Impact of marijuana legislation on marijuana and cannabidiol related attitudes, perceptions, and behaviors among adolescents receiving mood disorder treatment in the United States

Christopher J. Hammond MD PhD[1]; Yoon Ji Moon, BS[1]; Mary Fristad PhD[2]; Annabel Kady[1]; Christopher D Schneck MD[3]; Aimee E. Sullivan[3]; Melissa M. Batt[3]; Neera Ghaziuddin MD MRCPsych[4]; Jarrod M. Leffler PhD[5]; Manpreet K. Singh MD MS[6]; Sally Weinstein PhD[7]; Leslie Hulvershorn MD[8]; Leslie Miller MD[1]

1 Johns Hopkins School of Medicine; 2 Ohio State Univ/Nationwide Children's Hospital; 3 University of Colorado Anschutz Med. Campus; 4 University of Michigan; 5 Mayo Clinic; 6 Stanford University; 7 University of Illinois at Chicago; 8 Indiana Univ School of Medicine

Introduction

Dramatic shifts in marijuana laws (ML) over the past 20 years along with federal deregulation of hemp with the 2018 Farm Bill have resulted in increased availability and use of cannabinoid-based products (CBP) including recreational marijuana (RM), medical marijuana (MM) and cannabidiol (CBD) supplements, throughout the United States. The widespread advertising and multimedia promotion of CBP that have accompanied these legislative changes carry unknown implications for American youth.[1-3] Furthermore, adolescents with mood disorders may be more vulnerable to adverse health outcomes related to cannabinoid exposure.

Objectives

In the present study we examined attitudes, perceptions, and behaviors related to marijuana and CBD product use among youth receiving mood disorder treatment in the U.S. and their parents and investigated the impact of ML on these beliefs and behaviors.

Methods

Overview. Data are from the ongoing, NNDC-funded, Marijuana and Cannabidiol Attitudes, Beliefs, and Behaviors Survey [MABS] study.

Participants and procedures. Participants included adolescent (ages 12-17) and young adult (ages 18-25) patients in treatment for mood disorders along w/ their parents/caregivers and mental health providers. They were recruited from NNDC-affiliated Child Mood Disorder Clinics throughout the U.S. All participants were informed that the survey was anonymous, and that participation was optional. The MABS study has a target accrual goal of 50 participants from each group respectively (N=150 total sample). Data are from N=67 youth and N=56 parent/caregiver participants from 4 NNDC sites (IU, UIC, JHU, & Mayo).

Measures. The *MABS Survey* is an electronically administered questionnaire w/ branch logic that includes 130 items querying marijuana- and CBD related attitudes, perceptions, and behaviors, including acceptability, perception of harmfulness and medical benefit, expectancies about marijuana's and CBD's effects on mood, anxiety, and cognition, along with parent-youth communication, parenting practices, and demographics and clinical characteristics. Respondents also complete the *Marijuana Effect Expectancy Questionnaire-Brief (MEEQ-B).* Youth respondents complete the *Patient Health Questionnaire-2 (PHQ-2)* and *Generalized Anxiety Disorder 2-item (GAD-2).*

Data Analysis: In addition to descriptive analyses, regression models controlling for covariates were used to examine relationships between perceptions and behaviors and assess the impact of ML (RML and MML vs. no ML) on perceptions and behaviors in youth and parents/caregivers.

