SUPPORT Act Grant

101: 20

“Novel” Substances

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Licensed Clinical Social Worker
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Disclaimer

- The information contained in this material can change as we learn more about the brain and the ways it is impacted by the environment, trauma, medications, substances of misuse, and other things.

- Always follow the guidelines of your agency, ethical and legal standards of your certifying Board, evidence-based practice methods; local, state and Federal laws as well as your judgement and commonsense when working with clients.
Questions?

If you have any questions, please do not hesitate to contact me

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SUPPORT Act Courses

1: Tele-Behavioral Health in the Time of COVID-19 (No longer available—Incorporated into all courses!)
2: Client Engagement
3: Suicide
4: Crisis & De-Escalation
5: Withdrawal Syndromes & Withdrawal Management
6: Trauma-Informed Care
7: Overview of SUD
8: Opioids & Stimulants
9: SUD Treatment Basics
10: Screening & Assessment
11: Co-Occurring Disorders
12: Individual Therapy Skills
13: Group Therapy Skills
14: Addressing SUD Bias & Building Provider Empathy
15: SUD & Cultural Humility
16: SUD Treatment & the Family
17: Alcohol & Cannabis
18: SUD & Legal System-Involved Clients
19: SUD & LGBTQ+ Communities
20: “Novel” Substances of Use
Program Content

I. Neurobiology of Addiction
II. Novel Depressants, Stimulants & Opioids
III. “Psychedelic” Plants and Chemicals
IV. Tele-Behavioral Health Basics
Neurobiology of Addiction
Addiction Defined: ASAM

Addiction is a treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment, and an individual’s life experiences. People with addiction use substances or engage in behaviors that become compulsive and often continue despite harmful consequences.

Prevention efforts and treatment approaches for addiction are generally as successful as those for other chronic diseases.

Adopted by the ASAM Board of Directors September 15, 2019
The 3 Laws of Psychopharmacology (Grisel, 2019, p. 30)

The definition of an additive drug is one that stimulates the mesolimbic pathway, but there are three general axioms in psychopharmacology that also apply to all drugs:

1. All drugs act by changing the rate of what is already going on
2. All drugs have side effects
3. The brain adapts to all drugs that effect it by counteracting the drug’s effects

“The brain’s response to a drug is always to facilitate the opposite state; therefore, the only way for any regular user to feel normal is to take the drug.” (p. 32)
How Do Drugs Get to the Brain?

**Pharmacodynamics**: A drug’s effect on the body

**Pharmacokinetics**: The body’s effect on a drug; how a drug is absorbed, distributed, metabolized, eliminated and excreted by the body; all of which are influenced by:

- Route of administration
- Speed of transit to the brain
- Rates of metabolism
- Process of elimination
- Affinity for nerve cells and neurotransmitters

*Pharmacodynamics & pharmacokinetics co-occur*

*The more rapidly a drug reaches its target in the brain, the greater the reinforcing potential*
<table>
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<th>Drug Classes</th>
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<td>Stimulants</td>
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<td>Opioids</td>
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<td>Cannabinoids</td>
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<td>Inhalants</td>
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<td>Other Substances</td>
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Novel Depressants, Stimulants & Opioids
Gamma Hydroxybutyric Acid (GHB)

- “Georgia Home Boy,” “Grievous Bodily Harm”
- A “club drug,” sold as a clear liquid, powder, tablet or capsule; dosing is extremely difficult and has a steep curve, which can lead to unintentional overdose
  - Also used as a rape drug
- Users report none of the after-effects common to other depressants
- Positive symptoms are like benzodiazepines: Euphoria, happiness, increased sexuality and well-being, heightened sense of touch, relaxation and disinhibition
- **Symptoms typically end within four hours**
  - Gamma-butyrolactone (GBL), 1,4-Butanediol (BD), and gamma hydroxyvalerate (GHV) are precursor chemicals (pro drugs) sometimes used as substitutes; they can be found in paint strippers, drain cleaners and nail-polish removers
Flunitrazepam: Rohypnol

- “Roofies”
- Illegal in the U.S., but legal in other countries
- Clear liquid, ingested orally; similar in many ways to GHB
- Benzodiazepine, but with faster onset, longer duration of action and stronger effects at lower doses
- Five times the potency of Valium
- Used as a rape drug; by typically being added to a drink, but now reformulated so that it releases a blue dye when added to a liquid
- Overdoses can be treated with Flumazenil
Seroquel® (Quetiapine)

