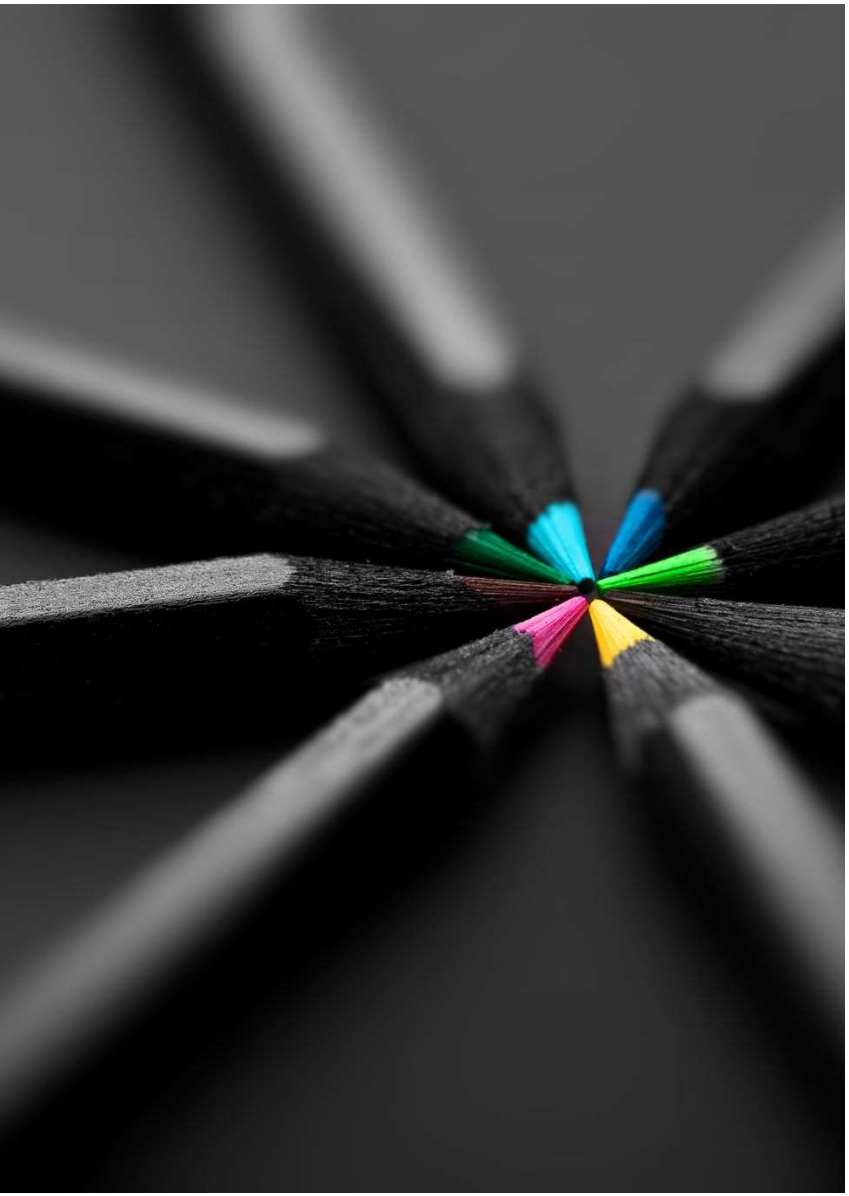

Integrative Support for Individuals Living with a Brain Injury and Intellectual and Developmental Disorders

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April 29, 2021

Disclosures

- None

Learning Objectives

- Descrubes types of treamment teams and how to work within them
- Described 8 interventions for cognitive, psychological, and social issues
- Describe how to develop culturally sensitive goals and objectives within the 8 interventions
- Describe how to manage ethical issues related to goals and objectives

Definition IDD and DD

Intellectual Disability or Developmental Disorder

- Deficits in intellectual functions
- Deficits in adaptative function
- Onset during developmental period
- Level of severity: mild, moderate, severe, and profound
- Note: IQ scores above 70 may exist with adaptive functioning comparable to a lower IQ and result in the diagnoses of IDD.
- DSM-V, 2013 APA

Developmental Disability

- a severe, chronic disability of an individual who has a mental or physical impairment
- by the age of 22
- which is likely to continue indefinitely and results in substantial functional limitations in three or more areas of major life activity.
- https://www.kennedykrieger.org/patient-care/conditions/developmental-disorders

Definition Neurocognitive Disorder

Major

- Significant cognitive decline in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition)
- Cognitive deficits interfere with independence in everyday activities
- Not due to delirium and not better explained by other mental disorder
- Specify what due to: e.g., TBI
- Specify with or without behavioral disturbance and severity (mild, moderate and severe)

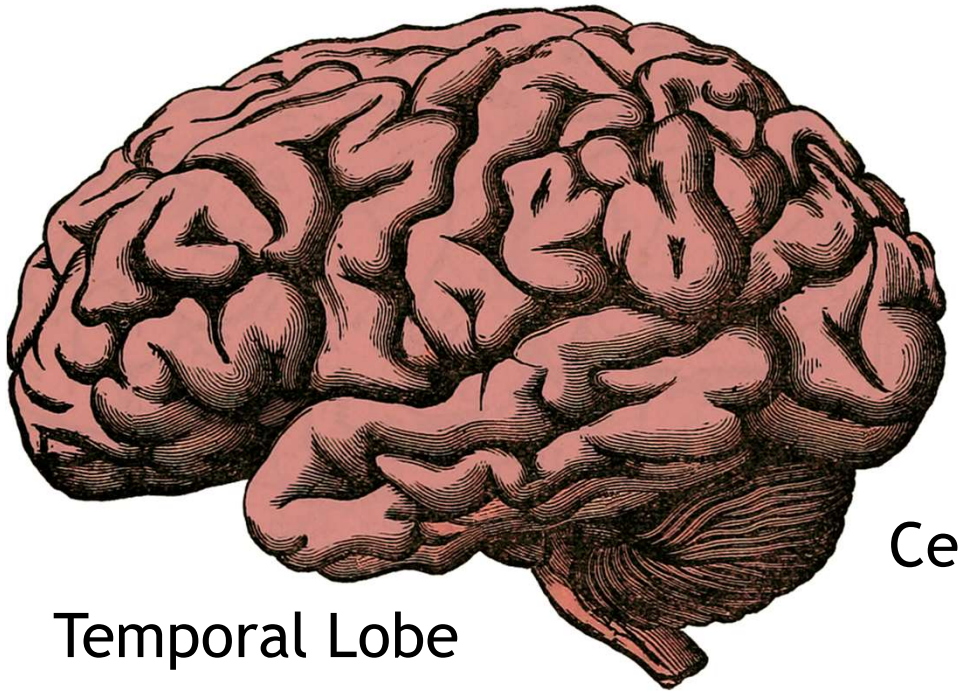
Mild

- Modest cognitive decline in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition)
- Cognitive deficits DO NOT interfere with independence in everyday activities, but greater effort is needed
- Not due to delirium and not better explained by other mental disorder
- Specify what due to: e.g., TBI
- Specify with or without behavioral disturbance

Human Brain

Parietal Lobe

Integrating sensory information, knowledge of numbers and their relations, visual spatial processing



Frontal Lobe

Planning, doing, evaluating, organizing, inhibiting

Occipital Lobe

Visual processing

Cerebellum

Movement, balance, attention

Temporal Lobe

Language, speech, memory, emotion, facial recognition

Brain Stem

Heart rate, blood pressure, alertness breathing, swallowing, digestion

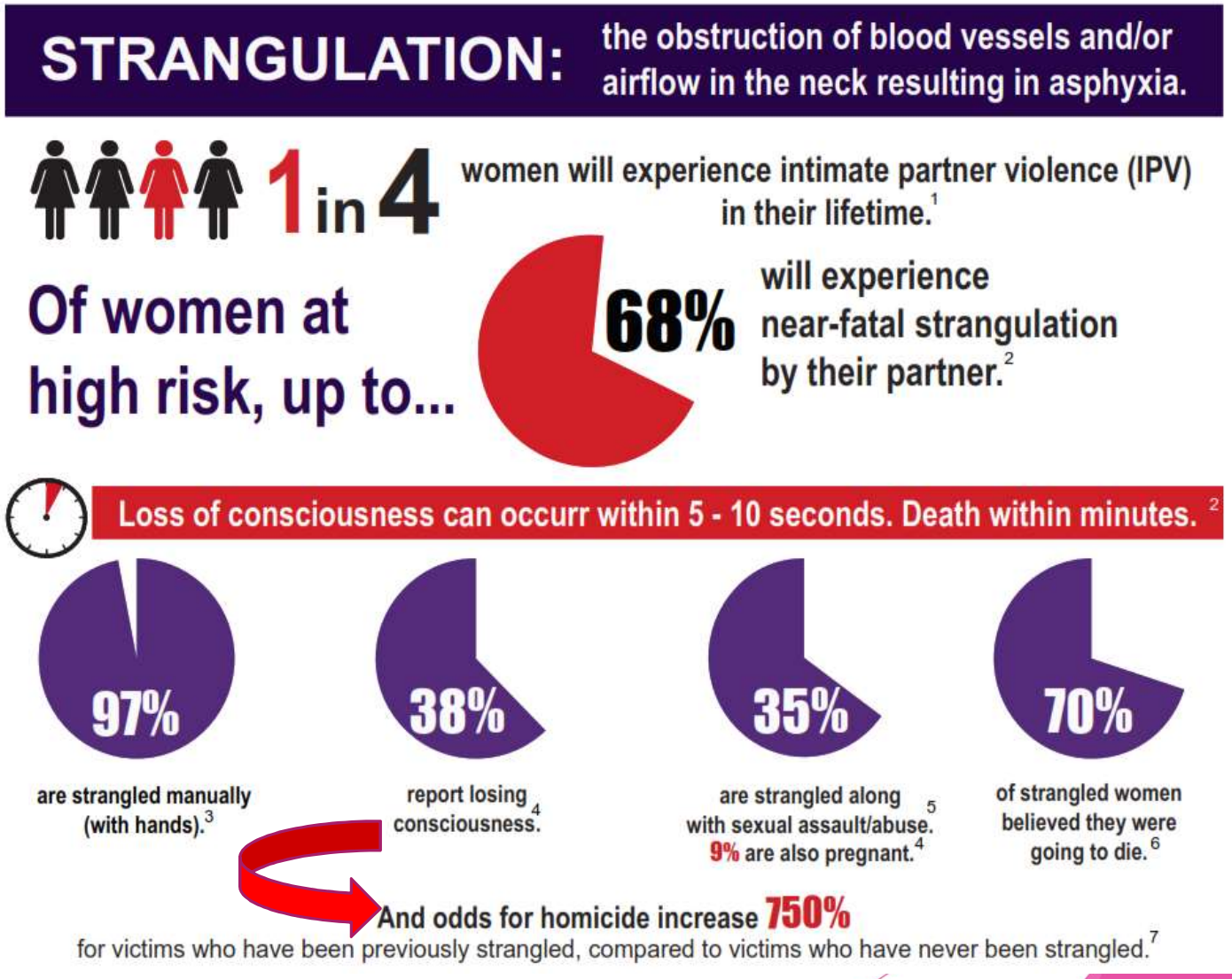
Two Categories of Brain Injuries

Traumatic

1. Blow to Head
   Coup contra coup
2. Penetrating Injury
3. Diffuse Axonal Injury

Acquired

1. Anoxic - Hypoxic
2. Toxic
3. Medical


STRANGULATION:
the obstruction of blood vessels and/or airflow in the neck resulting in asphyxia.
1 in 4
women will experience intimate partner violence (IPV) in their lifetime.[1]
Of women at high risk, up to...
68%
will experience near-fatal strangulation by their partner.[2]
Loss of consciousness can occurr within 5 - 10 seconds. Death within minutes.[2]
97%
are strangled manually (with hands).[3]
38%
report losing consciousness.[4]
35%
are strangled along with sexual assault/abuse.[5] 9% are also pregnant.[4]
70%
of strangled women believed they were going to die.[6]
And odds for homicide increase 750%
for victims who have been previously strangled, compared to victims who have never been strangled.[7]

Occurrence of Traumatic Brain Injuries

- The top 3 causes of TBI are 1. **falls**, 2. **being struck by or against an object** and 3. **motor vehicle crashes** in the US. (CDC)
- 2.87 million emergency department (ED) visits, hospitalizations, and deaths nationwide were TBI related in the US in 2014 (CDC)
- 2 million to 8 million people most likely experience a concussion each year in the US (Victoroff, 2019 p 100-101)
- 5.3 million people are estimated to live with long-term disabilities from TBI in US. And is the leading cause of death and disability. (CDC)
- TBI is predicted to become the third leading cause of global mortality and disability by 2020 (Victoroff, 2019 p3)
- 5,024 people were hospitalized as a result of TBI in NM from 2012-2016, with the highest incident rate in the elderly, NM- IBIS
- **In NM approximately 369,319 adults (25% of the adult population) have had a TBI with loss of consciousness and 59,091 (4%) adults are in need of services for TBI.** (Whiteneck, 2019)

Brain Injury

- TBI is the leading cause of death and disability in people younger than 45 in the US (Nguyen et al., 2016)
- Concussive brain injuries (CBI) are the most common type of brain injury and “more than 40% of survivors still suffer from… neurobehavioral deficits at one year post-injury…which has global implications for human health” CBI are not mildTBI (Victoroff 2019 p XV)

Incident of TBI in IDD vs non IDD (Seto et al., 2021)

- In Ontario, adults with IDD had almost **two times** the incidence of TBI relative to those without IDD (2.8 vs 1.53 new cases per 1,000) over a 15 year study period.
- In both cohorts, a higher proportion of TBI cases were younger (19–29 years) and male.
- **Falls** are an important contributor to injuries in persons with IDD and in the general population, and are consistently found to be the leading cause of traumatic brain injury (TBI).
- Persons with IDD experienced a significantly higher risk of TBI compared to the general population indicating the possibility, and **need, for targeted TBI prevention**.