Results

Adolescent & Young Adult (AYA) Beliefs about MM and CBD:
- A majority of AYA agreed with the statements that MM (80%) and CBD (75%) are safe and effective treatments for certain mental health conditions
- Over half of AYA believe that mental health providers should be recommending or prescribing MM (53%) or CBD (56%)
- Many AYA reported believing that MM, when used regularly, improves depression (54%), anxiety (57%), and suicidal thoughts and behaviors (STB: 37%)
- Many AYA reported believing that CBD improves depression (53%), anxiety (58%), and STB (31%)
- *AYA make minimal distinctions between MM and CBD safety and efficacy*

Parents/Caregivers Beliefs about MM and CBD
- A majority of caregivers agreed with statements that MM and CBD (64% each) are "safe and effective treatments for certain mental health conditions in adults"
- These numbers dropped to 29% and 41% in relation to caregiver beliefs about safety and efficacy of MM and CBD for treatment of teen mental health conditions.
- 46% and 48% of caregivers believe that mental health providers should be recommending or prescribing MM or CBD
- 46%, 52%, and 33% of caregivers reported believing that MM, when used regularly, improves depression, anxiety, and STB
- 53%, 51%, and 33% of caregivers reported believing that CBD improves depression, anxiety, and STB
- *Caregivers make minimal distinctions between MM and CBD safety and efficacy*

Prevalence of MM and CBD Use in Youth/Families Treated for Mood Disorders:
- Discrepancies in past year MM but not CBD use were observed across informants:
  - 14% vs. 5% of AYA vs. parent/caregivers reported past yr. MM use by a household member
  - 18% vs. 20% of AYA vs. parent/caregivers reported past yr. CBD use by a household member
- Parent/caregiver disclosure of MM and CBD use for themselves and their teens:
  - 7% parent/caregivers reported past yr. MM use and 14% reported past yr. CBD use
  - 2% parent/caregivers reported past yr. MM use by their teen while 20% reported past yr. CBD use by their teen

Marijuana Expectancies are Correlated with Marijuana and CBD Use Behaviors:
- In AYA: positive marijuana expectancies and past year CBD use were associated with an increased likelihood of using medical or recreational marijuana in the next 6 months
- In parents/caregivers: positive and negative marijuana expectancies were positively and negatively correlated with past year CBD use, respectively

Marijuana legislation impacts AYA and parent/caregiver Beliefs about MM and CBD:
- AYA living in RML and MML states (compared to no ML states) had higher positive MJ expectancies
- Parents/caregivers living in RML and MML states (compared to no ML states) were more likely to believe that MM is a safe and effective treatment for teen mental health conditions.

Table 1. Sample Characteristics

	Youth (n = 67)
Age (Years)	17.3 (3.6)
Sex (% Female)	64%
Mental Health Conditions (%)	
Depressive disorder	84%
Anxiety disorder	90%
Mental Health Treatment (%)	
Individual Psychotherapy	84%
Psychotropic medication	72%
Lives in a RML state	3%
Lives in a MML state	75%
Lives in a state with no ML	22%
MEEQ-B positive expectancy score	3.8 (0.8)
MEEQ-B negative expectancy score	3.4 (0.8)
PHQ-2 Depression Total Score	2.4 (1.9)
GAD-2 Anxiety Total Score	2.9 (2.0)
Probably/definitely plan to use in the next 6 months (%)	
Marijuana	25%
Medical marijuana	12%
CBD	8%

Fig. 1. Youth marijuana expectancies differ as a function of state marijuana policy

