

# The Impact of Co-Occurring Mental Health Problems on Referral to and Initiation of Treatment Among Youth Under Probation Supervision

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Presented at the Lisbon Addictions Conference

Lisbon, Portugal

November 25, 2022

# Background

- 722,600 delinquency cases in juvenile court (Hockenberry, 2022)
  - 75% of justice-involved youth on community supervision (Hockenberry & Puzzanchera, 2019)
- Justice-involved youth suffer from higher rates of mental health (MH) and substance use disorders (SUD) than the general population (Wasserman et al., 2010)
  - 60% of adolescents with a SUD had a comorbid mental health disorder (Armstrong & Costello, 2002)
- Linkages to proper treatment services are severely lacking (Wasserman et al., 2021)
  - Particularly for those on community supervision (Belenko et al., 2017)

# Literature Review

- Youth with co-occurring disorders (CODs) are treated differently by the courts (Walker et al., 2022)
  - Youth with SUD treated more punitively than those with CODs and more likely to receive out-of-home placement
  - May affect treatment referrals
- Treatment initiation varies by youth demographics and supervision levels (Belenko et al., 2022; DeLucca et al., 2022; Wasserman et al., 2021)

# Literature Review (cont'd)

- Lack of comorbid disorder treatment capacity
  - Only 18% of SU & 9% of MH programs capable of dual diagnosis (McGovern et al., 2014)
- Youth with CODs have worse treatment outcomes across both MH and SU programs (Morisano et al., 2014; Tomlinson et al., 2004)
- Access to treatment varies by location
  - Rural vs. Urban (Anderson & Gittler, 2005)

# Juvenile Justice- Translational Research on Interventions for Adolescents in the Legal System (JJ-TRIALS)

## Overview

- 5-year, implementation science initiative
- Launched by National Institute on Drug Abuse (NIDA) in July 2013
- 6 Research Centers and 1 Coordinating Center
- Juvenile Justice Partners representing 7 states

(Knight et al., 2016)

## Primary Goals

- Provide insight into substance use-related services within the US juvenile justice system (**National Survey**)
- Improve delivery of Evidence-Based Practices addressing **prevention** and **treatment** services targeting **substance use** and **HIV risk behaviors** in community-based juvenile justice settings (**2 Study Protocols**)
- Advance implementation science (**Methods/Publications**)

# JJ-TRIALS Rationale

## Problem

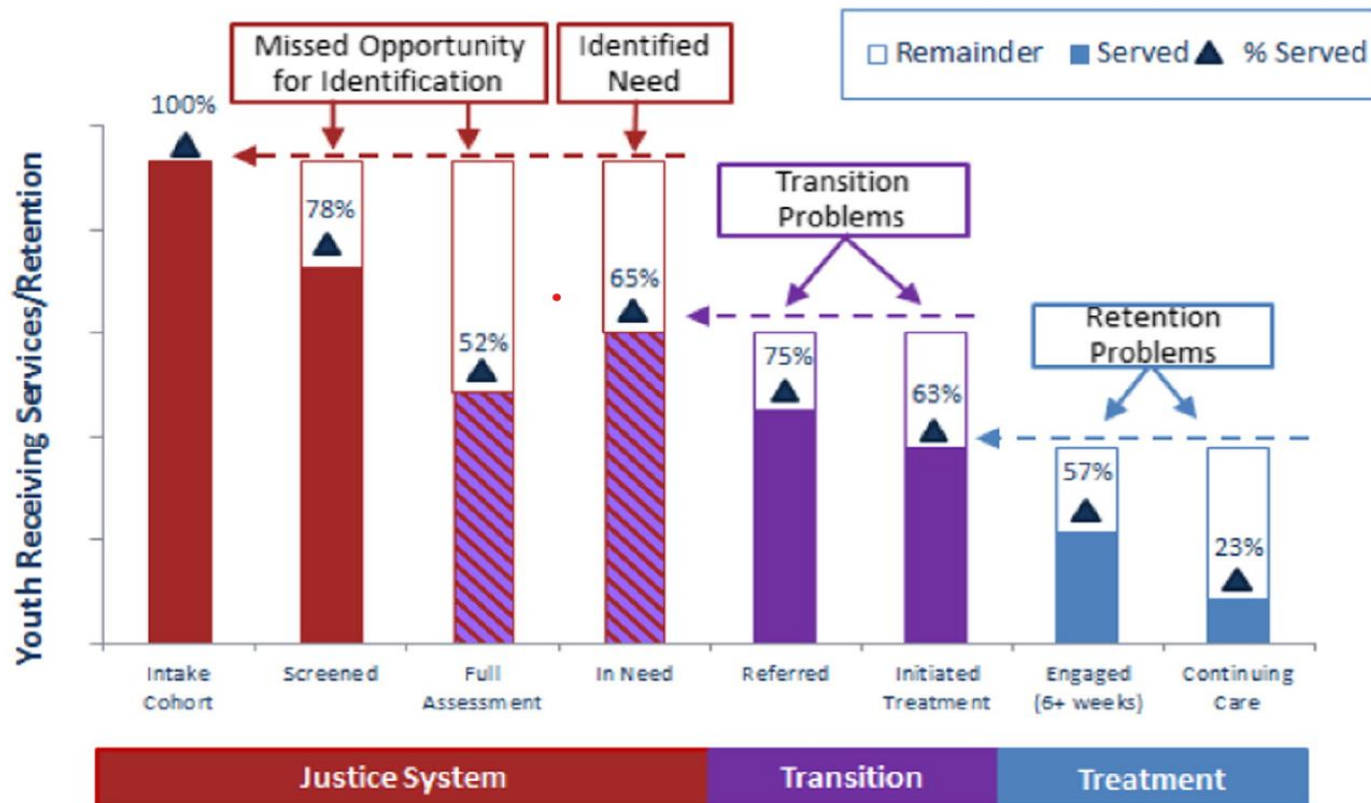
- High rates of substance use among justice involved youth
- Few youth (<1 in 3) receive treatment
- Many system level barriers to improving treatment:
  - Fragmented, uncoordinated juvenile justice and substance abuse treatment systems
  - Low uptake of evidence-based screening, assessment, and treatment interventions

