Substance abuse amongst high school and college students

Classroom Presentation

HERMAN KALSI
UNIVERSITY OF VERMONT
COLLEGE OF MEDICINE C/O 2016

IN COLLABORATION WITH:

DANIEL PEARSON
YOUTH HEALTH SERVICE CORPS
NORTHWESTERN CT AHEC

TRICIA HARRITY, MS
EXECUTIVE DIRECTOR
NORTHWESTERN CT AHEC
Topics of Discussion

- Introduction
- Prescription mediation abuse
  - Stimulants
  - Depressants
  - Pain medications (Opioids)
- Alcohol
- Cough and Cold Medications
- Marijuana
- 3,4-methylenedioxymethamphetamine
- Bath Salts
- Identification and Assistance
- References
Introduction

- Substance abuse among young adults is hardly a new trend

- Alarming increase in prescription drug overdoses and binge drinking
  - About 50% of full-time college students binge drink or abuse prescription drugs
    - 25% of which meet the definition of having substance abuse or a dependence
      - That is three times the rate of the general population

- Drug abuse and addiction have negative consequences
  - Individuals and Society

- Estimated overall total cost of substance abuse in US:$600 billion annually
  - Family disintegration, loss of employment, failure in school, violence, safety implications, health care costs, court fees, infrastructure repair

- Ease of access is a main contributor to drug abuse amongst college students
Stimulants
Skippy, Vitamin r, Bennies, Black beauties, Roses, Hearts, Speed, or Uppers, the Smart drug,

- Amphetamines and Methylphenidate
  - Adderall, Dexedrine, Ritalin, Concerta
  - Narcolepsy, ADHD, treatment resistant depression

- 1 in 5 college kids admit to abusing

- Chemical structures are similar to DA and NE
  - stimulants boost the effects of those chemicals

- “Academic Performance Enhancer”
  - Heightened sense of motivation, focus, concentration, alertness, attention, energy

- Do not increase learning or thinking ability!
  - Helps eliminate distractions so focus is maintained

- Side effects: hypertension, tachycardia, hyperthermia, insomnia, decreased appetite, intense anger, paranoia, seizure and stroke

- Should not be mixed with medications that contain decongestants such as OTC cold medicines → severe hypertension

- ED management should include; airway management, fluid replacement, vigorous cooling
  - Activated charcoal can be helpful
  - Avoid Beta Blockers→ unopposed alpha effects. Instead use benzodiazepines to manage initial hypertension
  - Cardiogenic pulmonary edema managed with diuretics
Depressants
Barbs, Reds, Red birds, Phennies, Tooies, Yellows, or Yellow jackets, Candy downers, Sleeping pills, or Tranks, A-minus, or Zombie pills

Three primary groups: barbiturates, benzodiazepines, and non benzodiazepine hypnotics

- Referred to as CNS depressants or tranquilizers
  - Slow down (or “depress”) the normal activity that goes on in the brain and spinal cord

- Affect GABA helps to slow down brain activity
  - Relaxed effect that is helpful to people with anxiety or sleep problems
    - Too much GABA activity, though, can be harmful

- Side effects: Slurred speech, shallow breathing, sleepiness, disorientation, lack of coordination

- Not for use with any medicine or substance that causes sleepiness
  - Prescription pain medications, OTC cold & Allergy medicines, Alcohol
    - Slowed heart rate and breathing → death

- Approximately 23,000 deaths due to prescription drug overdose in 2011
  - Over 30% of which involved benzodiazepines
    - Among young people, males are almost 3 times more likely to overdose than are females

- ED Management:
  - Barbiturates: Supportive care. No specific antidote for barbiturate toxicity. Activated Charcoal
    - Possible clinical use of intravenous lipid emulsion (ILE) as an antidote
  - Benzodiazepines: Flumazenil
Opioids

Oxycodone, Hydrocodone, Morphine, Codeine, Fentanyl, Hydromorphone, meperidine, methadone
Oxy, Percs, Happy pills, Hillbilly heroin, OC, or Vikes

- In young adults: management of severe pain. Usually after surgery

- Opioids also affect the limbic system and nucleus accumbens
  - Relaxed and Euphoric
    - Repeated abuse of opioids can lead to addiction

- Side Effects: sleepiness, confusion, nausea, constipation, respiratory depression

- Not for use with any medicine or substance that causes sleepiness
  - Depressants, OTC cold & Allergy medicines, Alcohol
    - Slowed heart rate and breathing → death

- Reported that: Crushing prescription pills to snort or inject the powder introduced them to these addictive and dangerous methods of drug taking

- Opium is derived from the poppy plant
  - OxyContin and Vicodin are made from opium
  - Morphine and codeine are two natural products of opium

- Morphine can be turned into heroin
  - This is why, when prescription opioids are abused, they can have effects that are similar to heroin

- Start out using prescription opioids → Heroin (cheaper and easier to obtain)
  - Almost 50% of youngsters who inject heroin reported abusing prescription opioids before starting
Most abused substance on college campuses is alcohol

National Institute on Alcohol Abuse and Alcoholism (NIH): Reports that four out of five college students drink alcohol
- ¾ of this population is under the legal drinking age
  - ½ of these drinkers engage in binge drinking