✧ Atypical antipsychotic (second generation)
✧ Indications:
  ◦ Mood stabilization
  ◦ Anti-psychotic
  ◦ SHOULD NOT BE PRESCRIBED FOR INSOMIA ALONE!!
✧ Side Effects:
  ◦ Stiff Muscles (dystonia)
  ◦ Muscle spasms
  ◦ Abnormal movements (akathisia, parkinsonism)
✧ The immediate release is more often abused, and often crushed and insufflated, or crushed, dissolved in water and injected and used for its sedating effects
✧ Should be avoided in patients with a substance use history
Derived from the Khat (or Qat; pronounced “cot”) plant from Africa & the Middle East

Leaves of this plant are chewed or brewed in tea

More potent than caffeine, but less powerful than cocaine

Cathinone can be extracted from the plant, purified and snorted or injected

Methcathinone and Mephedrone are synthetic (and stronger) forms of Cathinone

P. Brasler, DMAS
“Bath Salts”: Methylenedioxypyrovalerone (MDPV) & Mephedrone

♦ Methcathinone derivatives, sold in powder, tablets and capsules; an average dose is five to 20 Mg

♦ Four times the potency of methylphenidate, but has entactogenic and hallucinogenic properties and appears to precipitate psychosis easier than other amphetamines because of its faster and stronger impact on the dopamine system

♦ Effects are typical for most amphetamines, but coming down from use is very unpleasant

♦ Tolerance can build quickly

♦ Most effects resolve in 3 – 4 hours, with milder effects lasting a total of 6 – 8 hours
Flakka: Alpha-Pyrrolidinovalerophenone (Alpha-PVP)

- Another synthetic cathinone, which emerged in Florida and other states in 2014 – 2015
- Manufactured in China, shipped to the U.S. in bulk and sold relatively cheaply in the U.S. (one dose is as little as $5)
- Like MPDV, this cathinone can be insufflated, but it is mainly orally ingested
- Cannot be smoked, but it is water soluble so it could be injected
Fentanyl Analogues & Novel Psychoactive Substances (NPS)

- **p-FBF: 4-Fluorobutyrfentanyl:**
  - Created in the 1960’s, and found its way onto the Black Market in the 1980’s; Now a Schedule I drug
  - Sometimes sold in an intra-nasal spray formulation
- **MAF: Methoxyacetylfentanyl**
- **THFF: Tetrahyrdofuranylfentanyl**
- **U49900 & U47700:**
  - Created by Upjohn in the 1970’s; **eight** times more potent than morphine
  - Not true Fentanyl analogues, but often taken with fentanyl
“Psycchedelic” Plants & Chemicals: Entactogens, Hallucinogens & Dissociates
“Psychedelic” Drugs

Three over-lapping classes of drugs:
- Entactogens
- Hallucinogens
- Dissociates

Phenethylamines: Drugs in all three classes that are chemically comparable to the neurotransmitter Dopamine

Tryptamines: Drugs in all three classes that are chemically related to the neurotransmitter Serotonin
“Psychedelic” Drugs

- The effects of all drugs are influenced by the user’s environment and mindset, but these variables have a greater impact with psychedelic plants and chemicals.

  - **Set**: The person’s mindset (emotional wellbeing and expectations of the substance’s effects)

  - **Setting**: The physical environment in which the person takes the drug (is it safe?)

  - **State specific memory**: Events experienced in an altered state of consciousness can be recalled only upon returning to that state (also occurs with alcohol and other depressants as well as cannabis)
Entactogens

- A wide variety of drugs that change mood and increase empathic response
- Usually taken in social settings
- Reactions can be like dissociates or hallucinogens at regular doses
- In higher doses, many of these drugs act like stimulants
- The vast majority of these are “designer drugs” that are human-made and can contain a variety of chemicals
  - Pure MDMA in the form of “Ecstasy” or “Molly” is rare; usually adulterants are present
Methylenedioxy-Methamphetamine (MDMA): Ecstasy, Molly

HEALTH EFFECTS

- Hyperthermia
- Severe dehydration; accidental overhydration, electrolyte imbalances
- Tachycardia
- Hypertension
- Renal failure
- Down-regulation of serotonin receptors

SIGNS OF INTOXICATION

- Dilated pupils; Nystagmus
- Confusion
- Headaches; Nausea
- Agitation; Anxiety
- Increased sex drive
- Pleasure senses heightened
- Increased physical energy
- Jaw clinching (Bruxism)
- Sweating
- Reported feelings of self-awareness, acceptance
MDMA

◊ Synthetic drug—related to some plant substances (notably Mescaline), but human-made (first synthesized in 1912)

◊ Causes a greater release of Serotonin than Dopamine (compared to stimulants)

◊ Often taken with other drugs (LSD, DXM, ETOH, Ritalin, Opioids, Viagra, etc.), and rarely found in pure form—adulterants are usually present

