Exploring sensation-seeking and first cannabis use experiences as correlates of current cannabis use problems in young adult cannabis and tobacco co-users.

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Background

How do first-time subjective cannabis sensations impact future use?

With cannabis use disorder (CUD) rates increasing over the last decade, there is a need to identify factors associated with use to reduce cannabis related problems. Subjective experiences of one's first cannabis use may be one explanation for continued use, such that individuals with more positive first use experiences may be more likely to progress to regular and perhaps problematic use (Le Strat et al., 2009; Fergusson et al., 2003). Additionally, personality characteristics associated with cannabis use, such as sensation seeking, may influence the subjective responses to one's first cannabis use experience, as well as future likelihood of cannabis problem severity (Barnum et al., 2019; Meil et al, 2016). This study examined the relationship between subjective experiences of first cannabis use and sensation seeking on cannabis use behavior and CUD diagnosis.

Method

Participants

Participants were 97 young adult current cannabis and tobacco co- users (55.7% male, 50.5% White) who completed the baseline survey of a longitudinal study examining daily patterns of tobacco and cannabis use and co-use.

Procedure

. Participants completed the 4-item Brief Sensation Seeking Scale and indicated intensity of 15 sensations at first cannabis use (1 = not at all to 5 = intense): dizziness, lightheadedness, nausea, paranoia, confusion, happiness, anxiety, taste, smell, relaxation, energy, difficulty inhaling, coughing or choking, giddiness or laughter, and rush or "buzz." Cannabis use outcomes included: (1) past 30-day number of days used cannabis; (2) past 30-day cannabis intoxication intensity (1 = not at all high to 10 = extremely high); and (3) likelihood of a CUD (score ≥ 12 on the Cannabis Use Disorder Identification Test- Revised).

Analyses

A principal components analysis (PCA) was used to reduce the 15 sensations into underlying factors. Next, separate regression analyses (linear or binary logistic, depending on the outcome) were conducted to examine the associations of the PCA-derived "first experiences" factors and sensation seeking on the outcomes of interest. Models controlled for gender, race, and age at first cannabis use.

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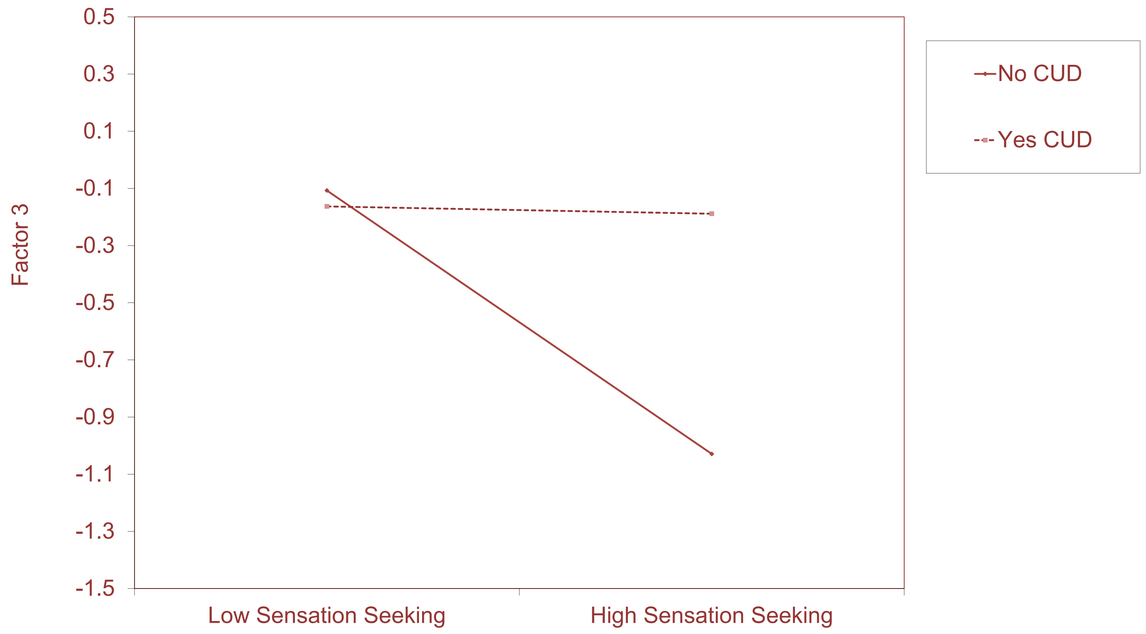
Rotated factor loadings for subjective experiences of first-time cannabis use

Sensation	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*
Dizzy	0.154	**0.765**	0.044	-0.004
Lightheaded, like fainting	-0.107	**0.795**	0.168	0.163
Nauseated	-0.072	**0.786**	-0.082	0.057
Couging or choking	**0.775**	0.21	-0.049	-0.177
Liked the taste	-0.052	0.077	0.052	**0.943**
Relaxed or calm	**0.632**	-0.156	-0.118	0.28
Rush or "buzz"	**0.53**	0.126	-0.027	0.139
Difficulty inhaling	0.416	**0.574**	0.13	-0.175
Liked the smell	0.137	0.131	-0.009	**0.827**
Paranoid	0.018	-0.071	**0.907**	-0.077
Anxious	-0.062	0.093	**0.899**	0.057
Giddy, laughing a lot	**0.731**	-0.059	0.242	-0.008
Confused	0.053	0.017	**0.727**	0.059
Happy	**0.65**	-0.181	0.089	0.323
Energized	**0.35**	-0.147	-0.129	0.313

Interaction Results: Sensation-Seeking X Factor 3 (negative emotional sensations)



- For those with a CUD, sensation seeking was not associated with Factor 3, b=-0.004, p=.916.
- For those without a CUD, sensation seeking was associated with Factor 3, b=-0.14, p=.012.

Results

Over half (61.9%) of the participants met criteria for a CUD. PCA results indicated a 4-factor solution: (1) "positive emotional experiences" (e.g., happy); (2) "negative physical experiences" (e.g., dizzy); (3) "negative emotional experiences" (e.g., paranoia); and (4) "taste and smell". Cronbach's alpha was ≥ .765 for all 4 factors.

Regression results indicated greater negative physical experiences at first use were associated with an increased likelihood of a CUD diagnosis (AOR = 1.93, p = .038) and lower average cannabis intoxication in the last 30 days (b = -0.343, p = .049). Additionally, greater negative emotional experiences at first use were associated with less frequent cannabis use in the past 30 days (b = -2.043, p = .028).

Discussion

Negative emotional experiences associated with first use of cannabis may impede continued use, as feelings of anxiety and paranoia are typically perceived aversively and may negatively reinforce future use (e.g. these feelings reduce desire to use). It is also possible that the negative physical experiences queried in this study (e.g. nausea, lightheadedness) are more variable in perception; that is, some individuals may experience these as thrilling, thus explaining a positive association with CUD diagnosis; whereas others may experience these as aversive, explaining the negative association with past 30-day intoxication. Understanding subjective experiences of first cannabis use has clinical relevance. Patients may identify intoxication as the primary reason reinforcing their use, but may be unaware of the specific sensations they seek from cannabis use. Identifying subjectively reinforcing sensations, and guiding patients to sober activities with similar sensations, may help reduce cannabis dependency.

References

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