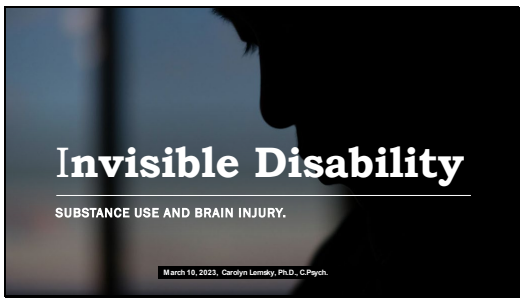
Slide 1



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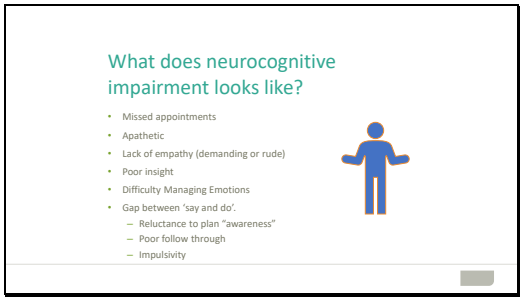

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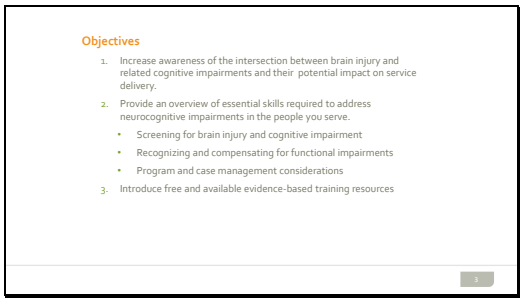


Slide 4

Substance use and Traumatic Injury

- Intoxication increases the risk of having a brain injury.
- Each fall or overdose increases the likelihood of lingering cognitive impairment.
- The nature of brain injury and its outcomes increases vulnerability to substance use disorders
- Brain injury may cause or worsen mental health symptoms
- The cognitive and mental health consequences of brain injury may make it more difficult to benefit from treatment.

T

Slide 5

Populations at risk for brain injury

Substance Users

Military

Domestic Abuse Survivors

Athletes (boxers, football players hockey players)

People with a previous TBI

Homeless or marginally housed

Justice involvement

Rural and Remote

Slide 6

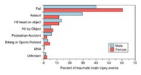
Brain injury endemic among homeless populations: Vancouver research

Traumatic brain injury in precariously housed persons: Incidence and risks

Slide 7

Homelessness

- N=326, 100 participants had a total of 175 TBIs (61% more than one TBI)
- Annualized incidence rates of 20%, as compared to 1% in the general population (Nikoo, Daderman, Krauss, Hwang & Palepu, 2017).
- Opioid dependence and previous TBI were significant risk factors.
- 9.7% events were OD related
- 60.8% intoxication
- 18.3% LOC > 30 min.

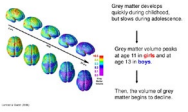


Slide 8

Childhood Brain Injury

- Early insults alter the future development of the brain.
- Apparently mild injuries may have long-term impacts
- Longitudinal data point to elevated risks of
  - Mental health disorders
  - Substance use disorders
  - Legal Involvement
  - Reduced Educational Attainment
  - Homelessness

Proliferation: Grey Matter

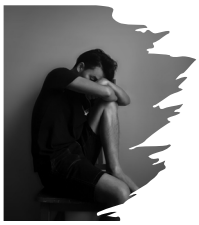


Grey matter develops quickly during childhood, but slows during adolescence.

Grey matter volume peaks at age 11 in girls and at age 13 in boys.

Then, the volume of grey matter begins to decline.

Slide 9



History of brain injury is a marker for symptom complexity

- up to 75% of people attending programs for concurrent disorders have a history of brain injury with loss of consciousness (Hugo et al, 2017).
- History of brain injury is associated with more and more severe psychiatric symptoms.
- History of brain injury increases the risk of suicide three-fold.
- Strongly associated with other social determinants of health including housing, poverty, social isolation

Slide 10

A history of TBI with LOC is common among the clients you serve

Non-institutionalized adults
1 in 5

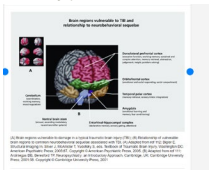
People seeking treatment for SUD
2 - 3 in 5