## Strategies offered by JJ-TRIALS

- Education about existing evidence-based practices (EBP)
- Assistance in implementing EBP and pursuing systems change efforts. Key elements include:
  - Interagency Change Teams
  - Data Driven Decision Making
  - External Facilitation (experimental condition)
- **Goal:** Reduce unmet substance use service needs for justice-involved youth

# Behavioral Health Services Cascade

**Behavioral Health Services Cascade: Hypothetical Case**



Source: Belenko et al., 2017

# Current Study

- Lack of research on JJ-involved youth with CODs and the treatment process
- Research questions:
  - How do co-occurring disorders among youth on probation affect referral to and initiation of treatment?
  - How much variation in referrals and initiations to treatment are due to site-level differences?



# Data

- Youth from 14 counties in 3 states with valid administrative data on MH indicators (internalizing or externalizing symptoms)
  - Subset of youth in need of treatment
  - Subset of youth referred to treatment
- Outcome variables: Referral to & Initiation of treatment
  - Youth referrals (n = 9,427)
  - Youth initiations (n = 2,470)

# Outcome Variables

Variable	n	%
<b>Referral by Need (n = 9,427)</b>		
Not referred	7,209	76.5
Referred	2,218	23.5
<b>Referred and initiated (n = 2,470)</b>		
Did not initiate	636	25.7
Initiated	1,834	74.3