$r_{(67)}$= .29 , p=0.02
$r_{(55)}$= -.05 , p=0.74
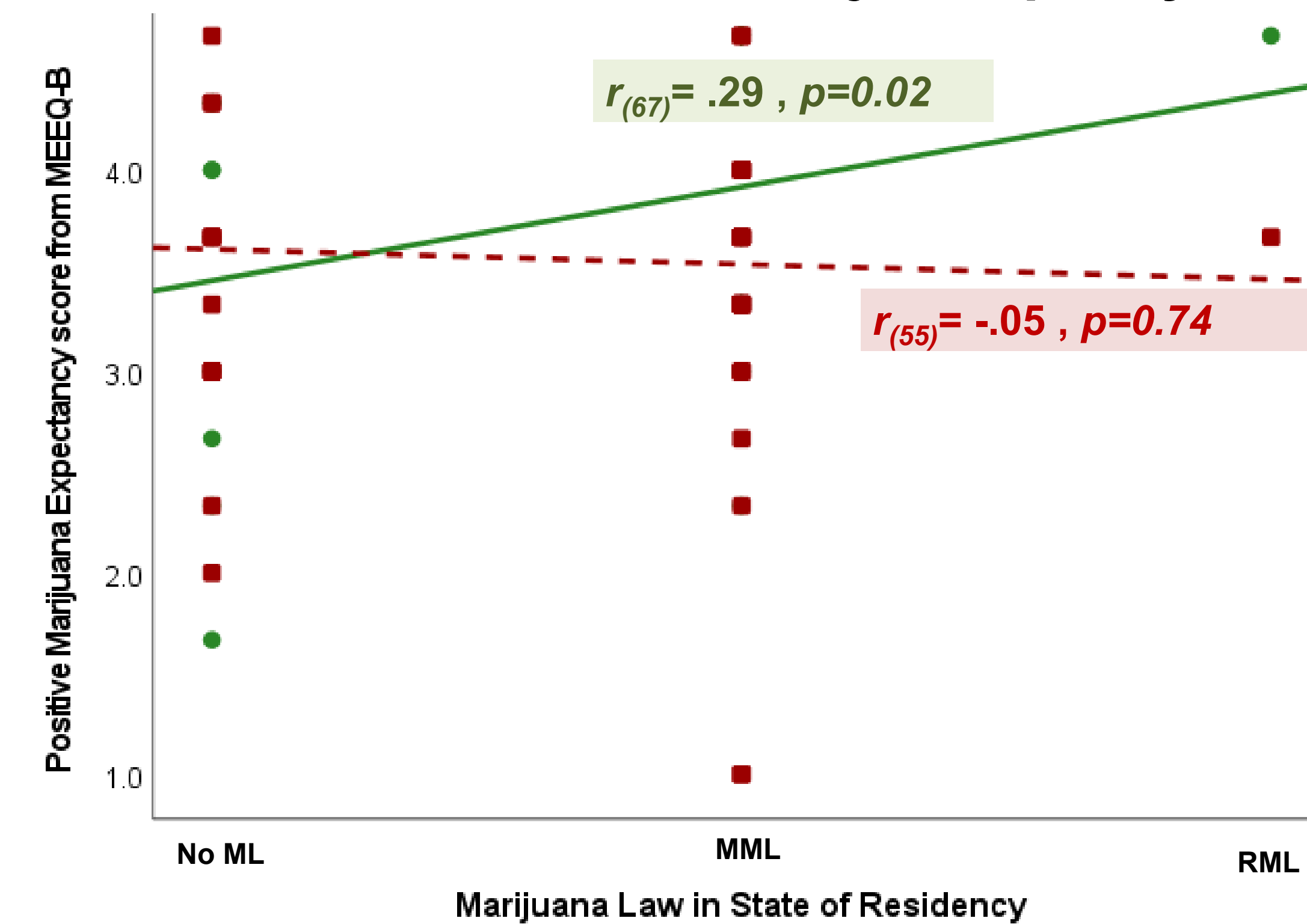
Fig. 2. Youth marijuana expectancies are related to likelihood of future marijuana use

