Hallucinogens
Psychedelics
Entheogens
Psychology 470
Introduction to Chemical Addictions
Steven E. Meier, Ph.D.

Listen to the audio lecture while viewing these slides

Psyc 470 – Introduction to Chemical Addictions

Background
- Traditional hallucinogens have significantly been decreasing in use for the past 10 years
- Generally cause distortions in brain functioning but do not cause loss of consciousness
- Have been experiencing a comeback when used at low levels in psychiatry
  - To help clients gain enlightenment.

Psyc 470 – Introduction to Chemical Addictions

Four Different Groups
- Are generally categorized by the type of neurotransmitter it influences.
  - Anticholinergic
  - Catecholamine like
  - Serotonin
  - Other Group
    - Psychedelic Anesthetics

Psyc 470 – Introduction to Chemical Addictions

Anticholinergic
- Found in Belladonna, Jimsonweed, and other plants
- Attaches to Ach. Receptors and blocks the site
- Influences memory and learning
- High doses causes paralysis of the respiratory system

Psyc 470 – Introduction to Chemical Addictions

Catecholamine Like
- Also called Phenethylamine Psychedelics
- Are similar to dopamine and norepinephrine
- Also similar to the structure of amphetamines
- Cause stimulatory effects
- Lots of different types
  - Myristin  Found in Nutmeg
  - Elemicin  Found in Mace
  - Mescaline  Found in Peyote
  - Synthetic  Human made
Effects

- Increase levels of serotonin and dopamine in the synaptic cleft and on receptors
- Also blocks the reuptake (removal) of these neurotransmitters
- Can influence other NT such as Norepinephrine
- Result –
  - Stimulation
  - Sensory changes
  - Sleep changes
  - Emotional swings

Lots of Synthetic Compounds

- **DOM**
  - Amphetamine-like (low doses) and hallucination effects (high-doses)
  - Can cause convulsions and death
  - Not as popular anymore

- **MDA**
  - “The Love Drug”
  - Heightens touch sensations
  - Causes the release of NE, Dopamine, and Ser
  - Causes physical exhaustion
  - High doses can cause death.

MDMA (Ecstasy)

- Also called Adam, X, E, and others
- More hallucinogenic effects than MDA
- Increases levels of Serotonin, Dopamine, and NE.
- Has more hallucinogenic effects than MDA
- Lasts about 2-6 hours

Lots of Effects

- Time and reality distortion
- Euphoric effects
- Hyperactivity allows you to go a long time.
- Hyperthermia
- Increased blood pressure and hear rate
- Muscle tension
- Serotonin receptor degradation
- THIS IS BAD STUFF

Combined with Lots of Other Drugs

- Viagra Sextasy
- Increased risk for BBPs
- Ketamine Kitty Flipping
- LSD Candy Flipping
- Heroin H-Bomb
- Others

PMA

- Similar to MDMA
- Very toxic
- Often taken by people who believe it is MDMA
- THIS IS VERY BAD STUFF
Serotonin-Like Compounds

- Also called Indoleamine Psychedelics
- Are serotonin agonists (look like serotonin).
- Lost of different types
  - LSD
  - Psilocybin
  - DMT
  - Ololiuqui
  - Others

Pharmacokinetics and Pharmacodynamics

- Can be smoked, taken orally, or injected
- Do not need a lot to get an effect
- Lasts about 6-12 hours
- Metabolized by the liver
- Binds on serotonin receptors
  - Causes surges of sensory information
  - Alters signals
  - Causes changes in mood (can occur rapidly)
  - Can have enlightening or bad trips
  - Can have reoccurring effects (flashbacks)

LSD

- Most potent Hallucinogen
- Has been used to treat schizophrenia, alcoholism and other disorders
- AT LOW DOSES AND UNDER CONTROLLED CONDITIONS
- Psychodynamic (Freudian) model
- Want the client to understand why they have the issues
- Not very effective treatment results

Psilocybin and Psilocin

- Found in mushrooms
  - Magic mushrooms
  - Shrooms
- Lasts 2-4 hours

DMT

- Is like LSD but has a short duration
- Causes the same effects
  - 30 minutes
  - Businessman's lunch break
- Metabolized by enzymes in the synaptic cleft (MAO)

Ololiuqui

- Found in morning glory seeds
- Need a lot of seeds to get an effect
- >100
- Problem
  - Causes nausea and vomiting
  - Headache
Psychedelic Anesthetics

- Several types
- PCP
  - Angel Dust, Crystal T., Peter Pan
- Ketamine
  - Special K, Vitamin K, Jet

PCP

- First developed as an anesthetic
- Was problematic in humans
  - Stopped use
- Worked well for large animals
  - Still used

Pharmacokinetics and Pharmacodynamics

- Can be taken orally, inhalation, injection
- Distributed by the circulatory system
- Stimulates several systems
  - Brain reward systems
  - Sympathetic Nervous system
    - Increased BP and HR
    - Endocrine effects
  - Shuts down pain systems
  - Causes lots of effects
    - Hallucinations
    - Feelings of invulnerability
  - Endocrine effects
- Shuts down pain systems
- Can cause
  - Cramping and vomiting

Ketamine

- Developed to replace PCP as an anesthetic
- Is odorless and tasteless
- Used as a date rape drug
- Similar effects as PCP

Kinikinik

- Called
  - Bearberry, Rockberry, Beargrape
- Found in shrubs and red willow
- Found throughout Idaho
- Is usually smoked
- Creates hallucinations
- Can cause
  - Cramping and vomiting

Overall

- MOST hallucinogens are relatively safe from a lethality standpoint
- Can be
  - Dangerous due to unpredictability
    - Don't know what the effect will be.
- Are experiencing a research comeback in Psychiatry at low does (MDMA)
- Are still being used and tested in other countries.