Slide Division Week #2

- Jim 1-21
- Aaron 22-41

- Aaron 42-64

Assessment & Intervention Fundamentals

CDS 663 Week 2 – Begin Jim

Lecture Map Part A

- Assessment
  - Rationale for testing
  - Characteristics of tests
  - Cognitive Assessment domains
- Assessment Approaches
  - Standardized Testing
  - Formal vs. Informal
  - Timing and purpose of assessment
  - Use of Hypothesis Testing
- Outcome Measurement
  - Goal Attainment Scaling

ASSESSMENT
You will (or have already) learned

- Purpose of assessments
- Review psychometric test concepts including: validity, reliability, base rate and sensitivity
- Differentiate standard/nonstandard, formal/informal, static/dynamic

Primary Reasons for Assessment

- Diagnosing a disease or disorder
- Establishing that an individual meets criteria for classification or for qualification for services
- Establishing degree of impairment for benefits or litigation
- Formulating a prognosis
- Establishing baseline and progress measures
- Planning rehabilitative and educational intervention
- Measuring outcome of therapy

Timing of Assessments often determines purpose

- Initial Assessment: Documents baseline abilities, helps identify sources of concern; documents performance and participation prior to intervention; assists with treatment selection
- Ongoing Assessment: Documents progress related to therapy goals and provides information useful for modifying intervention
- Outcome Assessment: Documents final effects of intervention or condition after a discrete time period

CHARTR Clinical Decision Making (Initial Assessment)

- Am I making a diagnosis or determining the source of a problem?

OR

- Do I already know the cognitive-communicative diagnosis?

Test Characteristics

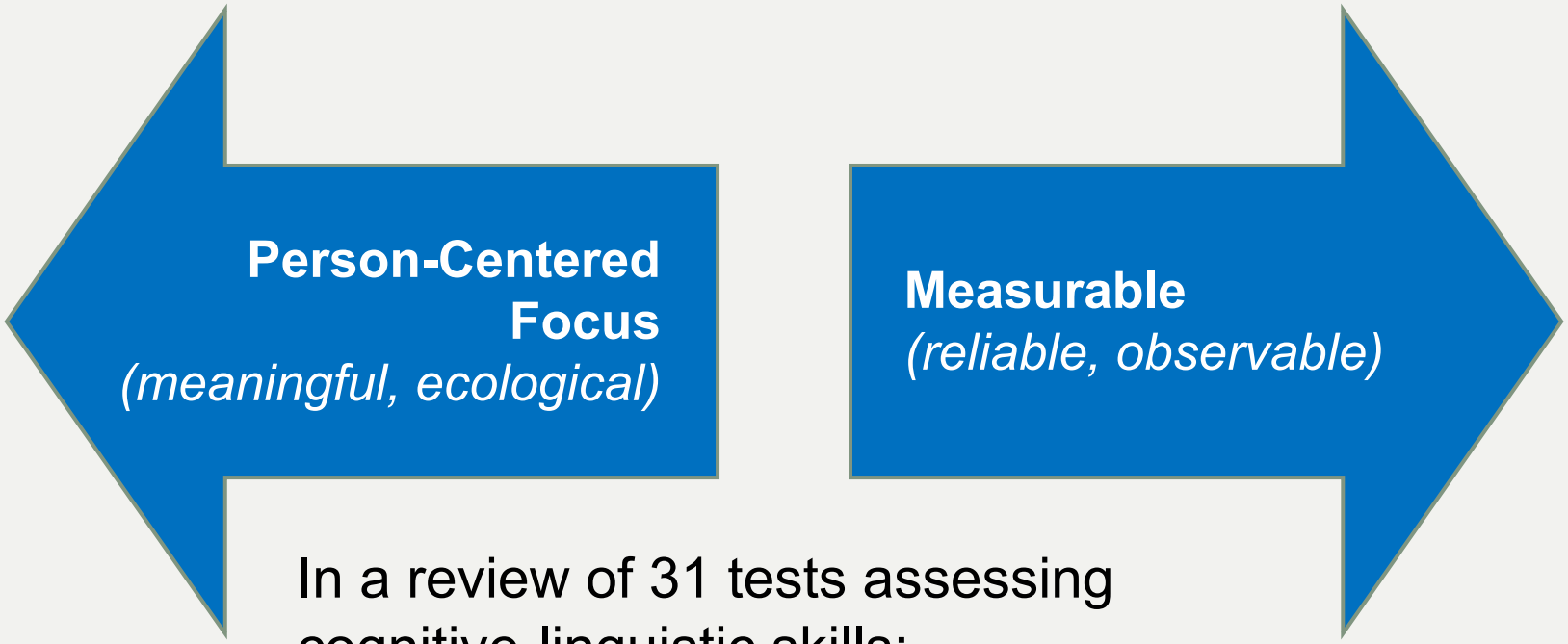
- Formal vs. Informal
  - Degree to which procedures are well prescribed and define
- Standardized vs. Non-standardized
  - All standardized tests are formal; some non-standardized test are formal; all informal tests are non-standardized
  - If standardized, need to know the psychometric properties
- Static vs. Dynamic
- All standardized tests are static; non-standardized tests may be either

Need to know psychometric properties of tests..