# Descriptive Statistics: Youth Demographics

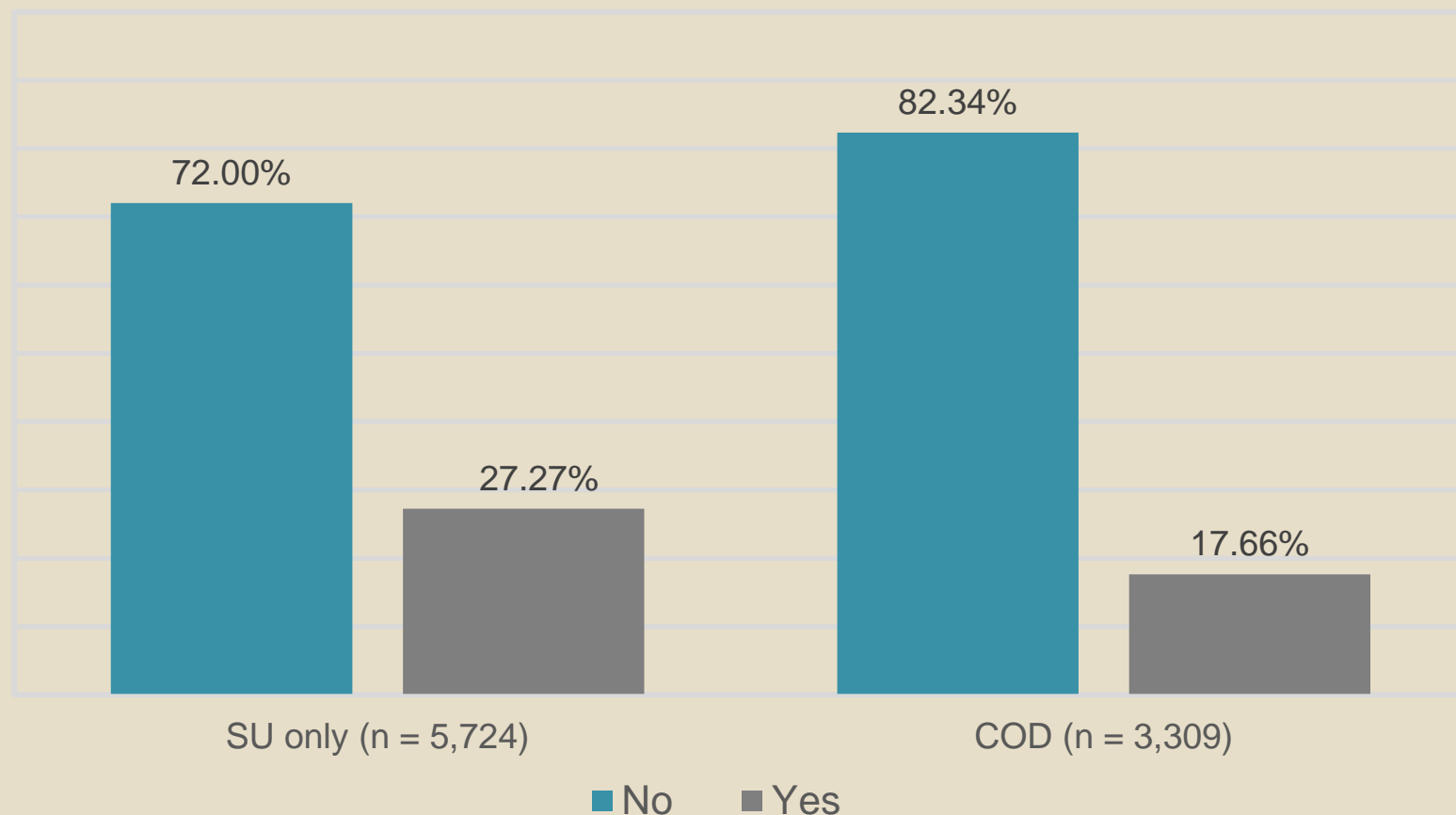
	Referral %	Initiation %
<b>Race</b>		
Black non-Hispanic	37.7	28.3
All others	62.3	71.7
<b>Ethnicity</b>		
Non-Hispanic	69.3	70.1
Hispanic	30.7	29.9
<b>Gender</b>		
Male	81.4	82.7
Female	18.6	17.3
<b>Age</b>		
15 and younger	52.3	56.1
16 and older	47.7	43.9

# Descriptive Statistics: Agency-Level Characteristics

	Referral %	Initiation %
<b>Co-occurring Disorder</b>		
SU only	63.4	71.8
SU & MH	36.6	28.2
<b>Detention Status</b>		
Yes	49.4	53.9
No	50.6	46.1
<b>Supervision Level</b>		
High	62.5	82.2
Low	37.5	17.8
<b>AOD Charge</b>		
Yes	25.9	26.1
No	74.1	73.9
<b>Experimental Condition</b>		
Core	40.6	57.7
Enhanced	59.3	42.3