◊ Cannot be taken regularly, as it quickly loses its effectiveness if taken on a regular basis (the brain takes time to replenish serotonin)

**Dosing:**

<table>
<thead>
<tr>
<th>Dose</th>
<th>Process</th>
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<tbody>
<tr>
<td>50 – 75 Mg = Low</td>
<td>30 Minutes: “Coming On”</td>
</tr>
<tr>
<td>125 – 160 = Moderate</td>
<td>30 – 180 Mins.: Plateau</td>
</tr>
<tr>
<td>180 – 200 = High</td>
<td>3 – 6 Hours: “Coming Down”</td>
</tr>
<tr>
<td></td>
<td>Day After: “Afterglow”</td>
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Additional Entactogens

◊ Many (200+) were synthesized by Alexander Shulgin, who provides the recipes for them in his texts PIHKAL and TIHKAL; also available at www.erowid.org

◊ Examples include:
  ◊ MDA (stronger and shorter-lasting than MDMA; more hallucinogenic)
  ◊ MDE, MDEA (“Eve”)
  ◊ MMDA (more hallucinogenic than MDMA)
  ◊ DOM/STP, TFMPP (reportedly more intense than LSD)
  ◊ 5-APDB, 6-APDN, 5/6-APB (“Benzofury”)
  ◊ B-Fly (Bromo-Dragonfly)
  ◊ 3-MeO-PCP (derivative of PCP)
  ◊ PMA, PMMA (often sold as MDMA, but break down much slower than MDMA, leading to re-dosing; also inhibits reuptake of serotonin leading to possible serotonin syndrome)
Serootonin Syndrome

- Clinicians need to be aware of Serootonin Syndrome as it requires immediate medical assessment and intervention.
- Caused by too much serotonin.
- Symptoms include: Diarrhea, restlessness, elevated body temperature, tremors, cognitive changes, rigidity, delirium, and autonomic nervous system instability.
- Mortality rate is 10% to 15% among untreated patients.
- Should be monitored with intoxicated and withdrawing patients, particularly those who have used drugs that impact serotonin (entactogens and hallucinogens especially).
Excited Delirium

“Stimulant toxicity resulting in excited delirium syndrome has been described with MDMA, cocaine, amphetamine, cathinones and cannabimimetics” (Rose, 2016, 29)

Delirium, **rhabdomyolysis** (muscle tissue breakdown which releases a protein into the bloodstream which can damage kidneys), agitated or violent behaviors along with hyperthermia

Like other forms of delirium, this is a medical emergency, requiring immediate care
Hallucinogens

- Hallucinogens present the widest variety of effects of any drug class:
  - Auditory, visual and tactile hallucinations
  - Increased insight and “internal discussions”
  - Intensified and/or distorted perceptions
  - Severely impaired judgment
  - Feelings of “oneness” or connectedness
  - Delusions (false beliefs)

- We know less about hallucinogens and how they impact the brain than we do most other drugs
LSD-25: D—Lysergic Acid Diethylamide

**HEALTH EFFECTS**
- Increased body temperature, heart rate & blood pressure
- Sleeplessness; Loss of appetite
- Sweating

**SIGNS OF INTOXICATION**
- Visual hallucinations
- Dilated pupils
- Anxiety; possible paranoia
- Abnormal laughter
- Nausea; Dizziness
- Numbness
- Impaired reasoning and loss of judgment
- Verbal expression is often difficult: Single-word answers and non-sequiturs
LSD

- Synthesized in 1938 (Hoffman)
- **Extremely potent drug:** Doses are measured in the microgram (mcg) range; usually 150 – 300 Mcg
- The most widely-used hallucinogenic
- Effects start after about 20 minutes, peak at two to four hours, and can last six to 12 hours
- Orally ingested on blotter-paper or on sugar cubes
- Tolerance develops very quickly, but disappears days after cessation of use
- “Bad Trips” are often a panic reaction to the drug and are described as nightmarish
- Withdrawal is mental and emotional, not physical
“Magic” Mushrooms

A variety of mushrooms (which are orally ingested), mostly from South America, that produce a wide variety of hallucinogenic symptoms from the active ingredients: Psilocybin and psilocin, both isolated in 1956

**SIGNS OF INTOXICATION**

- Dilated pupils
- Warm skin
- Excessive sweating
- Body odor
- Impaired coordination
- Disorientation
- Hallucinations
- Effects last about six hours
Dimethyltryptamine (DMT)