- Reliability
- Validity
- Base Rate phenomena
  - Probability of condition occurring in general public (leading to false positives)
- Sensitivity
  - If lacking, leads to false negatives

Review the types of reliability and validity coded in Turkstra et al (2005)

The Tension when Selecting Outcome Measures for Cognitive Rehabilitation



In a review of 31 tests assessing cognitive-linguistic skills:

None of the tests were predictive of performance in contexts relevant to daily life (ecological validity)

Turkstra et al, 2005

Limited Time for Evaluation

Typical evaluation: Test → Infer Function → Plan Treatment

- Standardized, impairment-level test
- Infer the degree to which impairments will likely impact everyday activities
- Plan treatment accordingly

Can be hard to find “ecologically valid” standardized tests..

- Executive functions: Testing environment may mask problems; base rate problem…often around 50%;
- Discourse/pragmatics: Sensitivity to context; base rate problem, reliability for assessing more complex functions

Static/Descriptive vs. Dynamic/Experimental

- Static: Measures performance w/out attempting to identify the factors that influence performance (positive or negative)
- Dynamic: Attempts to identify the effects of factors.
  - Test-retest is one example
  - Flexible testing—accommodating an impairment
  - Experimental...try altering administration according to hypothesis

Cognitive Assessment Areas

- Orientation/Arousal
- General Cognitive/Intellectual Abilities
- General Measures of Disability and Outcome
- Attention
- Memory & New Learning
- Executive Functions

Orientation/Arousal

- COMA: different instruments used to measure (Glascow Coma Scale awards points for eye opening, best motor response, best verbal response)
- PTA (GOAT is an example of instrument and looks at orientation to person, place, time & circumstance)
- Scales to track progress: most widely used is the Rancho Los Amigos Levels of Cognitive Functioning

GLASCOW COMA SCALE

McKay Moore Sohlberg, PhD, CCC-SLP

Rancho Scale Mnemonic

- Rancho Levels Song
- Rancho Levels Website

General Measures of disability and outcome

- FIM (Functional Independence Measure) one of the most widely used outcome measures. It is a 7-level scoring system; cognitive portion is only a small amount of the total variance of test; correlates with GOS; only a very blunt measure of outcome
- FAM(Functional Assessment Measure) extends FIM for cognitive and psychosocial issues; a bit more broad
- Disability Rating Scale (DRS) a bit more sensitive

Functional Assessment/Collaborative Contextualized Hypothesis Testing

(Ylvisaker & Feeney, 1998; Coelho et al, 2005)

- Ongoing
  - disability and contexts change
- Contextualized
  - ecological validity of standardized testing is questionable
- Collaborative
  - increasing the number of people who participate increases perspectives and variety of observations and the contexts; more people likely to be involved in intervention
- Hypothesis testing assessment
  - all behavior is multiply determined

Hypothesis Testing (Dynamic Assessment; Functional Assessment)

- Components/Implementation:
  - Problem identification
  - Hypothesis formulation
  - Hypothesis selection
  - Hypothesis testing
  - Formulation of intervention plan
  - Ongoing review

Hypothesis Testing Example

Observed reading problem..what is the source?

- Physical issue?
- Sensory issue?
- Cognitive issue?
- Language issue?
- Academic issue?
- Emotional?

Measuring Treatment Progress

- Changes in processing/abilities
  - Test/Retest on psychometrically sound tests
- Changes in skills/functional activities
  - Observation-Based: Functional Assessment, Rating scales, Counts/Sampling
- Progress on patient-selected goals
  - Goal Attainment Scaling

Summary
Examiner needs to…

- Be clear about reason for assessment
- Be knowledgeable about cognitive assessments and instruments
- Select instruments for their sensitivity
- Consider big picture: social, real world contextual variables
- Span WHO model
- Collaborative--involve the individual, family and relevant community members
- Use Hypothesis Testing to determine source of concerns and guide selection of treatment

Let’s Talk Specifically about Outcome Measurement

What are the criteria that come to mind when you measure the outcome of your therapy?

What is Goal Attainment Scaling?

- A method of measuring outcomes that are specific, sensitive and meaningful to clients
- Uses a collaborative interview process to generate functional goal domains that would be expected to change with therapy
- Delineates different objective levels of possible progress
- Becoming increasing more common as there is a call for **patient-centered outcomes**

Goal Attainment Scaling

1. Goal selection
2. Weighting goals,
3. Articulating the “expected” level of outcome in objective, measurable terms
4. Articulation of other outcome levels
5. Assessment of GAS level pre and post treatment.

