Substance Use Disorders and Cognitive Deficits

Presented by:

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Agenda

• How drugs work on the brain
• What happens when someone has a brain injury
• How to modify Substance Use Disorder therapy to provide services to those with cognitive deficits
Drugs on the Brain

• Disruption of communication systems in the brain

• Mimics neurotransmitters in the brain sending abnormal messages throughout the system

• Other drugs order the release of large amounts of neurotransmitters
How Drugs Produce Pleasure

• *Directly or indirectly target the reward system*

• *Dopamine is the main player*

• *Dopamine regulates emotions, and feelings of pleasure*

• *Rewards pathway in mid-brain, also the area responsible with habit formation*
How Reward Leads to Habit

- We are wired to repeat behavior by associating behavior with reward.

- When reward circuit is activated, the brain remembers

- Brain forms habits to be efficient

- A process sometimes called “Chunking”
Drugs are More Rewarding

- 2 to 10 more times the amount of dopamine
- The brain was not built to deal with this amount of reinforcement
- Effects are stronger, quicker and can last longer than natural rewards
- Natural dopamine system changes either by producing less or reducing receptors
Effects of Long Term Use

• Cognitive impairment due to disruptions of glutamate

• Glutamate a player in Willpower

• Environmental cues trigger autonomic nervous system activation

• Repeated exposure erodes intentional behavior and can inhibit frontal lobe activation

National institute of Drug Abuse (2009)
Drugs, Brains and Behavior: The Science of Addiction
Traumatic Brain Injury

Traumatic Brain Injury is an important public health problem in the United States. Because the problems that result from TBI, such as those of thinking and memory, are often not visible, and because awareness about TBI among the general public is limited, it is frequently referred to as the “silent epidemic”.

Prevalence

SAMPLE:
295 people with co-occurring mental health and substance use disorders enrolled in a prospective study of integrated treatment of substance abuse.

SETTING:
Outpatient community mental health center in Washington, District of Columbia.

MAIN MEASURES:
The Ohio State University TBI Identification Method. Standardized measures assessed psychiatric diagnoses, symptom severity, current and lifetime substance use, and history of institutionalization.
Prevalence

RESULTS:
✓ 80% screened positive for TBI, and 25% reported at least 1 moderate or severe TBI.
✓ TBI was associated with current alcohol use and psychiatric symptom severity and with lifetime institutionalization and homelessness.
✓ More common among participants with post-traumatic stress disorder, borderline personality disorder, and antisocial personality disorder.
✓ Men (vs. women) and participants with psychotic disorders (vs those with mood disorders) had an earlier age of first TBI with loss of consciousness.

The Prevalence of Traumatic Brain Injury Among People with Co-Occurring Mental Health and Substance Use Disorders
McHugo GJ, Krassenbaum S, Donley S, Corrigan JD, Bogner J, Drake RE.
Head Trauma Rehabilitation 2017 May/Jun;32(3):E65-E74.
Leading Causes of TBI

➢ **Falls:**

- *Leading cause of TBI*
- Account for 47% of all TBI related ED visits, hospitalizations and deaths in the US in 2013

➢ **Being Struck by or against an object:**

- *Second leading cause accounting for 15% of ED visits, hospitalizations, and deaths in the US in 2013*
Leading Causes of TBI

Motor Vehicle Accidents:

Third overall leading cause of TBI related ED visits, hospitalizations and deaths accounting for 15% in 2016

Psychosocial Effects/Changes

- Anger / Aggression
- Social inappropriateness
- Difficulty managing money
- Following directions
- Formulation of goals
- Starting and completing tasks
- Speaking clearly
Physical Effects / Changes

- Physical Changes:
  - Muscle movement
  - Muscle coordination
  - Sleep
  - Hearing
  - Vision
  - Taste
  - Smell
  - Touch
  - Fatigue
  - Weakness
  - Balance
  - Speech
  - Seizures
  - Sexual functioning
Psychological Effects

