YOUTH SUBSTANCE USE DISORDERS & CO-OCCURRING DEPRESSION:

THE NATURE OF THE ASSOCIATION AND TREATMENT IMPLICATIONS

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A DISCLAIMER

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- **I am presently receiving federal research support - NIAAA**
- **I have been receiving royalties for authored and edited books on the treatment of adolescent substance use disorders and on dual diagnosis by APPI and Hazelden**

Research Society on Marijuana (RSMj)

3rd Annual Scientific Meeting

July 26-28, 2019, USA

Vancouver, Washington

(adjacent to Portland, Oregon)

Call for Proposals:

Register at researchmj.org

Struggling with sadness? Alcohol use getting in the way?

✓~ Are you 13-21 years of age?

✓~ Do you struggle with alcohol abuse (with or without other substance use) and depression?

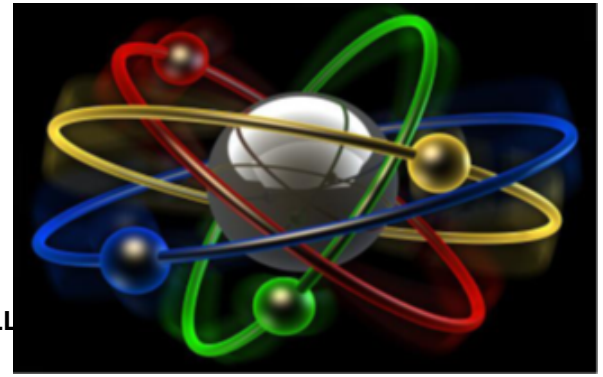
✓~ Do you want to get help?

If you are a teenager who is struggling with alcohol use and depression and would like to learn more about the ATOM Programs

T-TAAD Study at UCONN HEALTH, please call

➢**Rebecca @ (860) 679-8478 burke@uchc.edu**

*ALL



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NSDUH USA 2016

- **Major Depressive Episode (MDE):**

In 12.8% of youth aged 12-17 and 10.9% 0f those aged 18-25

- **Substance Use :**

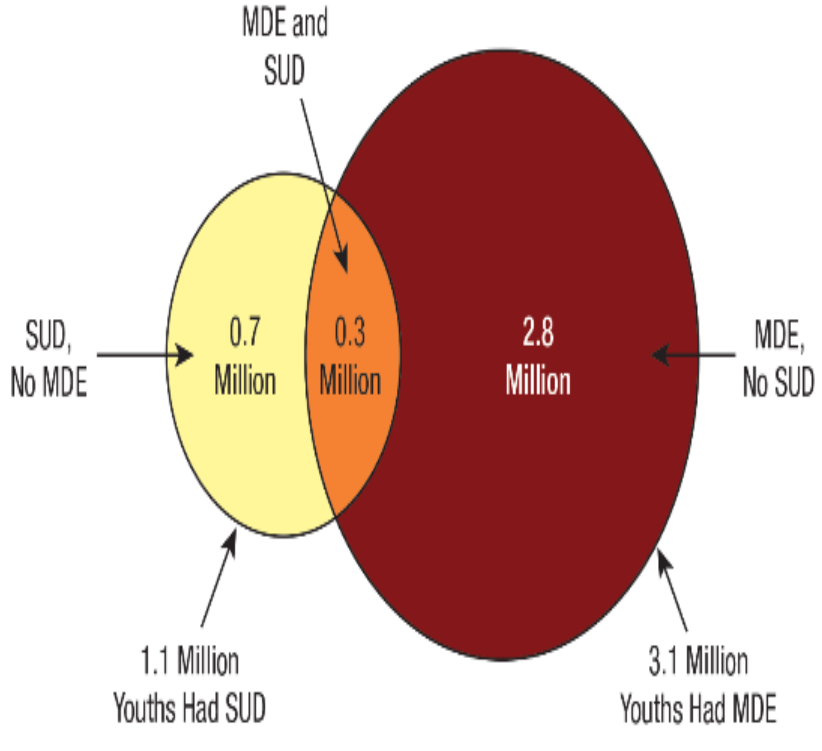
Among MDE 31.7% Vs. Non MDE 13.4%

*National Survey on Drug Use & Health. An annual household survey of the prevalence and epidemiology of drug use in the general population>12Y.O. n>55,000

MDE AMONG ADOLESCENTS WITH A SUBSTANCE USE DISORDER

THE 333,000 ADOLESCENTS IN 2016 WHO HAD A CO-OCCURRING MDE AND AN SUD IN THE PAST YEAR REPRESENT ABOUT ONE THIRD (33.0 PERCENT) OF THE 1.1 MILLION ADOLESCENTS WHO HAD A PAST YEAR SUD (FIGURE 66). AMONG ADOLESCENTS WITHOUT A PAST YEAR SUD, 11.9 PERCENT (2.8 MILLION ADOLESCENTS) HAD AN MDE IN THE PAST YEAR.

