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Functional Treatment for Acquired Brain Injury in Inpatient Rehabilitation

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Disclosure

Financial: None. I have not received any compensation from test, treatment, or application developers or publishers. These recommendations are based off of my clinical experience.

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Objectives

After this course, participants will be able to:

- Describe the International Classification of Functioning, Disability, and Health (ICF) and the Plan, Implement, and Evaluate (PIE) framework and how to develop goals based on these frameworks.
- List three functional therapy tasks to use in the acute rehabilitation setting for various cognitive and physical deficits.
- Describe the benefits of co-treating and developing multidisciplinary goals in functional treatment of brain injury.

Mechanisms & Symptoms of ABI

- Acquired Brain Injury
  - Traumatic Brain Injury (TBI)
  - Stroke
  - Other Neurological Impairment
    - Anoxia/Hypoxia, Disease, etc.
**ABI Severity**

- Severity Continuum (TBI)
- Ranchos Los Amigos Scale (TBI)
- Glasgow Coma Scale (TBI)
- NIH Stroke Scale (Stroke)

**“Typical” Symptoms of ABI**

- Attention
- Memory
- Executive Functioning
- Problem Solving
- Language
- Pragmatics
- Swallowing
- Physical Symptoms
Impact of Medication

- Pain
- Neurostimulants
- Blood Pressure
- Antiepileptic

Post Traumatic Amnesia (PTA)

- What is PTA?
- How does PTA impact my treatment and assessment?
Treatment and Goal Planning Frameworks

- Functional and Patient Centered
- International Classification of Functioning, Disability, and Health (ICF)
- Plan, Implement, Evaluate (PIE)

Functional Goals

- **Long Term**
  - Patient will use memory strategies independently while in the work environment.
  - Patient will safely consume least restrictive diet to maintain nutrition and hydration.

- **Short Term**
  - Patient will use circumlocution in conversation with familiar partners with 90% accuracy.
  - Patient and clinician will collaborate to identify patient-centered goals for return to school.
More Functional Goals

- ASHA’s website has examples of how to apply the ICF framework to goal setting.
  
  - [http://www.asha.org/slp/icf/](http://www.asha.org/slp/icf/)

- Be creative, don’t “plug and play,” but involve your patients and families in functional, patient-centered goal setting.

Interdisciplinary Goals

- Aligned with patient-centered, functional mentality.

- Focus on the whole patient, not just discipline specific care, to establish the most functional and appropriate treatment plan.

- Example:
  - Patient will safely perform transfer from bed to wheelchair.

- What are the interdisciplinary components of this goal?
Patient will safely perform transfer from bed to wheelchair

- What are the interdisciplinary components of this goal?
  - SLP: Patient will recall and safely sequence steps to transfer from bed to wheelchair with minimal verbal cues.
  - PT: Patient will safely perform transfer from bed to wheelchair with modified independence.
  - OT: Patient will complete bed to chair transfers with modified independence and adaptive equipment.

Intake Assessment

- When is it appropriate to complete a standardized, formal assessment versus an informal assessment?
Things to Consider: Assessment

- Medication
- Level of consciousness
- Physical symptoms
- Communication
- Family dynamics
- Agitation and motor restlessness
- PTA

Informal Assessment and Interdisciplinary Intake

- Screener
- Informal observation of functional tasks
- Interdisciplinary group intake
  - All components of core therapy team go into patient’s room at on day of admission. What should the focus of the evaluation be?
Functional Treatment and Specific Symptom Areas

Patients with Low Level Brain Injury (LLBI)

You CAN and should treat these patients!
JFK Coma Recovery Scale (CRS)-Revised

- The purpose is to “assist with differential diagnosis, prognostic assessment and treatment planning in patients with disorders of consciousness.”
- Auditory, visual, motor, oromotor, communication, and arousal functions assessed
- Lowest item “represents reflexive activity while the highest items represent cognitively-mediated behaviors.”
- Scoring is standardized. Recommend training by a therapist who has performed the CRS-R prior to administration and application.

https://www.tbims.org/combi/crs/

Treatment Ideas for LLBI Patients

- Base on CRS-R results.
- Education, education, education.
- Co-treats are extremely beneficial for patients with LLBI.
Refresher: PTA

How does PTA impact assessment, treatment activities, and goals?