- Orientation
- Concentration
- Mental control
- Shifting thoughts
- Sequencing
- Perseveration
- Memory verbal and non-verbal
- Learning over time

- Reasoning verbal and non-verbal
- Linear thought process
- Mechanical manipulation
- Perception
- Planning
- Foresight
- Language
CONSEQUENCES OF DISABILITY

• Memory impairment – short and long term
• Decreased self awareness/insight
• Impairment in abstract thinking
• Increased concrete thinking

• Attention deficits/concentration
• Reduced ability to process information
CONSEQUENCES of DISABILITY

- Sensory deficits – smell, taste, touch, vision
- Reduced initiation and what may appear to be motivation
- Dis-inhibition decrease impulse control
- Altered self image

Full lives for people with disabilities
What is Executive Functioning?

Activity in the Frontal and Pre-Frontal Lobe that is responsible for:

- Planning
- Organizing
- Working memory
- Attention
- Impulse Control
TREATMENT

Important to adapt treatment techniques for people with TBI so that:

✓ There is an increased opportunity for success

✓ The patient can understand what is required by the program

✓ The patient can act appropriately and understand behavior concerns

✓ TBI education is as important as is the drug/alcohol education for this patient

✓ The treatment of both recovery and cognitive needs produces the best outcomes
TREATMENT

• Modify groups
  – Give a group orientation
    • Date
    • Purpose of group
    • Important announcements
    • Do not overwhelm

• Do not overwhelm
  – Rate of information is critical
    • Verbal and written with repetition is useful
    • Practice new skills
    • Role play

• Be concise
• Encourage note taking
• Be aware of vocabulary problems, especially when using specialized or treatment language
  - Always define and give examples
• Summarize statements to check patients’ comprehension and identification of main points
• Ask clients to present their own summary statements
TREATMENT

• Compensatory strategies
  – *Date books and calendars to record appointments and daily schedule*
  – *Notebook to record important information and notes from groups and counseling sessions*
  – *Wristwatch alarms*
  – *Post Its*
  – *Visual cues (pictures, maps, diagrams)*
  – *Information, guidelines and expectations should be reviewed often and should be very specific*
  – *Offer immediate and specific feedback about behavior*
    • *Give concrete suggestions and examples*
TREATMENT

Importance of Psychoeducation

✓ Increased self-awareness

✓ Peer support for adjustment to the disability
TREATMENT

• Education about TBI and specific issues related to substance abuse
  – Seizures are more likely
  – Dangers of mixing alcohol and drugs
  – Dangers of mixing above with prescription medications
  – Increased risk of additional brain injury

➢ Chance of a second head injury is 3 times greater (Ohio Valley Center for Head Injury Prevention)

  – Interferes with TBI rehabilitation
SPECIFIC EXAMPLES OF PROGRAM AND SITE MODIFICATIONS

• **Signs identifying:**
  – Counselors offices
  – Group rooms
  – Bathrooms

• **Directions (floor plans) displayed**
HELPFUL HINTS WHEN WORKING WITH TBI PATIENTS

- **Educate your non-TBI patients about TBI.**
- **Many Non-TBI patients do not understand why TBI patients may need extra time or attention**
  - Be careful to not violate individual patient confidentiality
  - Educate non-TBI patients about all the areas of life that can be affected by TBI (e.g. memory, concentration, reading, difficulty with instructions, mood swings, impulse control etc.)
  - Appeal to patients empathy. Ask them to imagine what it would be like if they woke up one day and a part of their brain no longer worked correctly. What kind of help would they need?
  - Remind them of the need for individualized treatment – one size does not fit all
HELPFUL HINTS WHEN WORKING WITH TBI PATIENTS

What appears to be denial in TBI patients may be lack of self awareness caused by the brain injury

- TBI patients get lost sometimes – be understanding and helpful

- TBI patients may need extra rest – this is not a manipulation to avoid treatment

- TBI clients may struggle to remember rules and regulations such as sign in/sign out when leaving unit, appointments scheduled
HELPFUL HINTS WHEN WORKING WITH TBI PATIENTS