$r_{(67)}$= .50 , p<0.001
$r_{(55)}$= .01 , p=0.97
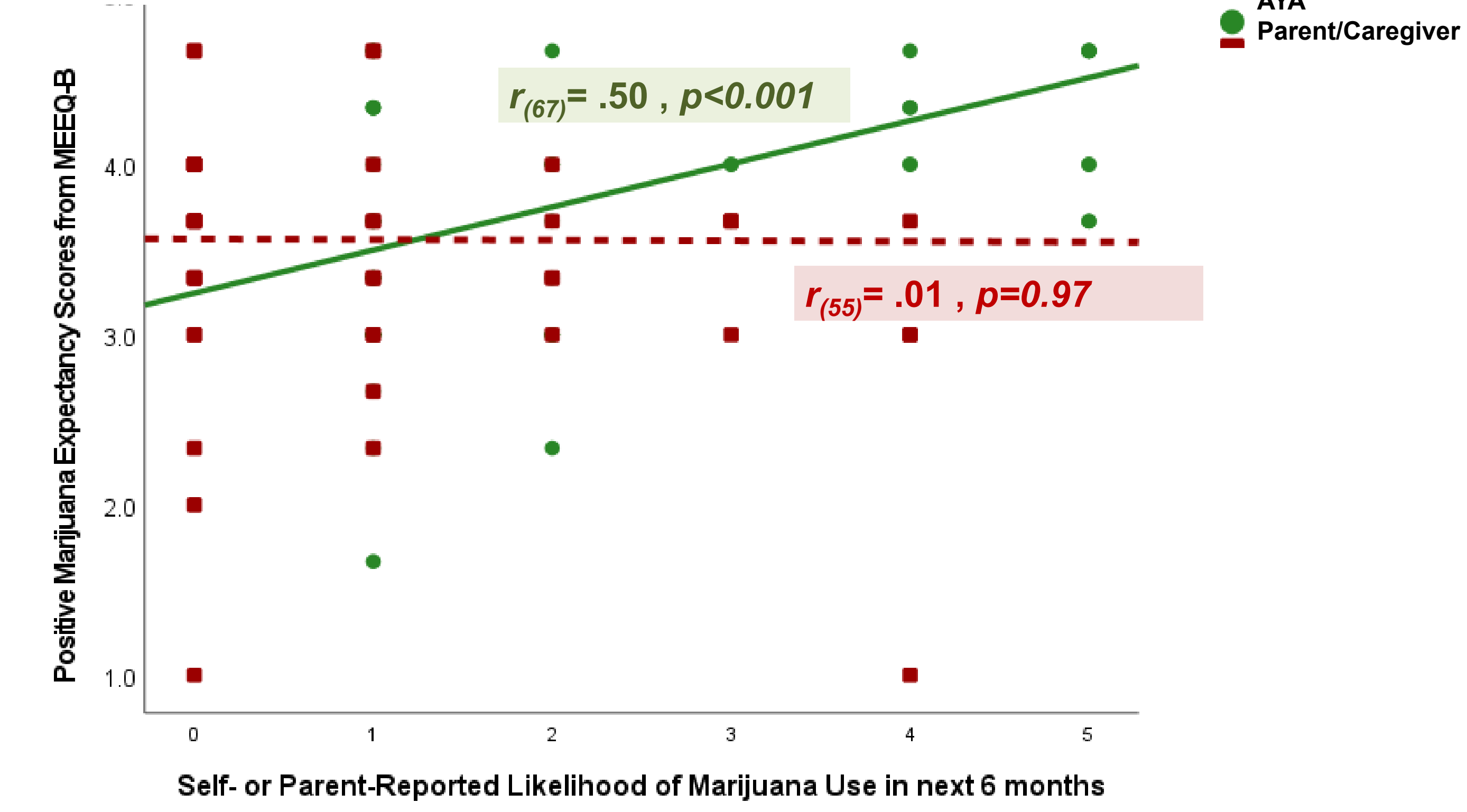
Conclusion

Interim results from this multisite study show that U.S. youth receiving mood disorder treatment and their parents perceive marijuana and CBD products to be safe and effective treatments for mental health problems, including depression, anxiety, and STB. Further, they suggest that marijuana policies impact these beliefs and may increase the likelihood of future marijuana use. Based upon these findings, there is a mismatch between youth/parent perception[1-3] and the current evidence related to safety and efficacy of CBP for mood disorders.[4] As such, mental health clinicians and public health campaigns should provide targeted, evidence-based education to youth and parents and encourage fact-driven discussions between parents, youth, and providers about cannabinoids and mood disorders. Future marijuana legislation should incorporate risk mitigating provisions that seek to reduce this pathway to marijuana use in AYA.

References
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