- Seto, K., Lloyd, M., Chan, V., Chung, H., & Balogh, R. (2021). Traumatic brain injury incidence in adults with intellectual and developmental disabilities. *The Canadian Journal of Neurological Sciences. Le Journal Canadien Des Sciences Neurologiques, 48*(3), 392–399. https://doi-org.libproxy.unm.edu/10.1017/cjn.2020.181

How Severe Can a Brain Injury Be?

Concussion / Mild

- May resolve within 10 days, some effects may be longstanding and interfere with daily activities GCS 13-15 , But a CBI can be more severe than mild

Moderate

- Effects interfere with daily activities, require support and may be longstanding GCS 9-12

Severe

- Effects interfere with daily activities, require a great deal of support, long standing, GCS 8 or less

Death

Two Screens for Brain Injury

H.E.L.P. S. At National Association of State Head Injury (NASHIA.org)

- 5 questions to ask in interview that includes hit on head, hospitalization, loss of consciousness, behavioral changes, and medical illnesses
- Easy to score
- Can determine if referral is needed from results
- Educates on brain injury
- https://www.nashia.org/pdf/hotopics/pa-helps-screening-tool.pdf

OSU-TBI – ID at Ohio State University Brain Injury Prevention and Rehabilitation

- Interview or questionnaire
- 5 questions to ask with follow up and one question about repeated head injuries
- 3 step process
- Provides information on worst, first, multiple, recent and other sources of brain injury
- Training video available for free
- https://wexnermedical.osu.edu/neurological-institute/departments-and-centers/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id

HELPS Brain Injury Screening Tool

Consumer Information: _____

_____

_____

Agency/Screener's Information: _____

_____

H Have you ever **H**it your **H**ead or been **H**it on the **H**ead? ☐ Yes ☐ No

Note: Prompt client to think about all incidents that may have occurred at any age, even those that did not seem serious: vehicle accidents, falls, assault, abuse, sports, etc. Screen for domestic violence and child abuse, and also for service related injuries. A TBI can also occur from violent shaking of the head, such as being shaken as a baby or child.

E Were you ever seen in the **E**mergency room, hospital, or by a doctor because of an injury to your head? ☐ Yes ☐ No

Note: Many people are seen for treatment. However, there are those who cannot afford treatment, or who do not think they require medical attention.

L Did you ever **L**ose consciousness or experience a period of being dazed and confused because of an injury to your head? ☐ Yes ☐ No

Note: People with TBI may not lose consciousness but experience an "alteration of consciousness." This may include feeling dazed, confused, or disoriented at the time of the injury, or being unable to remember the events surrounding the injury.

P Do you experience any of these **P**roblems in your daily life since you hit your head? ☐ Yes ☐ No

Note: Ask your client if s/he experiences any of the following problems, and ask when the problem presented. You are looking for a combination of two or more problems that were not present prior to the injury.

- ☐ headaches
- ☐ dizziness
- ☐ anxiety
- ☐ depression
- ☐ difficulty concentrating
- ☐ difficulty remembering
- ☐ difficulty reading, writing, calculating
- ☐ poor problem solving
- ☐ difficulty performing your job/school work
- ☐ change in relationships with others
- ☐ poor judgment (being fired from job, arrests, fights)

S Any significant **S**icknesses? ☐ Yes ☐ No

Note: Traumatic brain injury implies a physical blow to the head, but acquired brain injury may also be caused by medical conditions, such as: brain tumor, meningitis, West Nile virus, stroke, seizures. Also screen for instances of oxygen deprivation such as following a heart attack, carbon monoxide poisoning, near drowning, or near suffocation.

Scoring the HELPS Screening Tool

A HELPS screening is considered positive for a *possible* TBI when the following 3 items are identified:

1.) An event that could have caused a brain injury (yes to H, E **or** S), **and**
2.) A period of loss of consciousness or altered consciousness after the injury or another indication that the injury was severe (yes to L or E), **and**
3.) The presence of two or more chronic problems listed under P that were not present before the injury.

Note:

- A positive screening is **not sufficient to diagnose TBI** as the reason for current symptoms and difficulties - other possible causes may need to be ruled out
- **Some individuals could present exceptions** to the screening results, such as people who do have TBI-related problems but answered "no" to some questions
- Consider positive responses within the context of the person's self-report and documentation of altered behavioral and/or cognitive functioning

The original HELPS TBI screening tool was developed by M. Picard, D. Scartsbrick, R. Paluck, 9/91, International Center for the Disabled, TBI-NET, U.S. Department of Education, Rehabilitation Services Administration, Grant #H128A00022. The Helps Tool was updated by project personnel to reflect recent recommendations by the CDC on the diagnosis of TBI. See http://www.cdc.gov/ncipc/pub-res/tbi_toolkit/physicians/mtbi/diagnosis.htm.

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Treatment of Concussion

- Biological
- Emotional
- Cognitive
- Sleep
- Emergent Issues

- Post Concussion Symptom Scale
  - https://www.education.ne.gov/wp-content/uploads/2017/07/Post-Concussion_Symptom_Checklist.pdf
  - https://www.missourilawyers.com/wp-content/uploads/2014/01/Post-Concussion-Test-PCSS.pdf
- Acute Concussion Evaluation A.C.E.
- CDC website www.cdc.gov/headsup/index.html

Concussion Symptoms Check List (A.C.E.)

B. Symptom Check List* Since the injury, has the person experienced any of these symptoms any more than usual today or in the past day?

Indicate presence of each symptom (0=No, 1=Yes). **Lovell & Collins, 1998 JHTR*

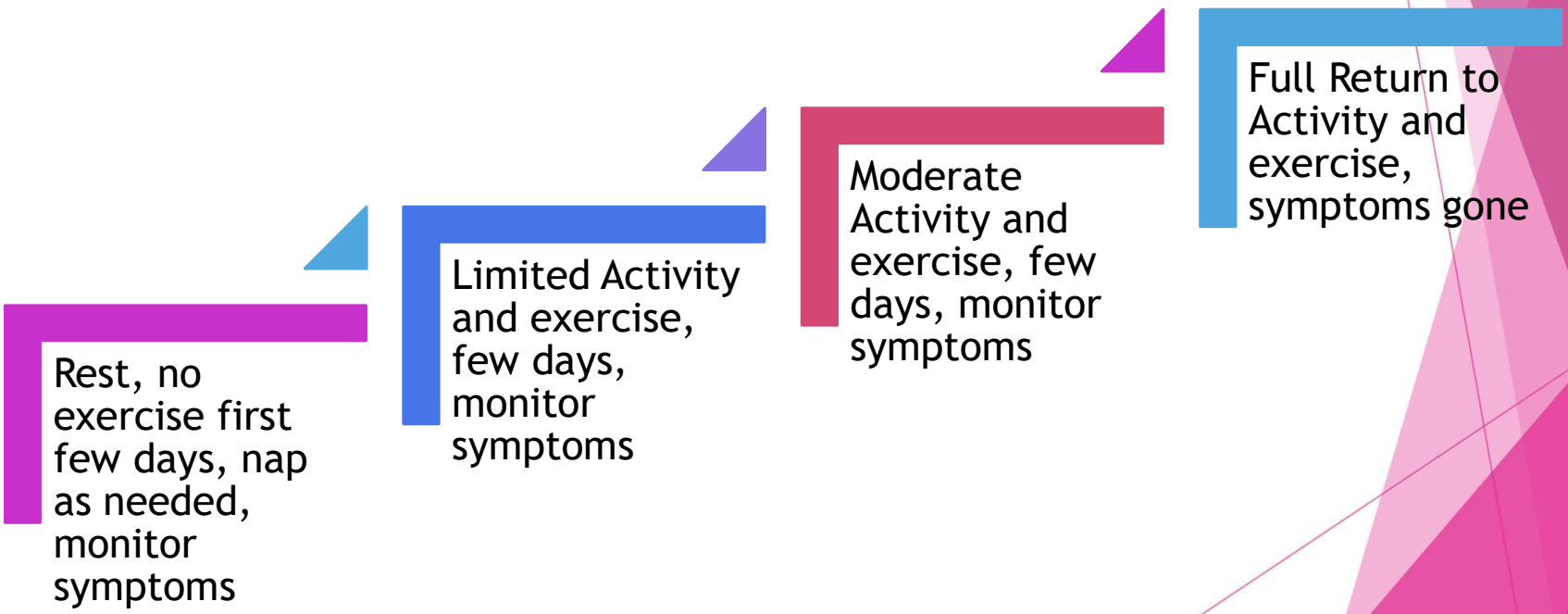
PHYSICAL (10)		COGNITIVE (4)		SLEEP (4)		
Headache	0 1	Feeling mentally foggy	0 1	Drowsiness	0 1	
Nausea	0 1	Feeling slowed down	0 1	Sleeping less than usual	0 1	N/A
Vomiting	0 1	Difficulty concentrating	0 1	Sleeping more than usual	0 1	N/A
Balance problems	0 1	Difficulty remembering	0 1	Trouble falling asleep	0 1	N/A
Dizziness	0 1	**COGNITIVE Total (0-4)**	_____	**SLEEP Total (0-4)**	_____	
Visual problems	0 1	**EMOTIONAL (4)**				
Fatigue	0 1	Irritability	0 1			
Sensitivity to light	0 1	Sadness	0 1			
Sensitivity to noise	0 1	More emotional	0 1			
Numbness/Tingling	0 1	Nervousness	0 1			
PHYSICAL Total (0-10)	_____	**EMOTIONAL Total (0-4)**	_____			
(Add Physical, Cognitive, Emotion, Sleep totals) Total Symptom Score (0-22)	_____					

Exertion: Do these symptoms worsen with:
Physical Activity __Yes __No __N/A
Cognitive Activity __Yes __No __N/A

Overall Rating: How different is the person acting compared to his/her usual self? (circle)
Normal 0 1 2 3 4 5 6 Very Different

https://www.cdc.gov/headsup/pdfs/providers/ace_v2-a.pdf

4 Steps To Recover from Concussion: Return to Learn! (CDC)



LEARN CONCUSSION SIGNS AND SYMPTOMS

SEE FULL LIST OF SYMPTOMS @

www.cdc.gov/Concussion

Post Concussion Symptoms?

- Up to 10 to 14 days is typical recovery time from concussion
- Get help IMMEDIATELY if symptoms worsen
- Get help if symptoms continue after two weeks
- Multiple or repeated concussions increase risk of longer recovery
- Post-Concussion Syndrome can occur if symptoms persist for more than 30 days, about 40% of people with concussion experience symptoms up to a year after the injury
- Support helps

Repeat TBI risk factors

- Median time to recurrence ranged from 0.5 to 3.8 years across 22 studies.
- In studies where cases were ascertained from multiple points of care, at least 5.50% (95% CI 4.80%-6.30%) of patients experienced a recurrence after a 1-year follow-up.
- **Risk factors measured at time of index traumatic brain injury (TBI) that were significantly associated with rTBI in more than one study were male sex, prior TBI before index case, moderate or severe TBI, and alcohol intoxication.**
- Risk factors reported in a single study that were significantly associated with rTBI were epilepsy, not seeking medical care, and multiple factors indicative of low socioeconomic status.
- rTBI is an important contributor to the general population TBI burden. Certain risk factors can help identify individuals at higher risk of these repeated injuries. However, higher quality research that improves on rTBI surveillance methodology is needed. (Lasry, O. et al., 2017)

Outcomes IDD

- Adults with IDD were found to feel less autonomous, more lonely, more afraid in their homes, and less likely to have friends (Sheppard-Jones, et al. 2005)
- Skill impairments arising from difficulties in communication, comprehension, perspective taking and information processing are considered to be primary reasons for the increased susceptibility to loneliness in people with IDD (Gilmore & Cuskelly, 2014)
- Further deficits include behavioural regulation such as the ability to inhibit aggressive behaviours (Bellanti & Bierman, 2000)
- up to 60% of adults with IDD exhibit aggression and around 20% have any challenging behaviours (Koritsas & Iacono, 2012; Lundqvist, 2013)
- an average loneliness prevalence of 44.74% was estimated across a total sample of 11,685 adults with IDD. (Alexandra et al 2018)

Alexandra, P., Angela, H., & Ali, A. (2018). Loneliness in people with intellectual and developmental disorders across the lifespan: a systematic review of prevalence and interventions. *Journal of Applied Research in Intellectual Disabilities*, *31*(5), 643–658. https://doi-org.libproxy.unm.edu/10.1111/jar.12432

Medical Problems post Brain Injury

- Movement
- Balance - Dizziness
- Vision
- Pain
- Headaches – Migraines
- Fatigue
- Sleep
- Seizures
- Metabolic – Endocrine
- Smell- Taste
- Hearing
- Toileting
- Shunts
- Feeding - Swallowing

Cognitive Issues post Brain Injury

Tires quickly

Can't seem to wake up

Slow to do things

Short attention span

Poor immediate memory

Poor long-term memory of past events

Difficulty learning new things and remembering recent events

Can't say what I'm thinking well

- Poor planning
- Can't get started on or finish tasks
- Poor organization
- Blurts things out at the wrong time
- Poor awareness of problems and solutions
- Slow to read and remember what was read
- Slow to do simple addition or can't do it