Advantages of GAS

- Captures individual variability
- Shows high sensitivity to change in the areas that individuals have deemed as most important to them.
- **There is therapeutic value from the GAS process specific to brain injury rehabilitation.**
  - What did your reading say about this?

More advantages

- Can delineate the degree of change
- Can be used to measure intervention effects on hetergenous populations with different comorbidities
- Aligns the therapist and the patient

GAS CRITERIA

- **S**pecificity
- **M**easurability
- **A**ttainability
- **R**elevant
- **T**ime-specificity
- **E**quidistant
- uni**D**imensional

(Ruble et al., 2012)

SMARTED Goals

Definition of levels of attainment

+2 Much more than expected

+1 Somewhat more than expected

0 Expected level of outcome

-1 Somewhat less than expected-BASELINE

-2 Much less than expected

Functional Domain: School Performance/Assignment Management
Cognitive Domain: Executive Functions
Intervention Approach: Use of planner
Measurement: Missing/late assignments reported on school website; GPA

2 **Most favorable outcome likely**	No missing/late assignment	A's in all classes
1 **Greater than expected outcome**	1 missing/late assignment,	Mostly A's, no more than one B
0 **Expected level of outcome**	2 missing/late assignments	Mostly B's with one A
-1 **Less than expected outcome**	3 late/ missing assignment'	all B's
-2 **Most unfavorable outcome**	More than 3 late assignments	B's and C's

Inpatient clinical case study
Background

Age: 34 year old male

Diagnosis: Moderate TBI, GCS 9 in ER

Currently: Rancho V (Confused-appropriate)

Etiology: Rock climbing fall

Neuroimaging:

- Large left subdural hematoma with mass effect necessitating a left-sided craniotomy and surgical evacuation
- Hemorrhagic contusions of right and left frontal lobes, R > L

Time since injury: 4 weeks

Living situation: married with 2 children

Employment: teacher

Johnson, S & Frey, K, ASHA, Denver, CO, 2015

Inpatient clinical case example

Cognitive communication problems & strengths

Presenting problems:

- Fluent aphasia – paraphasias and impaired comprehension
- Poor memory - inability to recall daily routines
- Poor attention – difficulty staying focused
- Impaired safety awareness
- Impaired independence

Strengths:

- Recognized people
- Expressed self with ~ 40% success, 60% paraphasias
- Could follow simple directions, write and read simple information

Johnson, S & Frey, K, ASHA, Denver, CO, 2015

Step 1: Assessment &
Step 2: Goal setting - Inpatient Case

Assessment:

- Chart review –
  - understanding of neuroanatomy
  - social, educational, work history
- Boston Naming Test
- Western Aphasia Battery
- Orientation Log

Goal setting (begin with the end): *GET THE #$!! OUT OF HERE*

- improve SAFETY by *learning to use the call light*
- improve INDEPENDENCE by *coming to therapies*

Johnson, S & Frey, K, ASHA, Denver, CO, 2015

Example questions	Example responses
"What do you want to work on?"	*"Get the #$!! out of here."*
"What's getting in the way of you being able to do that?"	"*This stupid belt and nurse that's with me all the time."*
"Getting rid of the belt and your nurse will help you work toward getting out of here?" "What can you do to get rid of the belt and nurse?	*"They tell me I need to use the call light and follow my therapy schedule. They say at some point I should be showing up to my therapies on my own."*
"Are you using your call light any time right now or showing up to your therapies on your own?"	*"I use my call light sometimes and know where some of my therapies are."*
"Can you put a number to how often you use the call light during the day or you know where your therapies are?"	*"Maybe I use the call light once during the day. I don't go to any of my therapies on my own"*
"What does 'doing a little better or worse with that' look like?"	*"Maybe using my call light 3 times during the day."* *"Maybe use my planner to help me know where to go for at least one therapy session."*
"How will you measure your progress?"	*"Write it down on my form"*
"How will you remember to keep progressing with your goal?"	*"Tell staff/therapists and my family that I want to do this so they can remind me if needed."*

Goal Attainment Scaling
Goal: Get rid of behavioral attendant

Level of Attainment	Goal 1 Safety: Get rid of 1:1 attendant **Uses call light**	Goal 2 Independence: **Come to therapies I'ly**	Goal 3 Independence: **Improve communication w/ wife**
Much more than expected + 2	Uses call light 5 of 5 opportunities during the day	I get myself to my therapies and to my meals	
Somewhat more than expected + 1	Uses call light 4 of 5 opportunities during the day	I tell my family how to get to my therapies and my meals	
Expected level of outcome 0	Uses call light 2-3 of 5 opportunities during the day	At least one time during the day I tell my family to look in my planner so they know where I need to go	
Somewhat less than expected - 1	Uses call light 1 of 5 opportunities during the day	My family takes me to my therapies and my meals	
Much less than expected - 2	Uses call light 0 of 5 opportunities during the day	I become easily agitated by any daily routines	

