

## Introduction

- National Institute on Drug Abuse (NIDA) data showed that abuse of tobacco, alcohol, and illicit drugs costs United States more than **\$740 billion annually**.
- According to the 2015 New York State Department of Health data, approximately **10% of New Yorkers** have been reported to use illicit drugs; **12 % of total drug related hospitalization** were occurred in patients between 15-24 years of age ; around **4235 deaths** were attributed to drug overdose in age group of 15-24 and,.
- In the borough of **Bronx in 2012, more than 11,000** unintentional drug poisoning cases were recorded.
- Use of illicit drugs during adolescent age can lead to drug dependence in adulthood; higher risk of depression, anxiety disorder, PTSD; multiple psychiatric admissions; impulsive and suicidal behaviors, and vehicular fatalities. The most common drug use in adolescents is marijuana, which can lead to poor academic performance and unemployment.
- Some subpopulations like youth with developmental disabilities, LGBTQ minority group, homeless or foster care kids, and transitional age youth with chronic medical illnesses are higher risk of developing substance use disorder, compared to the general population.
- With recent advancement of technology and use of Neuroimaging studies, alterations in amygdala, hippocampus, and cerebellar regions is seen adolescents using marijuana.

## Objective

- The aim of this study was to understand and identify factors associated with drug use among adolescents who were admitted to an inpatient psychiatric unit at Bronx Lebanon Hospital (BLH) in the South Bronx.

## Method

- This is an IRB approved, retrospective chart review of 300 adolescents (age 13-18 years), who were consecutively admitted to inpatient psychiatric unit in a community hospital in the South Bronx during 2011 and 2015.
- Mean (SD) was calculated for quantitative variables and frequencies (%) for categorical variables. Then, backward logistic regression analysis was run to identify predictors of positive screening test for drugs among adolescents at the Bronx-Lebanon Hospital.
- Age, gender, number of diagnoses, medical diagnosis, history of abuse, legal status, history of seclusions, restraints, intramuscular medications, suicide history, living with biological parents, family history of mental illness, legal history, and substance use were entered as predictors in the regression model.

## Results

- Urine sample was collected in 259 patients (86.3%). Among those, 178 patients (59.3%) had negative urine toxicology results (Table 1)
- Most common substance use was found to be cannabinoids ( 42 patients, 14%) followed by Amphetamines (26 patients, 8.7%)
- The mean age of adolescents admitted at the hospital was 14.10 years (3.50). They were more often to be males (51%) and Hispanics (59%).
- A higher proportion of these adolescents 79% were living with their biological parents, 18% foster parents, and 3% in group homes.
- Positive drug screening test among adolescents was associated with increasing age, increasing number of diagnoses, patient's legal history, use of intramuscular medications, no suicide history, history of abuse and having a mood disorder (Table 2)

**Table 1- Frequency of drug use among adolescents admitted in BLH (N= 300)**

Drug	Frequency (n)	Percent (%)
Benzodiazepine	4	1.3
Cannabinoids	42	14.0
Cocaine	3	1.0
Methadone	2	0.7
PCP	4	1.3
Amphetamines	26	8.7
NC	41	13.7
None	178	59.3

**Table 2. Predictors of drug use among adolescent at BLH(N= 300) using backward regression Model. Cox & Snell R<sup>2</sup> = 13.6%, Nagelkerke R<sup>2</sup> = 18.4%**

Variable	B	P Value	Odds Ratio	95% CI for odds ration (lower-Upper)
Age	0.07	0.075	1.07	0.99 - 1.16
Diagnosis Number	0.51	0.005	1.67	1.17 - 2.38
Patient's legal status	0.89	0.020	2.44	1.15 - 5.15
Intramuscular medications	0.83	0.003	2.29	1.34 - 3.94
Suicide History	-0.69	0.025	0.50	0.27 - 0.92
Any History of abuse	0.55	0.072	1.73	0.95 - 3.15
Mood Disorder	0.62	0.025	1.86	1.08 - 3.21
Constant	-3.30	0.000	0.04	

## Discussion

- Our study results showed that age, psychiatric diagnosis, patient's legal involvement, history of physical and or sexual abuse, and diagnosis of mood disorder were independent predictors of substance use in adolescents admitted to Bronx Lebanon Hospital.
- Our study results are in line with the available literature showing mental health disorder commonly co-occur with substance use disorder. For instance, cannabis use was found to be associated with 1.7 times greater risk of developing major depressive disorder.
- Cannabis use was also associated with more life time suicide in individuals with bipolar disorder; heavy cannabis use during adolescents also carried high risk of developing schizophrenia
- PTSD and histories of physical and sexual abuse were also observed to be more common in youth with substance use disorder, as compared to general population.
- Transitional age youth who are being involved in juvenile justice system were also noticed to at increased risk of substance use, and may have been entered the legal system because of their persistent substance use.

## Conclusions

- Adolescents are at high risk of developing substance use disorder which may be related to their unique and critical neurological and biological differences from later adult years.
- A system of care based approach is vital for early identification of substance use disorder and also providing culturally competent and strength based approach to transitional age youth struggling with substance use.

## References

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