Improving Communication and Quality of Life: Cognitive Therapy After Brain Injury

The Maxwell & Eleanor Blum Patient and Family Learning Center
Mass General Hospital

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Disclosure

• Magdalen (Maggie) Balz is speech language pathologist (SLP) at Massachusetts General Hospital in the Speech, Language and Swallowing Disorders Department, where she evaluates patients with cognitive, language, and motor speech deficits.

• She is the Group Facilitator for CLIP (Cognitive Linguistic Intensive Program)

• She has no other financial/ non-financial disclosures
“Cognitive-communication disorders encompass difficulty with any aspect of communication that is affected by disruption of cognition. Communication may be verbal or nonverbal and includes listening, speaking, gesturing, reading, and writing in all domains of language (phonologic, morphologic, syntactic, semantic, and pragmatic). Cognition includes cognitive processes and systems (e.g., attention, perception, memory, organization, executive function). Areas of function affected by cognitive impairments include behavioral self-regulation, social interaction, activities of daily living, learning and academic performance, and vocational performance.”

Why SLP for cognitive therapy?

Where does cognition end and language begin?
Cognition

• Definition:

Cognition noun: conscious mental activities: the activities of thinking, understanding, learning, and remembering
Cognition

• Clinically defined:
  – Mental processing information:
    • Organizing
    • Understanding
    • Remembering
    • Communicating with others

• Core components:
  – Attention
  – Memory
  – Executive Functioning
  – Information Processing
Components of Cognition

Executive Functioning

Memory

Attention
What are cognitive deficits?
Cognitive Deficits

Difficulty with:

• Attention
  – Trouble concentrating

• Memory
  – Forgetting where you put things
  – Forgetting appointments
  – Forgetting conversations or new things you learn

• Executive Functioning (Planning/ organization)
  – Designing and following a schedule
  – Adjusting your schedule as needed
How do we decide what to target in therapy?
• Informal and Formal Assessments
• Patient Report

DIAGNOSING
COGNITIVE COMMUNICATION DEFICITS
Formal Assessments - Attention

• **Attention**
  – *Test of Everyday Attention (TEA)*
  – *Attention Process Training Test (APT Test)*
    • Example:
      – Sustained Attention
      – Selective Attention
      – Divided Attention
      – Alternating Attention

• **Memory**
  – *Woodcock Johnson Test of Cognitive Abilities*

• **Executive Functioning**
  – *Functional Assessment of Verbal Reasoning and Executive Strategies (FAVRES)*
Therapy Goal are Patient-Centered

Personal Challenges

1. What are current daily challenges?
2. If any, what are tasks are avoided?
3. What are targets for therapy?
WHO ICF
International Classification of Functioning, Disability and Health
ICF model of concussion
Work and School

Participation

Return to Work

Activity

Learning a new computer program
Ability to work full time

Impairments

Poor Working Memory and Attention
Visual Deficits
Anxiety, Irritability, fatigue

Holloran, S.W.
THERAPY INTERVENTION

• Patient education
• Compensatory strategies
Cognitive Rehabilitation

What is cognitive rehabilitation?
Cognitive Rehabilitation

• Patient Education

• Restorative
  – Develop skills
    • Attention Process Training, therapy materials

• Compensatory
  – Learn strategies
    • Strategy: a tool, plan or method to accomplish a task
    • ABC’s of Project Management

• Functional Problem Solving
  – Study strategies for tests
  – Plans to accomplish work projects
Therapy Options

• Traditional therapy (1-2/ week, start with ~10 weeks)
  – Patient education
  – Compensatory strategies
  – Identifying tasks for home program work

• Intensive therapy (3-4/ week for 1 month)
  – Restorative therapy
  – Compensatory strategies
  – Identify home program tasks to complete after therapy is complete

• Intensive therapy program (4/ week), Cognitive Linguistic Intensive Program (CLIP)
  – Group and individual therapy
  – Restorative therapy
  – Identify strategies to continue after therapy program is complete
Evidence-based practice

The Study of Cognitive Rehabilitation Effectiveness

The SCORE clinical trial is a randomized controlled treatment trial evaluating the effectiveness of cognitive rehabilitation in post-deployment military service members who sustained a concussion.
• Patient Education
• Compensatory Strategies

ATTENTION

Executive Functioning

Memory

Attention
Sustained Attention

• Maintaining attention over time
  – Vulnerable to fatigue

Sohlberg & Mateer, 1987
Selective Attention

- Focusing on *one* thing at a time
- Ignoring distractors/ background noise

Sohlberg & Mateer, 1987

Selective Attention - Distractions

• Distractions can be
  – External
  – Internal
• More effort is required to ignore distractions
  – Less resources are available to absorb information

Sohlberg & Mateer, 1987
Selective Attention – Distractors
External

• Use ear plugs when reading over time
• Rewrite instructions
• Use cue card to cover distracting portions of the written material
• Use highlighter
• Organize information in a visually simplified manner so it is less confusing
Selective Attention – Distractors