Inpatient clinical case study

Treatment construction

Goal	Context	Materials	Task	Support / Cues
1. Safety: **Use the call light**	Room	• Steps for using the call light • Index cards	1) Review steps for the call light 2) He write each step on index card 3) Review steps – he put cards in order 4) Practice using call light	1) Simplify steps 2) Errorless learning 3) Review-Say-Do
2. Independence: **Coming to therapies on his own**	Office Hallways Room Gym	• Planner • Daily schedule	1) Review schedule of day 2) Practice route for schedule 3) Practice initiation of telling staff / family where he is going	1) Consistent paths 2) Point out landmarks 3) Verbal / visual cues for him to initiate telling staff/family

Johnson, S & Frey, K, ASHA, Denver, CO, 2015

The GAS Process

Goal	Live on my own with weekly check-ins & help as needed by family (3 hours or less weekly)
+2 Much more than expected	Live on my own with weekly check-ins & help as needed by family (3 hours or less weekly)
+1 More than expected	Live with family and get help for 25% of daily activities.
0 Expected	Live with family and get help for 50% of daily activities.
-1 Baseline	Live with family and get help for 75% of daily activities.
-2 Decline	Live with family and get help for nearly all daily activities (more than 75%).

Summary of Benefits for GAS

- Client-centric versus population-centric
  - Individualized vs. global measure
- Accommodate different goals for same client
- Aggregate results across clients receiving the same treatment with different goals
  - Practice-based evidence
- Can objectively assess degree of goal attainment – outcome measure

Welcome to Consolidation Station

MEDBRIDGE

Review & Chew 1

MEDBRIDGE

Lecture Map Part B

- Increasing Client Buy-In (Building Therapeutic Alliance)
  - Need to promote self-efficacy, motivation, and trust
  - Challenges may be due to deficits in self awareness, psychological conditions (denial, depression)
- SLPs need to know how to promote resilience
  - Tools: client-centered goal setting, collaborative interview skills and MI
  - Therapy approaches to decrease deficits in self awareness and increase motivation
- Big picture flow of therapy that can promote resilience and self-efficacy
  - Four phases of cognitive rehabilitation (from Clinician's Guideline)
  - Dynamic Coaching

Resilience

Reading & Podcast Review

- Clinician's Guide to Cognitive Rehabilitation in Mild Traumatic Brain Injury

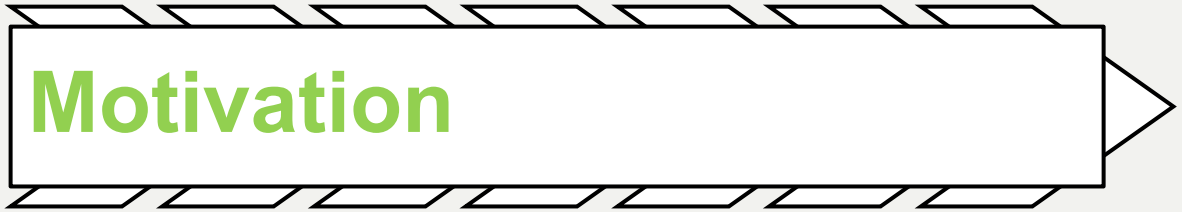
- Hillig, Ma & Dorsch (2019)
  - What were the components of the intervention used in the article?
  - Why do you think this was an effective intervention?

- Called to Care (podcast)

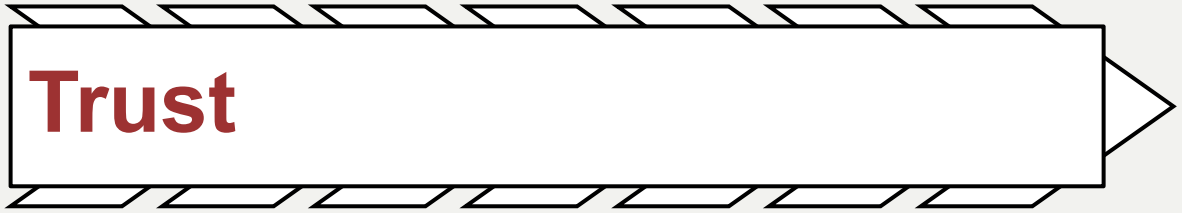
What Increases Patient Buy-In?

“I can do this.”

“This is a goal that matters to me.”



“I believe that you understand, care and can help me."