Figure 66. Past Year Substance Use Disorder (SUD) and Major Depressive Episode (MDE) among Youths Aged 12 to 17: Numbers in Millions, 2016

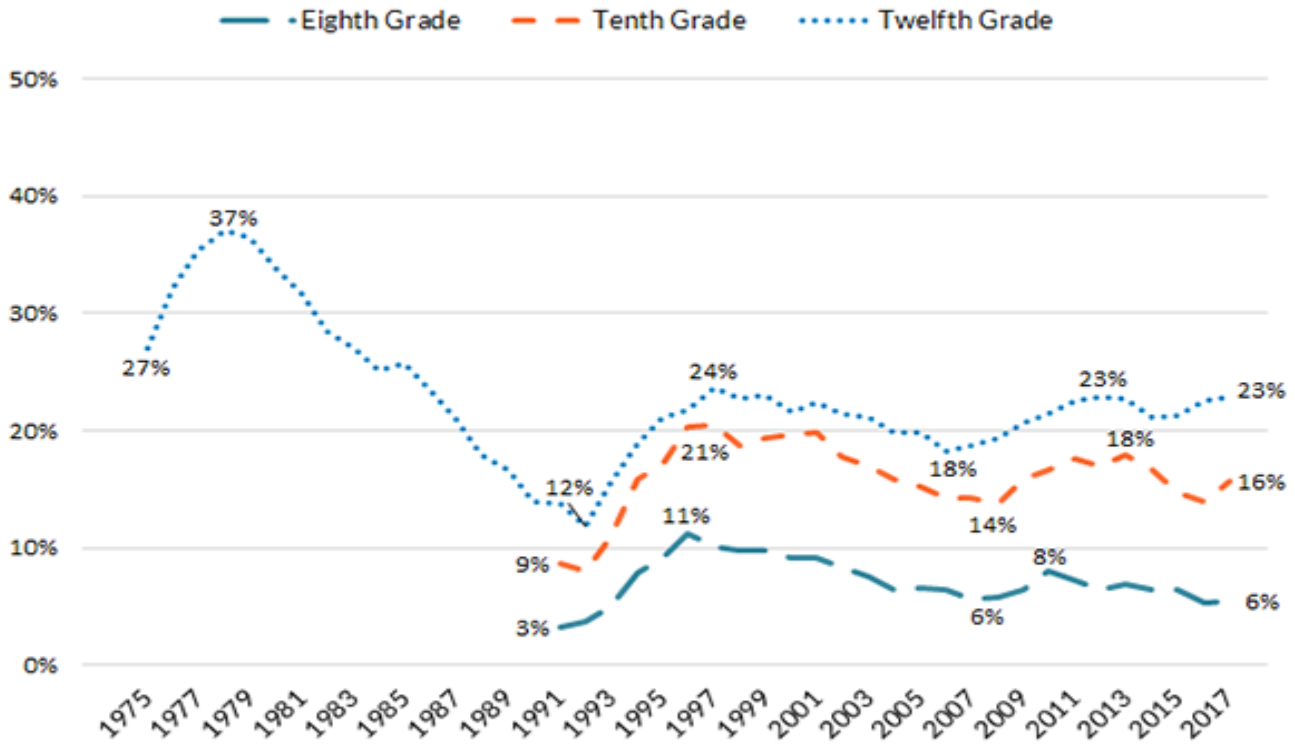


Note: Youth respondents with unknown MDE data were excluded.

IMPAIRED BUT UNDIAGNOSED

- individuals with psychosocial impairment not meeting DSM criteria for any of 29 well-defined disorders, but who have symptoms associated with psychosocial impairment should be regarded as suffering from a psychiatric disorder. Angold A et al. (JAACAP, 1999)
- The prevalence of subthreshold MDD among youth in lit. review ranged between 5-29%. Elevated rates of psych comorbidity, suicidality, impaired function. Carrellas NW et al. (2017)
- The clinical significance of depressive symptoms does not depend on crossing the major depressive diagnostic threshold. Lewinsohn et al. (2000)
- A third of youth with a sub-thershold diagnosis developed MDD during a follow-up period. Hill et al. (2014)

Percentage of Students in Grades 8, 10, and 12 Who Report They Used Marijuana in the Past Thirty Days: Select Years, 1975-2017



Source: Data for 1975-2017: Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2018). Demographic subgroup trends among adolescents in the use of various licit and illicit drugs, 1975–2017 (Monitoring the Future Occasional Paper No. 90). Ann Arbor, MI: Institute for Social Research, The University of Michigan. Retrieved from http://www.monitoringthefuture.org/pubs/occpapers/mtf-occ90.pdf. (Tables 13, 14, and 15)

childtrends.org

PREVALENCE OF DISORDERS IN ADOLESCENTS WHO USE OR ABUSE SUBSTANCES

	Percentage	OR
Conduct disorder	25 to 50%	4
Depression	20 to 30%	2-3*
Anxiety	8 to 18%	1.5

*Meaning that comorbidity of AUD/SUD is X2-3 higher for those who suffer from depression than for those from the general population.