Internal

• When you are in the middle of doing a task, and you start thinking about something else, you are experiencing an internal distraction
  – Internal distractions can be:
    • Thoughts
    • Worries
    • TO DO Tasks
Managing Mind Chatter
Let It Lie

* Step 1: Define the distraction
  Be specific
  - “I just forgot to do two errands that I meant to do today.”
  - “I didn’t remember I had a dentist appointment in 30 minutes, and now I don’t have time to get there.”
Let It Lie

• Step 2: Ask yourself
  – “At this very moment in time, is there anything I must do to resolve this issue?”
  – Is there a consequence if you do not address the issue immediately?
Let It Lie

• Step 2: Ask yourself, Continued
  – If yes, do it right away
    • For example, call the dentist and reschedule (have your planner with you when you do this).
    • After the note is written, immediately get back on task
  – If no, see Step 3
Let It Lie

• Step 3: Write a note to yourself to address the issue later
  – Plan *when* you will think about it or act on it
  – After the note is written, immediately get back on task
Let It Lie

• Step 4: Stop worrying about it and *Let It Lie*
  – You have a **plan of action**
  – Every time you think about it, remind yourself, “I have a plan.”
Commercially available: Let it Lie
Alternating Attention

• Shift focus from one thing to another
  – Task A to Task B, back to Task A

• Mental flexibility allows you to switch your focus between more than one task

Sohlberg & Mateer, 1987
Divided Attention

• Simultaneous response to two or more tasks
• Divide your attention between two or more tasks
• Challenged daily in tasks such as driving (listening to the radio, operating a vehicle, conversing)
• There is one strategy that works best for managing divided attention...

Sohlberg & Mateer, 1987
Attention Strategies

• Reduce distractions
• Manage fatigue
• Avoid interruptions
• When necessary, *Re-Vamp Attention*
  – Set up your focus
  – Eliminate new distractions that have arisen
• Set a time limit
  – Tell yourself, “I’m only going to work for 10 minutes at a time.”
• Reward your success!
  – What is a quick reward system you could create for yourself?
Attention – Summary

• Sustained
  – Paying attention to something over a period of *time*

• Selective
  – *Ignoring background* stimuli and focusing on the current task

• Alternating
  – Going *back and forth between two different tasks* (Task A, Task B, back to Task A… Do you remember where you left off?)

• Divided
  – Attempting to do *two different tasks simultaneously*

Sohlberg & Mateer, 1987
Patient Education
Compensatory strategies

MEMORY
Memory

- **(Attention)**
  - Information that is not attended to cannot be recalled later

- **Encoding**
  - The process of organizing and maintaining information in short-term or “working” memory (our mental clipboard)

- **Consolidation/ Storage**
  - The process of storing information in long-term memory

- **Retrieval**
  - The process of *recalling* or *recognizing* the consolidated information as needed

Memory

• All the stages of memory are related
• People can have difficulties at all stages of memory
• Attention, Encoding, Consolidation/Storage, and Retrieval are all parts of an interrelated process

Memory Strategies

Visual Imagery

• Picture a story through a cameral lens
• Mapping directions
• Picturing items to buy at a grocery store
Memory Strategies

Association

• Create meaningful links from something you are trying to learn to something you already know
  – Example, learning foreign languages
  – *Mnemonics* - Write a phrase that connects meaning
    • The more ridiculous the better!
Encoding

Verbal rehearsal

• Self talk
  – Talk your way through the steps
  – Repeat information out loud
Memory Strategies

Chunking/Grouping

- Categorizing information
  - Phone numbers
  - Group items on a shopping list by departments in the grocery store
Memory Strategies

Schematic analysis

• Sort/ categorize information into
  – Main theme
  – Sub themes
  – Details
Livescribe Pen
Executive Functioning

- Memory
- Attention

- Patient Education
- Strategies

EXECUTIVE FUNCTION
Executive Functioning

• Those mental capacities necessary for formulating goals, planning how to achieve them, and carrying out the plans effectively.

• At the heart of all socially useful, personally enhancing, constructive and creative activities.


Executive Functioning

- Goal formulation
- Planning
- Implementation
- Monitoring for effective performance

Executive Functioning

“Executive functions (also known as cognitive control and supervisory attentional system) is an umbrella term for the management (regulation, control) of cognitive processes, including working memory, reasoning, task flexibility, and problem solving as well as planning and execution.”

http://en.wikipedia.org/wiki/Executive_functions
GOALS
Personal Goal

What makes a good goal for Cognitive Therapy?

Create S.M.A.R.T. Goals

- SPECIFIC
- MEASURABLE
- ACHIEVABLE
- REALISTIC/RELEVANT
- TIMELY

Creating SMART Goals

• What is your SMART Goal?
• What do you want to do that you are not doing now?
• What is holding you back from reaching your goal?
• Where do you hope to be at the end of 6 weeks?
Write your own SMART goal

We tell our patients:

Putting your goal in writing will make yourself more accountable
## