

# Substance abuse amongst high school and college students

## Classroom Presentation



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# Topics of Discussion



- Introduction
- Prescription medication 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

- relaxing 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

# Alcohol

Booze, Brew, Chug, Cold one, Giggle juice, Kool aid, Mouthwash, Poison, Shine, Sauce, Swish



- Most abused substance on college campuses is alcohol
- National Institute on Alcohol Abuse and Alcoholism (NIAA): Reports that four out of five college students drink alcohol
  - $\frac{3}{4}$  of this population is under the legal drinking age
    - $\frac{1}{2}$  of these drinkers engage in binge drinking
- Contributors to abuse? Ease of access, relatively inexpensive
- Why? Relax, attempt to fit in, 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)
- NIAA: 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->DA release->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 Lightning, 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

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