Trends in Substance Use Disorders (SUDs) in Adolescents

Shonali Saha, MD
Adolescent Medicine Fellow
Johns Hopkins School of Medicine
LSU Health Sciences Center
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Disclosures

• I have no financial disclosures or conflicts of interest
Objectives

• Current trends and rates of adolescent drug use
• Common cases of adolescents with SUDs
• Developmentally specific aspects of adolescent addiction
• Screening and evaluating adolescents for SUDs
• Treatment options
• Advocacy for adolescents with SUDs
CURRENT TRENDS
Why do youth use substances? How do they make their choices?

- Psychoactive potential
- Reports of its supposed benefits
- Perceived risk of its use
- Acceptability to peer group
- Accessibility/Availability

Source: http://www.casacolumbia.org
Monitoring the Future

• University of Michigan
• N= Approximately 50,000
• Annual survey of high school students across the United States
• 12th graders since 1975
• 8th and 10th graders since 1991
Teen Alcohol Use (by gender)

Source: 2009 Monitoring the Future Study, the University of Michigan
Binge Drinking in Teens

Source: 2013 Monitoring the Future Study, the University of Michigan
Trends in Annual Prevalence of an Illicit Drug Use Index
Grades 8, 10, and 12

Source: 2013 Monitoring the Future Study, the University of Michigan
### Past-Year Use of Illicit Drugs and Pharmaceuticals among 12th Graders

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>Use Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marijuana/Hashish</td>
<td>36.4%</td>
</tr>
<tr>
<td>Synthetic Marijuana</td>
<td>11.3%</td>
</tr>
<tr>
<td>Adderall</td>
<td>7.6%</td>
</tr>
<tr>
<td>Vicodin</td>
<td>7.5%</td>
</tr>
<tr>
<td>Cough Medicine</td>
<td>5.6%</td>
</tr>
<tr>
<td>Tranquilizers</td>
<td>5.3%</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>4.8%</td>
</tr>
<tr>
<td>Sedatives*</td>
<td>4.5%</td>
</tr>
<tr>
<td>Salvia</td>
<td>4.4%</td>
</tr>
<tr>
<td>OxyContin</td>
<td>4.3%</td>
</tr>
<tr>
<td>MDMA (Ecstasy)</td>
<td>3.8%</td>
</tr>
<tr>
<td>Inhalants</td>
<td>2.9%</td>
</tr>
<tr>
<td>Cocaine (any form)</td>
<td>2.7%</td>
</tr>
<tr>
<td>Ritalin</td>
<td>2.6%</td>
</tr>
</tbody>
</table>

**Legend:**
- **Blue** Illicit Drugs
- **Orange** Pharmaceutical

**Source:** University of Michigan, 2012 Monitoring the Future Study
Adolescent Alcohol Use in Louisiana as compared to US (2011)

<table>
<thead>
<tr>
<th>Alcohol related behavior in last 30 days</th>
<th>Percent reported by 9-12 graders in Louisiana</th>
<th>Percent reported by 9-12 graders in United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drank alcohol</td>
<td>44%</td>
<td>39%</td>
</tr>
<tr>
<td>Engaged in binge drinking* (&gt;5 drinks in one sitting)</td>
<td>23%</td>
<td>22%</td>
</tr>
<tr>
<td>Drove a car while under the influence of alcohol</td>
<td>12%</td>
<td>8%</td>
</tr>
<tr>
<td>Driven by a person who was intoxicated</td>
<td>32%</td>
<td>24%</td>
</tr>
</tbody>
</table>

Source: hhs.gov/oah
## Adolescent Substance Use in Louisiana as compared to US (2011)

<table>
<thead>
<tr>
<th>Lifetime Substance Use</th>
<th>Percent of use reported by 9-12 graders in Louisiana</th>
<th>Percent of use reported by 9-12 graders in United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Use before age 13</td>
<td>26%</td>
<td>20%</td>
</tr>
<tr>
<td>Marijuana</td>
<td>34%</td>
<td>40%</td>
</tr>
<tr>
<td>Inhalant</td>
<td>13%</td>
<td>11%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Non-medical use of pain Relievers</td>
<td>6%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Source: hhs.gov/oah
2013 Data from Maryland High School Students (N =27,507)

<table>
<thead>
<tr>
<th>Substance Use in last 30 days</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigarettes</td>
<td>12.1%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>33.0%</td>
</tr>
<tr>
<td>Marijuana</td>
<td>21.1%</td>
</tr>
<tr>
<td>Prescription drugs or other medications for non-medical reasons</td>
<td>8.5%</td>
</tr>
<tr>
<td>K2, Spice, Bath Salts, or any other substances to get high</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

- **Association between students reporting their schools have a large drug problem and easy access to drugs are and use of marijuana, prescription drugs, and K2.**
- **Majority of students underestimate risk of substance use.**

Source: Saha, S et al. (manuscript in preparation)
CASES
Case 1

13 year old M comes in for an annual physical. During routine screening, he tells you his friends have started drinking, but he has not. His father is a recovering alcoholic.