Psychosocial Issues post Brain Injury

- Depression
- Anxiety
- PTSD
- Suicide
- Anger – Aggression
- Substance Use
- Isolation – loss of family and friends
- Loss of independence
- Loss of job, housing and no food or transportation
- No insurance or adequate medical or behavioral care
- Worsening of any behavioral health issues prior to brain injury
- Duration of changes can be fleeting to lasting a life time, repetitive brain injuries worsen outcome

Major Overlap of Symptoms Between Issues

	Brain Injury	Acute Stress/ PTSD	Anxiety	Depression	Substance Use
Anxious around others	X	X	X	X	X
Hopelessness	X	X	X	X	X
Irritability	X	X	X	X	X
Medical problems	X	X	X	X	X
Loss of friends	X	X	X	X	X
Loss of job	X	X	X	X	X
Poor attention	X	X	X	X	X
Poor memory	X	X	X	X	X
Sleep issues	X	X	X	X	X
Sadness	X	X	X	X	X
Suicidality	X	X	X	X	X

Psychiatric Disorders and TBI

- TBI is associated with substantially elevated risks of premature mortality, including suicide, injuries and assaults, more so when accompanied by a psychiatric disorder or substance abuse (Fazel et al., 2014).
- In pediatric TBI, psychiatric disorders with pre-injury onset are more common than population-based rates (Max, JE et al., 2012).
- Early TBI (before age 12) doubles likelihood of an adult psychiatric diagnosis.
- Premorbid alcohol abuse increases the risk of developing mood disorders post-TBI and increases risk of alcohol abuse relapse.
- TBI patients with mood disorder and premorbid alcohol abuse had major difficulties resuming a productive life (Jorge et al., 2005)

Depression and TBI

- Multiple studies have found high rates of post TBI depression in pediatric and adult populations and called for further research into this. (Jones et al., 2017, Juengst, SB et al., 2017; Roy, D et al., 2017; Laliberte Durish C et al., 2017; Ricardo and Arciniegas, 2013; Max JE et al., 2012; Hart, T. et al., 2011; Seel, RT et al., 2003)
- "Minor depression may be as common as major depression after TBI and should be taken seriously for its association to negative outcomes related to participation and quality of life. Findings suggest that, as in other populations, minor and major depression are not separate entities, but exist on a continuum." Depression severity was significantly associated with level of societal participation. (Hart, T. et al., 2011)

Suicide Risk

- Two to four times greater for persons living with TBI than for the general population
- Mild brain injury increases risk.
- Psychiatric or substance use disorders co-occurring with TBI increase risk

(Substance Abuse Treatment Advisory 2010).

Mood Post TBI After Discharge from Hospital

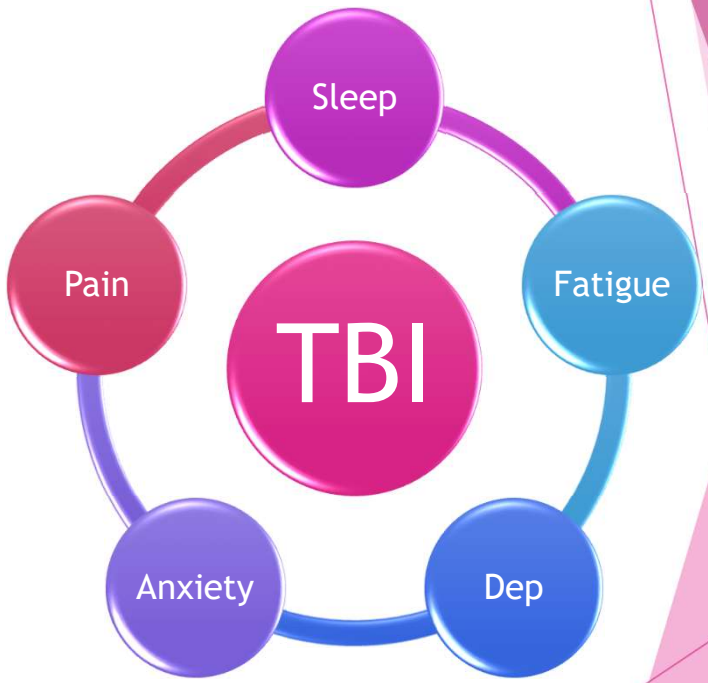
- Patients initially discharged home tended to have better mood scores over time than patients first treated in inpatient rehabilitation centers or nursing homes
- Mood starts to improve 18 months after TBI when motor and cognitive outcome have stabilized.
- Time post TBI, **cognitive outcome** and initial discharge destination are the strongest predictors of mood up to 3 years after TBI.
- Mood scores of patients with moderate and severe TBI should be frequently monitored, especially in rehabilitation centers and nursing homes. (Valk-Kleibeuker K et al., 2014)

PTSD &TBI

- Both PTSD and TBI commonly occur in the general population, both share some pathophysiological characteristics and both are associated with cognitive impairment and sleep disruption.
- PTSD and TBI present with a number of overlapping symptoms, which can lead to over-diagnosis or misdiagnosis. Both conditions are associated with co-morbidities important in diagnosis and treatment planning.
- More research is needed to elucidate what treatments are effective in PTSD and TBI co-morbidity and on factors predictive of treatment success. (Taney KS et al., 2014)

Sleep Disorders and TBI

- Sleep disturbance and fatigue are persistent and common sequela of TBI
- Fatigue may cause depression and anxiety
- Impaired cognitive functioning may create fatigue which in turn requires greater cognitive effort and can result in pain. (Ponsford and Sinclair, 2014)



Depression Screens and Measures

- PHQ9
- Depression and Anxiety Stress Scale (DASS and DASS21)
- Hospital Anxiety and Depression Scale
- Beck Depression Inventory
- Neurobehavioral Functional Inventory
- Wimbledon Self Report Scale
- Child Depression Inventory
- Other

Suicide Assessment Tools

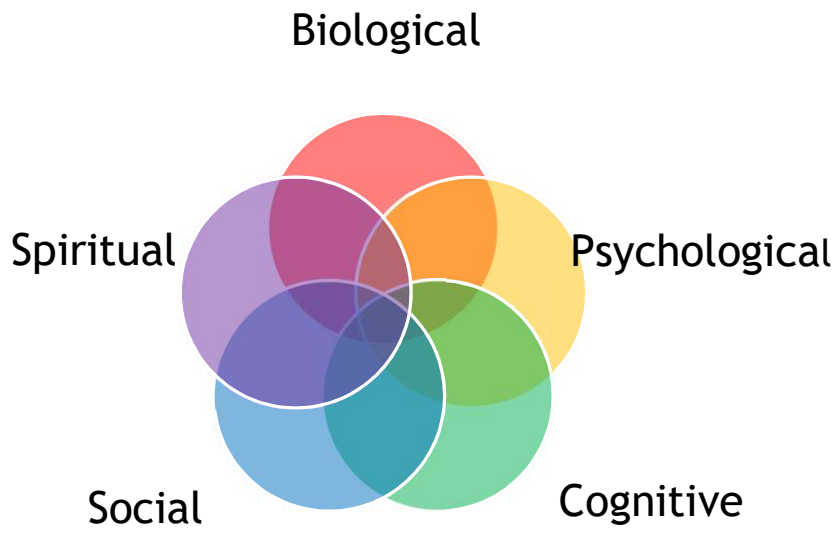
- Columbia-Suicide Severity Rating Scale (C-SSRS): Mental health training is not required to administer it.
- SAFE-T (Suicide Assessment Five-Step Evaluation and Triage)
- Suicide Behaviors Questionnaire (SBQ-R)
- Above measures listed at SAMHSA website: http://www.integration.samhsa.gov/clinical-practice/screening-tools#depression
- Question, Persuade, and Refer (QPR) http://www.qprinstitute.com/
- PHQ-9
- Resource: 1-800-273-TALK (8355) National suicide prevention hotline that links to local crisis center

PTSD measures

- Primary Care – Posttraumatic Stress Disorder Screen (PC-PTSD, score of 3 or 4, positive)
- Posttraumatic Stress Disorder Civilian Version (PCL-CV, score of 50 or higher)

Integrative Rehabilitation Model

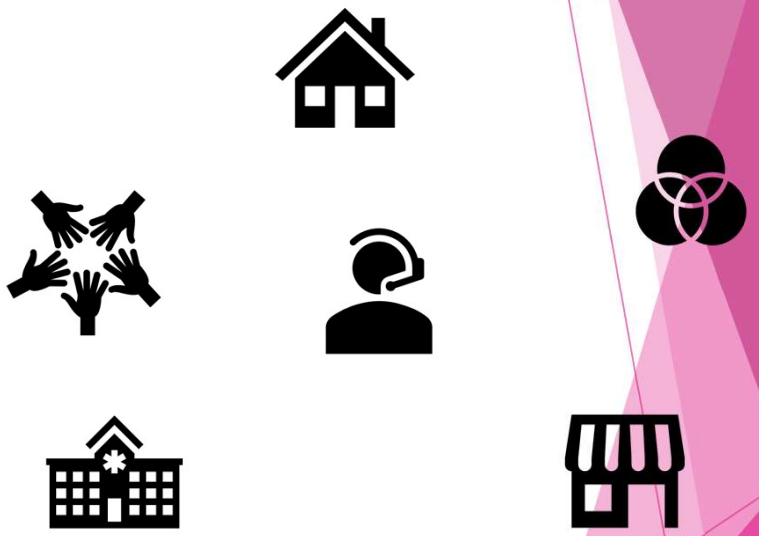
BioPsychoCogSocialSpiritual Model



1. Medical Health Professionals
2. Rehabilitation Therapists (PT, OT, SLP)
3. Psychologists - Counselors
4. Social Work
5. Information Technology
6. Support Agencies
7. Person Living with Brain Injury
8. Family
9. School or Work
10. Community

Baseline Assessments

Assessments	Professional * anyone can assess
Medication Effects	* MD
Awareness of Deficits	* All
Psychological	* Psychologist
Substance Use	* MD Counselor
Medical	* MD
Pain	* MD, PT
Vision	* Eye doctor
Family	* Social Worker
Neuropsychological	*Neuropsychologist
Speech Language	*Speech Therapist
Communication Needs	*Speech Therapist
Balance - Walking	*Physical Therapist
Activities of Daily Living	*Occupational Therapist
Neurological	*Neurologist



Integrative Cognitive Rehabilitation Psychotherapy (ICRP)

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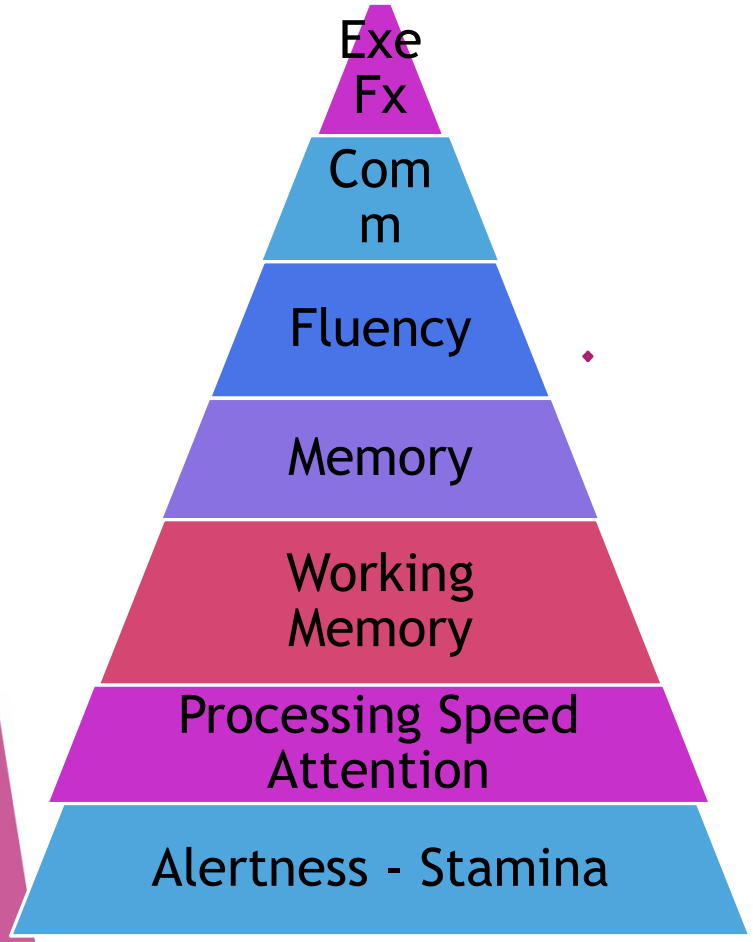
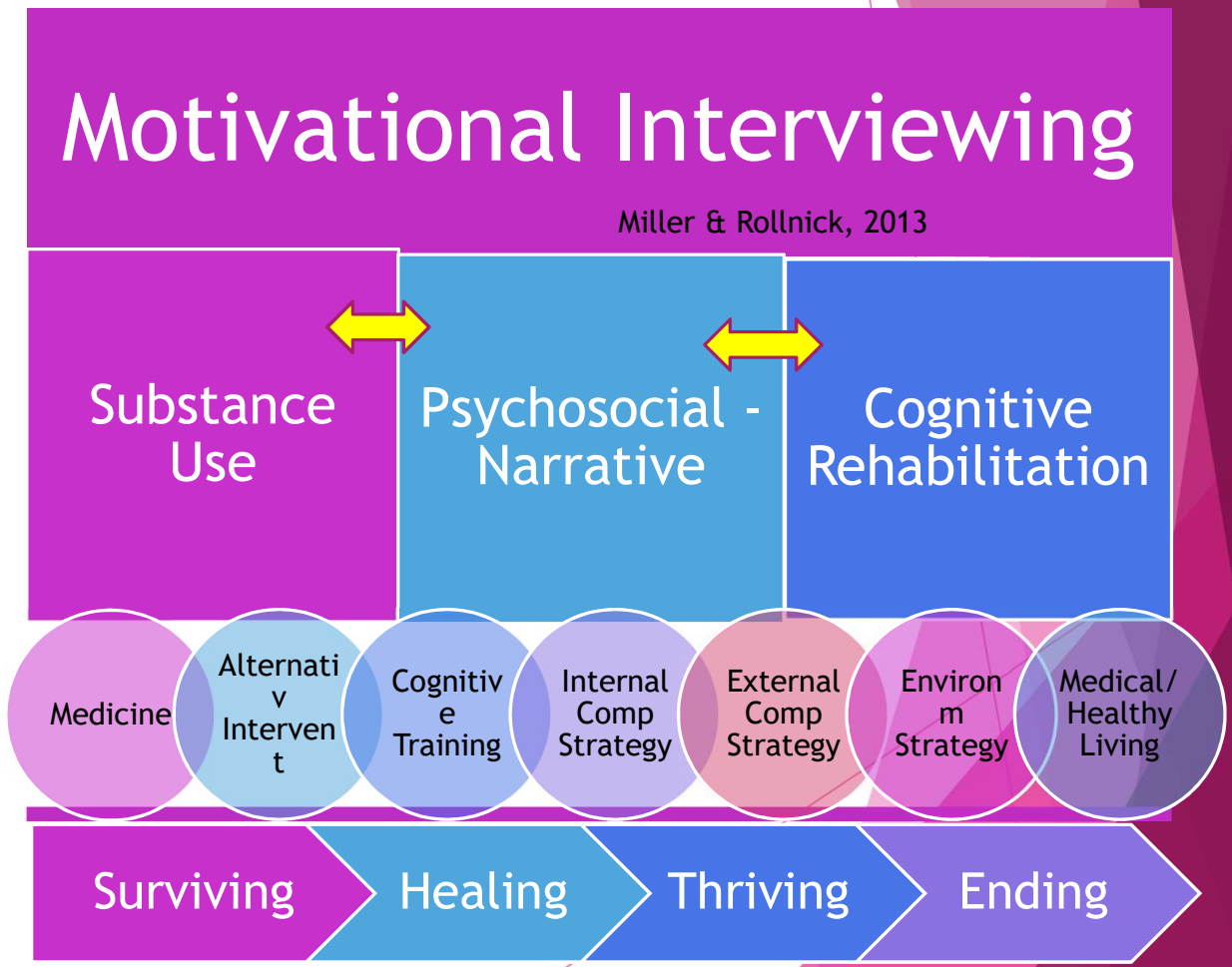




