Trauma & Addiction

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Objectives

01 Explain how substances affect the brain.

02 Describe the association between an Adverse Childhood Experience (ACE) score and the effects on health, behavior, and life potential.

03 Identify the relationship between the ten categories of the ACEs and illicit drug use.
Societal Definition

- Lack self-control/No willpower
- Lazy
- Immoral
- No family
- Relapse = failure
- Overdoses are "...getting rid of a problem."—Crow

Wing County Commissioner
DSM 5 Definition

Addiction is “...a chronic, relapsing disorder characterized by compulsive drug seeking and use despite adverse consequences” (DSM 5, 2013).
NIDA

Brain disorder—drugs and alcohol cause functional changes in reward, stress, and self-control brain circuits

(NIDA, 2018)
Substances & the Brain
Neurotransmission
Neurotransmitters

Endorphins

“exorcise gives you endorphins”

“endorphins make you happy”

“happy people don’t shoot their husbands.”
Opioids

Prescription Drug Epidemic
- "Each year between 76,000 and 137,000 Americans die and 1.6 million to 2.6 million are injured due to bad reactions from legally prescribed drugs" (Inaba & Cohen, 2014).

Overdoses
- It's rare that only one psychoactive is used. Usually a benzodiazepine is also used. (Inaba & Cohen, 2014)
Neurotransmitters
Serotonin

LSD

- Illusions & Delusions are the primary experiences
- Causes a person to see sounds, feel smells, hear colors

(Inaba & Cohen, 2014)
Neurotransmitters
Norepinephrine

(https://requestreduce.org/categories/pepe-le-pew-clip-art.html)
Methamphetamine

- Increases the release of norepinephrine
- Expels neurotransmitters in excessive amounts
- Blocks enzymes that metabolize the excess neurotransmitters, allowing accumulation and continued overstimulation

(Inaba & Cohen, 2014)
Neurotransmitters
Dopamine

Cocaine

- Prevents reabsorption, increasing concentration and intensifying effects

-Sexual Side Effects
  * enhances sexual desire
  * high doses and chronic use sexual dysfunction is common

-Aggression & Violence
  * inhibitory functions suppressed
  * emotional triggers overstimulated

(Inaba & Cohen, 2019)
Neurotransmitters
Acetylcholine

Acetylcholine affects:
- heart rate
- blood pressure
- memory
- learning
- reflexes
- aggression
- sleep
- sexual activity
- mental acuity

(Inaba & Cohen, 2014)
Nicotine

- Stimulant that disrupts acetylcholine
- Makes a smoker feel satisfied and calm
- 480,000 Americans die prematurely each year

(Inaba & Cohen, 2014)
3 Systems

01 Automatic

02 Semi-Automatic

03 Voluntary

(Ackley, 2019)
Systems

Automatic-
*Heartbeat
*Fight or Flight

Semi-Automatic-
*Breathing

Voluntary-
Eat, Drink, Sleep, Sex

(Ackley, 2019)
Who develops SUD?

- 50-60% Biological
- 40-50% Environmental
- Other Factors that Increase Risk

(NIDA, 2018)
Adverse Childhood Experiences

“Adverse childhood experiences (ACEs) are stressful or traumatic events, including abuse and neglect” (SAMHSA, 2018).

Kaiser Permanente
Find Your ACE Score
10 Categories

1. Physical abuse
2. Sexual abuse
3. Emotional abuse
4. Physical neglect
5. Emotional neglect
6. Mother treated violently
7. Substance misuse within household
8. Household mental illness
9. Parental separation or divorce
10. Incarcerated household member

(Ackley, 2019)
The ACE Pyramid

Mechanism by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

(CDC, 2016)
ACEs & Substance Use

- ACEs predict early onset drug use. (risky behavior)
- Physical abuse, sexual abuse, having a mentally ill household member, substance abuse in the home, and parental discord or divorce were significantly associated with drinking by the age of 14.
- People with 5 or more ACEs are 7- to 10-fold more likely to report problems with illicit substance use than people with 0 ACEs.
- For every additional ACE score, the rate of number of prescription drugs used by adolescents increased by 62%.