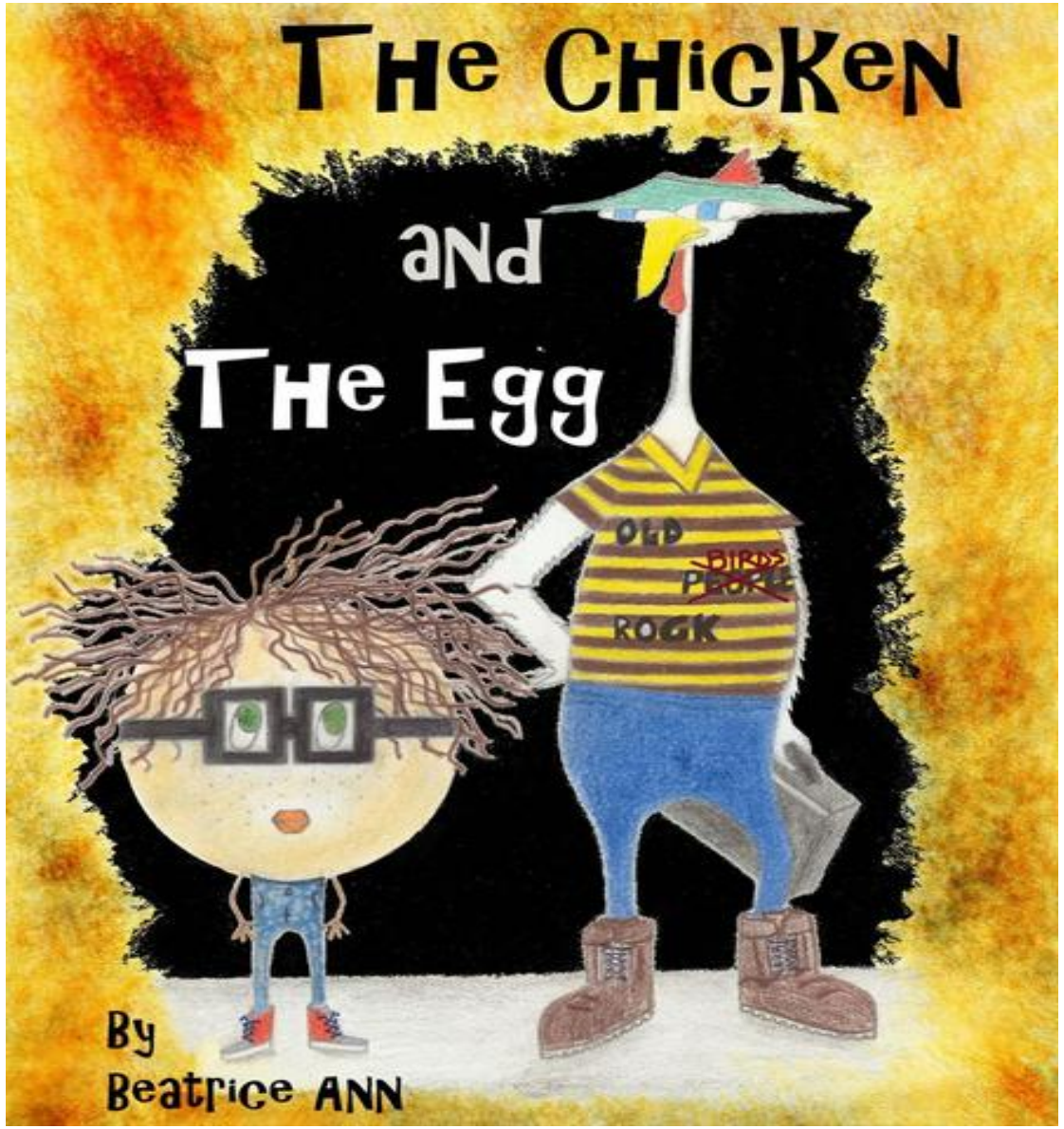
Armstrong, TD & Costello, EJ. (*J Consul Clin Psychology, 2002*);

Bott et al. (J Stud Alcohol, 2005)

CANNABIS USE IN ADOLESCENCE AND RISK OF DEPRESSION ANXIETY & SUICIDALITY:

- Systematic review & meta-analysis of 11 studies, n=23,317
- The OR of developing: anxiety NS; depression 1.37
- OR of Suicidal ideation 1.50; Suicide attempt 3.46
- The high prevalence of adolescents using cannabis generates a large # of young adults who could develop depression and suicidality attributed to cannabis

Gobbi G. et al. (JAMA Psychiatry, Feb13, 2019)


The Chicken
and
The Egg
By
Beatrice ANN

EXPLAINING CO-OCCURRENCE: 5 MODELS

1) Secondary substance use model: Self Medication?

2) Secondary psychopathology mode: Disease Model?

3) Bidirectional model: multiple factors are involved in triggering and maintaining MH and SU Disorders;

The Rebound Effect: provoked by bio-behavioral processes where SU may produce/increase psych symptoms

4) Common-factor model: proposed to independently increase the risk for both (e.g., neurobiological, etc);

5) Un-relatedness model: A co-probability of otherwise un-related disorders Kay-Lambkin et al. (2004);Tomlinson et al. (2006)

MOTIVATIONAL ASPECTS OF ONGOING DRUG USE

Allostatic Hypothesis: Emphasizes the secondary psycho-pathology that emerge after prolonged SU, including the compensatory use of other drugs. Koob et al. (2014)

The progression from occasional user to chronic user is a shift from SU as a positively reinforced reward-seeking behavior to a negatively reinforced compulsive behavior.