Group Issues that may need to be addressed

- Significant Grief/Loss:
  - Loss of memory/skills/abilities
    - Loss of identity
    - Loss of power/control
  - Loss of anticipated future (dreams/career)
  - Relationship issues (possible loss of relationships)
    - Spiritual confusion/crisis
  - Isolation related to all of the above
HELPFUL HINTS WHEN WORKING WITH TBI PATIENTS

Groups

• Provide notebooks for taking notes during group
  – Will need to change group therapy rules to allow for note taking
  – Not usually allowed in group setting

• Experiential activities work well
  – Allows for multiple pathways for processing information
CASE MANAGEMENT

- KNOW THE CLIENT’S HISTORY
- READ THE CHART
- PURSUE COLLATERAL CONTACTS
- RESEARCH DIABILITIES
- MAKE 1:1 TIME

- OBTAIN DISABILITY RELATED TESTING AND MEDICAL REPORTS
- USE WHAT THE CLIENT TELLS YOU WORKED OR THE RECORD INDICATES WORKED IN THE PAST
Medical Assistance Funded Waiver Programs

- CADI - Community Alternatives for Disabled Individuals
  - Case-management
  - Day programs - Adult Day Care
  - In Home Services
  - ILS - Independent Living Skills

- Residential Services
  - TBIW - Traumatic Brain Injury Waiver
  - Case-management
  - Adult Day Care
  - In Home Services
  - ILS
  - Mental Health
  - Residential Services
ACTIVE vs. REACTIVE COUNSELING

- Get releases and start calling
- Look for weak links in the support system
- Inform the network of the plan - ask for support
- Try to modify the network

- Know 1 or 2 key resources
- Anticipate access problems
- Visit clients where they live or will live
- Meet caregivers
- Learn the transportation system
Individual Sessions

- **Short term 15-20 minutes**
- **Daily or multiple times per day**
- **Reduce Stimulus**
- **Reduce Distractions**
Relaxation & Recreation

- Teach arousal reduction techniques
- Physical therapy/ self management techniques
- Planned guided relaxation
- Activities that lessen the chance for impulse control problems
- Assign a peer to help those with eye hand coordination problems
COMPENSATORY SKILLS

- ATTENTION
- PREFERENTIAL SEATING
- DISTRACTION FREE
- SENSITIVE TO FATIGUE
- LOOK FOR WITHDRAWAL BEHAVIORS
  - CONFUSION
  - PERSEVERATION

- LANGUAGE COMPREHENSION
- SPEAK SLOWLY
- USE TAPE RECORDER, NOTES, SIGNS
- USE REPETITION
- STATE QUESTION FIRST
COMPENSATORY SKILLS

- Organizational skills
- Teach common routines
- Teach main idea and then details
- Groups tasks – doctor, work, support meetings

- Task organization
- Use checklist and daily planner
- Work in quiet environment
- Eliminate distractions
- Keep items in designated places
OTHER COGNITIVE DEFICITS

- **SCHIZOPHRENIA**
  - PARANOIA
  - DELUSIONAL
  - PERSECUTORY

- **ANXIETY**
  - PANIC
  - OBSESSIVE COMPULSIVE
  - PTSD
  - STRESS

- **COMMUNICATION**
  - RECEPTIVE
  - EXPRESSIVE

- **ATTENTION DEFICIT**
  - INNATENTION
  - HYPERACTIVE
  - OPPOSITIONAL
  - DISRUPTIVE

- **MOOD DISORDERS**
  - DEPRESSION
  - BI POLAR
In closing…

• People with Brain Injuries do benefit from treatment when compensatory skills are taught and practiced

• Teaching non-brain injury peers about brain injury helps with group cohesion by helping those with injuries feel accepted

• People suffering from brain injuries are participating in traditional programs

• Staff members of these programs can benefit from further education, which can lead to a heightened sense of empathy
Thank You for Your Attention and Interest!

• Don’t hesitate to contact me directly if you would like more information about this topic:

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