What Decreases Patient Buy-In?

Organic Factors

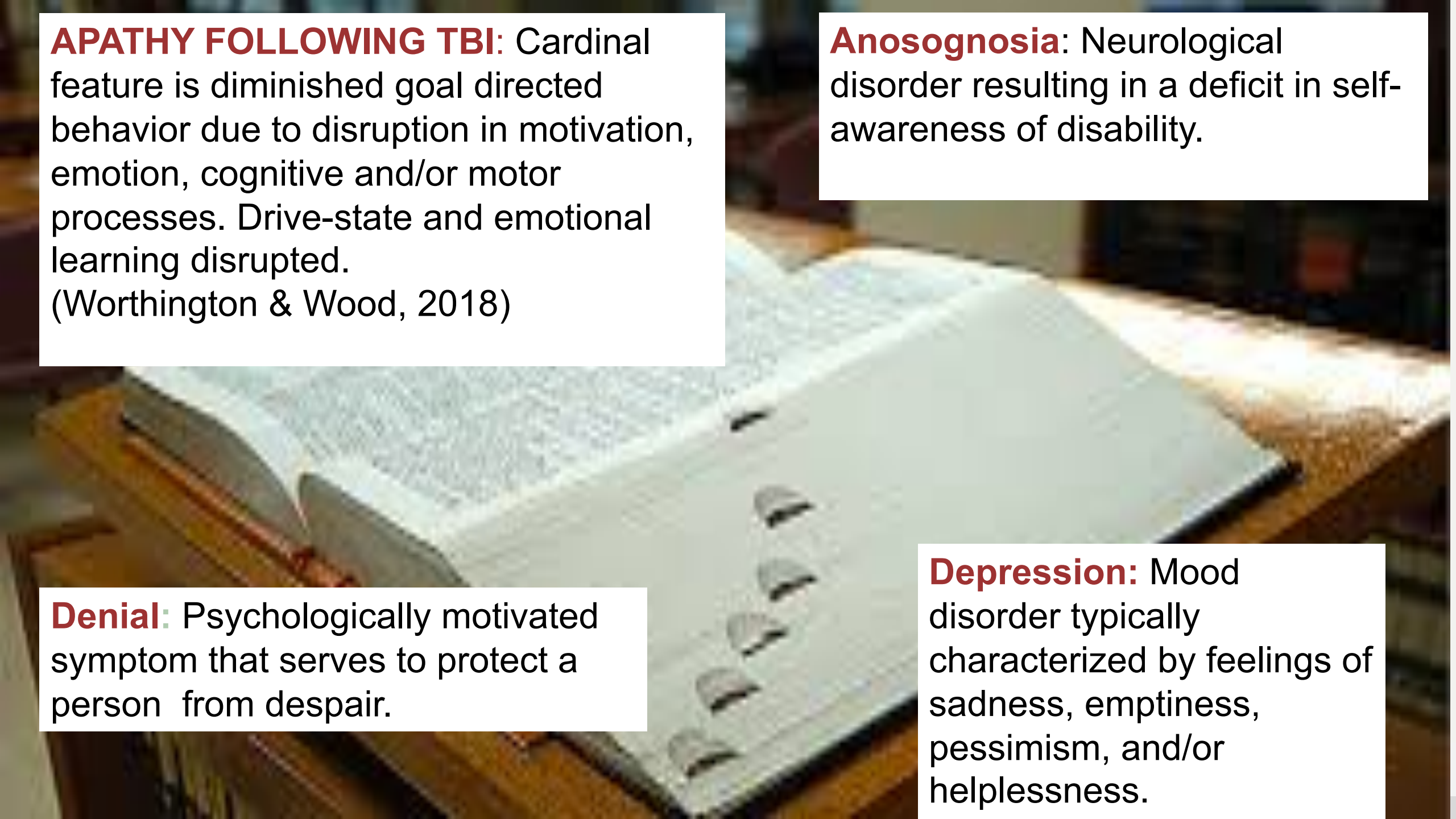
- Anosagnosia/Lack of Self Awareness
- Apathy syndromes

Pre-Injury Psychological Traits

- Negative emotionality
- Mental health conditions
- Defensive coping style

Response to Impairment

- Reactive depression
- Denial
- Low expectation for improvement



APATHY FOLLOWING TBI: Cardinal feature is diminished goal directed behavior due to disruption in motivation, emotion, cognitive and/or motor processes. Drive-state and emotional learning disrupted.
(Worthington & Wood, 2018)

Anosognosia: Neurological disorder resulting in a deficit in self-awareness of disability.

Denial: Psychologically motivated symptom that serves to protect a person from despair.

Depression: Mood disorder typically characterized by feelings of sadness, emptiness, pessimism, and/or helplessness.