Developmental Metacognitive Approach, Laatsch & Stress, 2009

Break 15 min

Predictors of Outcome

- Premorbid Level of Functioning
- Education
- Severity of Injury
- Family Functioning
- Age of Onset
- Type of Interventions

Emotional Reactions and Premorbid Psychiatric Issues (ACRM Manual Haskins et al., 2014)

- Neuropathological changes
- Adjustment difficulties
- Premorbid conditions
- Important to obtain a thorough history and current level of emotional functioning.
- Psychotherapy may be needed when mood issues are prominent.

Awareness (ACRM Manual Haskins et al.,2014)

- Neurocognitive – Anosognosia
  - Global impairment results in problems with reasoning and abstract thought
  - Domain-specific impairments are difficult to perceive and recognize
- Psychological denial – to avoid emotionally painful thoughts, direct confrontation discouraged; developing hope helps
- Social/environmental – lack of education and information about brain injury; education helps
- Adjust therapeutic interventions accordingly

Family Factors (ACRM Manual Haskins et al., 2014)

- Family functioning is an important variable in predicting outcome.
- Families struggle to adjust.
- Integrating families into treatment enhances outcomes.
- Educating family members on individual's impairments and their effect on behavior and family functioning is important.

Neuropsychological Evaluation Laatsch 08

- Attention
- Processing speed
- Working memory
- Memory
- Executive functioning
- Language
- Achievement
- Fluency
- Overall intelligence
- Psychological issues

Hierarchical Structure of Cognition (Suchy, 2016)

- "It is a well-recognized fact that cognition is organized in a hierarchical fashion (Stuss, Picton, & Alexander, 2001), such that higher-order processes (such as executive functioning[EF]) depend on lower-order processes (such as perception, language, and speed of processing)." p121
- "…clinicians need to be aware that disruptions in lower-order component processes can mimic disruption in the higher-order processes." p121
- "…test scores alone are generally not sufficient for differential diagnosis of EF subdomains: rather, clinicians need to integrate test scores with behavioral observations, background information, and qualitative aspects of test performance in order to determine which subdomain principally contributed to impaired scores." p124

Executive Functioning Evaluation

- Premorbid functioning
- Tests of Executive Functioning
- Survey of Executive Functioning
- Functional Assessment
- Rorschach Inkblot

Five Executive Functioning Impairments

- Social Cognition
- Response Selection
- Meta-tasking
- Executive Cognitive Functions
- Initiation & Maintenance

Social Cognition Deficits (Suchy, 2016)

- The “ability to appropriately respond to social cues and to generate behaviors that are socially appropriate” p98
- **Socially Inappropriate Syndrome**: poor responsiveness to social and interpersonal cues; mild impairment may manifest as a disregard for rules or wishes of others and actions that appear self-destructive or counter to stated goals, severe impairment may manifest as grossly inappropriate behaviors; behaviors can alienate support system and health care
- Neuroanatomical networks primarily involve the right hemisphere, amygdala and its connections with the orbitalfrontal cortex, cortical networks that subserve the theory of mind and the mirror neuron system, and von Economo neurons p 98

Response Selection Deficits (Suchy 2016)

- "…one's ability either to inhibit an inappropriate response BEFORE it takes place or to STOP a response that has already been initiated."
- Elemental processes include: "threat sensitivity, contingency updating, and discrepancy detection (all…largely implicit), as well as inhibition (…typically a conscious, effortful process)"
- **Disinhibited Syndrome** is a result of deficits in response selection and manifest as impulsivity
- Neuroanatomical networks primarily include the right inferior frontal gyrus, right anterior insula, the anterior cingulate gyrus, and the amygdala p 67

Meta-tasking Deficits (Suchy, 2016)

- " ability to execute several multistep tasks in an interleaved fashion over somewhat extended periods."
- Elemental processes include: "time-based prospective memory, event-based prospective memory and meta-monitoring".
- Disorganized Syndrome result of MT deficits and manifest by "pervasive difficulties with successful completion of complex daily activities (e.g., preparation of a complex meal), tardiness, forgetfulness, and rule-breaking."
- Neuroanatomical networks primarily involve the frontopolar cortex and lateral prefrontal cortex (bilaterally) while more posterior brain areas have been implicated. P 50

Executive Cognitive Functions Deficits (Suchy, 2016)

- “a set of neurocognitive processes that together generate mental products such as solutions to problems, plans or organizational systems.”
- Elemental processes include: “generative retrieval of relevant information, manipulation of information in Working Memory, and flexible application of information to a question at hand”.
- **Dysexecutive Syndrome** is the result of ECT deficits and manifest as “impaired reasoning, failures to effectively plan, poverty of ideation, and behavioral disorganization”
- Neuroanatomical networks primarily involve both cortical and subcortical regions of the frontal lobes, superior parietal lobule or right parietal lobe more broadly, cortical and subcortical temporal lobe structures, and cerebellum.” p 35

Initiation & Maintenance Deficits (Suchy, 2016)

- "subdomain of EF that controls the effectiveness, speed, and maintenance of motor output and associated mental processes."
- Elemental processes include: "initiation, maintenance, and effort mobilization".
- **Apathetic Syndrome** results with IM deficits and manifest as "sluggish behavioral and mental output, inadequate chunking of actions into a single motor program, and an inability to sustain actions across time". Includes **Akinetic Mutism** and **Amotivational Syndrome**.
- Neuroanatomical underpinnings are complex and include: "supplementary motor area, anterior cingulate gyrate, distributed attentional network (relying primarily on the right hemisphere) and mesolimbic dopamine system." p 81

Activities to Work on Executive Functioning

- Tower of London
- Card Games
- Memory Games
- Writing Projects
- Cooking and Baking
- Role-play social interactions

Principles for Attention Training (ACRM Manual Haskins et al., 2014 p75)

- Theory driven treatment planning
- Hierarchical task training
- Repetition needed to attain automatic response
- Record-keeping needed to make informed treatment decisions
- Include tasks to promote generalization of strategies
- Real-work adaptation is the ultimate measure of success

Sohlberg et al., 2001

Attention Processing Training (ACRM Manual Haskins et al., 2014, Sohlberg et al., 2001)

- Hierarchical – Focused > Sustained > Selective > Alternating > Divided
- Assessment – neuropsychological, self-report, or behavioral rating scales
- Functional tasks – home, work, school, and community
- Highly individualized, trial and error in choosing tasks and schedules
- Qualitative measures: patterns of errors, environmental factors, psychological factors (depression, anxiety, pain, fatigue, medication, etc.)
- Quantitative measures: accuracy, speed, amount and type of cueing

Generalizing Tasks Across 4 Levels of Attention

(ACRM Manual Haskins et al., 2014, Solhberg et al 2001)

- L 2 Sustained
  - Home – cooking, paying bills, cleaning etc.
  - Work – job specific
  - Community – shopping, banking, fitness, etc.
- L3 Alternating
  - Home – cooking and laundry, etc.
  - Work: switching, and managing interruptions
  - Community – multi-tasking at bank, travel, exercise, errands
- L4 Selective
  - Home – Cooking w/kids playing, chores w/radio playing, doing task with talking going on in the background, etc.
  - Work – filling out paperwork in busy office, etc.
  - Community – eating at busy, loud restaurant, going to a game or fair, etc.
- L5 Divided
  - home – cooking task that requires simultaneous monitoring of two items
  - Work – writing and listening, etc
  - Community – driving on hiway, etc.

Attention Process Training APT-3 for Persons with Acquired Brain Injury

- Developed by **McKay Moore Sohlberg, Ph.D. and Catherine Mateer, Ph.D.** includes an extensive range of attention exercises appropriate for people with mild to severe attention deficits due to acquired brain injuries.
- Target populations include adolescents, adults and veterans.
- Unlike the APT-1 and APT-2 programs, the APT-3 is a computer based program promoting efficient data collection and analyses and treatment planning.
- Also included on the Clinician Drive is PDF manual with sample scoresheets for all therapeutic activities and tasks.
- https://www.lapublishing.com/attention-process-training-apt/

7 Level Model of Attention Training (Parente & Herrman, 2010, p 118-121)

- Basic Arousal
- Simple Orientation to a Visual-auditory Stimulus
- Attention with Discrimination
- Concentration and Mental Control
- Distracted Attention
- Attention with Immediate Memory
- Interference Resistance Training

Basic Arousal, Simple Orientation, Attention with Discrimination (Parente & Herrmann, 2010, pp118-119)

- LI Basic Arousal is length of time on a task
- L II Simple Orientation – exercises to adjust body position to correctly perceive a stimulus
  - measure is the number of times of correct orientation and vigilance (duration of time)
  - Go to LIII once able to correctly orient for extended duration of time.
- L III Attention with Discrimination – exercises to attend to and discriminate between stimuli
  - Measure is the accuracy of discrimination and duration of time on task (vigilance)

Concentration and Distraction (Parente & Herrmann, 2010, pp 119-120)

- L IV Concentration with Mental Control – exercises focus on mental manipulation and cognitive effort without much memory
  - Measures include: duration (goal is 30 min or more), number of correct responses, and improvement with practice
- L V Distracted Attention – exercises focus on processing two sources of information with the goal of being able to ignore one source while attending to the other source.
  - Measures include: number of correct responses and duration able to sustain dual input

Immediate Memory and Interference Resistance (Parente & Herrmann, 2010 pp120 -122

- L VI Attention with Immediate Memory –exercises are designed to improve attention, concentration and short-term memory
  - measures include number of errors (accuracy), length of time on task using immediate memory, and length of time in the session during the activity (vigilance)
- L VII Interference Resistance Training – exercises are designed to train client to remember something after a second task has interfered with the memory of the first.
  - Measures include correct recall of first task, correct recall of second task, and length of time on task

Time Pressure Management (TPM) (ACRM Manual Haskins et al., 2014)

- Strategy to deal with mental slowness and avoid cognitive overload
- Training on making effective decisions before (strategic) during (tactical) and rapid in the moment of (operational level) the execution of a task
- 3 phases of instruction: identifying the problem, teaching the strategy, and generalization
- Can use The Mental Slowness Observation Test to obtain a self-report rating on speed of information processing (Winkens et al., 2009) and The Mental Slowness Questionnaire. (ACRM Manual Haskins et al., 2014,p80)
- Research “indicate that… that both treatments improve task performance significantly for an information intake task (but)… TPM,… produces greater gains than concentration training and also appears to generalize to other measures of speed and memory function”. (Fasotti et al., 2010)

TPM Strategies (ACRM Manual Haskins et al., 2014)

- Recognize the problem of not enough time
- Develop short plan to avoid such situations using strategic and tactical planning
- Create an emergency plan for when in overwhelming situations
- Practice plan
- 5 specific strategies: 1. ask for more specific information, 2. ask for more specific instruction, 3. ask if person can briefly stop talking, 4. make a written plan, 5. restate the most important instructions (Winkens et al., 2009)
- Use of role play.

