



University of Colorado  
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# Impact of Co-occurring Substance Use Disorder on Inpatient Adolescent Psychiatry Outcomes

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## BACKGROUND

- Co-occurring substance use disorders (SUD) in adolescents with mental health disorders are increasingly recognized.<sup>1,2</sup>
- Dual diagnosis is associated with a wide variety of poor SUD and mental health outcomes.<sup>1,3-5</sup>
- Prior studies have demonstrated the efficacy of outpatient or residential treatment modalities for individuals with dual diagnoses. No prior studies have examined whether SUD is associated with negative inpatient psychiatric outcomes.<sup>3-5</sup>
- We determine the prevalence of co-occurring SUD and mental health disorders amongst adolescents admitted to an inpatient psychiatric unit and whether co-occurring SUD is associated with difference in length of stay (LOS) or rate of 6-month readmission.

## METHODS

**STUDY DESIGN:** Retrospective cohort study using electronic health record (EHR) data extracted from the adolescent inpatient psychiatry unit at an urban county hospital.

**DATA EXTRACTION:** All adolescent inpatient psychiatry admissions from 04/01/2016 through 11/19/2021 for children aged 14-21 with length of stay (LOS) less than 14 days. Presence of a co-occurring SUD determined by ICD-10 substance use diagnosis on the encounter (F10.XXX - F19.XXX), across all diagnosis types, not limited to primary encounter or billing diagnoses; F17.XXX (Nicotine Dependence) was not included in the SUD group.

**OUTCOME VARIABLES:** LOS and 6-month readmission rates for index admission, and, in cases of multiple admissions, for each encounter. Demographic data were also analyzed.

**STATISTICS:** LOS data were analyzed using two-tailed T test and 6-month readmission data with a  $X^2$  test of independence. Demographic data were analyzed using  $X^2$  test of independence.

**DISCLOSURES:** The authors have no disclosures to report.

## RESULTS

### STUDY POPULATION

- 2,423 adolescents aged 14-21 were admitted to our adolescent psychiatric unit during the study period for 2,762 unique encounters.
- 34.8% of adolescents admitted to our inpatient psychiatry unit had a co-occurring SUD.
- Mean age:  $15.6 \pm 1.3$  years old.
- Racial demographics: 87.6% white, 9.2% black, 2.1% Asian, 1.1% American Indian/Alaska Native, Native Hawaiian, other Pacific Islander. No statistically significant differences in racial demographics by SUD group ( $X^2=5.51$ ,  $p=0.24$ ).
- Ethnic demographics: Hispanic adolescents were overrepresented in the SUD group (29.8% with SUD vs. 23.6% without,  $X^2(2)=10.53$ ,  $p=0.005$ ).
- 17% of encounters were missing racial data and 7% of encounters were missing ethnicity data.
- Gender: 63.0% female and 37.0% male. Males were overrepresented in the SUD group ( $X^2=38.66$ ,  $p<.001$ ). However, the group of adolescents with co-occurring SUD was still predominantly female (54%).

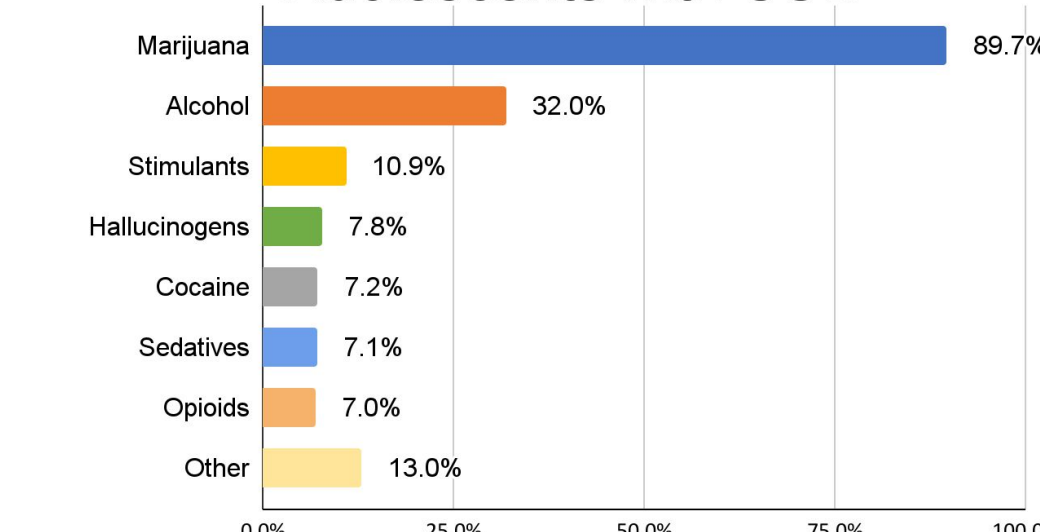
### PRIMARY OUTCOMES

- No significant differences in primary outcomes of 6-month readmission rate and hospital LOS between adolescents with and without SUD.