With respect to comorbid pathology, the model suggests that negative mood states related to SU cycles evolve into chronic conditions (i.e., Internalizing Disorders).

Progression to non cannabis SUD is anticipated/expanded effort for relief from reward deficiency & neg. mood states. Olfson M. et al. (Cannabis use and risk for prescription opioid use disorder-Am J psychiatry, 2017); Kaminer Y. (editorial in Substance Abuse J. 2017)

PSYCH DISORDERS AS A RISK FACTOR FOR SUD

- Depression n=13, OR 2.03 Groenman AP et al. (JAACAP, 2017)
- MH disorders are a risk factor for SUD but this association works both ways. Wilkinson AL, et al. (Addict Behav, 2016)
- This would suggest shared liability (supported by shared genetic origin among common psychiatric disorders). Cross-Disorder Group: Psychiatric Genomics Consortium (Lancet, 2013)
- Children of Alcoholics are at increased risk of developing other disorders showing cross-disorder transfer. Hill SY et al. (1999)

CO-OCCURRING DISORDERS

May:

Precede as a risk factor of,

Develop as a consequence of,

Moderate the severity of,

*In 3:4 participants of the ECA study a psychiatric disorder preceded the SUD Christie KA, et al. (Am J psychiatry, 1988)

OR

Originate from a common vulnerability as SUDs (transmissible liability index)

Tarter RE & Horner MS (IN: Youth SUD and Co-occurring Disorders,

Edited by Kaminer, Y: APPI, 2016)

PERCEIVED EFFECT OF CANNABIS ON NEGATIVE AFFECT

- Based on a naturalistic examination of data from a medical cannabis (MC) app Strainprint
- n=1,399 MC users; App used n=18,392
- Cannabis reduced perceived symptoms of depression (50%) and anxiety/stress (58%) short term
- High CBD/low THC ratio was associated with > changes of depression ratings
- Baseline symptoms of Depression only exacerbated across time
- Primary limitations: are the self-selected nature of the sample and inability to control for expectancy effects

Cuttler C et al. (J. Aff D. 2018)

"PROTECTIVE FACTOR" OF INTERNALIZING D.

Associated with behavioral inhibition (BI);

BI may counteract reward seeking associated with negative consequences;

Persons with Int'l D. are less likely to affiliate with deviant peers;

Individuals with negative moods and Int'l D. may experience cannabis to be less reinforcing;

Cannabis use may result with intensification of Int'l symptoms thus making continued use less likely

Arendt M, et al. (2007)

Why we can not further ignore SA in patients with mental illness

- Overlapping developmental, environmental and genetic vulnerabilities.
- Drugs can trigger mental disorders in those that are vulnerable and can exacerbate their course.
- Patients with mental illness are at greater risk for substance abuse.
- Drugs contribute significantly to the morbidity and mortality of patients with mental illness. Compton W. (2010)

NEGATIVE CONSEQUENCES: DEPRESSION COMORBIDITY IN YOUTH

Often experience increased severity of both disorders

Compared to a single diagnosis:

- **Elevated risk for suicide;**
- **Greater treatment attrition and poorer outcomes;**
- **Poorer overall quality of life including: social competence, mental and physical health (disability)**

Babowitch JD, & Antshel KM (J. Affect Disorders, 2016)