TPM teaching pointers (ACRM Manual Haskins et al., 2014, p82 Winkens et al., 2009)

- Initially target easy tasks
- Model first, then practice using an overt self-talk method to talk themselves through the task
- Frequent reminders of the benefit of the strategy to avoid feeling overwhelmed
- Use distributed practice paradigm where brief learning trials are spread out over time

Aerobic Exercise and Cognitive Functioning

- Aerobic exercise may have a positive effect on improving global cognitive ability and a potential benefit on memory, attention, and the visuospatial domain of cognition in stroke survivors. (Zheng et al., 2016)
- Combined aerobic and strength training programs generated the largest cognitive gains and that improvements in cognitive performance were achieved even in the chronic stroke phase (mean=2.6 years post stroke). Positive moderate treatment effects were found for attention/processing speed measures, (Oberlin et al., 2017)
- No Support: 6 months of high or low intensity exercise was not effective in improving cognitive function, specifically executive functions. (Tang et al., 2016)

Processing Speed

- Motor
- Auditory
- Verbal

Working Memory

- Working memory is the ability to process information effectively in short-term memory (Parente and Herrmann, p 141), and is related to how well a person living with brain injury can read, spell and reason numerically.

N-back Task (ACRM Manual Haskins et al., 2014, Cicerone, 2002)

- Presentation of a sequence of stimuli with the requirements for the client to continuously report the stimulus occurring n number back of current stimuli
  - 1 back condition – a set of digits are presented sequentially in random order and the client is asked to report the digit which occurred ONE back to the current digit
  - 2 back condition – a set of digits are presented sequentially in random order and the client is asked to report the digit which occurred TWO back to the current digit
- "***Now do the same thing for this whole set, naming the card that is One (Two) back, working at your own pace, but try to go through this deck as accurately and efficiently as you can. Give me the answer for every card, even if you are not sure. If you miss one, just try to get back on track and do the best you can***. Have the client place cards in order while naming the card once (twice) removed. Record responses and total time" (p84, ACRM) Record strategies and amount and type of support provided

N-back Task Variations (ACRM Manual Haskins et al., 2014, p 84-85)

- Therapist or client can place cards at different rates
- Client can be allowed to stop, review, and correct errors as part of the intervention
- Increase complexity of task by encoding of more than one stimulus attribute
- Increase interruptions, such as ask client to name the color of the card that is face up, prior to naming the number of the –back card
- Develop task of “place mark” by asking client to generate a response at random points during the n-back procedure (e.g., name a fruit or how many letters in the word orange)…

N-back Task Variations (ACRM Manual Haskins et al., 2014, p85)

- Sorting task – set of 40 playing cards, client sorts card by suit, placing each card beneath the cue card, while simultaneously naming the card once or twice removed from the last card placed down in any pile
- While performing the N-back task the client is asked to make a self-generated response on each trial, prior to naming the relevant card in the n-back task. Can ask client to generate an example from two or more semantic categories without repeating examples from the same category on successive trials OR to generate a random letter triad that is not a word, natural letter sequence or acronym, prior to the naming of the n-back stimulus
- Engage in ongoing secondary task while maintaining performance on the primary n-back task. Can create tasks that simulate real life demands

Tasks

- Digits Backward or Letters Backward
- Digit Symbol or Coding
- Simple addition, add two double digit numbers without paper and pencil
- Recall the last word of each sentence. First recall several sentences then recall the last word of each sentence. Continue to increase the number of sentences until fail at task.
- Letter number sequencing subtest (WAISIV), recall numbers first in order and letters second in alphabetically order 4 C 1 F 1 4 C F
- N-back task, come up with the opposite of the first word after hearing the second word, example: white: _____; up: black; hot: down; start: cold; …
- Color-match game with large matrix
- Out of office tasks

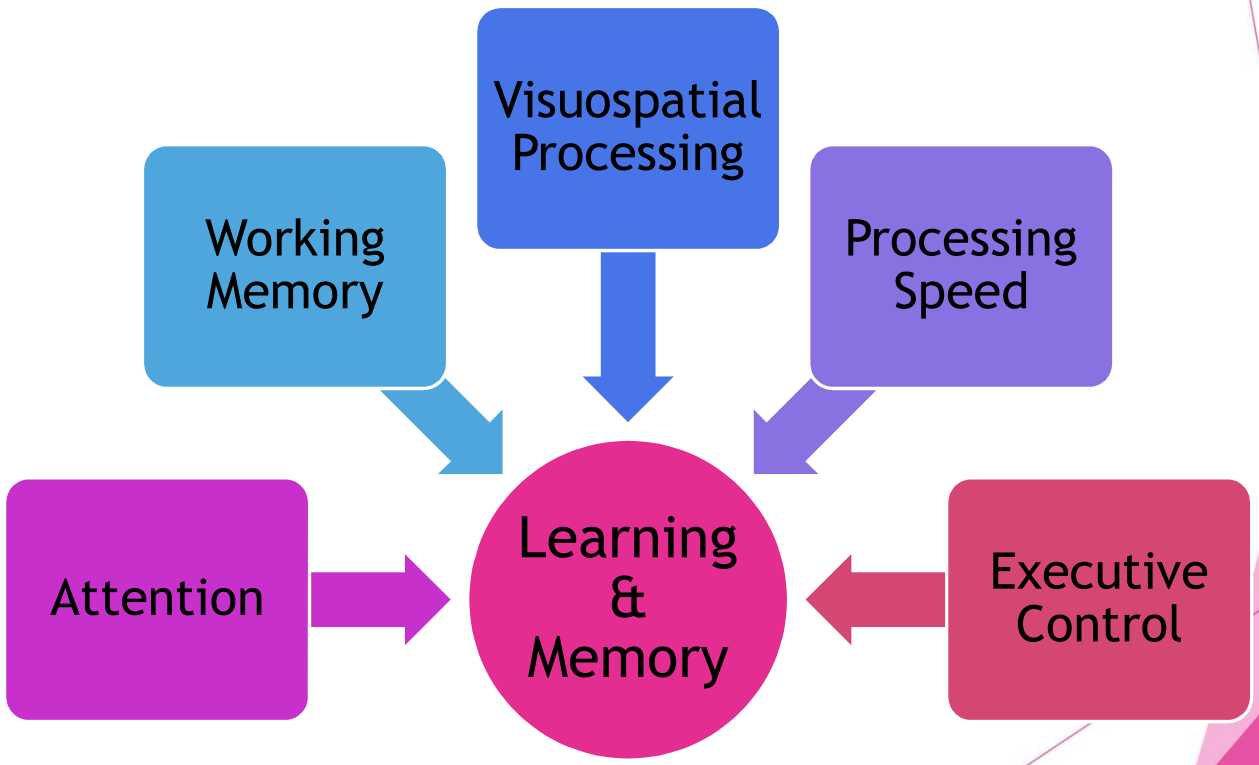
Suggestions for Retraining Working Memory

(Parente and Herrmann 2010, p 148)

- Shorten the length of directions and instructions
- Provide training that simulates real-world processing: calculating restaurant bills
- Avoid a fast speaking rate, especially in instructional settings, use a tape recorder at different speeds
- Emphatic stress on target words or phrases in sentences and place most important information at beginning and end of sentences
- Increase response automaticity through overlearning and extra rehearsal to reduce the load on memory
- Use a part-whole learning strategy, analyze the demands of a specific task and then break the task down into components and overlearn the smaller components.

Elements of Learning and Memory

(Chiaravalloti, 2018)



Memory Process (ACRM Manual Haskins et al., 2014 p44)

- Involves complex set of skills: attention, processing speed, working memory, encoding, storage and retrieval
- Attention: alertness, arousal, sustained concentration, vigilance, divided attention, and alternating attention
- Working memory/short term memory: space for encoding and storage of memory
- Encoding: assignment of meaningfulness to verbal and nonverbal sensory information to allow for recall
- Storage: transfer of information into long-term memory or permanent memory
- Retrieval: search for and activation of memory. (Immediate and Delayed)

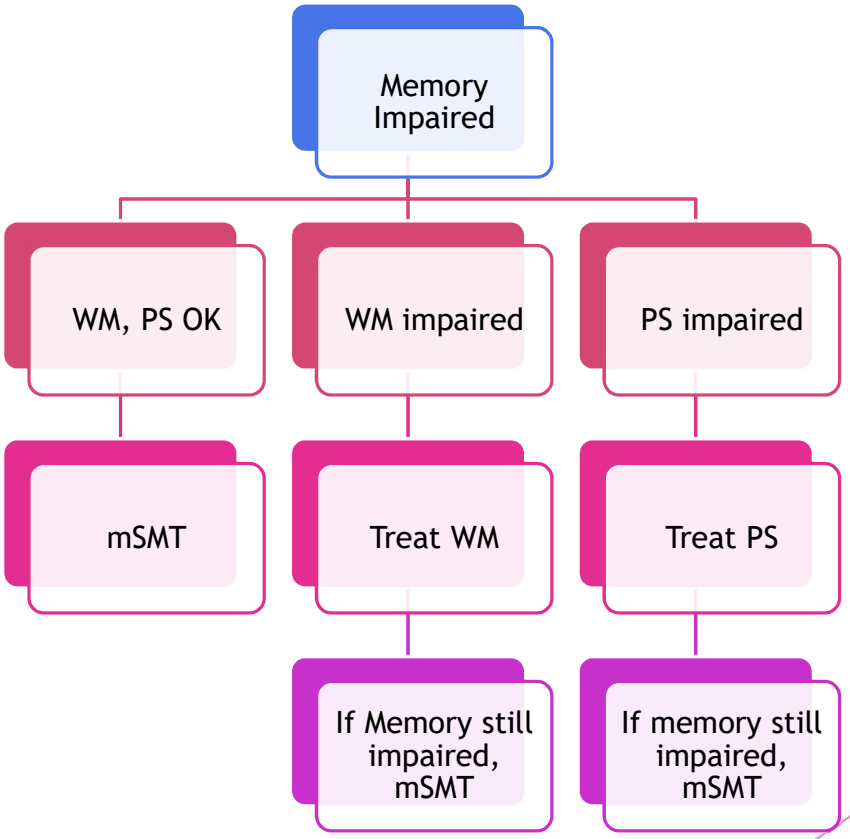
Memory Types (ACRM Manual Haskins et al., 2014, p44)

- Declarative (Explicit): purposefully learned, stored and retrieved,
  - Semantic memory: facts and abstract concepts
  - Episodic memory: context specific memories of things that happen
    - Autobiographical memory: personally relevant events
- Procedural (Implicit): “accidental” learning, know how to do something but can’t explain how, such as motor skills,
- Retrospective Memory: memory of past events
- Prospective Memory: memory of future events, requiring the person to remember to remember

Decision Tree for Treatment Planning in Memory Dysfunction (ACRM Manual Haskins et al., 2014, p46)

- **Deficit Awareness** – NO - then Use techniques to increase awareness and if possible, use **electronic devise and notebook** with assistance, if not then use **task specific approach**: errorless learning, spaced retrieval, chaining
- YES – then **What is Level of Impairment: SEVERE** then use **task specific approach** AND **external strategies** only: provide cueing and assistance
- Impairment **MILD/MODERATE**: Use **memory strategy training**, continue to use **external strategy with assistance**, if needed

Hierarchical Skills in Memory (Chiaravalloti 2018)



https://kesslerfoundation.org/sites/default/files/filepicker/11/Chiaravalloti_Nancy_mSMT_18JAN18.pdf

TEACH-M (ACRM Manual Haskins et al., 2014, p69)

- Task Analysis: Know the instructional content, Break up into small steps, Chain steps together
- Errorless Learning: Keep efforts to a minimum during the acquisition phase, Model target steps before the patient attempts a new skill or step, Carefully fade support, If an error occurs, demonstrate the correct skill or step immediately and ask the client to do it again, Use simple, consistent instructional wording
- Assessment: Initial: assess skills before initiating treatment for the first time, Ongoing: probe performance at the beginning of each teaching session or before introducing a new step.
- Cumulative Review: Regularly integrate and review new skills with previously learned skills
- High Rates of Correct Practice: Practice the skill several times, distributed practice encourages this
- Metacognitive Strategy: The prediction-reflection technique can be used to encourage active processing of the material or another appropriate strategy that encourages self-reflection and problem-solving
    - (reproduced from Ehlhandt et al. 2005 by permission in ACRM Manaul, Haskins et al., 2014)

CogSMART

- https://s3.amazonaws.com/cogsmart/CogSMART+for+TBI+Manual+September+2010.pdf
- Prospective Memory and Using Calendars with strategies
- Learning and Memory with strategies

CogSMART for TBI (p50)

- MEMORY STRATEGIES Which ones are you using already?
- Check off the strategies you already use.
- EXTERNAL Strategies that are outside your head (in your environment) Calendar/ PDA/ Microsoft Outlook Lists/ Notes/ Appointment cards Sticky Notes Notebook "Can't miss reminders" (e.g., bag on doorknob) Automatic places, Writing on your hand, Filing boxes, Timers/ Alarms Watch, Voicemail messages (call yourself), Signs & Landmarks, Automatic shut-off applications (coffee-maker, iron), Pill boxes
- INTERNAL Strategies or mental "tricks" inside your head Pay attention (conversational vigilance, task vigilance), Self-talk, Repeat/ Rehearse, Associate, Acronyms, Visualize, Categorize/ Chunk, Rhymes

Managing Disinhibition, Overstimulation, & Aggression

- Determine the antecedent to the behavior.
- Identify if there is a frontal lobe impairment.
- Identify if the brain is being overstimulated.
- Identify ways to reduce stimulation, maintain emotional control, introduce executive functioning.
- Develop substitute behaviors for inappropriate behaviors and aggression.

