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Short communication

Is cannabis use associated with an increased risk of onset and persistence of alcohol use disorders? A three-year prospective study among adults in the United States

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ABSTRACT

Background: The relationship between cannabis use and alcohol use disorders (AUDs) over time remains unclear. The current study used longitudinal data from adults in the United States (U.S.) to investigate the association between cannabis use and risk of onset and persistence of AUDs three years later.
Methods: The study used data from respondents who completed both waves of the National Epidemiological Study of Alcohol Use and Related Disorders (NESARC; Wave 1, 2001–2001; Wave 2, 2004–2005) and for whom the age of first cannabis use preceded the age of any AUD. Incident AUDs were examined among respondents with no lifetime AUD diagnosis at Wave 1 (n = 27,461). Persistent AUDs were examined among respondents with a lifetime AUD diagnosis at Wave 1 (n = 2,121).
Results: Among adults with no history of AUD, cannabis use at Wave 1 was associated with increased incidence of an AUD three years later relative to no cannabis use (Odds Ratio (OR) = 5.43; 95% Confidence Interval (CI) = 4.54–6.49). Among adults with a history of AUD, cannabis use at Wave 1 was associated with increased likelihood of AUD persistence three years later relative to no cannabis use (OR = 1.74; 95% CI = 1.56–1.95). These relationships remained significant after controlling for demographics, psychiatric disorders, and other substance use disorders.
Conclusions: Cannabis use is associated with increased risk of AUD onset and persistence over the course of three years among U.S. adults. Community-based and clinical programs aimed at preventing or treating problematic alcohol use may benefit from integrating information about cannabis use in order to improve outcomes.

1. Introduction

Alcohol use-related disease and accidents are one of the leading causes of death in the U.S. (CDC, 2004; Stahre et al., 2014). For adults, there is a significant association between alcohol and cannabis use (e.g., Butterworth et al., 2014; Hyggen and Hammer, 2014) and use of alcohol and cannabis, compared to alcohol alone, is associated with heavier alcohol consumption and greater negative alcohol-related consequences (e.g., Hyggen and Hammer, 2014; Midanik et al., 2007; Subbaraman and Kerr, 2015). Less is known about the association between cannabis use and alcohol use disorders (AUDs). In a study using Wave 1 data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), cannabis dependence was significantly associated with a reduced likelihood of remission from alcohol dependence in univariate analyses (HR = 0.55, 95% CI = 0.32, 0.94), but this relationship was no longer significant in multivariate analyses (HR = 0.64, 95% CI = 0.37–1.13; Lopez-Quintero et al., 2011). It is not yet clear how cannabis use may be related to the onset and persistence of AUDs over time. Given the relationship of cannabis use to alcohol-related problems, it is important to gain a better understanding these potential relationships.

The current study used longitudinal data from a representative sample of U.S. adults to examine the association between cannabis use and the risk of onset and persistence of AUDs. It was expected

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Table 1
Demographic frequencies for the full sample (n = 29,582) and frequencies of Wave 1 cannabis use and Wave 2 alcohol use disorders among participants with and without an alcohol use disorder diagnosis at Wave 1 by demographics.

	Total (n; %)		No Wave 1 AUD (n = 27,461)						Wave 1 AUD[a] (n = 2,121)					
			(n; %)						(n; %)					
Demographic variable			Wave 1 PY cannabis use		p	Wave 2 alcohol use disorder		p	Wave 1 PY cannabis use		p	Wave 2 alcohol use disorder		p
Gender														
Men	12050	46	87	0.96	<.0001	377	3.31	<.0001	283	23.27	<.0001	365	27.04	0.0023
Women	17532	54	73	0.5		243	1.54		133	17.94		172	24.36	
Age														
18–29	4075	15.31	42	1.31	<.0001	191	5.91	<.0001	216	34.61		175	29.79	<.0001
30–44	8607	28.51	82	1.31		215	2.7		138	19.84		202	26.02	
45–64	9900	35.43	34	0.43		185	1.87		62	10.71		154	25.71	
65+	7000	20.75	2	0.02		29	0.34		0			6	3.87	
Race/ethnicity														
NH White	16866	71.77	115	0.76	<.0001	315	2.18	<.0001	268	21.61	<0.0001	332	25.87	0.0055
NH Black	5707	10.88	15	0.39		138	2.85		49	20.42		86	29.93	
NH native American/AK native	460	2.04	7	2.21		10	2.69		18	37.83		18	34.94	
NH Asian/Pacific Islander	886	4.28	4	0.25		12	1.43		5	18.26		7	27.8	
Hispanic	5663	11.03	19	0.57		145	2.97		76	18.89		94	22.9	
Marital status														
Current	16109	64.43	70	0.55	<.0001	254	1.61	<.0001	119	13.62	<.0001	210	22.72	<.0001
Widowed, separated, divorced	7988	19.04	44	0.9		137	2.19		75	19.53		127	29.74	
Never	5485	16.53	46	1.12		229	5.55		222	34.85		200	29.73	
Personal income														
$0–19,999	13482	43.21	71	0.71	0.1275	289	2.4	0.0008	198	30.31	<.0001	235	33.06	<.0001
$20–34,999	6928	23.28	38	0.78		139	2.46		108	21.48		138	26.18	
$35–69,999	6664	23.69	34	0.62		148	2.27		87	15.7		123	21.2	
$70,000+	2508	9.83	17	0.72		44	1.75		23	10.18		41	17.85	
Education														
Less than HS degree	5025	14.25	23	0.7	<.0001	111	2.35	<.0001	68	29.48	<.0001	91	37.92	<.0001
High school degree	14425	49.48	86	0.83		335	2.54		224	23.03		281	25.08	
More than HS	10132	36.27	51	0.54		174	2.01		124	16.73		165	23.93	

Note: NH: non-Hispanic; AK: Alaska; HS: high school; PY: past year.
[a] Met criteria for past-year alcohol abuse and/or alcohol dependence.

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