men), and any illicit drug use and/or medication misuse.[6] Other conditions assessed in the year prior to the screen included EHR-documented tobacco use and composite indicators for both mental health and substance use disorder diagnoses derived from EHR-documented International Classification of Disease 9/10 codes.[6]

Sample characteristics, including the unadjusted prevalence of behavioral health conditions, were calculated. The age- and gender-adjusted prevalence of behavioral health conditions across three levels of cannabis use frequency was estimated from logistic regression models.[6] Linear tests of trend assessed whether the frequency of cannabis use was associated with each condition, and separate interactions of cannabis use with age and gender were tested. Results are presented as the average adjusted probability, with 95% confidence intervals (CI), of each condition.

RESULTS

Table 1 summarizes the study sample ($n = 22{,}095$). Adjusted models indicated that behavioral health conditions were increasingly common with more frequent cannabis use (Fig. 1). Age-modified associations of cannabis use frequency with unhealthy alcohol use ($p = 0.030$) and tobacco use ($p = 0.019$) such that young adult patients (18–29 years) who used cannabis were at increased risk of both (data available upon request). Specifically, among young adult patients, the increased risk of unhealthy alcohol use was

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Table 1 Primary Care Adult Patients Who Responded to a Question About Past-Year Cannabis Use (*n* 22,095)

	N	%
Gender		
Women	13,182	(59.7)
Men	8913	(40.3)
Age categories		
18–29	2228	(10.1)
30–49	5194	(23.5)
≥ 50	14,673	(66.5)
Race/ethnicity		
Black	490	(2.2)
Hispanic	997	(4.5)
Other	1972	(8.9)
White	17,993	(81.4)
Unknown	643	(2.9)
Frequency of past-year cannabis use*		
None	18,716	(84.7)
Less than daily	2693	(12.2)
Daily	686	(3.1)
Behavioral health conditions		
Tobacco use (in the past year)†	2133	(9.7)
Any mental health diagnosis (in the past year)‡	5340	(24.2)
Any substance use disorder diagnosis (in the past year)§	635	(2.9)
Depression symptoms (in the past 2 weeks)II	3582	(16.3)
Unhealthy alcohol use (in the past year)II	5863	(26.6)
Illicit drug use and/or medication misuse (in the past year)II	363	(1.7)

**Based on single-item question: "How often in the past year have you used marijuana?" – none ("never"), less than daily ("less than monthly," "monthly," "weekly,"), and daily ("daily or almost daily"), where marijuana use could include nonmedical or medical use*

†Assessed in the year prior to initial visit to pilot clinic

‡Includes EHR-documented ICD 9/10 codes for major depressive disorders, anxiety disorders, and serious mental health disorder in the year prior to the cannabis screen

§Includes EHR-documented ICD 9/10 codes for alcohol, cannabis, and all other drug use disorders (not including tobacco) in the year prior to the cannabis screen

IIBehavioral health screens asked alongside the cannabis screen

Total N varies due to some patients not completing screen items: PHQ-2 (n 22,081); AUDIT-C for unhealthy alcohol use (n 22,034); drug screen (n 21,945);

observed for those who reported any past-year cannabis use (52% [95% CI 49–56%]), whereas the increased risk for tobacco use was observed among those who reported daily cannabis use (39% [95% CI 32–46%]). No other age or gender interactions were significant.

DISCUSSION

Our study found a strong association between the frequency of cannabis use and tobacco use, depression symptoms, and other drug use, and as well as diagnosed mental health and substance use disorders. Tobacco and unhealthy alcohol use were most common among young adult patients who reported daily and any past-year cannabis use, respectively. Among patients who used cannabis daily, nearly 50% reported depression symptoms and more than 35% had a past-year mental health disorder diagnosis.

Despite limitations (e.g., cross-sectional design, single health system, mostly white sample), findings have important implications. Asking about the frequency of cannabis use as part of routine behavioral health screening in primary care, in a state with legalized use, identifies patients at increased risk for substance use and mental health conditions. Because cannabis use is associated with an increased risk of other substance use disorders, including tobacco and alcohol use disorders,[4] information about cannabis use should be integrated into recommended tobacco and alcohol counseling. In addition, patients with mental health conditions who use cannabis frequently can be engaged in discussions of how their use relates to their mental health symptoms.[5] Integrating routine assessment of cannabis use into primary behavioral health care will become increasingly important to understand patients' needs as legalization expands.

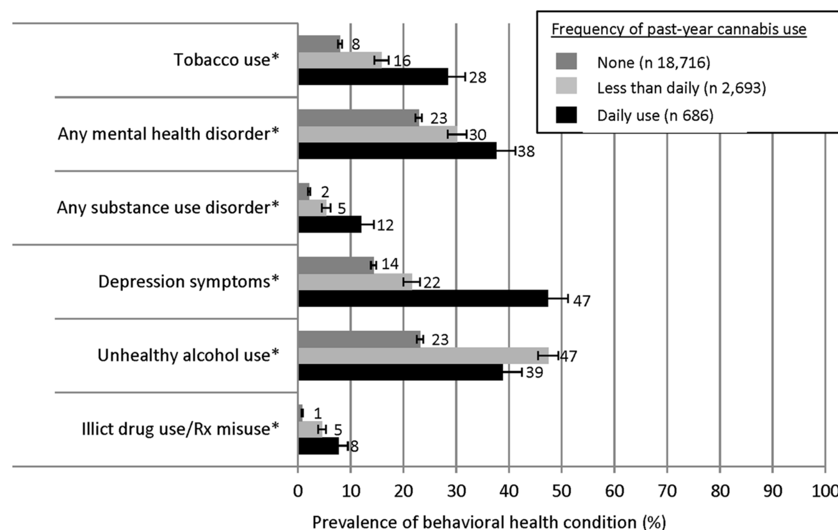

Figure 1 Age- and gender-adjusted prevalence of behavioral health conditions for each frequency of past-year cannabis use *Significant test of trend at $p < 0.001$ for all conditions

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Authors' Contributions *Dr. Lapham had full access to all the study data and takes responsibility for the integrity of the data and the accuracy of the data analysis. Study concept and design: Lapham, Bradley. Statistical analysis: Lapham. Interpretation of results: All authors. Drafting of manuscript: Lapham, Bradley. Critical revision of the manuscript for important intellectual content: All authors.*

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Compliance with ethical standards:

Conflict of Interest: *The authors declare that they do not have a conflict of interest.*

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