Theoretical model of possible trajectories following trauma

- Resilient re-integration (e.g., acceptance of limitation after an injury but development of new interests and activities)
- Re-integration with loss (e.g., engage in wheelchair sports)
- Re-integration back to homeostasis (e.g., life activities return to previous state after a traumatic injury)
- Dysfunctional re-integration (e.g., depression, isolation, substance abuse)

Richardson GE. The metatheory of resilience and resiliency. *Journal of Clinical Psychology*. 2002;58:307–321.

FROM THE RESILIENCE LITERATURE….

The process of psychological reintegration is the ability to learn new skills from the disruptive experience in a way that will allow one to negotiate life events.

Preventing the negative trajectory of recovery requires individuals to figure out the value of personal disruption and adversity as avenues to promote growth and adjustment.

How can we as SLPs facilitate these adaptations?

Neils-Strunjas, J. et al., (2017) Role of resilience in the rehabilitation of adults with ABI. *Brain Injury*, 31(2), 131-139.

Essential Clinical Skill Sets for Facilitating Client Buy-In & Positive Adaptation

Intervention Techniques for Managing Deficits in Unawareness and Promoting Resilience

Techniques for Building Therapeutic Rapport

Motivational Interviewing (MI)

One Part Philosophy

- Client Autonomy
- Resist the ‘Righting Reflex’

One Part Communication Technique

- OARS

Motivational Interviewing Techniques (OARS):The Path to Collaborative Goals

- *(Miller & Rollnick, 2012)*
- **Open-Ended Questions** vs. Yes/No Questions
  - How can I help you? How do memory challenges affect you at work?

  vs.
  - Do you have problems with memory? Can you remember the things you need to do at work?
- **Affirmation** vs. A simple compliment
  - Even though you didn't always use your strategy on vacation, you did remember to use it twice in very difficult situations, you should feel good about that.

  vs.
  - Nice job
- **Reflections** vs. More questions
  - You have trouble reading textbooks, your mind wanders.

  vs.
  - I see, are you distracted?
- **Summaries** the opportunity for collaboration
  - Summaries collect a number of things *said by the client* presented back to the client for *validation*

MI in Action…

- https://www.youtube.com/watch?v=_VIvanBFkvI
- What MI techniques were violated?
- Thoughts?

Round 2

- https://www.youtube.com/watch?v=67I6g1I7Zao&t=34s

An Operational Definition of a Collaborative Goal Using MI Techniques

A goal in which:

1. the functional context, functional activity, and cognitive context for that goal are identified through client responses to open-ended questions or reflections by the clinician
2. and validated by the client in response to a clinician summary of that information.

Four Interview Components When Collaboratively Setting Goals (GAS Goals)

1. Identifying the problem
   a) Cognitive-communication domain (attention, memory, language)
   b) Functional Domain/Context (grades/school; household management; social communication)
2. Facilitating Buy-In
3. Selecting Therapy Approach
4. Generating Goal Hierarchies

An Operational Definition of a Collaborative Goal Using MI Techniques: An Example