What more do you want to know about his friends? What guidance do you offer him today? How might his family history inform your counseling?
**STEP 1: ASK THE TWO AGE-SPECIFIC SCREENING QUESTIONS**
- One about friends’ drinking
- One about patient’s drinking frequency

**Does the patient drink?**

**NO**

**STEP 2: GUIDE PATIENT**
*For patients who DO NOT drink alcohol*

- Reinforce healthy choices.
  - *If friends drink:*
    - Explore your patient’s views about this.
    - Ask about his or her plans to stay alcohol free.
    - Rescreen at next visit.
  - *If friends don’t drink:*
    - Praise the choice of nondrinking friends.
    - Elicit and affirm reasons for staying alcohol free.
    - Rescreen next year.

**Screening complete for patients who do not drink**

**YES**

**STEP 2: ASSESS RISK**
*For patients who DO drink alcohol*

- Identify **Lower**, **Moderate**, or **Highest** risk level using the age-specific risk chart on page 10.
- Use what you already know about your patient, and ask more questions as needed.

**STEP 3: ADVISE AND ASSIST**

**LOWER RISK**
- Provide brief advice to stop drinking.

**MODERATE RISK**
- Provide brief advice or, if problems are present, conduct brief motivational interviewing.
- Arrange for followup, ideally within a month.

**HIGHEST RISK**
- Conduct brief motivational interviewing.
- Consider referral to treatment.
- Arrange for followup within a month.

**STEP 4: AT FOLLOWUP, CONTINUE SUPPORT**

- Ask about alcohol use and any related consequences or problems.
- Review the patient’s goal(s) related to alcohol and his or her plans to accomplish them.
- Offer support and encouragement.
- Complete a full psychosocial interview, if not done at the previous visit.

Source: www.niaaa.nih.gov/YouthGuide
Have you ever ridden in a **CAR** driven by someone (including yourself) who was “high” or had been using alcohol or drugs?

Do you ever use alcohol or drugs to **RELAX**, feel better about yourself, or fit in?

Do you ever use alcohol or drugs while you are by yourself, **ALONE**?

Do you ever **FORGET** things you did while using alcohol or drugs?

Do you family or **FRIENDS** ever tell you that you should cut down on your drinking or drug use?

Have you ever gotten into **TROUBLE** while you were using alcohol or drugs?

*Two or more yes answers on the CRAFT suggest a serious problem and a need for further assessment. © Copyright, Children’s Hospital Boston, 2001. All Rights Reserved.*
Probability of a Substance Abuse/Dependence Diagnosis Based on CRAFFT Score

Source: Knight et al, 2002.
Case 2

15 y/o M with a history of daily marijuana use, ADHD, and asthma
- Previously smoked $20 a day at last visit 2 years ago
- Recent positive urine toxicology by Probation Officer after 3 months of negative ones
- Mother concerned about ADHD medication interacting with marijuana and stopped giving it to him

What are the major concerns to address in the visit?
What testing do you want to do?
What do you tell your patient when he says, “But Doc, weed is a plant. It is natural?”
Past Month Use of Cigarettes and Marijuana among 12th Graders, 1975 to 2012

Source: The Monitoring the Future study, the University of Michigan
Marijuana Past-Year Use vs. Perceived Risk among 12th Graders

[Graph showing the trend of Marijuana Past-Year Use and Perceived Risk from 1975 to 2011.]

Source: University of Michigan, 2012 Monitoring the Future Study
Disapproval of Daily Use of Marijuana by Youth

Disapproval
% disapproving of using regularly

Source: 2013 Monitoring the Future Study, the University of Michigan
Addressing Mom’s concerns

• What do you tell his mother interactions about the ADHD medicine?
• What illicit drugs would you consider contraindicated with stimulant use?
• What do you tell her when she asks you “to screen for everything” at today’s visit?
2010 National Survey on Drug Use and Health: Association between Substance Problems and Mental Illness Severity

