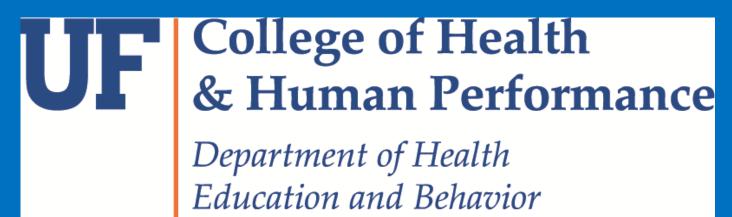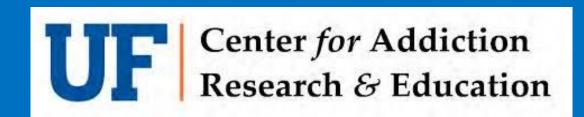# Associations of Cannabis Use Motives and Cannabis Demand in Young Adults

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Introduction

Background

o   Cannabis is the most commonly used psychotropic substance in the U.S. with 10.5% of young adults reporting monthly use in 2018[1].

o   Consequences attributed to cannabis use include addiction, poor educational outcomes, impaired motor coordination, and increased anxiety and depression[2].

o   Cannabis use for enjoyment, sleep and altered perception motives have been found to relate to more cannabis use frequency while use for boredom, coping, and social anxiety have been found to relate to more cannabis related problems[3, 4, 5].

o   Behavioral economic demand can be used to understand the relative reinforcement efficacy of substances and has been found to be a significant predictor of frequency and level of cannabis use[6, 7].

o   The relationship between cannabis demand and motives, however, has yet to be examined.

Purpose

o   To assess the utility of cannabis use motives to predict cannabis demand (amplitude and persistence).

Method

Participants

o   Participants were recruited using flyers posted in the community and local websites and completed an online assessment battery

o   Inclusion criteria:
  - Young adults 18 to 29 years old
  - Report using cannabis at least one day in the past 30 days

o N = 93 (50.5% female; M_{age}= 20.63)

Measures

o   **Demographics:** Participants were asked about age, gender, race, employment status, and income

o   **Cannabis Use Frequency:** Participants were asked to report how many times in the last month they used cannabis.

o   **Comprehensive Marijuana Motives Questionnaire:** Participants were asked how often they use cannabis for 36 listed reasons to create a total cannabis motive scores as well as subscale scores for enjoyment, conformity, coping, experimentation, boredom, alcohol, celebration, altered perception, social anxiety, relative low risk, sleep, and availibility motives[8].

Measures – Continued

- **Marijuana Purchase Task:** Using a hypothetical choice task, participants were asked to indicate how many hits of cannabis they would purchase at increasing price points
  - o   "How many hits would you take if they would cost you: $0, $0.25, $0.50, $0.75, $1, … $10?"
  - o   Amplitude: Amount consumed at unrestricted price (Intensity)[9].
  - o   Persistence: Sensitivity to increasing price (Breakpoint, Elasticity, P_{max}, O_{max})[9].

Results

Table 1. *Series of Hierarchical Linear Regression Models Predicting Persistence*

Predictor	Step 1			Step 2		
	B	$SE\ B$	β	B	$SE\ B$	β
Model 1						
Age	-1.56	0.03	0.18	0.07	0.03	0.21*
Days Used	0.01	0.01	0.15	0.01	0.01	0.06
Gender	0.11	0.16	0.07	0.12	0.16	0.08
Total motives				0.01	0.00	0.24*
R^2		0.06			0.11*	
ΔR^2					0.05*	
Model 2						
Age	0.06	0.03	0.12	0.06	0.03	0.21*
Days Used	0.01	0.01	0.15	0.01	0.01	0.07
Gender	0.11	0.16	0.07	0.16	0.16	0.10
Enjoyment				0.06	0.03	0.22*
R^2		0.06			0.10*	
ΔR^2					0.04*	
Model 3						
Age	0.06	0.03	0.18	0.06	0.03	0.19
Days Used	0.01	0.01	0.15	0.01	0.01	0.18
Gender	0.11	0.16	0.07	0.12	0.16	0.08
Conformity				0.11	0.05	0.23*
R^2		0.06			0.11*	
ΔR^2					0.05*	
Model 4						
Age	0.06	0.03	0.18	0.06	0.03	0.18
Days Used	0.01	0.01	0.15	0.01	0.01	0.08
Gender	0.11	0.16	0.07	0.10	0.16	0.07
Coping				0.07	0.03	0.27**
R^2		0.06			0.13*	
ΔR^2					0.07**	

Note: N = 93; Males were coded as 1 and females were coded as 2. *$p \leq .05$; **$p \leq .01$; ***$p \leq .001$. Dependent variable = Persistence

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Results & Discussion

Hierarchical Regressions

o   Hierarchical regressions were conducted to assess the utility of cannabis use motives to predict amplutude and persistence.

- The first step controlled for gender, age, and cannabis use frequency
- Individual cannabis use motives were then added in the second steps.

Results

o   Initial correlational analyses showed significant relationships between demand and total number of motives, conformity, enjoyment, coping, experimentation, boredom, celebration, and sleep motives (all p's < .05).

o   Neither total motives or any of the 12 cannabis use motives significantly predicted amplitude (all p's > .05) while total motives, enjoyment, conformity, and coping motives were significant predictors of persistence (all p's < .05, see Table 1).

o   Findings may suggest that young adults who use cannabis for enjoyment, conformity, or coping reasons may experience greater reinforcement efficacy of cannabis than those who use for other motives.

- This may place them at increased risk for developing cannabis use disorder or other problems assoicated with their use.

o   Further, these motives were related to persistence but not amplitude suggesting individuals using cannabis for these cannabis use motives may also be less sensitive to increases in price and continue to purchase at higher prices.

Future Directions

o   These findings can be used to inform cannabis interventions by targeting specific motives for use.

o   Future research should investigate the mediating effects of cannabis use motives on cannabis related outcomes to better understand the nature of the relationship.

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