Psychiatric Inpatients
2 - 3 in 5

Co-occurring Disorders
3-4 in 5

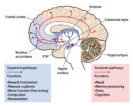
Slide 11

Pattern of Injury



The Finger print of TBI

Neuroanatomy of Reward



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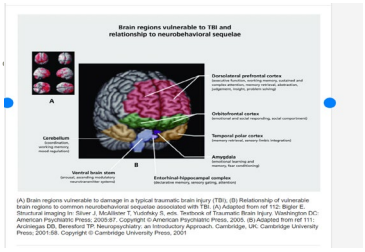
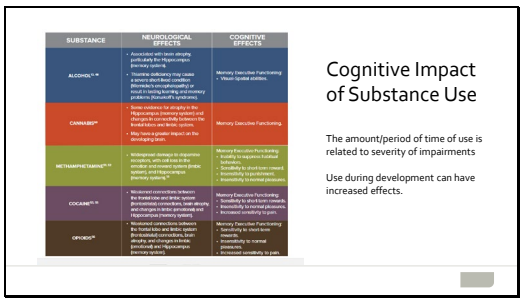
Pattern



(A) Brain regions vulnerable to damage in a typical traumatic brain injury (TBI), (B) Relationship of vulnerable brain regions to common neurobehavioral sequelae associated with TBI. (A) Adapted from ref 112: Bigler E. Structural imaging In: Silver J, Mcallister T, Yudofsky S, eds. Textbook of Traumatic Brain Injury. Washington DC: American Psychiatric Press; 2005:87. Copyright © American Psychiatric Press, 2005. (B) Adapted from ref 111: Arciniegas DB, Beresford TP. Neuropsychiatry: an Introductory Approach. Cambridge, UK: Cambridge University Press; 2001:68. Copyright © Cambridge University Press, 2001

Slide 13

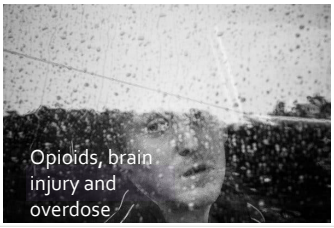


Cognitive Impact of Substance Use

The amount/period of time of use is related to severity of impairments

Use during development can have increased effects.

Slide 14



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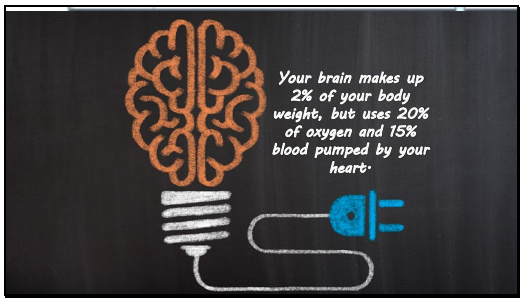


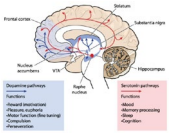
Slide 16

Impact of Damage to pre-frontal cortex and reward system

Effects of hypoxia and opioid use

- Opioid use limits the growth of connections in the hippocampus.
- Changes how pleasure and reward are perceived.
- Damage to frontal lobes where information about emotion is processed and planning and problem-solving take place.

Neuroanatomy of Reward



Slide 17

Impact of respiratory suppression

Hypoxia: Reduction in oxygen available to the brain.

- Temporary memory loss
- Reduced coordination
- Inattentiveness
- Poor judgement

Anoxia: Complete lack of oxygen to the brain.

- Coma
- Seizure
- Brain death

Slide 18

Many factors may contribute to cognitive impairment in people who use opioids


Drug and Alcohol Dependence

Review

Neurocognitive impairments and brain abnormalities resulting from opioid-related overdoses: A systematic review

- Neurotoxic impact of opioids and other drugs on memory and executive functioning.
- Cognitive impact of chronic/infectious disease including HIV, Hepatitis.
- Risk of traumatic brain injury
- Possible additive effects of multiple overdoses

Slide 19

Effects of brain injury and substance use

- Cognitive Changes
  - Attention
  - Memory
  - Problem-solving/planning communication
  - Poor social cognition (reading and responding to emotion, social cues and behaviours)
- Changes in self-regulation
  - A reward system that is tilted toward immediate reward (discounting the value of delay)
  - Less active 'executive functioning'. Behavior is guided by "habit" or compulsion.
  - Less self-reflection

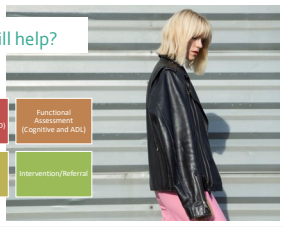
Slide 20

Cognitive Impairment in Addictions Services

- 20 to 70% screen positive for cognitive impairment
  - Higher in programs serving more complex clients
  - 20-50% in programs serving people with alcohol use disorders

Slide 21

What will help?