(SAMHSA)
## Risk and Protective Factors for Drug Use, Misuse, and Addiction

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Protective Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive behavior in childhood&lt;sup&gt;13, 14&lt;/sup&gt;</td>
<td>Good self control&lt;sup&gt;16&lt;/sup&gt;</td>
</tr>
<tr>
<td>Lack of parental supervision&lt;sup&gt;14, 16&lt;/sup&gt;</td>
<td>Parental monitoring and support&lt;sup&gt;16–18&lt;/sup&gt;</td>
</tr>
<tr>
<td>Poor social skills&lt;sup&gt;13, 17, 18&lt;/sup&gt;</td>
<td>Positive relationships&lt;sup&gt;17, 19&lt;/sup&gt;</td>
</tr>
<tr>
<td>Drug experimentation&lt;sup&gt;14, 20, 21&lt;/sup&gt;</td>
<td>Good grades&lt;sup&gt;17, 22&lt;/sup&gt;</td>
</tr>
<tr>
<td>Availability of drugs at school&lt;sup&gt;21, 29&lt;/sup&gt;</td>
<td>School anti-drug policies&lt;sup&gt;17&lt;/sup&gt;</td>
</tr>
<tr>
<td>Community poverty&lt;sup&gt;24, 25&lt;/sup&gt;</td>
<td>Neighborhood resources&lt;sup&gt;26&lt;/sup&gt;</td>
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(NIDA, 2018)
ACE Study

- Women are 50% more likely to have 5 or more ACEs.
- A male child with a score of 6 or more increases likelihood of becoming IV drug user by 4600% compared to a male child with 0.
- A score of 4 or more ACEs increases the likelihood of developing alcoholism by 500%.

(Ackley, 2019)
Trauma (DSM 5)

"Exposure to trauma must result from one or both of the following, in which the individual:

- directly experiences the traumatic event
- witnesses the traumatic event in person"

(Ackley, 29, 2019)
Trauma's Impact on the Brain & Body

- Constant “stress response” mode
- Cues continue to trigger trauma
- Reaction to trauma cues
- Disrupts brain chemistry

(Ackley, 2019)
Trauma's Impact on the Brain & Body

The Limbic System

Stores emotional events

Processes sense of smell

Where feeling of bonding and social connectedness occurs

Controls appetite & sleep cycle

Modulates libido

(Ackley, 2019)
Trauma's Impact on the Brain & Body

Neurotransmitters

Serotonin - emotional stability/homeostasis

Dopamine - drive and pleasure/rewards

Opioid Peptides - pain relievers

(Ackley, 2019)
Treat the Trauma

Recognize Symptoms of Trauma

- Hyperarousal
- Constriction
- Dissociation
- Denial

(Ackley, 2019)
Treat the Trauma

Triggers

- External stimulus
- Causes a physical or emotional reaction
- Sight, Sound, Smell, Person, Place, Behavior, etc.

(Ackley, 2019)
Treat the Trauma

Potential for healing from trauma:

- *Men working with men*
- *Women working with women*

(Ackley, 2019)
Treat the Trauma

Healing from Trauma

- Physical symptoms of PTSD are manageable.
- Feelings associated with trauma are bearable.
- Authority over memories.
- Damaged self-esteem is restored.
- Important relationships reestablished.
- Reconstructed a system of meaning and belief.

(Ackley, 2019)
Treat the Trauma

- Treat the substance use disorder, but not the trauma --\> Substance use gets worse.
- *Substance use may resolve on its own if only trauma is treated.
Understanding ACEs (trauma) to Prevent Substance Use

- Prevent ACEs to prevent substance use.
- Reduce exposure to ACEs and increasing protective factors.
- Essentials for Childhood
- Provide safe, stable, nurturing environments and relationships.
- Invest in substance use prevention aim toward youth!!!
Healing the Brain

SEEDS
Exercise 30 minutes each day

Education Learn something new each day

Diet Food can either nourish or starve the brain

Sleep The brain & body need rest to regenerate each day

(Ackley, 2019)