- Dimethyltryptamine is found in a number of plant seeds, vines, tree bark and other plant materials, or is chemically synthesized
- Chemically it is the most basic psychedelic drug
- It probably exists as a neurotransmitter and interacts with the Pineal gland
- DMT is smoked (added to cannabis, but smells like burnt plastic), sniffed or injected (IV), and produces a short (30 minutes or less), intense hallucinogenic trip [a.k.a. “Businessman’s High”]
DMT

◊ Produces extremely vivid colors with a rapid onset

◊ Users often feel that they leave their bodies and commune with spirits, aliens, or “others” who guide them

◊ Ayahuasca Tea (Yage) contains Harmaline + DMT. The Harmaline allows the user to orally consume the DMT

  ◊ Even then, drinking Yage typically causes intense vomiting prior to the hallucinogenic effects

◊ 5-MeO-DMT is a venom from a desert toad (usually dried and smoked)
Salvia Divinorum

- Mint plant grown in Mexico; the most potent known natural hallucinogen
- Creates hallucinations and dissociative symptoms
- Possession of Salvia Divinorum A is now illegal in Virginia and many other states
- The plant is smoked and produces symptoms similar to Ketamine and Mescaline
- The leaves can also be chewed or brewed into a tea, but the material must be absorbed through gum tissue as stomach acid neutralizes it
- The effects usually last for less than one hour
Nutmeg

- Acts as a Hallucinogen and a Dissociate
- Active chemicals are variants of MDA
- Hallucinogenic effects: 1 Gram of nutmeg per ~10 pounds of body weight
- Hallucinations last for about 24 hours (slow onset of several hours)

- Dissociative effects can last for several days afterward along with feeling physically ill (mainly nausea)
Dissociates

- Most of these drugs are structurally like most of the hallucinogenic drugs and nearly all of the Entactogens (there is a lot of overlap)

- Dissociates create a feeling that the user is outside of their body, and/or in a different reality
Phencyclidine (PCP)

- “Angel dust,” “Fry,” “Hog,” “Embalming fluid” “Wet”
- Developed as an anesthetic in 1956 by Parke-Davis; 34 analogs of PCP exist
- Impacts glutamate receptors as opposed to serotonin receptors
- Comes in a variety of forms (liquid, crystal, tablet or powdered forms) and has stimulant, depressant, hallucinogenic, anesthetic and analgesic properties
- Can be smoked, insufflated, swallowed or injected
  - Often smoked in cigarettes or with marijuana
- A low dose lasts about two hours, a moderate dose up to six hours, and a heavy dose for much longer
- Some people develop psychotic reactions that can last for days after the drug is not detectible in their system
PCP: Signs of Intoxication

- Panic attacks
- Seizures
- Hypertension
- Tachycardia
- Excessive salivation
- Amnesia
- Numbness or diminished pain response
- Disorientation
- Perspiring heavily
- Blank stare
- Agitation, excitement
- Chemical odor
- Incomplete/slurred verbal responses
- Non-communicative
- Muscle rigidity
- Psychosis
- Depersonalization
Dextromethorphan (DXM)

**Signs of Intoxication**

- Decreased appetite
- Dilated pupils
- Loss of control
- Slurred speech
- Fever; sweating
- Dissociation
- Aggression
- Panic reactions
- Personality shifts
- Rash
- Nausea & vomiting
DXM

◊ An opioid, but works on suppressing the cough reflex as opposed to dampening pain

◊ Pure DXM is a powder made up of white-to-slightly-yellow crystals

◊ Numerous websites describe ways to chemically separate DXM from over-the-counter products

◊ DXM has little to no psychotropic effect in the doses used medically

◊ Alteration of consciousness usually occurs following ingestion of 7 to 50 times the therapeutic dose over a short time

◊ Most users report that the “trip,” from beginning to end lasts 5 – 6 hours that includes distinctive plateaus

◊ Users also report an “afterglow” that lasts 24 – 48 hours after they have come down
Ketamine

- Derived from PCP (one-tenth the strength), and developed for the same reasons (anesthetic) but not as strong or long-lasting as PCP

- Used through insufflation and injection: Quick onset and termination—usually 1 – 2 hours

- Ketamine is used as an animal tranquilizer, as an anesthetic in children and the elderly, as a sedative in acute setting, and as a treatment for severe depression
  - Can cause urinary tract complications

- Favored as a psychedelic in low doses
  - Low doses create a variety of hallucinations and dissociations—most notably, a sense of leaving one’s body, journeying out into the universe, and even losing a sense of time; users also report detailed near-death experiences (“Falling down the ‘K-Hole’”)
“Psychedelic” Drugs Withdrawal Symptoms

- Most psychedelic plants and chemicals do not have a significant withdrawal profile, and some lack any substantial withdrawal symptoms.

