Substance Use Before and During Cannabis Withdrawal of Adults with Schizophrenia

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Keywords

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Approximately 17–80% of people with schizophrenia use cannabis[1–3] and one-quarter have a lifetime cannabis use disorder.[4] Withdrawal symptoms are clinically significant because they may act as negative reinforcement for relapse to cannabis use.[5–6] We previously published a cross-sectional survey on the experience of cannabis withdrawal (assessed with the Marijuana Quit Questionnaire [MJQQ]) in 120 adults with schizophrenia who made a "serious" (self-defined) quit attempt without formal treatment while not in a controlled environment (index quit attempt).[7–8] Here we extend those findings by presenting data on psychoactive substance use before and during the index quit attempt among the same cohort.

Participants were a convenience sample of adults (18 years or older) with a chart diagnosis of schizophrenia or schizoaffective disorder (DSM-IV criteria) recruited from community outpatient mental health treatment programs in the Baltimore, MD metropolitan area (December 2006–July 2011) who used cannabis at least weekly for six months prior to the index quit attempt. Data were collected using the MJQQ (Levin et al., 2010), an individually administered, 176-item, semi-structured, self-report questionnaire that collects information

on sociodemographic data and cannabis use history, and index quit attempt characteristics, including changes in other substance use. Participants had to show ability to give valid informed consent based on the Evaluation to Sign Consent process.[9] The Institutional Review Boards of the University of Maryland, Baltimore, the Maryland Department of Health and Mental Hygiene, the Sheppard Pratt Health System, and the National Institute on Drug Abuse Intramural Research Program approved the study. The study and procedures were fully explained and written informed consent was obtained from all participants, who were paid for their participation. Descriptive statistics are reported as number (percentage) for categorical data and mean and range for age.

A full description of participants was previously published.[7] Briefly, three-quarters were men and 62.5% African Americans. The average age at the time of interview was 41.5 (21.3–63.3) years; age at start of index quit attempt was 29.3 (15.4–59.1) years. The mean (range) interval between start of the index quit attempt and the interview was nine years (1 day–37 years). Among the 76 (63.3%) participants who had resumed cannabis use by the time of the interview, the median (range) duration of abstinence was 182 days (1 day–10 years). Frequency of substance use during the six months prior to the quit attempt and changes in use during the quit attempt (cannabis withdrawal) are summarized in Table 1. During quit attempts, participants substantially increased pre-existing levels of use of several psychoactive substances (caffeine, alcohol, and tobacco), perhaps to self-medicate cannabis withdrawal symptoms. Initiation of use was uncommon, except for caffeine and tobacco.

The proportion of subjects initiating or increasing caffeine, alcohol, or tobacco use is roughly comparable to that found in a study using the MJQQ in 469 adult cannabis smokers with no serious psychiatric co-morbidity.[6]

This study has several strengths, including the large sample size (N=120) and detailed substance use histories. The study is limited because the data were collected by retrospective self-report (without external or objective corroboration) at widely varying lengths of time after the index quit attempt, from a convenience sample at a single site. The interval between start of the index quit attempt and the interview was 1 day–37 years.

The duration of abstinence at time of interview was 1 day–10 years. These broad ranges suggest that recall bias could have influenced study results. However, there is evidence that cannabis users give reliable retrospective self-report about their cannabis withdrawal symptoms.[10] This study did not collect clinical information about schizophrenia before or during the index quit attempt.

Cannabis withdrawal is a major public health problem leading to relapse of cannabis use. Understanding cannabis withdrawal and associated substance use is critical and timely because cannabis withdrawal is a diagnosis newly added in DSM-5. Because there are no approved pharmacological treatments for cannabis withdrawal, there is a clinically unmet need for improved psychosocial treatment interventions focused on psychoactive substance use. Withdrawal symptoms are clinically significant because they may act as negative reinforcement for substance relapse. Smoking cessation programs should be recommended to patients due to the increased use of tobacco during cannabis withdrawal.

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Table 1

Substance Use Before and Changes in Use during Cannabis Quit Attempt (Withdrawal) in 120 Adults with Schizophrenia