Anger Self-Management Training

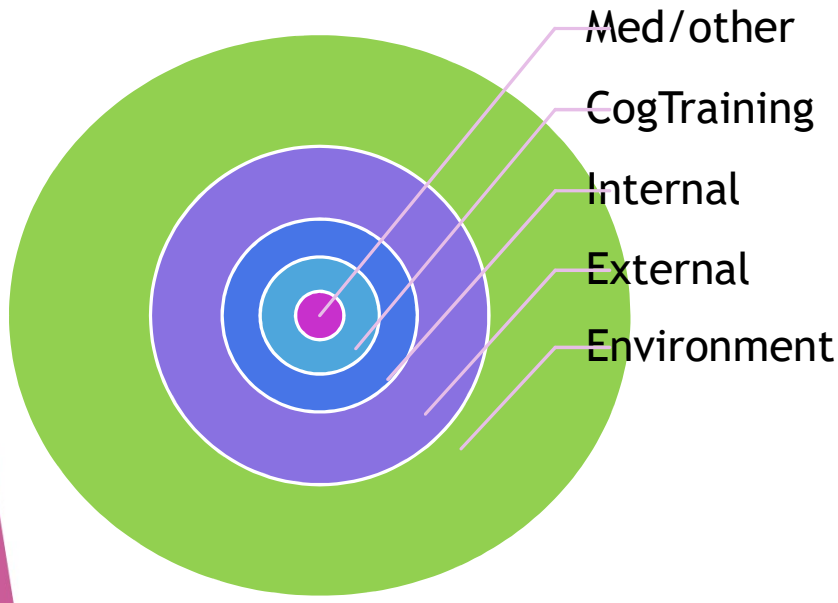
- Focuses on impaired self-awareness and problem-solving
- Use education and training of self-monitoring skills
- Manual is available
- Hart, T et al., 2017

Resources for Managing Stress and the Fight or Flight Response

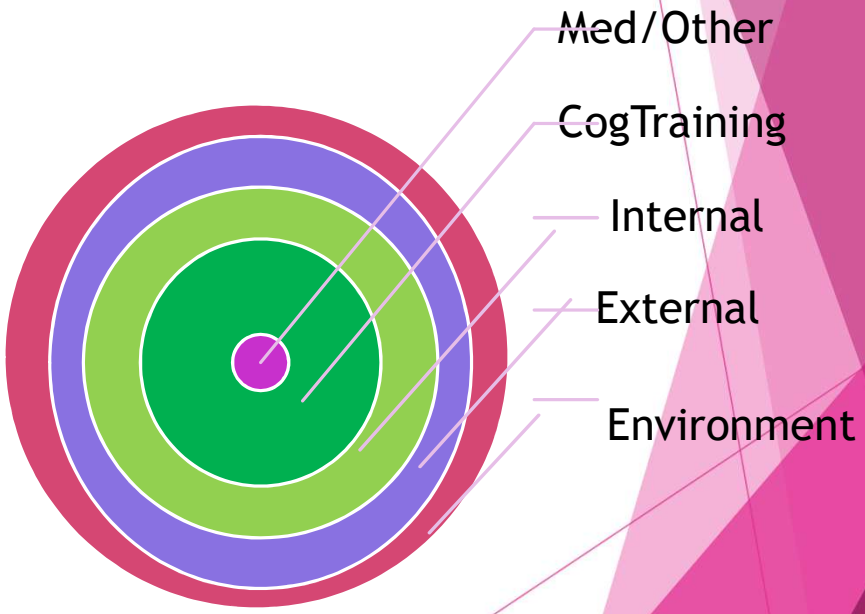
- Fight or Flight model http://www.thebodysoulconnection.com/EducationCenter/fight.html
- 5 minute stress mastery program, ***www.5MinuteStressMastery.com***
- http://stress.about.com/od/lowstresslifestyle/a/stress_relief.htm , 5 minute stress relief strategies
- chrome-extension://bpmcpldpdmajfigpchkicefoigmkfalc/views/app.html (2010 powerpoint by Dr. Lynne Wagner, PHD on stress management.
- http://www.cmhc.utexas.edu/stressrecess/animations/voyage/
- http://www.sterrenstages.nl/uploads/managing-stress.pdf ;
- https://www.youtube.com/watch?v=FBnBTkcr6No ;
- http://www.healthline.com/health/stress/effects-on-body
- http://www.apa.org/helpcenter/manage-stress.aspx

Possible Outcomes by Severity of Brain Injury

Severe EF



Mild – Moderate EF



Basic Principles of Treatment

- Good intake assessment
- Set the table – build in readiness to change and apply stages of care.
- Get to know members and type of team.
- Develop short-term and long-term goals across domains of care and varied treatment modalities.
- Integrate goals of rehabilitation team into rehabilitation psychotherapy and vice versa.
- Ongoing assessment and dynamic treatment plan

Basic Principles of Treatment (cont.)

- Monitor progress along the way (self-awareness, medication, medical, emotions, cognition, insight, family, work, future orientation, hope, substance use).
- Change intervention as appropriate (intensity, duration, frequency, focus).
- Be flexible in timing, focus, and interventions within sessions.
- Include support system.
- Consult with colleagues.

Managing Collaboration with Team

- Signed Releases
- Keeping Track
- Integrate
- Discuss
- Contact when in crisis
- Request

Goals and Objectives – Initial Assessment

- The Journey of a Thousand Miles Begins with a Single Step, Lao Tzu
- Intake Assessment of Awareness, Insight, Readiness to Change
- Picking Starting Points

Creating G/O Across Treatment Domains

- Determine stage for each area
- Determine G/O for each area to start, then update, continuous – dynamic
- Create CRT template for Obj, integrate with other therapies AND comment on how G/O will help other areas
- Create Psych issues template for Obj, consider different interventions along the way, planned and integrated, work with other professionals to help out, stages, assessments, processes and issues that need to be handled: grieving other, grieving self, narrative, establishing health routine, taking care of medical issues, creating new self, new friends, new life, strengthening resilience,

Tips

- Tolerate sitting with darkness, despair, and trauma
- Acknowledge depth of despair, hopelessness, helplessness, and loss
- Don’t rush to fix
- Flesh out range of emotions
- Explore own reaction to events and story
- Tolerate persistence of story across stages of therapy
- Consider metaphor and acting out elements in putting words to experience
- Look for and encourage development of strengths
- Speak to all levels of consciousness
- Help to ground person if decompensate too far or too harsh on self
- Laugh and cry as appropriate

Potential Pitfalls of Treatment

- Competing therapies and therapists
- Therapist working harder than client
- Family working harder than client
- Therapist gets ahead of the client
- Therapist unable to admit error or missed data
- Client hides severity of problem
- Therapist ignores severity of problem
- Therapist gets depressed or despondent
- Therapist gets angry at client
- Client struggles with working through loss
- Substance abuse gets in the way of care
- Client afraid of getting well and losing benefits
- Therapist overwhelmed by data

Tools for Setting Goals & Objectives

- Inquiring
- Reflecting
- Mirroring
- Engaging
- Assessing
- Encouraging
- Exploring Suggestions
- Creating homework
- Motivational Interviewing

Relationship-Centered

Self-Other Listening

Filtering Self Thoughts - Feelings

Partnering

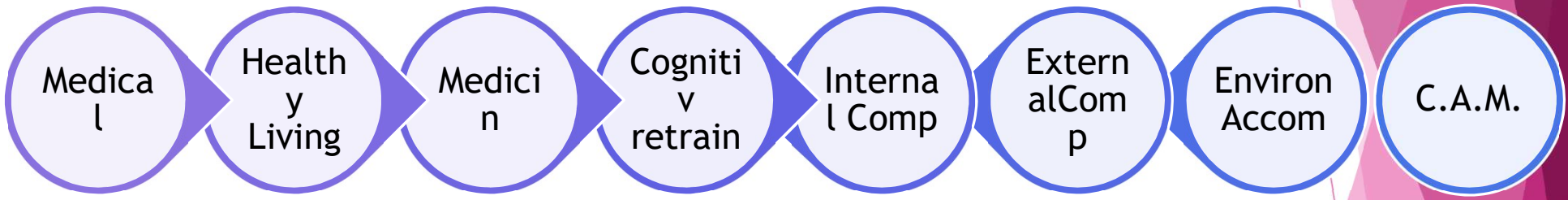
Power Balance

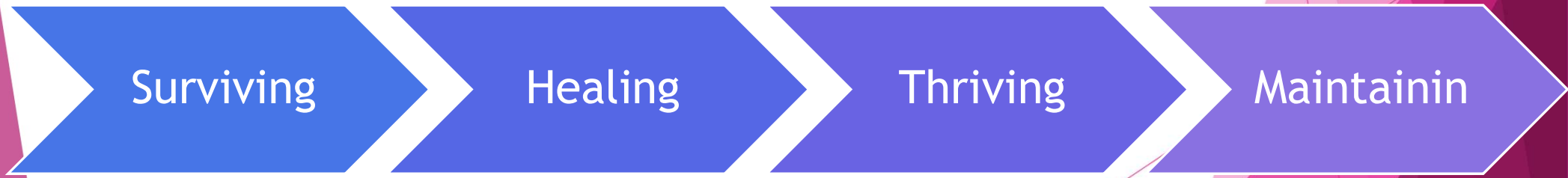
Integration

Shaping the 8 Interventions

- Safety
- Adaptability
- Flexibility
- Expectations
- Resources

Interventions & Stages of Recovery





Information & Communication Technology-based Assistive Technology

- Smartphones, personal digital assistants (PDAs), etc. with e.g. calendars and reminder alarms can improve prospective memory, especially for people with ABI.
- PDAs and similar products with prompts can improve execution of tasks for people with cognitive impairment due to different diagnoses.
- Products should be tailored to the users' needs and the users trained in product use.
- Further studies concerning children, older people and people with intellectual and developmental disability are required; as well as studies on cost-effectiveness and the effectiveness of related services.
- **Implications for rehabilitation**
- In order to support activity and participation in everyday life for people with prospective memory problems, especially people with acquired brain injury, they should be offered information and communication technology-based products, such smart phones, mobile phones, personal digital assistants or similar mainstream products equipped with reminding software.
- People with cognitive impairment having difficulties executing tasks independently should be offered PDAs and mobile telephones and similar products with prompting software, e.g. audio-verbal, picture and video-based task-sequencing prompts.
- The ICT-based products should be individually tailored, and the person should be trained in using the selected product.

Brandt Åse, Jensen, M. P., Søberg, M. S., Andersen, S. D., & Sund, T. (2020). Information and communication technology-based assistive technology to compensate for impaired cognition in everyday life: a systematic review. *Disability and Rehabilitation: Assistive Technology, 15*(7), 810–824. https://doi-org.libproxy.unm.edu/10.1080/17483107.2020.1765032

MCNT1.0 and 2.0

- An intensive and multidomain rehabilitation program for children with ACE and BIF, termed the Movement Cognition and Narration of emotions Treatment (MCNT1.0). The efficacy of MCNT1.0 on cognitive and social functioning was demonstrated with a previously reported randomized controlled trial (RCT). To extend the impact of the treatment also to the motor domain a new version, called MCNT2.0, was implemented.
- Results indicate that due to its positive effects on cognitive, social participation and motor domains, MCNT2.0 may represent a protective factor against maladaptive outcomes of children with ACE and BIF

Baglio, G., Zanette, M., Di Cesare, M., Di Tella, S., Clerici, M., Baglio, F., & Blasi, V. (2021). Rehabilitation and disability spectrum from adverse childhood experience: the impact of the movement cognition and narration of emotions treatment (mcnt) version 2.0. *Frontiers in Psychiatry, 11*. https://doi-org.libproxy.unm.edu/10.3389/fpsyt.2020.609819

Supports for Cognitive Weaknesses

	Adapt Living Space	Staff Support	External Supports	Internal Reminders	Healthy Living	Medication
Executive Functioning						
Commun						
Memory Immediate Delayed						
Working Memory						
Attention						
Processing Speed						
Alertness Stamina						

Support Plan

Support for_____	Staff, Care-giver and Person living with brain injury
Adapt Living Space	
Staff Support	
External Support	
Self Reminders	
Healthy Living	
Medicine	

Monitoring Progress (ACRM Manual Haskins et al., 2014)

- Create a detailed record of task performance in sessions (and homework).
- Keep track of the "big picture" including tracking of personally relevant milestones that can **facilitate motivation and instill hope.**
- Review records periodically.
- Specific techniques and data forms will vary across approaches.

Short Form-Measuring Outcomes in Services and Supports

- With limited tools to measure goal realization for people accessing a range of disability supports, the SF-MOSS has acceptable face validity and content validity as assessed by an expert group and an analysis of goals, respectively.
- The tool shows promise for tracking the outcomes resulting from services and supports and for service users to monitor change associated with the services they receive.
- **Hagiliassis, N., Koritsas, S., & Cuzzillo, C. (2020). Measuring goal realization associated with disability services and supports: initial evidence for a new tool. *Journal of Policy and Practice in Intellectual Disabilities, 17*(1), 4–12. https://doi-org.libproxy.unm.edu/10.1111/jppi.12291**

Community  Resources Summary

- Agencies
- Support: Finances, housing, transportation, healthy life-style, other
- Accommodate: Cognitive, accessibility, availability, fear, irritability, trust, mood,
- Refer: Cognitive, VOM, vision, sleep, headaches, seizures, pain, mood, medical, other

Referral Resources

COGNITIVE

Speech Language
Occupational Therapy
Physical Therapy VOM
Counselor –Brain Injury
Neuropsychologist
Psychiatrist
Neurologist
Sleep specialist
Vision
C.A.M.