Slide 22

Recommendations for service providers

- Routine Screening for brain injury and other sources of neurocognitive impairment
- Learning to recognize when behaviors are the result of neurological challenges
- Making programs more accommodating
- Viewing complexity as a rule and develop programming accordingly
- Care plans that include long-term supports

Slide 23

Brief Screening Questions – Brain Injury

OSU TBI-ID Quick Screen

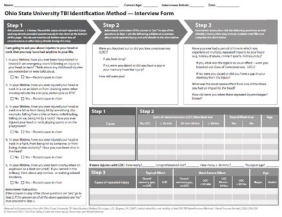
Please think about injuries you have had during your entire lifetime, especially those that affected your head or neck. It might help to remember times you went to the hospital or emergency room. Think about injuries you may have received from a car or motorcycle wreck, bicycle crash, being hit by something, falling, being hit by someone, playing sports, or during military service.

a. Thinking about any injuries you have had in your lifetime, were you ever knocked out, or did you lose consciousness?
_____ Yes
_____ No (IF NO, STOP HERE)

b. What was the longest time you were knocked out or unconscious? (Choose just one; if you are not sure, please make your best guess.)
_____ knocked out or lost consciousness *for less than 30 min*
_____ knocked out or lost consciousness *between 30 min and 24 hours*
_____ knocked out or lost consciousness *for 24 hours or longer*

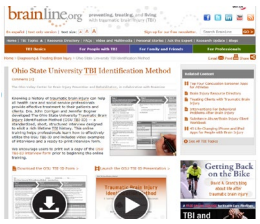
c. How old were you the first time you were knocked out or lost consciousness?
_____ years old

Slide 24



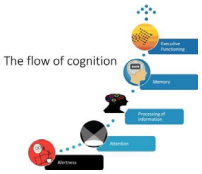
Ohio State University TBI Identification Method — Interview Form

Slide 25



Slide 26

- Alertness
  - Timing of appointments
  - Allowing breaks and movement
  - Modifying schedules
- Attention
  - Removing distractions
  - Visual aids
- Processing of information
  - Slow down
  - Elicit
- Memory
  - Summarize frequently
  - Provide written information
  - Strategize with the client about using memory aids
    - Passwords
    - Texts/messages
    - Background on phone screens.



Slide 27

Supporting Cognitive Processes (Reducing Cognitive Load)

- Slow down
- Break down tasks
- Use routines
- Create reminders and teach clients to use them
- Set clear goals and agendas
- Remove Distractions

Slide 28

The three brains

Reptilian Brain - Present

What should I do based on what is happening **right now**?

Limbic System - Past

What should I do based on what is happening **right now** and on what happened in the **past**?

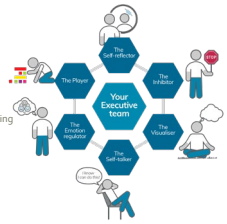
Neocortex - Future

What should I do based on what is happening **right now,** what happened in the **past** and what I want in the **future**?

Slide 29

The Executive team

- Self-reflector - Task monitoring, self awareness
- Inhibitor – Stop and Think
- Visualiser – Considering time Horizons
- Self-talker – Self Coaching
- Emotion regulator – Monitoring, thinking, responding
- Player – Problem-solving and Planning



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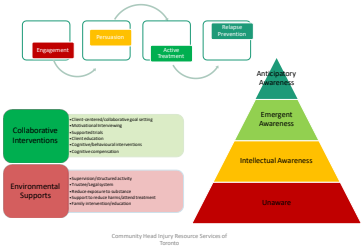


Slide 31

RESOURCES

Slide 32

https://aci.health.nsw.gov.au/projects/ace-program

- Screening
- Intervention
- Online training modules for facilitators
- Free materials

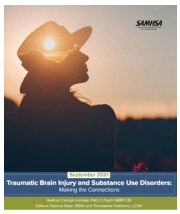
Slide 33

Multi-Site Trial

Increased completion rates (from 34% to 63%)

Reduction in rates of cognitive impairment, (from 53% to 27%)

Slide 34



https://attcnetwork.org/centers/mid-america-attc/traumatic-brain-injury-sud-series

- Brain Basics
- Brain injury and outcomes
- Screening for Brain Injury
- Screening for Functional Impairments
- Recognizing and Accommodating Cognitive Impairments
- Recommendations for Service Delivery.
- Resources