Contributors to abuse? Ease of access, relatively inexpensive

Why? Relax, attempt to fit it, peer pressure, to party or have fun, stress reliever, lower inhibitions, reduce anxiety or depression

Risks? Unprotected sex, sexual abuse, DUI/DWI, injuries (trips, falls, fights)

NIH: Reports 1,825 college students between the ages of 18 and 24 die each year from alcohol-related injuries
Marijuana
Weed, Pot, Bud, Grass herb, Mary jane, MJ, Reefer, Skunk, Boom, Gangster, Kif, Chronic, Ganja

- Mixture of the dried and shredded leaves, stems, seeds, and flowers of *Cannabis sativa*
  - Mixture can be green, brown, or gray

- Contains approximately 400 chemicals
  - delta-9-tetrahydrocannabinol (THC) is the main chemical
    - Responsible for effects

- Endocannabinoid system
  - THC attaches to cannabinoid receptors

- Receptor activation $\rightarrow$ DA release $\rightarrow$ effects
  - Function: pleasure, memory, thinking, concentration, sensory, time perception, coordinated movement functions

- Inhaled?
  - Near immediate onset and effects lasting up to 3 hours

- Regular user?
  - Side effects can be seen for days after use
  - Started in teenage years?
    - May impair brain development

- Additional health effects: Increase HR (20-50 bpm), respiratory tract insults, linked with depression and anxiety, suicidal thoughts among adolescents, increased risk for developing schizophrenia at an earlier age in those with family history
Cough and Cold Medications
Robotripping, Robo, Tussin, Triple c, Dex, Skittles, Candy, Velvet, Drank

- 3.1 million between 12-25 reported abusing OTC cough and cold medication to get high

- Why? No prescription needed, inexpensive, multiple forms (liquid syrup, capsule, pill, powder)

- Key players: Dextromethorphan (DXM) and Codeine
  - DXM: More commonly abused. Available OTC
    - Triaminic DM, Tylenol cold, robitussin DM, DayQuil, NyQuil
    - Also contains guaifenesin; at high doses → GI upset
  - Coricidin cough and cold (DXM without the guaifenesin)
  - NMDA Receptor Antagonist—Hallucinations and dissociation
    - Side Effects: loss of coordination, numbness, GI upset, HTN and tachycardia

  - Codeine: Much more difficult to legally obtain without a prescription
    - Promethazine-Codeine
    - Attaches to opioid receptors and at high doses can lead to euphoria
    - Side effects: Decreased heart rate and slowed respiratory rate

  - Both increase dopamine release
3,4-methylenedioxymethamphetamine (MDMA)
Ecstasy, Molly, E, Xtc, X, Adam, Hug, Beans, Clarity, Lover’s speed, Love drug

- Man-made drug
  - Energizing effects similar to the stimulants, as well as other effects similar to hallucinogens

- “Club Drug”: Popular in night clubs, raves, concerts

- Taken in tablet or capsule form
  - Can be of different colors and sometimes have cartoon-like images on them.
    - Take more than one pill at a time, called “bumping”

- “Molly” (slang for “molecular”)
  - pure crystalline powder form of MDMA (sold in capsules)

- Other problems? Much of ecstasy used today contains other drugs in addition to MDMA which themselves can be harmful
  - Caffeine, Dextromethorphan, Amphetamines, PCP, Cocaine

- Buying Capsules? Other chemicals are frequently substituted for MDMA
  - Most common: Cathinones (chemicals in bath salts)

- Effects of MDMA last 3-6 hours and are due to increases in 5-Ht, DA, NE
  - Changes in mood, aggression, sexual activity, sleep, perception of pain, vigilance

- Other effects: Increases in heart rate and blood pressure, muscle tension, teeth clenching, nausea, blurred vision, hyperthermia
Bath Salts
Bloom, Cloud Nine, Vanilla Sky, White Lightening, Scarface

- Name given to family of drugs containing one or more man-made chemicals related to cathinone
  - Amphetamine-like stimulant found naturally in the khat plant

- White or brown crystal-like powder
  - Plastic or foil package labeled “not for human consumption”
    - Sometimes marketed as plant food, jewelry cleaner, phone screen cleaner

- Not to be confused with Epsom salts (mineral mixture of magnesium and sulfate)->ease stress, relax muscles

- Swallowed, snorted, inhaled, injected

- Raise dopamine levels
  - Feelings of joy, more sociable, and heightened sex drive

- Chemicals produce anxiety, paranoia and hallucinations

- “Excited Delirium” is a serious side effect
  - Agitation, dehydration, rhabdomyolysis, renal failure
Identification and Assistance

- Lack of continuous contact with college children makes identifying addiction difficult for parents
- Look out for
  - Poor academic performance, drastic weight changes, isolation, unidentified pill bottles, traffic accidents/violations, high-risk sexual behavior, skipping classes, agitation, excessive sleepiness, decreased focus, forgetfulness, lack of motivation, draining financial funds
- Substance Abuse and Mental Health Services Administration
  - Access to a number of campaigns, programs and resources
References