The Economist

Hard truths about a no-deal Brexit

The Trump and AMLO show

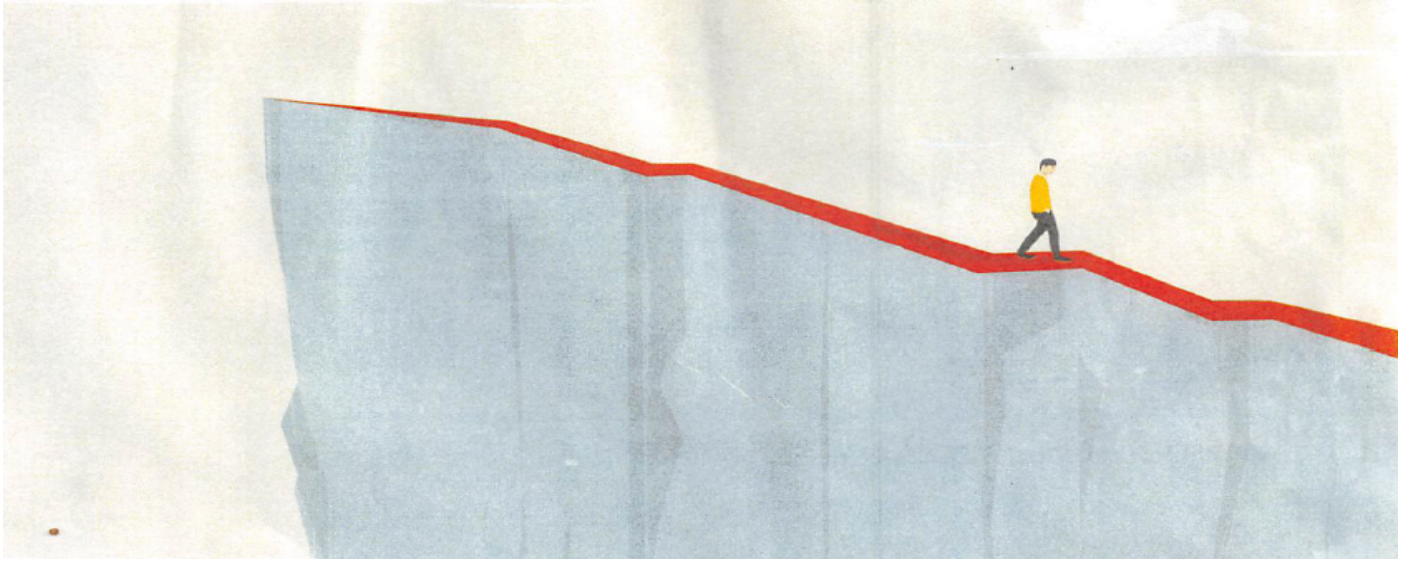
Going, going, Ghosn

Emerging-market currencies' comeback

NOVEMBER 24TH–30TH 2018

Staying alive

Why the global suicide rate is falling



IMPLICATIONS OF COMORBID MDD & SUD: SUICIDAL BEHAVIOR

The likelihood of suicide attempts increased by X2.5 with each additional psychiatric disorder. Goldston et al. (2009)

Increased risk for suicidal behaviors is common for MDD or SUD (X10-14) and is higher for the dually diagnosed.

A WHO funded review of studies on youth completed suicide from Australia(2), Finland, G.B., Israel, Norway, Sweden(2), USA(5) (N=894 cases). It concluded that 42% had a mood disorder, 41% had SUD and 21% a disruptive disorder. Fleischmann et al. (2005)

39% of suicide cases were diagnosed with two or more disorders mostly mood, SUD, and disruptive disorders.

MENTAL HEALTH GAPS FOR YOUTH

10-20% of youths in the U.S. meet diagnostic criteria for MH disorder.

Up to 50% of youth in the child welfare system and 70% in the JJ system have a diagnosable MH disorder.

Only 20-30% receive specialized MH care.

Youth comprise 25% of the population, only 1/9 of health care funding is directed to them. Kazak AE et al. (Am Psychol 65:85-97, 2010)

A TALE OF TWO SYSTEMS

Most adolescents receive separate SUD treatment from medical and psychiatric services, typically in community-based programs. Differences across these systems have significant systemic barriers to access for youth with co-occurring problems reinforced by distinct funding mechanisms. **Hawkins**

EH: Ann Rev Psychol 60:197-227, (2009)

BARRIERS FOR INTEGRATED SERVICES FOR THE DD YOUTH

The historical separation of substance abuse and mental health services.

The tendency to exclude youth with SUD from clinics for psychiatric disorders.

A limited # of clinicians and researchers who focus on dually diagnosed youth.

Few (<30%) providers respond using formal assessment practices or Tx protocols (10%).

