



Self-Reported Symptoms of Cannabis Use Disorder (SRSCUD): Psychometric Testing and Validation



CENTER ON ALCOHOLISM,
SUBSTANCE ABUSE,
& ADDICTIONS

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INTRODUCTION

- Findings from national surveys demonstrate that cannabis use peaks in young adulthood and that the annual prevalence of marijuana use among young adults (34.0%) is the highest it has been in decades (Johnston et al., 2016)
- Further, among those who had not used cannabis by the 12th grade, college students had a 51% increased probability of past-year cannabis use compared to their non-college student peers (Miech et al., 2017)
- For the purpose of developing preventions/interventions, it is important to identify risk and protective factors for CUD symptoms
- When CUD symptoms are dichotomized to create a symptom count, or when number of CUD symptoms are dichotomized to calculate presence/level of CUD diagnosis (i.e., mild, moderate, and severe), these two layers of false dichotomization may interfere with our ability to identify risk/protective factors for CUD symptoms

PURPOSE

- We developed a 13-item measure designed to characterize the 11 symptoms of CUD as described in the DSM-5 (APA, 2013)
- To evaluate the performance of this Self-Reported Symptoms of Cannabis Use Disorder (SRSCUD) measure, we examined its associations with other measures of CUD symptoms, negative cannabis-related consequences, and other known risk factors for CUD (i.e., coping motives)

METHOD

PARTICIPANTS AND PROCEDURE

- Colleges students (n = 7000) recruited from 9 universities in 9 states throughout the U.S.
- Our analyses focus on past month cannabis users (n = 2077)
- We used a planned missingness design such that participants were randomized to complete some measures (e.g., all cannabis users were given the SRSCUD, but they were randomized to complete either the CUDIT-R, SDS, or CAST)

MEASURES

- SRSCUD** includes 13 face valid indicators created to measure the 11 symptoms of CUD as described in the DSM-5 (APA, 2013)
- Other **CUD symptom** measures included the 8-item Cannabis Use Disorder Identification Test-Revised (CUDIT-R; Adamson et al., 2010), 5-item Severity of Dependence Scale (SDS; Gossop et al., 1995), and the 6-item Cannabis Abuse Screening Test (CAST; Legleye et al., 2007)
- Marijuana use consequences** were assessed using the 21-item short form of the Marijuana Consequences Questionnaire (MACQ; Simons, Dvorak, Merrill, & Read, 2010). The eight domains of marijuana consequences assessed were social-interpersonal consequences, impaired control, negative self-perception, self-care, risk behaviors, academic/occupational consequences, physical dependence, and blackout use.
- Frequency** and **quantity** of use in the past 30-days was assessed using the Marijuana Use Grid (MUG; Pearson et al., 2020)

Table 1. Descriptive Statistics and Factor Loadings for the Self-Report Symptoms of Cannabis Use Disorder (SRSCUD)

	EFA	CFA	Full Sample	
	N = 2011	N = 1012	N = 2023	
Stem: "In the past month,..."	λ	λ	M	SD
1. ... have you used marijuana in larger amounts or over a longer period than was intended?	0.553	0.524	1.90	0.969
2. ... have you had a persistent desire or tried unsuccessfully to cut down or control my marijuana use?	0.655	0.672	1.57	0.860
3. ... have you spent a great deal of time is spent in activities necessary to obtain marijuana, use marijuana, or recover from its effects?	0.709	0.715	1.53	0.804
4. ... have you had a craving, or a strong desire or urge to use marijuana?	0.588	0.546	1.89	0.957
5. ... has your recurrent use of marijuana resulted in a failure to fulfill major role obligations at work, school, or home.	0.801	0.801	1.34	0.666
6. ... have you continued to use marijuana use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of marijuana.	0.781	0.770	1.39	0.730
7. ... have you given up or reduced important social, occupational, or recreational activities because of your marijuana use?	0.805	0.830	1.33	0.663
8. ... have you recurrently used marijuana in situations in which it is physically hazardous?	0.751	0.774	1.29	0.649
9. ... have you continued to use marijuana despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by marijuana?	0.725	0.723	1.38	0.747
10. ... have you had a need for markedly increased marijuana to achieve intoxication or desired effect?	0.738	0.696	1.50	0.800
11. ... have you had a markedly diminished effect with continued use of the same amount of the marijuana?	0.732	0.699	1.52	0.794
12. ... have you have any withdrawal symptoms, such as feeling sick when you cut down or stopped using marijuana?	0.782	0.772	1.28	0.643
13. ... have you taken marijuana to relieve or avoid withdrawal symptoms?	0.772	0.740	1.32	0.695

Table 2. Descriptive Statistics and Factor Loadings for the Self-Report Symptoms of Cannabis Use Disorder (SRSCUD)

	r	p	n
CUDIT-R	0.697	<0.001	632
SDS	0.617	<0.001	712
CAST	0.624	<0.001	678
MACQ	0.496	<0.001	2021
Cannabis PBS	-0.382	<0.001	2021
Coping Motives	0.475	<0.001	2016
Marijuana Frequency	0.351	<0.001	2023
Marijuana Quality	0.102	<0.001	2023
	AUC	Sensitivity	Specificity
CUDIT-R Hazardous	0.839	0.775	0.781
CUDIT-R CUD	0.907	0.861	0.850
SDS CUD Cutoff	0.825	0.669	0.863
CAST CUD Cutoff	0.843	0.769	0.823

RESULTS/CONCLUSION

- We split our sample in half to conduct exploratory factor analysis (EFA, n = 1011) and confirmatory factor analysis (CFA, n = 1012)
- All items loaded saliently on a single-factor of CUD symptoms in both EFA (.553 = λ = 805) and CFA models (.524 = λ = 830) (see Table 1)
- In our final model, we allowed correlated errors between the two indicators of tolerance (items 10 and 11) and the two indicators of withdrawal (items 12 and 13), and obtained acceptable model fit across most indices: CFI = .941, TLI = .927, RMSEA = .059, SRMR = .042
- As shown in Table 2, the total score of the SRSCUD was strongly correlated with other CUD symptoms measures (.617 < r s < .697), demonstrating convergent validity
- SRSCUD was moderately positively correlated with a well-known risk factor for CUD (coping motives) and moderately negative correlated with a well-known protective (cannabis protective behavioral strategies).
- We conducted receiver-operator characteristic (ROC) curve analyses to identify well how our continuous measure of CUD symptoms could identify individuals who exceed the cutoffs for probable CUD on these other symptom measures
- For the most well-validated measure (CUDIT-R), we had excellent sensitivity/specificity (mean score of 1.5 on SRSCUD) for predicting probable CUD
- Although more research evaluating performance of the SRSCUD compared to a clinical diagnosis is needed, we have preliminary evidence for construct validity of this measure

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