	Adolescents with SUD	Adolescents without SUD	All encounters
Length of stay (days)	$5.51 \pm 2.99$	$5.45 \pm 2.82$	$5.47 \pm 2.88$

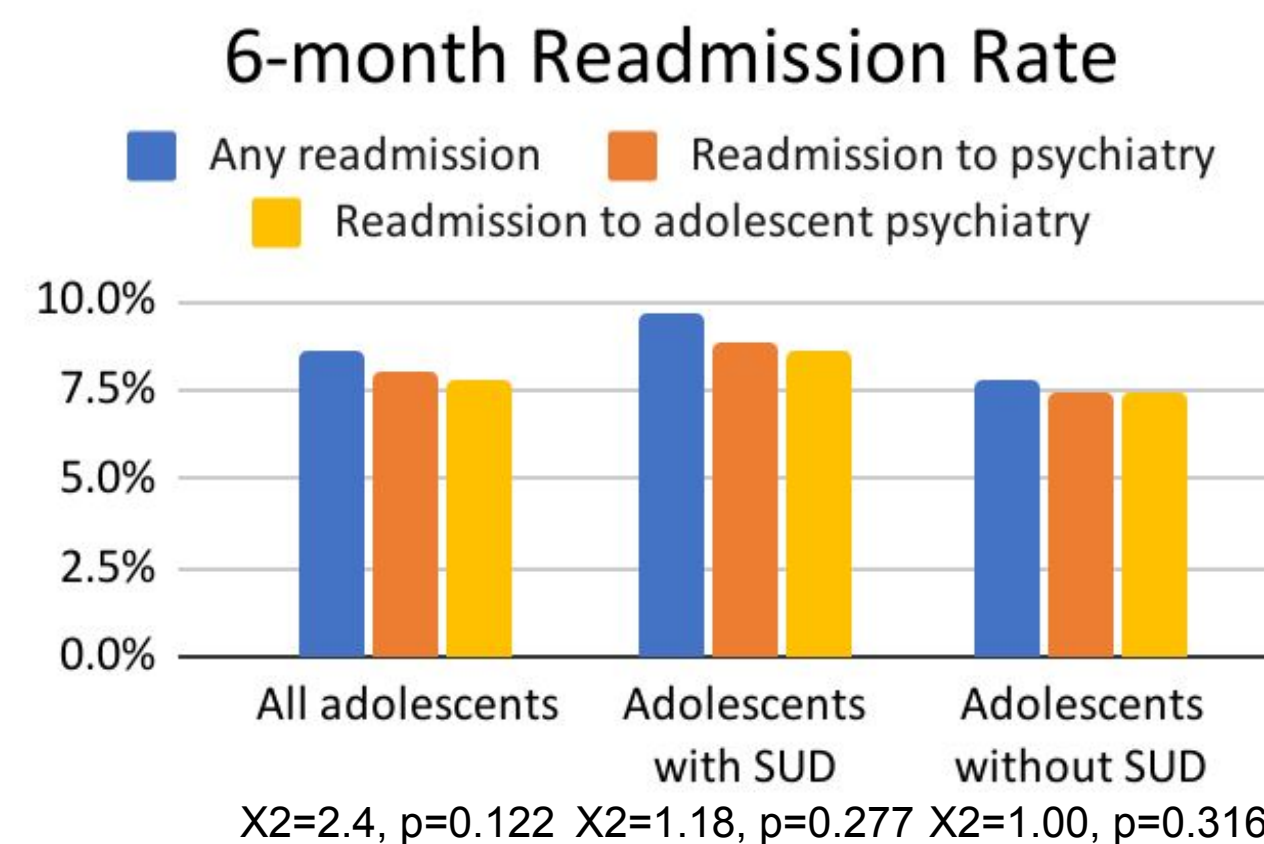
Two-tailed t test,  $p = 0.627$

### SUD Diagnosis Breakdown Among Adolescents with SUD



### SUD DIAGNOSIS BREAKDOWN

- The most common substances implicated in SUD diagnoses were marijuana and alcohol. Stimulants, hallucinogens, cocaine and opioids were also highly represented.
- 53% of adolescents carried  $\geq 2$  SUD diagnoses.
- 50 adolescents were diagnosed with tobacco use disorder exclusively.



## CONCLUSIONS

### Inpatient psychiatric hospitalization presents an essential opportunity for diagnosis and treatment referral for all adolescents with SUD.

- **Co-occurring SUD prevalence is high** in our inpatient adolescent psychiatry population, accounting for over one third of the total patient population.
- **Inpatient psychiatric hospitalization could facilitate improved access to SUD treatment for female patients in particular**, who are underrepresented in outpatient SUD treatment programs.
- **Patients would benefit from an integrated treatment approach in the inpatient psychiatric setting**, incorporating withdrawal management and detoxification services as well as non-pharmacologic treatment modalities and substance-specific medication for addiction treatment.
- Co-occurring SUD was not associated with increased LOS or 6-month readmission rate.
- Limitations:
  - Only one study site.
  - Did not follow primary outcomes beyond 6 months.
  - Did not examine other negative outcomes, including ED visits, healthcare utilization, suicidal behaviors, mortality.

## REFERENCES

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