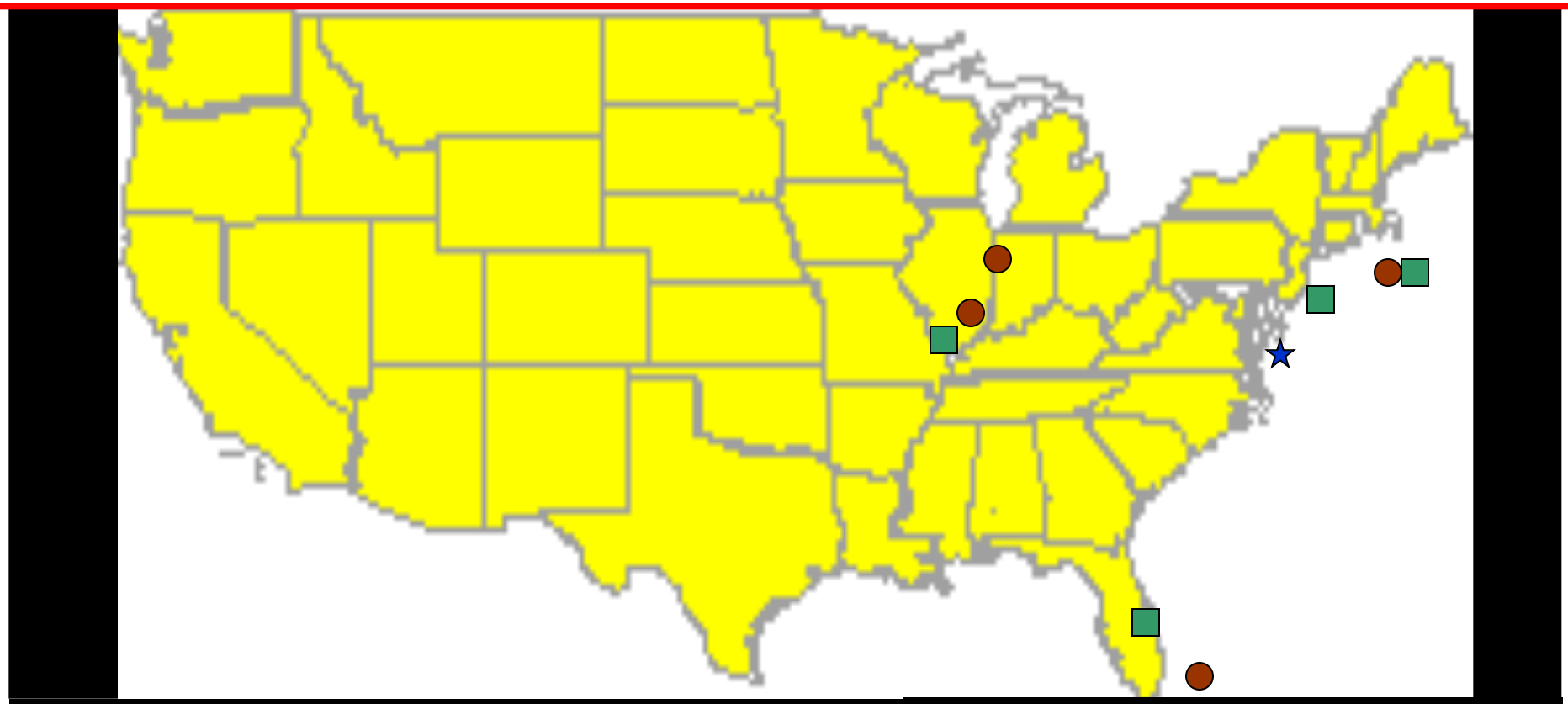
Issues with billing and funding treatment of the Dually Diagnosed. Lichtenstein et al. (2010)

CURRENT APPROACHES FOR DD INTERVENTION

- Currently, clinicians have more info about the epidemiology than about approaches to DD Tx
- Traditional treatment of co-occurring MH and SUD have been designed around the first and second models
- Utilizing existing uni-diagnosis Tx strategies
- Generally with the primary condition targeted for Tx
- The secondary condition is usually treated sequentially
- Failing to formulate co-morbidity Tx regimen leads to suboptimal Tx, poor outcomes, negative (and more costly) consequences Brady s et al. (1996); Kay-Lambkin et al. (2004)

CYT

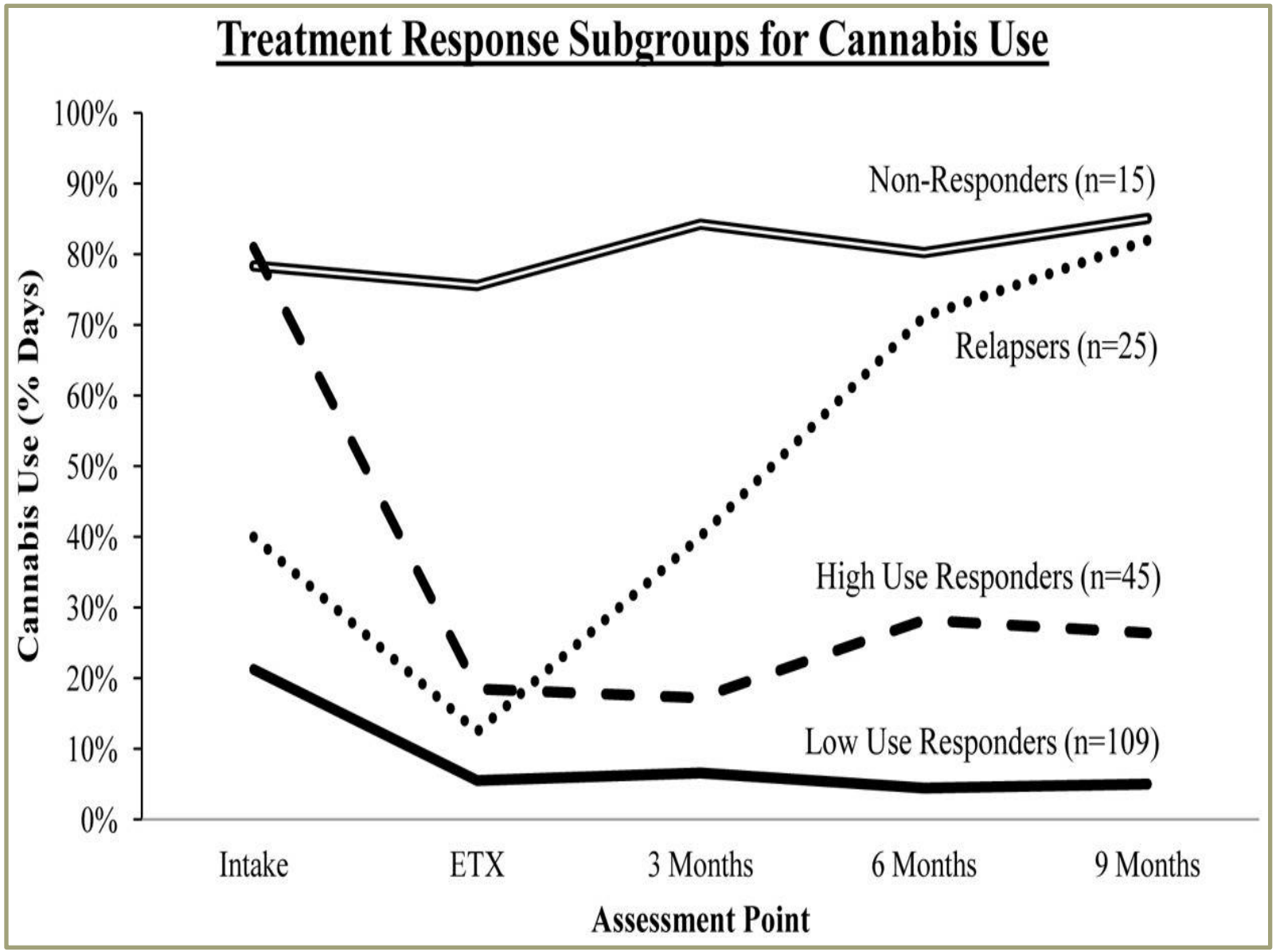
Cannabis Youth Treatment Randomized Field Experiment