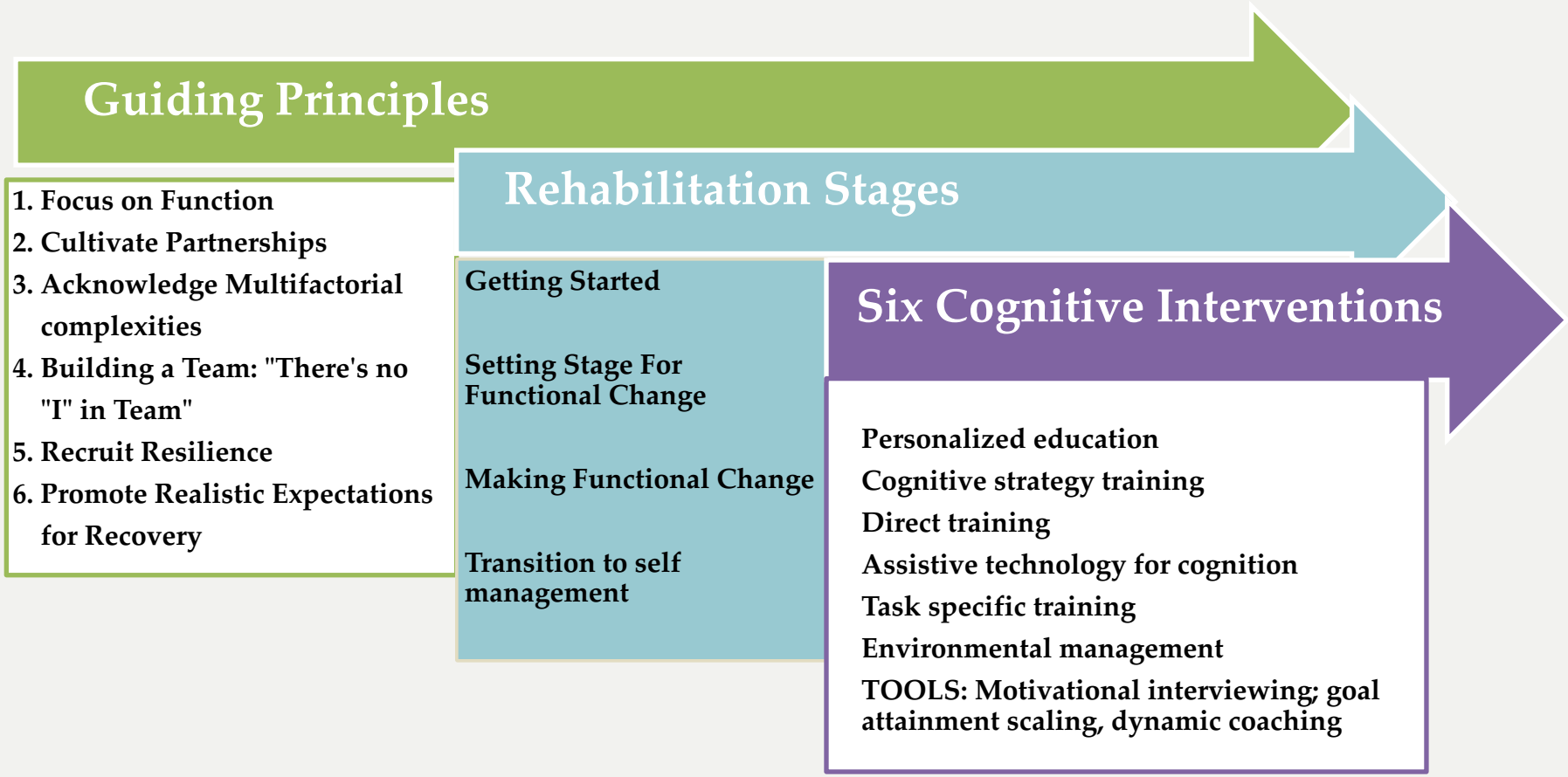
- **Open-ended question:** How can I help you?→ ***I'm really struggling in school, my test grades are terrible***
  - Functional Context = school
- **Open ended question:** Tell me how do you study? → ***Well I try and read these chapters and it's a lot harder than it used to be***
  - Functional Activity = reading college textbooks
- **Reflection:** It's hard to keep your focus when you are reading → ***Yes, my mind wanders, my eyes are moving across the page like I'm reading but I'm thinking about something completely different***
  - Cognitive Context = distractibility

An Operational Definition of a Collaborative Goal Using MI Techniques: An Example

- **Summary:** So what I hear you saying is that you're struggling on tests in school because reading the chapters is hard. You lose your focus and become distracted – you can't keep your mind on what you're reading.
- → ***Yes, and it's a huge problem for me. I can't remember what I read.***
- **Possible Level 0 Goal – Expected Outcome**
  - Goal: Client will use _____ strategy to maintain attentional focus while reading and will identify episodes of distractibility no more than once every 5 pages.

Let’s Back Up to the Big Picture: How does goal setting fit in the larger context of therapy?