Slide 35

Patterns of Injury

The Fingerprint of TBIs

Brain Injuries and Overdose

Slide 36

Other sources of cognitive difficulties

History of Substance Use

Overdose

Slide 37

Screening

- When
- Stigma
- Trauma-informed Care
- Methods
- Interpretation

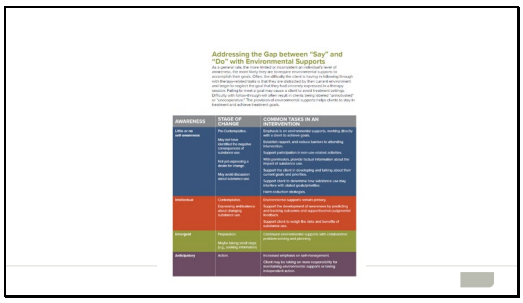
Slide 38

Slide 39

Self Awareness

- Self-Awareness Defined
- Assessment of Self-Awareness
- Impact on Programming

Slide 40



Slide 41

Slide 42

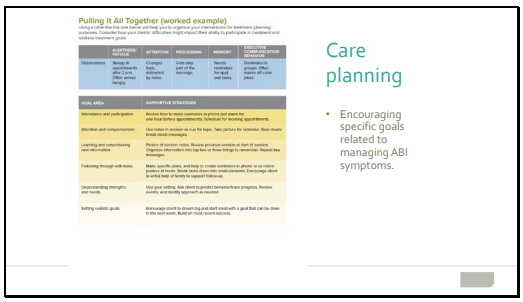
Recommendations for Service Delivery

- Outreach groups
- Intake
- Community Linkages
- Motivational Interviewing
- Community Reinforcement and Family Approach (CRAFT)
- Specialized Referrals

Adaptation for Outreach Services

Adaptation for Intake Services

Slide 43



Care planning

- Encouraging specific goals related to managing ABI symptoms.

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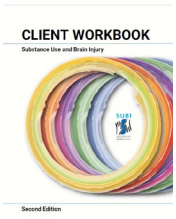
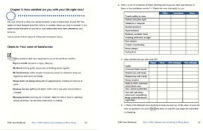
Introducing SUBI workbook 2.0



Slide 45

- MI adapted approach
- Inclusive Language
- Brief readings to encourage discussion and reflection



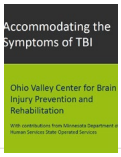
Slide 46

- MI adapted approach
  - Goals
  - Information
  - Tips
  - Check-in
  - Plan

T

Slide 47

WWW.Ohiovalley.org



Slide 48

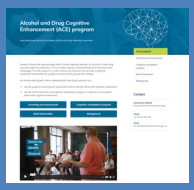
CRA/CRAFT

"Multiple research reviews and meta-analyses of the treatment-outcome literature have shown CRA to be among the most strongly supported treatment methods (Finney and Monahan 1996; Holder et al. 1991; Miller et al. 1995, 2005)."

Building a life that is more reinforcing than using

Slide 49

https://aci.health.nsw.gov.au/projects/ace-program



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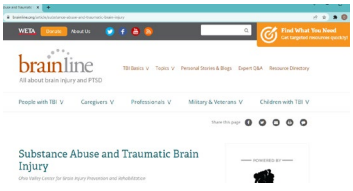
www.Brainline.org



Slide 51

https://abitoolkit.ca

- IVP Specific information
- Brain Injury Basics
- Screening with IVP-specific recommendations
- Recommendations for accommodations

https://www.youtube.com/watch?v=4IsDsvID0Sc&t=236s

Slide 52

Where Can I Get these Resources?

https://attcnetwork.org/centers/mid-america-attc/traumatic-brain-injury-sud-series

WORKBOOK:

https://static1.squarespace.com/static/5eb2bae2bb8af12ca7ab9f12/t/61c216a89268ca613d4bd917/1640109740567/SUBI+2+FINAL+508+accessible+12_16_21.pdf

Slide 53

Traumatic Brain Injury, Mental Health and Addiction

John Corrigan, Ph.D.
Director, Ohio Valley Center for Brain Injury Prevention and Rehabilitation

https://www.youtube.com/watch?v=V3ymctg8g88

Traumatic Brain Injury and Behavioural Health Challenges

Carolyn Lemsky, Ph.D.,
Director, substance use and brain injury bridging program

https://www.youtube.com/watch?v=4XbIUWhl1d0&t=126s