● Coordinating Center:
Chestnut Health Systems, Bloomington, IL, & Chicago, IL
University of Miami, Miami, FL
University of Conn. Health Center, Farmington, CT

■ Sites:
U Conn. Health Center, Farmington, CT
Operation PAR, St. Petersburg, FL
Chestnut Health Systems, IL
Children's Hosp. of Philadelphia, PA

★ Sponsored by: Center for Substance Abuse Treatment (CSAT), Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services



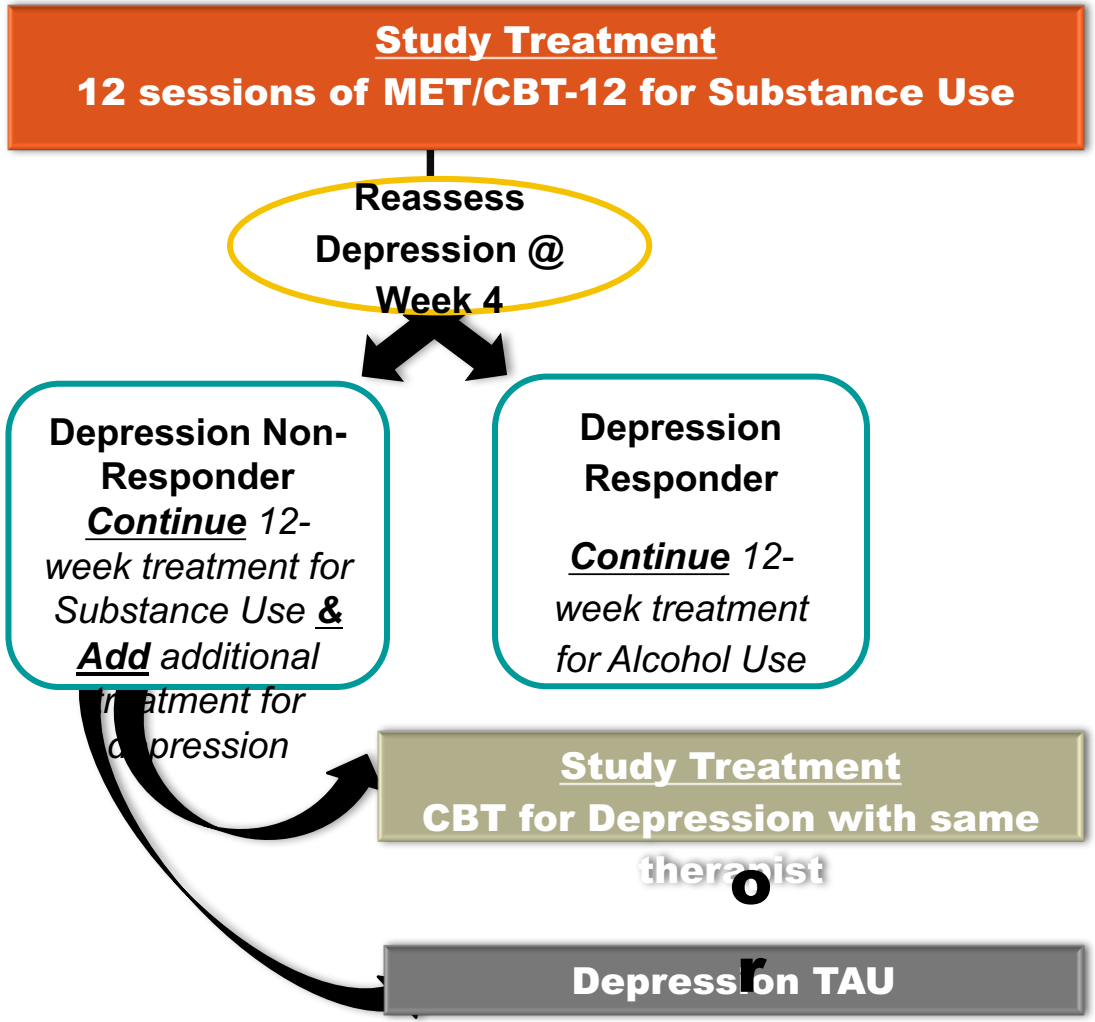
Four treatment response subgroups for percent days cannabis use across five assessment points

Figure 1. Adapted from "Identifying Treatment Response Subgroups for Adolescent Cannabis Use", by S. F. Babbin et al, 2016, Addictive Behaviors, 59, 75.