- Since psychedelic chemicals impact the serotonin system in some capacity, some withdrawal symptoms include:
  - Depression (anhedonia)
  - Anxiety
  - Nausea
  - Sleep problems (difficulty falling asleep or feeling over-tired even with an appropriate amount of sleep)
  - “Flashbacks” (some question as to whether these are valid dissociative or derealization symptoms)
Additional Drugs of Misuse

Diphenhydramine (Benadryl®) & Hydroxyzine (Vistaril®)
- Antihistamines; abused to create feelings of sedation
- Cause dramatic visual hallucinations at high doses

Promethazine (Phenergan®)
- Anti-nausea medication, abused to create feelings of sedation
- Mixed with Codeine = “Purple Drank,” “Sizzurp” or “Lean”

Gabapentin (Neurontin®)
- Anticonvulsant; abused to create feelings of sedation

Loperamide (Imodium®)
- Abused in high doses for opioid effects
Remember: Post-Webinar Survey

Once you exit this webinar, your internet browser will redirect you to a post-webinar survey. Similar to the pre-webinar survey:

- Your name and contact information will not be linked to your survey responses.
- Your decision to complete the survey is completely voluntary.
- You are able to complete one post survey per each webinar topic you attend.
- Your completion of the post-webinar survey will enter you into a separate drawing (from the pre-webinar survey) to win a $50 Amazon gift card!

If you have any questions about the current study, please feel free to contact, Dr. Lori Keyser-Marcus at Lori.keysermarcus@vcuhealth.org or (804) 828-4164. Thank you for helping us with this effort!
Tele-Behavioral Health Basics
We first need to admit that most of us do not enjoy “connecting” with clients this way; “I didn’t go to school for this!”

We also need to acknowledge that not all clients have access to technology to participate in tele-behavioral health and so we have to improvise.

Therefore practitioners and clients are using phones, Skype and FaceTime to conduct sessions; and getting creative in other ways.

Clinicians do not have to use HIPAA-compliant video conferencing technology during the current National Emergency; Health & Human Services will waive any penalties for HIPAA violations related to the platform used during this emergency.
Tele-Behavioral Health: Clinician

- Have a space set up where you can connect with your client without being disturbed
- Your work-space should provide some privacy for your client
- Internet connectivity and/or phone signal strength should be tested prior to engaging in tele-behavioral health
- If conducting a group therapy session, educate clients on muting themselves unless they are speaking
- I recommend against using your personal phone, but sometimes this cannot be avoided
  - If using a personal device, I would set firm boundaries with clients regarding when they can and cannot contact you
You’ll likely notice that the flow of clinical sessions will be slower than in-person.

Be aware that you will likely need to speak slower than in person.

Try to express empathy with your voice, especially when not connecting via video.
Tele-Behavioral Health: Client

- Try to have a private space where you can connect with your counselor that is also free from interruptions and distractions
- Test out your communications system (connectivity) prior to meeting with your counselor
- Most of us (counselors especially) don’t like meeting this way, so remember this is temporary and we (like you) look forward to meeting face-to-face again
Informed Consent to Tele-Behavioral Health Treatment—Essential Elements

◊ A statement explaining what tele-behavioral health will look like for you and the client (methods to be utilized: FaceTime, phone, etc.)
◊ A statement discussing the risks of tele-behavioral health (technology limitations and failures; possible/unintentional breaches of confidentiality)
◊ A statement agreeing that the sessions will not be recorded by either party
◊ A statement emphasizing that the content of the session is confidential and that a written release is required from the client to release information
◊ A statement noting the limits of confidentiality, including having to report suspected child abuse, vulnerable adult abuse, danger to self or others
Informed Consent to Tele-Behavioral Health Treatment—Essential Elements

- A statement explaining what steps must be taken should the clinician believe that the client is a danger to themselves, a danger to others or is unable to care for themselves
  - This could include a statement that participation in tele-behavioral health may not be appropriate and a higher level of care could be required
- A statement describing how you will handle technical problems should they arise
- A statement explaining that the client must disclose their physical location during the session and an individual the clinician can contact in case of an emergency
- A statement that you are continuing to maintain treatment records during this time
Documentation

❖ **If you don’t write it down, it never happened**

❖ Record, in detail, all aspects of client interactions, including any known precipitating events, interventions, outcomes, staff members involved and all contacts with outside agencies

❖ Record where the client says they are contacting you from

❖ Do this as quickly as possible following the session

❖ **Stick to the facts;** do not presuppose or assume anything

❖ See documentation as a necessary means to protect yourself, the people you serve, and your organization
References


References


References