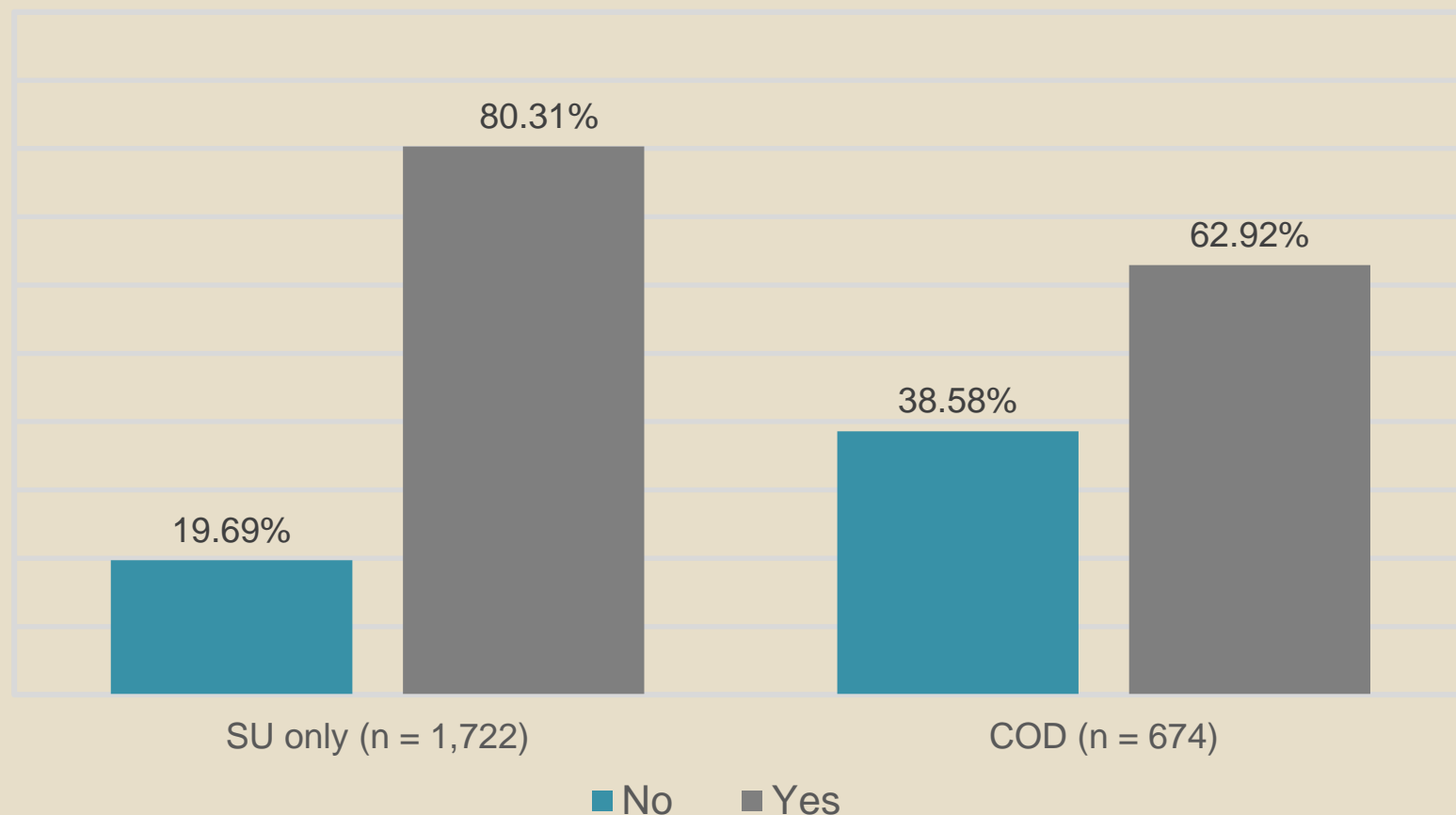
# Descriptive Statistics: COD and Referral

Referral by COD status



# Descriptive Statistics: COD and Initiation

Initiation by COD status



# Referrals by SU/COD and Site

Site	SU Only Referrals	COD Referrals
Site 1 (n = 89)	54%	83%
Site 2 (n = 680)	24%	46%
Site 3 (n = 287)	7%	15%
Site 4 (n = 315)	30%	86%
Site 5 (n = 119)	45%	35%
Site 6 (n = 69)	14%	27%
Site 7 (n = 780)	54%	45%
Site 8 (n = 826)	14%	10%
Site 9 (n = 1,177)	25%	24%
Site 10 (n = 224)	40%	32%
Site 11 (n = 1,853)	5%	4%
Site 12 (n = 1,160)	56%	52%
Site 13 (n = 812)	10%	13%
Site 14 (n = 635)	21%	18%

# Initiation by SU/COD and Site

Site	SU Only Initiation	COD Initiation
Site 1 (n = 58)	76%	71%
Site 2 (n = 224)	23%	38%
Site 3 (n = 31)	94%	92%
Site 4 (n = 159)	42%	22%
Site 5 (n = 60)	81%	86%
Site 6 (n = 15)	42%	100%
Site 7 (n = 354)	53%	47%
Site 8 (n = 112)	97%	95%
Site 9 (n = 240)	98%	93%
Site 10 (n = 87)	98%	100%
Site 11 (n = 100)	100%	100%
Site 12 (n = 648)	100%	100%
Site 13 (n = 107)	54%	55%
Site 14 (n = 121)	67%	42%



