

## INTRODUCTION

- Marijuana use has increased among adolescents in recent decades, while perceived risk has decreased
- The Marijuana Purchase Task (MPT) has been used to understand demand (i.e., relative value) for marijuana among adult samples
- It is unknown if the MPT is sensitive to characterizing marijuana demand among adolescents for whom using for recreational purposes is illegal in all states and who may have less experience purchasing marijuana
- Understanding the role of demand may provide novel insight into adolescents' motivations for use that can inform prevention and intervention

### Purpose of Study

- To validate the MPT with a late adolescent sample who presumably have less experience in purchasing and using marijuana relative to adult users

## METHOD

### Participants and Procedures

- 115 adolescents ( $M_{age}=16.94$ ,  $SD_{age}=0.88$ ; 52% female; 64% high school student) between the ages of 15-18 who reported lifetime marijuana use and current marijuana demand

### Measures

- Marijuana Purchase Task
  - Hypothetical weekly marijuana consumption (grams) across 20 escalating prices; produces 5 demand indices
  - Intensity (consumption at zero cost), breakpoint (price at which consumption suppressed to zero), elasticity (rate of decrease in consumption as a function of increasing price),  $O_{max}$  (peak expenditure), and  $P_{max}$  (price corresponding to peak expenditure)
- Marijuana Daily Questionnaire
  - Typical hours high in a week in past 3 months
- Marijuana Consequences Checklist
  - 26-items assessing presence and frequency of consequences
- Marijuana Craving Questionnaire
  - 12-items assessing marijuana craving
- Marijuana expenditures
  - 1 item assessing total expenditures in past 30 days
- Cannabis Use Disorders Identification Test-Revised
  - 8-items assessing problematic or harmful marijuana use; scores of 7 or less were coded as non-hazardous users, and scores of 8 or greater were coded as hazardous users

## RESULTS

- As expected, as price increased, hypothetical marijuana use decreased (see Figure 1)
- Convergent validity was established via significant associations between demand indices and marijuana outcomes (see Table 1)
- Divergent validity was also established via significant differences between non-hazardous users and hazardous users (see Table 2)

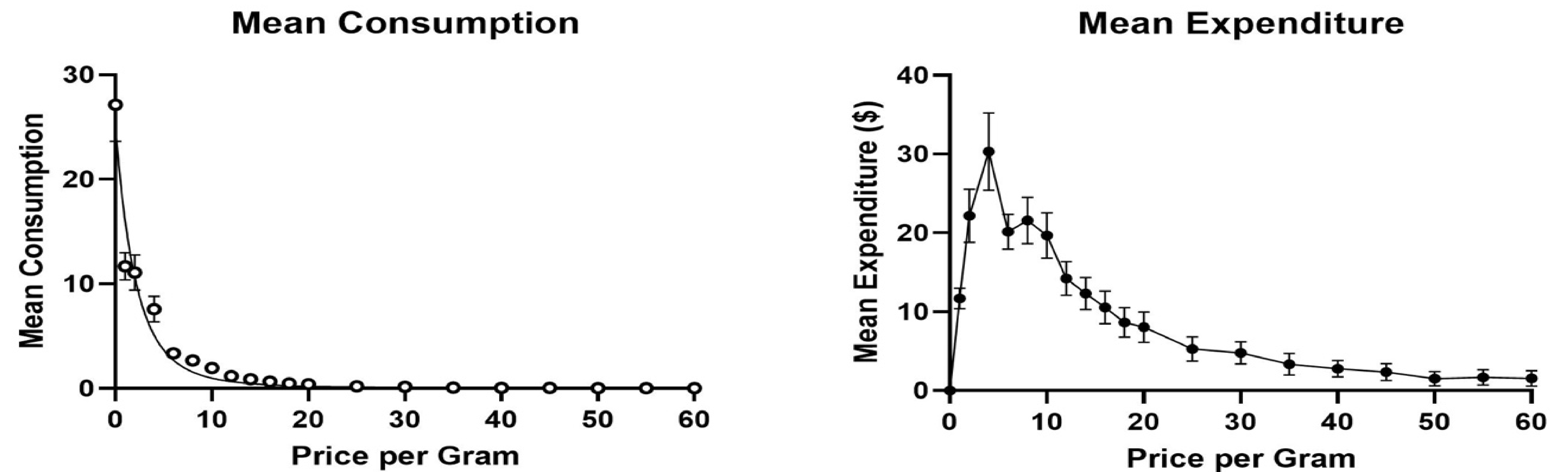


Figure 1. Mean consumption and expenditure curves for analytic sample. X-axis represents price per gram in both plots, whereas y-axis represents mean consumption in grams (Plot A) and mean expenditures in dollars (Plot B). Error bars represent SEMs.

Variable	Correlations								
	1	2	3	4	5	6	7	8	9
1. Intensity	-								
2. $O_{max}$	0.54***	-							
3. $P_{max}$	-0.14	0.35**	-						
4. Breakpoint	0.11	0.48***	0.62***	-					
5. Elasticity	-0.55***	-0.98***	-0.32***	-0.49***	-				
6. MJ Use	0.11	0.30**	0.12	0.20*	-0.35***	-			
7. MJ Consequences	0.11	0.29**	0.17	0.22*	-0.33***	0.55***	-		
8. MJ Craving	0.27**	0.33***	0.13	0.34***	-0.38***	0.31**	0.41***	-	
9. MJ Spending	0.24*	0.39***	0.11	0.27**	-0.41***	0.40***	0.44***	0.33***	-

Table 1. MJ = Marijuana; MJ Use represents the number of hours high in a typical week in the past 3 months, MJ Conseq. represent sum scores on Marijuana Consequences Checklist, \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Variable	Non-Hazardous Users (n = 39)		Hazardous Users (n = 76)		t	p
	M	(SEM)	M	(SEM)		
Intensity	23.61	(6.04)	28.96	(4.30)	0.72	0.471
$O_{max}$	24.10	(6.47)	44.85	(6.68)	3.11	0.0002
$P_{max}$	7.13	(0.81)	9.71	(1.07)	2.08	0.040
Breakpoint	11.51	(1.14)	18.82	(1.61)	3.71	<0.001
Elasticity	0.022	(0.007)	0.007	(0.001)	3.11	0.003
MJ Use	0.78	(0.18)	2.45	(0.26)	4.33	<0.001
MJ Consequences	10.97	(1.38)	27.49	(1.87)	5.90	<0.001
MJ Craving	37.08	(2.07)	44.97	(1.61)	2.93	0.003
MJ Spending	\$5.90	(2.03)	\$47.06	(8.15)	3.63	<0.001

Table 2. SEM = Standard Error of the Mean; MJ = marijuana, Non-hazardous users had cumulative CUDIT scores of 7 or less, hazardous users had CUDIT scores of 8 or more. Means and SEMs of non-transformed demand indices shown here for interpretability; t-tests performed on transformed variables for  $O_{max}$ ,  $P_{max}$ , and Elasticity.

## DISCUSSION

- In contrast with previous literature, intensity was less consistently associated with marijuana outcomes, which may reflect adolescents' inexperience with purchasing marijuana in legal markets
- Indices related to price sensitivity are important metrics in this age group, as evidenced by significant associations between  $O_{max}$ , breakpoint, and elasticity and marijuana outcomes
- The MPT appears to be a valid measure for assessing the reinforcing value of marijuana among adolescents

### Limitations & Future Directions

- Cross-sectional, self-report data
- Examine the factor structure of the MPT among adolescent marijuana users
- Examine associations between demand and other important constructs such as marijuana motives and personality characteristics

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