- Health Care Providers
- Treat: Headaches, mood, sleep, seizures, pain, healthy life-style, other
- Accommodate: Cognitive, accessibility, availability, fear, irritability, trust, culture
- Refer: Cognitive, VOM, vision, sleep, headaches, seizures, pain, mood, support, other

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Prevention

- Falls prevention
- Intimate partner safety
- Family safety
- Follow safety guidelines for activities
- Appropriate environmental accommodations
- Screen for mood issues

Telling Your Story or Self-Narratives

- People living with TBI don’t just accept their injuries but rather seem to ultimately revise their self-narratives by changing the appearance of their past and future or their environments.
- In general, the story of associating the client's difficulties to their environmental factors may become more important as he or she is in the stage of going back to the community
- Rehabilitation counselors should consider the client's recovery stage, age, and other contextual factors when assisting the construction of the client's self-narrative.
- More studies are needed to examine in-depth what one gains and loses when constructing a certain self-narrative. (Nochi, 2000)

5 common Self Narratives

1. **Better than others self**, things could be worse
2. **Grown self**, moral growth or better characteristics as a result of the injury
3. **Recovering self**, working to get back to premorbid level of functioning, getting back to 100%, projecting past self into the future as a guide for daily activities and motivation, common during the early stages but still present for some several years later,
4. **Living in here and now self**, one day at a time, dissociating past life from present life, and valuing what you can now do while ignoring what you could do premorbidly.
5. **Protesting self**, problems in managing issues related to TBI related to problems with the system so tend to set out to change the environment.

Nochi 2000

Public Self Narrative – what tell others

- Stage of therapy
- Level of intimacy of details
- Awareness of response of others
- Insight into response of others
- Insight into what response seeking from others
- Awareness of own reaction to others' responses
- Insight into own reaction and how to adjust details and own reaction

Private Narrative – what said in office

- Level of emotions (intensity and consciousness)
- Range of emotions
- Exploration of old and new identity
- Grieving
- Rebuilding active components of healthy self
- Developing humor and humility

Cultural Issues

- Use introspection to identify implicit biases and underlying values that may interfere with advocating for client.
- Express curiosity and cultural humility in exploring possible interventions and solutions. Consider a relationship-centered model of care.
- Assess strengths and weaknesses of culture and how to manage them within treatment planning
- Consider providing services outside traditional professional role but within guidelines of professional expectations (e.g., case-management)
- Identify barriers to availability and accessibility of services and work with client on possible solutions.
- Provide safe, respectful, empowering environment to work within, and learn how the client understands the reason for and treatment of, their condition.
- Seek consultation regarding cultural issues as needed.

Definition of Cultural Competency

- **Health Resources and Services Administration, Bureau of Primary Health Care**
- Cultural and linguistic competence is a set of congruent behaviors, attitudes and policies that come together in a system, agency or among professionals that enables effective work in cross-cultural situations.
- "**Culture**" refers to integrated patterns of human behavior that include the language, thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious or social groups.
- "**Competence**" implies having the capacity to function effectively as an individual and an organization within the context of the cultural beliefs, behaviors and needs presented by consumers and their communities.
  - http://www.bhpr.hrsa.gov/diversity/cultcomp.htm

A.D.D.R.E.S.S.I.N.G. (Hays 2008)

- Age
- Developmental history
- Disabilities – chronic condition
- Religious and spiritual orientation – possible source of strength
- Ethnicity
- Socioeconomic status
- Sexual orientation
- Indigenous heritage
- National origin
- Gender

In Ruff and Chester, 2014

Cultural Awareness: CultureCard (SAMHSA)

- The purpose of this guide is to provide basic information for Federal disaster responders and other service providers who may be deployed or otherwise assigned to provide or coordinate services in American Indian/Alaska Native (AI/AN) communities.
- This guide is intended to serve as a general briefing to enhance cultural competence while providing services to AI/AN communities. (Cultural competence is defined as the ability to function effectively in the context of cultural differences.) A more specific orientation or training should be provided by a member of the particular AI/AN community. (The guide covers 14 areas).
- Taken from: http://store.samhsa.gov/shin/content//SMA08-4354/SMA08-4354.pdf

Cultural Awareness: CultureCard (SAMHSA)

- Service providers should use this guide to ensure the following Five Elements of Cultural Competence* are being addressed:

1. Awareness, acceptance, and valuing of cultural differences
2. Awareness of one's own culture and values
3. Understanding the range of dynamics that result from the interaction between people of different cultures
4. Developing cultural knowledge of the particular community served or to access cultural brokers who may have that knowledge
5. Ability to adapt individual interventions, programs, and policies to fit the cultural context of the individual, family, or community

Culture and Spiritual Elements

- Cultures can have destructive and curative elements; developing awareness and insight into the positive and negative elements of the culture and how to manage them is essential to getting well.
- Keeping an eye on the spiritual component of the culture and person is important in assessing connectedness or relatedness within the self (how kind and accepting can one be to one's self) and within the community (how others relate to each other and their own sense of spirituality).
- Ritual can be very important in creating a loving and caring environment that allows growth and meaning.
- Understanding the Cosmology of the culture and how the act of a brain injury and the recovery from it work can help integrate western treatment paradigms with culturally based treatment paradigms, centering and empowering the person.

Ethical Issues

- Identify the type of team you are working with and respect the unspoken boundaries.
- Respectfully clarify the roles and responsibilities of team members while encouraging client and family involvement in decision making.
- Feel comfortable asking questions about treatment issues, explaining your level of training and expressing your willingness to collaborate.
- Follow ethical guidelines to resolve conflict and unprofessional behaviors if they arise.
- Advocate for your client and be introspective in teasing out personal feelings and implicit biases from professional role.
- Seek consultation and supervision as needed to improve your skills and provide safe and professional care.

Ethics

- Competency
- Collaboration
- Ending
- Dilemmas

Managing Self-care

- Known, Unknown, Unknowable
- It's a marathon not a sprint
- Give yourself permission to say No
- Laugh
- Find grace and beauty in your day
- Find time to eat, sleep, and exercise well
- Listen to your dreams
- Consult with colleagues

Computer Apps

- www.neuropsychonline.com
- www.positscience.com
- Lumosity
- The Peak app
- Happyneuron
- Brainteasers

Phenomenological Focus

- Premorbid level of functioning
- Severity of brain injury
- Existential issues, making meaning out of life
- Individuation process – new identity
- Experiential process
- Stages of recovery
- Interventions over immediate and long-term
- Specific mood issues
- Other heath professionals involvement
- Community Involvement
- Structuring the session
- Homework

Types of Psychotherapy

- Behavioral
- Functional Analytical
- Cognitive Behavioral Therapy – Prolonged Exposure, Cognitive Processing, etc
- Psychodynamic
- Family
- Group
- Mindfulness
- EMDR
- Other

Mindfulness Based Stress Reduction & TBI

- For mental fatigue post-stroke and TBI for 8 weeks, effective in improving self-assessment and performance on Digit Symbol Coding and Trail Making Test. (Johansson et al., 2012)

- For mTBI more than 7 months post-injury for 10 weeks, effective on improving self-assessment on quality of life and perceived self-efficacy and working memory and attention. (Azulay et al., 2013)

Grieving

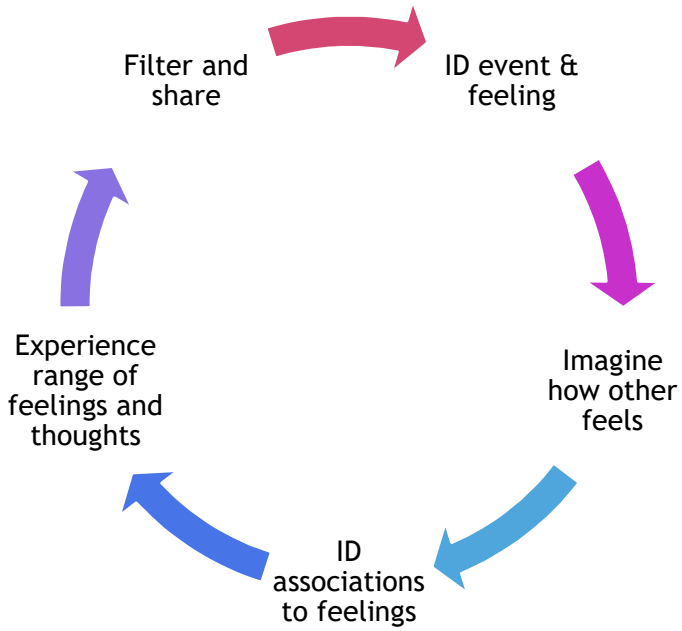
Grief

1. Denial
2. Anger
3. Bargaining
4. Depression
5. Acceptance
   - Kubler-Ross

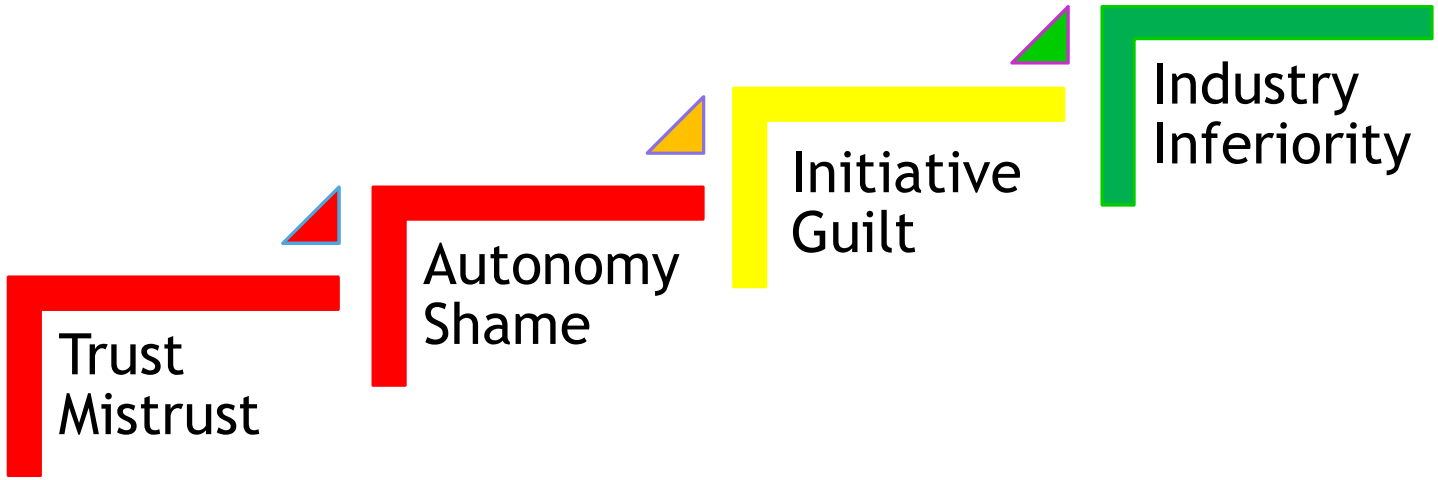
Chronic Sorrow

- Characteristics of loss
- Continuity of loss
- Presence of source of loss
- Episodic grief
- Reality vs. fantasy
  - Roos

10 second Empathy Plunge

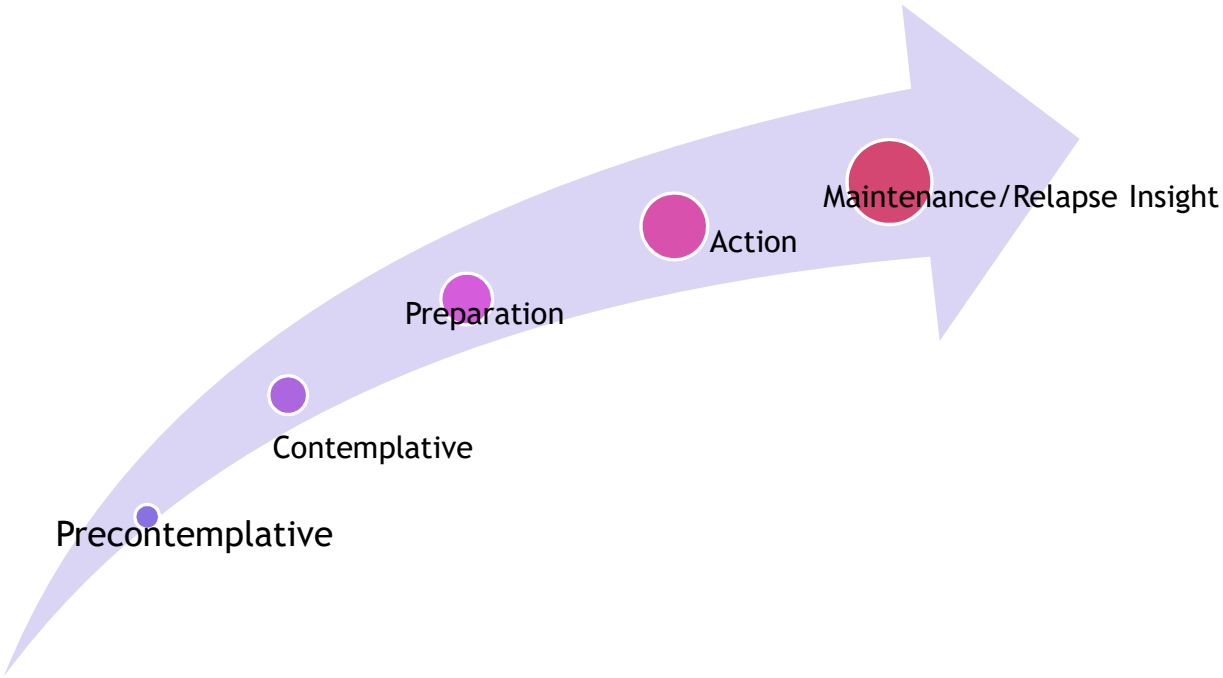


Building Blocks of Coping (E. Erikson, 1958)



Managing Resistance

Awareness and Insight



Support Groups

- Wonderful peer support for people living with brain injury and their care givers
- **T.H.R.I.V.E. with BI Support Group**
  - "How to" manual on running the T.H.R.I.V.E support group for both the facilitators and the group members
  - Allows for focused discussion on BI-relevant topics
  - Allows for individual assessment on where a person is in their recovery – surviving, mending, or thriving
  - Allows for further assessment of thinking skills and suggestions on how to improve on thinking skills

Thank you for your participation
Questions & Comments

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- For complete list of references please contact Mark Pedrotty.