# Analysis Plan

- Preliminary analyses
  - Descriptives
- Multi-level modeling
  - ANOVA – mixed effects logistic regression (Models 1 & 4)
  - ANCOVA – analysis of covariance (Models 2, 3, 5, & 6)
    - Referral models (1-3) include only those in need and initiation models (4-6) include those referred
  - Postestimation – Bayesian information criteria (BIC)

# Referral Models

	Model 1	Model 2	Model 3
Co-occurring	-	1.14	1.18*
Gender	-	-	1.20*
Age	-	-	0.94
Race	-	-	0.76**
Ethnicity	-	-	1.02
Experimental Condition	-	-	0.69
Supervision Level	-	-	4.70**
Detention Status	-	-	1.39**
AOD Charge	-	-	1.50**
Site-level variance	0.85	0.89	0.83
Constant	0.32**	0.31**	0.10**
BIC	8957.98	8582.85	8125.12
Wald Chi-Square	-	3.82	461.65**
LR Test	1346.68**	-	-
ICC	0.21	-	-

Note. The coefficients are odds ratio. \*p <0.05, \*\*p<0.01

# Initiation Models

	Model 4	Model 5	Model 6
Co-occurring	-	0.93	0.94
Gender	-	-	0.99
Age	-	-	0.97
Race	-	-	0.75
Ethnicity	-	-	0.88
Experimental Condition	-	-	0.90
Supervision Level	-	-	1.72**
Detention Status	-	-	1.03
AOD Charge	-	-	1.13
Site-level variance	6.35	6.29	6.23
Constant	7.77**	7.98**	6.21*
BIC	1768.37	1672.40	1717.37
Wald Chi-Square	-	0.32	17.24*
LR Test	1065.11**	-	-
ICC	0.66		

Note. The coefficients are odds ratio. \*p < 0.05, \*\*p < 0.01

# Findings: Referral

- Youth with CODs had 18% greater odds of being referred to treatment compared to SU-only youth ( $p < .05$ )
- Referrals varied by gender, race, and AOD charge
  - Males had 20% higher odds of being referred
  - Black youth had 24% lower odds
  - Youth with AOD charge had 50% higher odds
- Supervision level and detention status positively associated with referral
  - Higher supervision increased odds by 370%
  - Detention increased odds by 39%

# Findings: Initiation

- No significant difference between SU and COD for likelihood of treatment initiation
- Higher supervision level increased odds of initiation among referred youth by 72% compared with youth on low supervision

# Discussion

- Net of other factors, youth with CODs were more likely to be referred to treatment
- No difference in initiation of treatment among referred youth with SU or CODs
  - Indicative that mental health status may increase one's odds of getting a referral but does not impact the initiation process
- About 21% of the variation in referral and 66% initiation rates reflected site factors
  - Site level factors play a role in the treatment process

# Discussion

- Referral odds varied by race and detention
  - Black youth with SU issues may be at a disadvantage in access to treatment services
  - Detention increases access to treatment (consistent with literature)
  
- Referral and Initiation odds varied by supervision level
  - Youth with lower levels of supervision need better access to treatment services

# Limitations

- Missing data for administrative records
  - Sites varied in the quality and completeness of youth records
  - Some sites have smaller sample sizes than others
- Selection effects – not using data from all sites in JJ-TRIALS
  - Not a random sample of JJ agencies
- Lack of standardized assessment of MH
- Lack of referral/program details



# Future Directions

- Investigate site-level differences that may impact youth access to and quality of treatment
  - Rural vs. Urban settings
  - Site variations in access to treatment by SU/COD status
- Need to understand local treatment infrastructure, limitations, and availability of existing services
- Examine MH status by charge type
  - Do certain offenses limit access to treatment programs?
- Qualitative inquiry into inter-agency collaboration among probation and treatment staff
  - Quality of treatment programs
  - Treatment of youth with SU vs. CODs

# Acknowledgement

The data for this study were collected as part of the JJ-TRIALS cooperative agreement, **funded by the National Institute on Drug Abuse (NIDA), part of the National Institutes of Health (NIH)**. The authors gratefully acknowledge the collaborative contributions of NIDA and support from the following grant awards:

**Chestnut Health Systems (U01DA03622)**  
**Columbia University (U01DA036226)**  
**Emory University (U01DA036233)**  
**Mississippi State University (U01DA036176)**  
**Temple University (U01DA036225)**  
**Texas Christian University (U01DA036224)**  
**University of Kentucky (U01DA036158)**

The contents of this presentation are solely the responsibility of the authors and do not necessarily represent the official views of the NIDA, NIH, or the participating universities or juvenile justice systems.

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Thank you!  
Obrigado!

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