Clinical Guidelines Manual Developed for mTBI



Roadmap for Functional Cognitive Rehabilitation

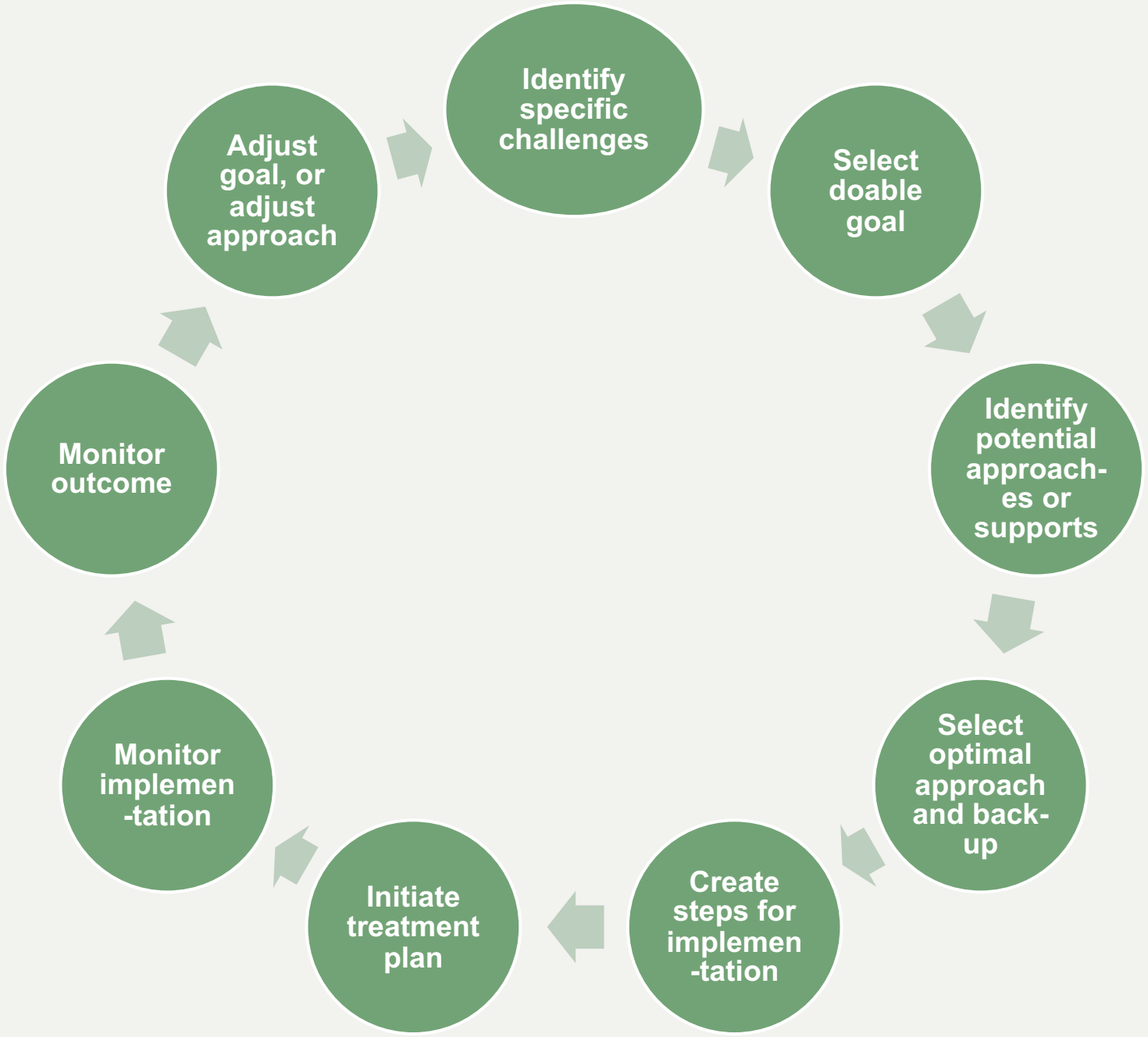
Overview

- **Get Started**
  - Establishing the therapeutic alliance, information gathering, engage & motivate
- **Set the Stage for Functional Change**
  - Client selects goals, treatment approaches, measurement plan
- **Make Functional Changes**
  - Engage in therapy, 6 approaches to cognitive rehabilitation, monitor progress, goal attainment
- **Transition to Self-Management**
  - Plan for discharge, evaluate outcomes

Dynamic Coaching

Acknowledgement: Don MacLennan, Minneapolis Veterans Administration Medical Center

- Collaborative problem-solving interaction
- Clinician functions as a coach, modeling and explicitly instructing self-regulation
- Both clinician and client are considered experts
- It is a method to develop a specific goal, identify a strategy/therapy approach to support that goal, monitor outcome and evaluate goal attainment
- Ultimate goal is for patient to engage in self-coaching process
- Requires some degree of self-awareness



McKay Moore Sohlberg,

Six Guiding Principles

1. **Recruit Resilience**
   - Identify & incorporate values of patient into therapy
   - Promote self-efficacy, positive expectation, sense of meaning
2. **Cultivate the Therapeutic Alliance**
   - A strong partnership provides the foundation for the therapeutic process
   - Listen carefully to the patient and resist the impulse to be *the expert*
3. **Acknowledge multifactorial complexities**
   - Persisting cognitive symptoms are often maintained by factors other than the brain injury
   - Regardless of the lack of clarity surrounding cause of cognitive symptoms, the symptoms are real and the therapist must move beyond symptom attribution to help the patient function better

Six Guiding Principles

4. **Build a team**
   - Include family wherever possible – family support is a strong prognostic variable for recovery
   - Other team members are driven by specific needs: Physicians for medical tx, Mental Health providers for mood disorders, PTSD, Social Work for community services as needed
5. **Focus on function**
   - Overarching goal of cognitive rehabilitation after mTBI is to help people resume valued activities
   - This is best accomplished when therapy itself is integration-focused and directed at functional activities in a community context
6. **Promote realistic expectations for recovery**
   - Positive expectation for recovery is critical for developing self-efficacy and self-determination
   - Provide education about nature of mTBI and expected recovery, highlight abilities and strengths, and demonstrate effectiveness of strategies in resuming everyday activities