Motivational Interviewing

- MI is a client-centered yet directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence. A counselor using an MI style expresses **empathy, develops discrepancy, reduces resistance, and supports client self-esteem.**
- **R.U.L.E:**
  - **Resist** reflex to right.
  - **Understand** person's own motivations.
  - **Listen** with empathy.
  - **Empower** the person.

http://www.motivationalinterviewing.org/sites/default/files/mia-step.pdf

Motivational Interviewing

- Can help with engagement in treatment (e.g., increased therapeutic alliance, acceptance of deficits, realistic goal setting, and constructive engagement) through non-confrontation, collaboration, and self-efficacy. (Medley & Powell, 2009)
- Has been used in TBI population to address substance abuse, anxiety, engagement in treatment in persons with impaired awareness, and to promote recovery. (Clark-Wilson et al., 2014)

Motivational Interviewing Facts (Miller and Rollnick, 2013)

- MI is not a "technique"…but rather is a complex style "of being with people, an integration of particular clinical skills to foster motivation for change." p35
- MI "blends well with other evidenced-based clinical skills and approaches….developed specifically for the purpose of helping people resolve ambivalence and strengthen motivation for change." p35
- "Counselors skillful in MI offer two to three reflections on average per question asked, and about half of all their responses…are reflections" p61
- In traditional counseling…"questions often outnumber reflections by a ratio of 10 to 1" p61

Motivational Interviewing: 5 Stages of Change

Stage	Descriptors
1. Pre-contemplation	“I won’t” or “I can’t”
2. Contemplation	Both good reasons for and against change
3. Preparation	Want to but…
4. Action	Doing it
5. Maintenance/Relapse	Now a habit and risk of relapse

4 Vital Components of Motivational Interviewing

- Acceptance
- Collaboration
- Compassion
- Evocation

Acceptance (Miller and Rollnick, 2013)

- Acceptance – four aspects that have deep roots in Carl Rogers' client centered approach

1. **Absolute Worth**: unconditional positive regard, respect for the person, that the other person should grow and unfold as is, implies no exploitation, belief that the person is fundamentally trustworthy,
2. **Accurate Empathy**: "to sense the client's inner world of private personal meanings as if it were your own, but without ever losing the "as if" quality" (Rogers, 1989 pp 92-93), p 18
3. **Autonomy Support**, honoring a person's "irrevocable right and capacity of self-direction p 18

   "…directly acknowledging a person's freedom of choice typically diminishes defensiveness and can facilitate change. This involves letting go of the idea and burden that you have to (or can) make people change. It is , in essence, relinquishing a power that you never had in the first place." P19
4. **Affirmation:** "to seek and acknowledge a person's strengths and efforts" p 19

Collaboration (Miller and Rollnick, 2013)

- **Collaboration** (Partnership) – done for and with a person, an active collaboration between experts, "The interviewer seeks to create a positive interpersonal atmosphere that is conducive to change but not coercive", "…activating their own motivation and resources for change" p 15
- Avoid the **EXPERT TRAP** by "letting go of the assumption that you are supposed to have and provide all the right answers". p16"…emphasis here is on awareness and honesty regarding one's own values and agenda in conversations about change."
- Includes a "**profound respect for the other**…the MI practitioner is a privileged witness to change,…"
- "You ask questions sometimes, but **mostly you listen** because the story is the person's own. Your purpose it to understand the life before you, to see the world through this person's eyes rather than superimposing your own vision" p 16

Compassion & Evocation (Miller and Rollnick, 2013)

- **Compassion** is a deliberate commitment to pursue the welfare and best interests of the other" p 20.

"To work with a spirit of compassion is to have your heart in the right place so that the trust you engender will be deserved" p 20

- **Evocation**: "The spirit of MI starts from a very different strengths-focused premise, that people already have within them much of what is needed, and you task is to EVOKE it…." P 21

"The assumption here is that people truly do have wisdom about themselves and have good reasons for doing what they have been doing." P 21

Core Interviewing Skills: O.A.R.S. (Miller and Rollnick, 2013)

- **Open ended questions**: what are the larger goals or values that have been internalized and act as guiding principles, work towards identifying values and goals so that can reflect and explore further
- **Affirming**: can facilitate retention, reduce defensiveness by not threatening self-image that can result in defending their autonomy and strengths, facilitate openness, …don't use I statements or praise, rather comment on something that is good about the person "You really worked hard on that this week", **positive reframe** to manage discouragement related to imperfection, comment on positive traits or skills of person, and genuine prizing or welcoming of the person
- **Reflecting**: show you are listening, when you hear change talk reflect it p186
- **Summarizing** : pull together as much of the change talk that is offered, (can discuss sustain talk if that is covered), and end with an open ended question that encourages change talk, "What else have you noticed?" p 194

D.A.R.N – C.A.T. - Language Change Skills

I want to

I'm willing to

I did do

(Miller and Rollnick, 2013)

Confidence Talk: D.A.R.N. – O.A.R.S.

- **Providing Advice**: solicit client's own ideas first, offer more than one possibility to choose from,
- **Identifying and Affirming Strengths**: ask about own positive attributes or strengths, can use list of adjectives of positive attributes, sources of social support,
- **Reviewing past Successes**
- **Brainstorming**
- **Reframing**: recast failures as "tries", shift attributes from internal to external p 220
- **Hypothetical Thinking**,
- **Resist** invitation to step in and provide solutions p 229

(Miller and Rollnick, 2013)

Importance Rule Technique to Evoke Change Talk

- "How important is it for you to _____ ? (scale of 0-10)" and
- "Why are you a ____ and not a 0 (or lower number)?,", p174,
- "The ratio of change talk to sustain talk is a predictor of change actually happening," p 174

(Miller and Rollnick, 2013)

Confidence Ruler Technique

- "How confident are you that you could do this if you decided to? On a scale from 0 to 10, where 0 is not at all confident and 10 is extremely confident, where would you say you are?"
- "Why are you a ___ and not 0 (or a lower number)?"
- "What would it take for you to go from ___ to a (higher number)?",
- "How might I help you go from a ___ to a (higher number)?"

(Miller and Rollnick, 2013)

Ask Permission to Provide Information

- Informing and Advising-Offering information or advice with permission and …" help them reach their own conclusion about the relevance of any information you provide." P34-35 (Miller and Rollnick, 2013)

Developing Discrepancy – Acceptance Tension

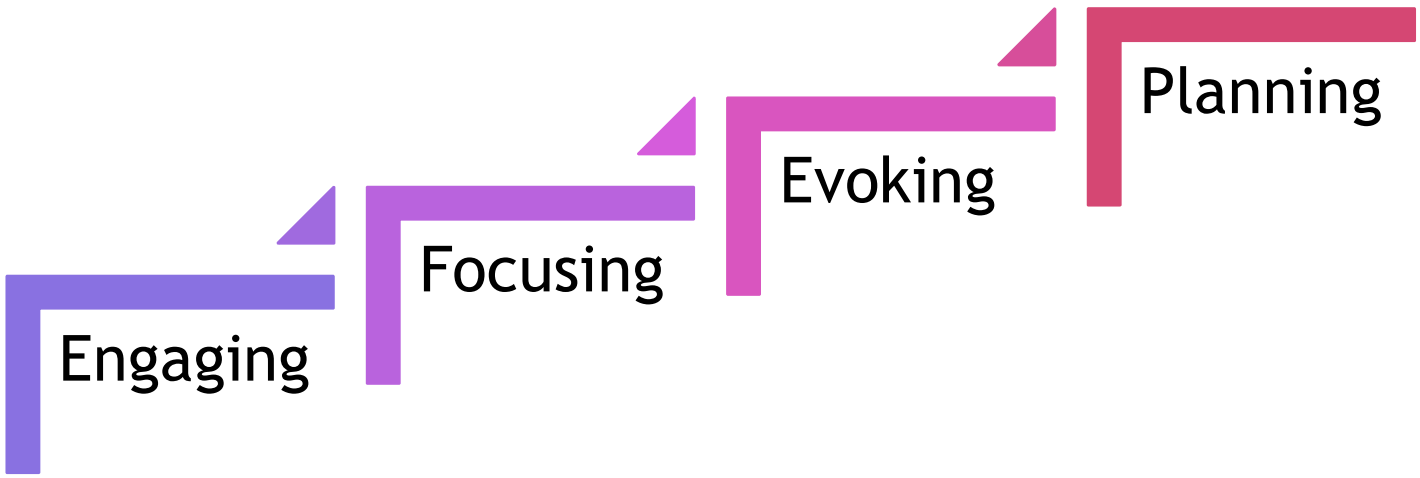
- Negative components can include:
- discrepancy appears too large to manage to too small to bother,
- feel unable to do anything about it,
- too unpleasant to think about it.

- Reframe discrepancy from:
- Shame to opportunity
- Pessimism to Possibility

- Move to Acceptance and Affirmation

(Miller and Rollnick, 2013)

4 Methods of Motivational Interviewing



(Miller and Rollnick, 2013)

Readiness to Change & Signs to Planning

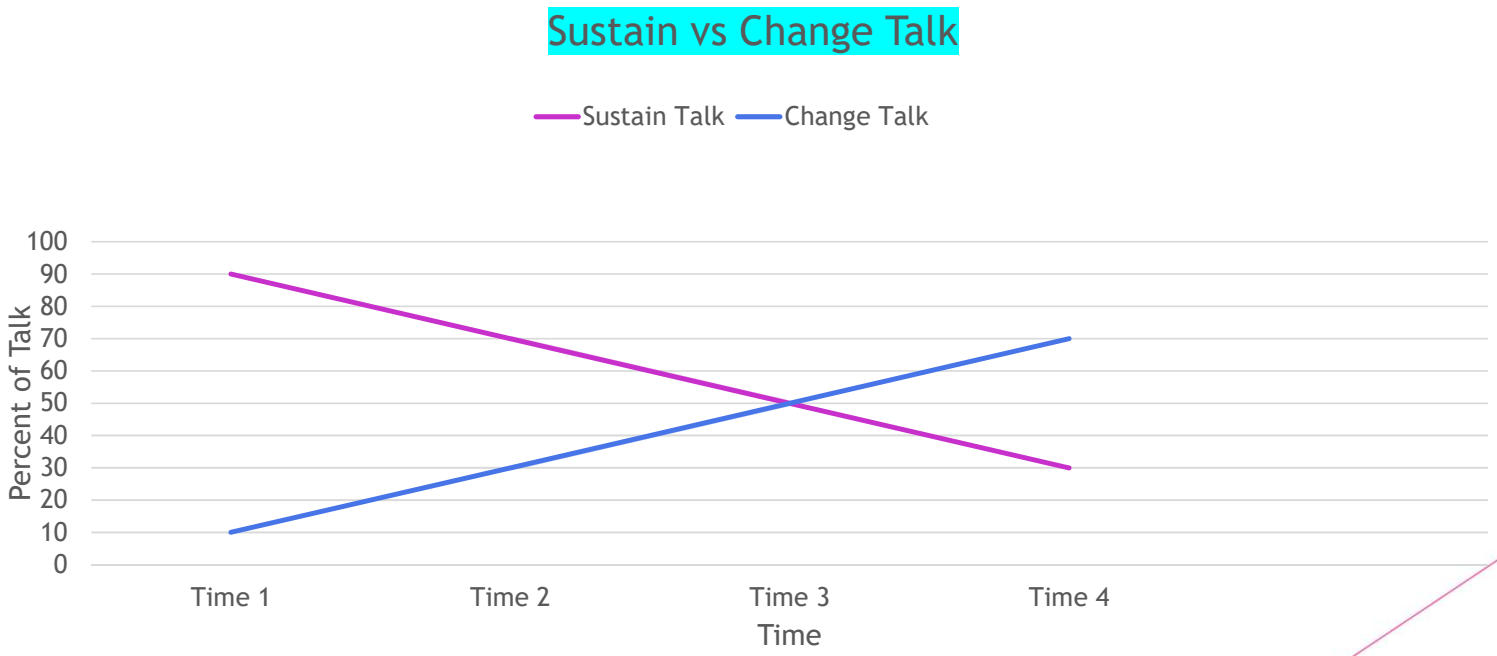
- Increased change talk,
- Taking steps,
- Decreased sustain talk,
- Resolve,
- Envisioning,
- Questions about change

- Planning … involves evoking, asking for, and listening to clients' own experience in what will work for them.
- Planning is a process of negotiation and collaboration drawing on the client's expertise as well as your own

(Miller and Rollnick, 2013)

EVOKING - Ambivalence

- Sustain and Change talk, this process is unique to MI, have motivations to sustain and change, includes pros/cons to change (Miller and Rollnick, 2013)



Benefit of Resolving Ambivalence

- **"…once people resolved their ambivalence about change, they often went ahead and did it on their own without additional professional assistance or permission**." P21

- "Your task…is to evoke and strengthen these change motivations that are already present"p 21 (Miller and Rollnick, 2013)