Memory

- Treatment goals should be functional and patient-driven.

- Types of memory:
  - Prospective
  - Short term
  - Working memory
  - Long term (implicit, explicit, etc.)
Functional Memory Treatment Tasks

- **SLP: Memory**
  - Patient will recall names of primary therapists with moderate visual and verbal cues.
  - Patient will route to room using environmental cues with maximum verbal cues.

- **Co-treatment PT and SLP: Memory**
  - Patient will recall steps to safely transfer from bed to walker with minimal verbal cues.
  - *SLP review photos of transfer steps with patient at beginning of session. Patient sequences these. Then SLP and PT assist patient with physical transfer.*

More SLP Memory Treatment Tasks

- Patient will write down his/her schedule every morning.

- Patient will identify medication and purpose of medication at each administration.

- Patient will recall compensatory strategies for dressing the lower extremity.
Attention

- Types of Attention
  - Focused
  - Sustained
  - Selective
  - Alternating
  - Divided

Functional Attention Treatment Tasks

- Patient will attend to 15 minute treatment session with moderate verbal cues.
- Patient will attend to safety signs on unit while routing to room with minimal verbal cues.

- Co-treatment OT and SLP: Attention
  - Patient will prepare a hot meal for three fellow patients with moderate verbal cues for attending to tasks and sequencing.
  - Can build on discipline specific and interdisciplinary goals.
Functional Attention Treatment Tasks

- Patients present with difficulty planning and organizing tasks, initiating tasks, completing tasks.
- Patient may have difficulty inhibiting responses (less filter!) and decreased insight.
- Involves ability to sustain attention to a single task, working memory, and pragmatic skills.

Executive Functioning

- Patients present with difficulty planning and organizing tasks, initiating tasks, completing tasks.
- Patient may have difficulty inhibiting responses (less filter!) and decreased insight.
- Involves ability to sustain attention to a single task, working memory, and pragmatic skills.
**Functional Executive Functioning Treatment Tasks**

- Goal setting and planning (*patient centered goals!*)
- Scavenger hunt around unit
- Meal plan and grocery store outing (*co-treat with TR, PT, or OT*)
  - Choose meal for xx number of people.
  - Sequence steps to meal.
  - Write out and organize grocery list.
  - Plan route to grocery store.
  - Estimate cost of grocery items.

**Speech and Language**

- Aphasia
- Word finding
- Dysarthria
- Nonverbal
- Pragmatics
Functional Speech and Language Treatment Tasks

- Structured conversation with fellow patients, staff, and family members.
- Requests from staff for various items.
- Use of compensatory strategy for nonverbal patients who can attend and are aware enough (e.g., communication board, text on phone, writing, etc.).
- Increase intelligibility in structured and non-structured environments.

Be sure to observe the patient’s speech and language not only in the therapy environment but also in more complex environments to determine functional communication.

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Functional Speech and Language Treatment Tasks

- Speech and language is a perfect area of focus for a co-treatment. Any therapy session involving communication can serve as a speech and language treatment task.
  - Walking with PT, work on patient’s intelligibility strategies throughout session.
  - OT and SLP bathing co-treat, ask patient to name items in shower.
  - Community outing with recreational therapy, ask patient to order food items for self and other patients with focus on pragmatics.
TBI Case Example

23 year old, Caucasian male, unrestrained driver, status post motor vehicle accident: car versus tree. Patient was unconscious at the scene and presented as a GCS 8 upon arrival to the emergency room. CT revealed large left subdural hematoma in addition to substantial subarachnoid hemorrhage. Left frontal craniotomy was performed and patient was mechanically ventilated via oral intubation while stabilized in ICU. Patient presents to your inpatient unit with left frontal skull defect and breathing room air.

Likely Symptoms?

- Physical?
  - Right upper/lower extremity hemiparesis
- Speech and Language?
  - Aphasia
  - Pragmatics
  - Dysarthria
- Cognition?
  - Memory
  - Attention
  - Problem solving
  - Executive functioning
- Swallowing?
What Symptom Do I Focus on First?

Possible Co-Treats?
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References


References