Substances	Use in six months prior to quit attempt	N (%[*])	Change in use during quit attempt	N (%[**])
Caffeine (e.g., coffee, colas)	Never used	11 (9.2)	Started use for first time	4/11 (36.4)
	Several times	2 (1.7)		
	About once a month	2 (1.7)	Increased	46 (42.2)
	Several times a month	11 (9.2)	Decreased	4 (3.7)
	1–2 days a week	6 (5.0)	No change	59 (54.1)
	3–4 days a week	5 (4.2)		
	5–6 days a week	4 (3.3)		
	Every day	79 (65.8)		
Alcohol	Never used	19 (16.0)	Started use for first time	1/19 (5.3)
	Several times	6 (5.0)		
	About once a month	7 (5.9)	Increased	38 (38.0)
	Several times a month	9 (7.6)	Decreased	26 (26.0)
	1–2 days a week	27 (22.7)	No change	36 (36.0)
	3–4 days a week	15 (12.6)		
	5–6 days a week	2 (1.7)		
	Every day	34 (28.6)		
Tobacco	Never used	9 (7.6)	Started use for first time	4/9 (44.4)
	About once a month	1 (0.8)		
	Several times a month	1 (0.8)	Increased	54 (49.1)
	1–2 days a week	4 (3.4)	Decreased	14 (12.7)
	3–4 days a week	3 (2.5)	No change	42 (38.2)
	5–6 days a week	1 (0.8)		
	Every day	100 (84.0)		
Sedatives, "downers" (e.g., chlordiazepoxide, alprazolam, barbiturates)	Never used	100 (83.3)	Started use for first time	2/100 (2.0)
	Several times	4 (3.3)		
	Several times a month	2 (1.7)	Increased	2 (10.0)
	1–2 days a week	6 (5.0)	Decreased	6 (30.0)
	3–4 days a week	1 (0.8)	No change	12 (60.0)
	Every day	7 (5.8)		
Sleeping aids e.g., diphenhydramine	Never used	103 (86.6)	Started use for first time	5/103 (4.9%)
	3–4 days a week	1 (0.8)	Increased	6 (37.5)
	Every day	15 (12.6)	Decreased	1 (6.25)

Substances	Use in six months prior to quit attempt	N (%[*])	Change in use during quit attempt	N (%[**])
			No change	9 (56.3)
Stimulants, "uppers," "speed"	Never used	91 (76.5)	Started use for first time	11/91 (12.1)
	Several times	6 (5.0)		
	About once a month	1 (0.8)	Increased	9 (32.1)
	Several times a month	4 (3.4)	Decreased	13 (46.4)
	1–2 days a week	5 (4.2)	No change	6 (21.4)
	3–4 days a week	3 (2.5)		
	5–6 days a week	1 (0.8)		
	Every day	7 (5.9)		
Narcotic pain medications e.g., codeine, oxycodone,	Never used	111 (93.3)	Started use for first time	1/111 (0.9)
	Several times	2 (1.7)		
	Several times a month	2 (1.7)	Increased	2 (25.0)
	1–2 days a week	2 (1.7)	Decreased	2 (25.0)
	Every day	2 (1.7)	No change	4 (50.0)
Other narcotics e.g., heroin, methadone, opium	Never used	109 (92.3)	Started use for first time	6/109 (5.5)
	Several times	3 (2.5)		
	Several times a month	1 (0.8)	Increased	3 (27.3)
	1–2 days a week	2 (1.7)	Decreased	4 (36.4)
	3–4 days a week	2 (1.7)	No change	2 (18.2)
	Every day	1 (0.8)		
Non-narcotic pain medications e.g., aspirin, acetaminophen, ibuprofen.	Never used	52 (43.7)	Started use for first time	3/52 (5.8)
	Several times	18 (15.1)		
	About once a month	15 (12.6)	Increased	13 (19.4)
	Several times a month	14 (11.8)	Decreased	4 (6.0)
	1–2 days a week	5 (4.2)	No change	50 (74.6)
	3–4 days a week	4 (3.4)		
	5–6 days a week	2 (1.7)		
	Every day	9 (7.6)		
Hallucinogens e.g., mescaline, lysergic acid diethylamide (LSD)	Never used	109 (92.4)	Started use for first time	1/109 (0.9)
	Several times	5 (4.2)		
	About once a month	1 (0.8)	Increased	0 (0.0)
	Several times a month	2 (1.7)	Decreased	6 (67.7)
	1–2 days a week	1 (0.8)	No change	3 (33.3)
Phencyclidine (PCP)	Never used	108 (90.8)	Started use for first time	1/108 (0.9)
	Several times	6 (5.0)		

Substances	Use in six months prior to quit attempt	N (%[*])	Change in use during quit attempt	N (%[**])
	About once a month	1 (0.8)	Increased	0 (0.0)
	Several times a month	1 (0.8)	Decreased use	11 (100.0)
	1–2 days a week	1 (0.8)	No change	0 (0.0)
	Every day	2 (1.7)		

[*] Denominator for caffeine and alcohol tobacco, sleeping aids, stimulants, narcotic pain medications, non-narcotic pain medications and PCP is 119. Denominator for other narcotics and hallucinogens is 118.

[**] Denominator for % "started use" is N of "never used" prior to quit attempt. Denominator for other categories is total N with any use of the substance prior to quit attempt. Sum of cell totals may not all = 120 due to missing data and inconsistent responses by participants.