RAPID RESPONSE-II

- Approx. 40% of youth 13-21 Y.O. were Rapid Responders after 4 sessions of SUD oriented CBT
- Response: a 50% reduction in the CDRS raw score (Poznanski & Mokros, 1996) plus CGI rating of ≥ much improved (CGI-I; Guy 1976)
- Remission: the absence of significant depression symptoms by a score of ≤28 on the CDRS
- Recovery: remission lasting 2 months

Adaptive Treatment Design: Treatment for Teens with Alcohol or marijuana Abuse & Depression (T-TAAD)



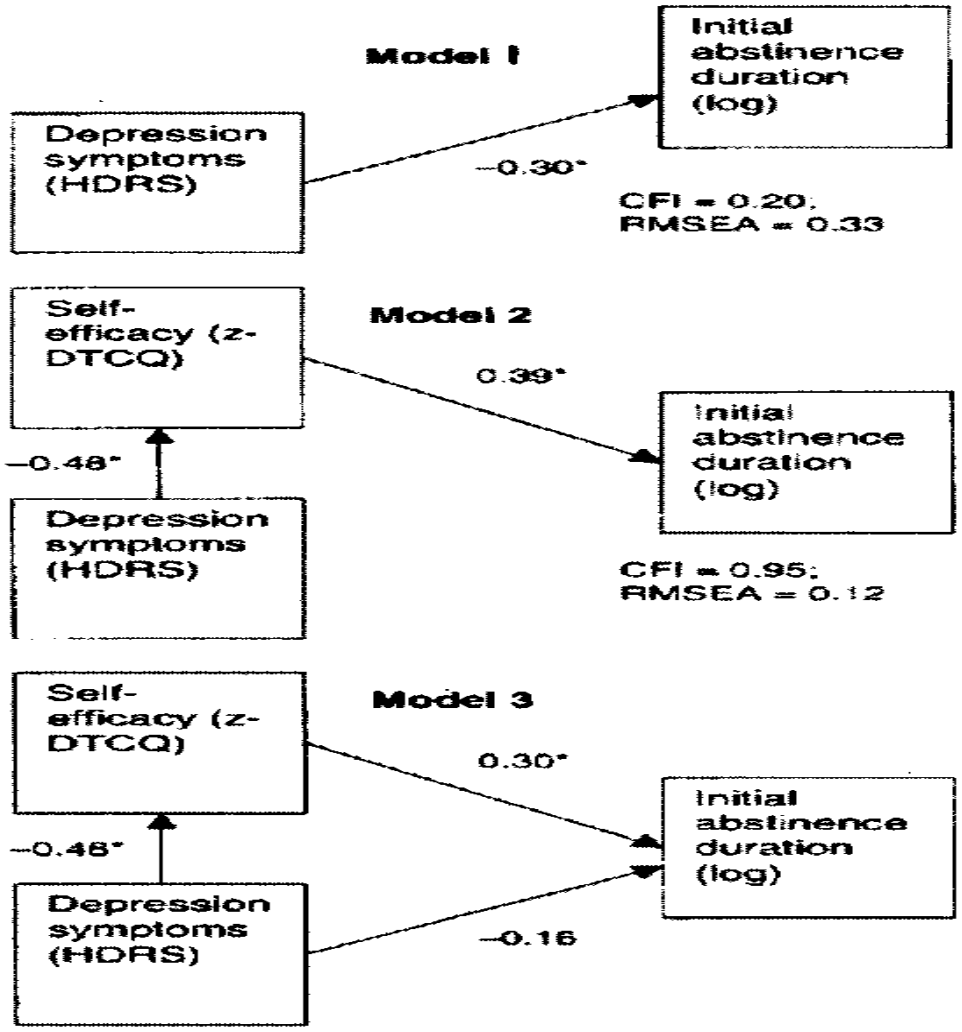
PROPOSED MECHANISMS FOR SYMPTOMS CHANGE

Dysfunctional reward processing might be a feature of comorbid depression and SUD that is responsive to Tx

Boger, et al. (J. Psychother. Integ., 2014)

Self-efficacy as a possible mediator between depression and substance use relapse

Ramo, DE et al. (Subst. Use Misuse 2010)



* $p < .05$

Figure 1. Three path models of the relationships between depression symptoms, drug-taking self-efficacy, and length of abstinence in adolescents.

RAMO DE (2010)

THE END

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