Source: samhsa.org
### Signs and Symptoms of Synthetic Cannabinoid Intoxication

<table>
<thead>
<tr>
<th>Psychoactive effects</th>
<th>Physical effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic cannabinoids (K2, spice)</td>
<td></td>
</tr>
<tr>
<td>Euphoria</td>
<td>Conjunctival injection</td>
</tr>
<tr>
<td>Irritability</td>
<td>Dry mouth</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Tachycardia</td>
</tr>
<tr>
<td>Aggression</td>
<td>Change in appetite</td>
</tr>
<tr>
<td>Numbness/Apathy</td>
<td>Muscle pain and weakness</td>
</tr>
<tr>
<td>Sadness</td>
<td>Rhabdomyolysis</td>
</tr>
<tr>
<td>Sedation</td>
<td>Myocardial infarction</td>
</tr>
<tr>
<td>Memory changes</td>
<td></td>
</tr>
<tr>
<td>Paranoia</td>
<td></td>
</tr>
<tr>
<td>Hallucinations</td>
<td></td>
</tr>
<tr>
<td>Psychosis</td>
<td></td>
</tr>
</tbody>
</table>

Source: Saha, S et al. (2012)
For more information:
See article in
**Contemporary Pediatrics**
October 2012
Case 3

16 y/o F new patient comes to your office with functional abdominal pain requesting refill of percocets?

• What are the key elements of her history and physical exam to evaluate for chronic pain besides a traditional work up for abdominal complaints?

• If you decide to give her narcotics for pain, what is indicated besides the prescription?
Prescription drugs

Drug overdose death rates in the US have more than tripled since 1990.\(^5\)

Source: cdc.gov
Non-Medical Prescription Opioid Use

Source: 2009 Monitoring the Future Study, the University of Michigan
Responsible Prescribing of Controlled Substances

- Treatment plans that incorporate functional goals
- Informed consent
- Prescribing agreements
- Periodic review
- Monitoring with routine urine toxicology
- Referral for patient requiring high doses
- Patient education on safe use, storage, and disposal of opioid medication
- Termination strategies for chronic opioid therapy

Source: FSMB Responsible Opioid Prescribing: A Clinician's Guide
DEVELOPMENT
AND SUBSTANCE USE
Unique Issue of Teens and Toxins
Does Development Matter?
Probability of Having 1 or More Dependence Symptom(s) as an Adult
Based on Age of First Use

Source: Dennis, et al. (2005)
Unique Issue of Teens and Toxins
Adolescents vs. Adults: Sensitivity to Alcohol Intoxication

Compared to adults, adolescents show

- Decreased dysphoria with hangover
- Decreased sedation, motor impairment with acute intoxication
- Increased social facilitation with intoxication
- Increased memory disruption
Addiction and Other Mental Illness ARE Developmental Diseases

½ psychiatric disorders
onset before age 15

¾ psychiatric disorders
onset before age 24

Age for tobacco, alcohol and cannabis dependence

% in Each Age Group to Develop First-time Dependence

Age

TOBACCO

THC

ALCOHOL
Adolescent Consequences of SUDs

What have I done to myself?
EVALUATION AND TREATMENT
Comprehensive Substance Use History

- Last use
- Age of onset
- Frequency of use
- Types of substances used
- Reasons for use (somatic and psychological benefits)
- Adverse events/consequences
- Cost of drugs
- Means of getting substances and money to pay for them
- Longest periods of abstinence
- Triggers
- Peer group
- Family support/lack of support
- Motivation to quit
Evaluation

- Outside informants
- Developmental trajectory
- Family context
  - Assets and vulnerabilities
  - Likely role in assisting (or impeding) recovery
- Peers and adolescent culture
- Personal assets and goals
- Therapeutic alliance
The sooner we intervene, The quicker they get better...

Source: Dennis, et al. (2005)
Levels of Care

- Early intervention
- Outpatient treatment
- Intensive outpatient treatment
- Residential treatment
- Medically managed intensive inpatient treatment/Hospitalization

Source: http://www.samhsa.gov
Treating SUDs in General Pediatrics

- Stay informed about the harms of drugs
- Talk candidly to youth and their parents about substances
- Conduct routine toxicology screens in PCP visits
- Screen in urgent and emergency care settings
  - see an injury -> take a detailed alcohol and drug use history
- Conduct brief interventions
- Treat or refer to specialty care

Source: http://www.casacolumbia.org
Treatment for Adolescent Substance Use

- Habilitation vs. Rehabilitation
- Outpatient vs. Inpatient
- Programmatic vs. Individualized Care
- Episodic vs. Longitudinal Care
- Treating co-morbid psychiatric conditions
- Use of medications and novel strategies

Source: Fishman, et al. (2008)
My Current Research

Adapting Mindfulness Based Relapse Prevention (MBRP) for Urban Youth
What more can physicians do?

- **Expand treatment capacity in the medical system**
- Require education and training in addiction
  *behavior change counseling and motivational interviewing*
- Advocate for government and private health care insurers to reimburse for adolescent substance use screenings, brief interventions, and treatment
- Support changing cultural norms about the acceptability of adolescent tobacco, alcohol, and other drug use

Source: http://www.casacolumbia.org
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