
Substance Use in Adolescents: Psychiatric Comorbidity



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ECHO 30 July 2020

Goals and objectives

- Goal: to define the comorbidity of substance use in adolescents
- Objectives:
 1. Participants should recognize conditions most often associated with SU
 2. Participants will hear about effects of ADHD and ADHD treatment on subsequent SU, and treatment of ADHD with comorbid SU disorder



Current mental disorders in adolescents with substance abuse

	Substance abuse	No abuse	Odds ratio
Disruptive disorders	25%	9%	5.6
Anxiety disorder	16%	8%	2.2
Mood disorder	49%	18%	4.5
		Kandel et al	JAACAP 1999; 38: 693



Mental disorders and subsequent substance abuse: NCS

- General prevalence in adolescents: alcohol abuse-6.5%, drug abuse-8.9%
- Prior mental disorder: alcohol abuse-10.3%, drug abuse-14.9%

Conway et al. JAACAP 2016; 55: 280-288



Mental disorders and subsequent substance abuse: NCS

	Alcohol Abuse	Drug Abuse
ADHD/ODD/CD	15.6%	24.0%
Anxiety disorder	17.3%	20.0%
Mood disorder	13.9%	19.3%



Mental disorders and subsequent substance abuse: meta-analysis JAACAP

	alcohol	drugs	nicotine
ADHD	2.15	1.52	2.52
ODD/CD	1.73	4.24	4.22
Anxiety	0.85	1.60	1.23
Depression	1.10		2.56



Explanations for the comorbidity

- Genetic overlap
- Imbalance between inhibitory control network and motivation-reward processing network
- Self medication for behavioral or emotional problems
- Environmental problems



ADHD and substance abuse

- What is the risk of substance abuse in children with ADHD?
- Which children with ADHD are at risk?
- Does the use of stimulants increase with risk of substance abuse?
- If an adolescent has ADHD and substance abuse, can treatment include stimulants?



MTA 6-year follow up (mean age 15 years)

	ADHD	controls
Alcohol	23%	16%
Marijuana	20%	8%
Tobacco	14%	4%



Comorbidity of Adult ADHD

	Adults with ADHD	Adults, no ADHD	Odds Ratio
Major Depressive disorder	18.6% (SE 4.2)	7.8% (SE 0.4)	2.7
Bipolar Disorder	19.4% (SE 3.8)	3.1% (SE 0.3)	7.4
Any Anxiety Disorder	47.1% (SE 5.0)	19.5% (SE 0.7)	3.7
Substance Use Disorder	15.2% (SE 4.8)	5.6% (SE 0.6)	3.0
Intermittent Explosive Disorder	19.6% (SE 3.8)	6.1% (SE 0.5)	3.7



ADHD and ODD/Conduct Disorder

- Core features: impulsivity and sensation seeking
- Associated with earlier age of onset, boys more than girls, family history of antisocial behavior
- ADHD + ODD/CD more impulsive than inattentive, more severe symptoms
- Increased risk of persistence of symptoms over time, substance abuse, delinquency

JAACAP 1997;36:1065-1079, JAACAP 2001;40:137-146,

JAACAP 2003;42:193-200.



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ADHD, stimulants, and substance abuse

- Stimulants neither protect against SUD nor increases risk Humphreys, Eng, and Lee JAMA Psychiatry 2013
- Increased SU if stimulants started later, after 10 years, or for shorter duration McCabe et al. JAACAP 2016
- While on ADHD medication, 35% lower odds of SU in men and 31% lower in women Quinn AJP 2017



Treatment of ADHD and Substance Abuse

- Misuse and diversion: education and safety measures
- ADHD plus substance abuse requires combined therapy. Stimulants alone improve ADHD symptoms with no effect on substance abuse
- Abuse potential high with short acting agents, low with methylphenidate ER (Concerta), dexamethylphenidate XR (Focalin XR), lisdexamfetamine (Vyvanse) Harstad et al. Pediatrics 2014



Stimulant misuse

- High school seniors: 16.7% reported nonmedical use of stimulants and 43% of adolescents with a prescription for stimulants misused the medication McCabe et al. JAACAP 2017
- In adults, 2% misuse stimulants Compton AJP 2018



Summary

- Substance use is frequently comorbid with other psychiatric disorders
- Psychiatric illness is a risk factor for substance abuse
- ADHD is a risk factor for SU but stimulant use does not increase the risk. Stimulants are a reasonable choice for medical treatment ADHD plus SU, but use caution

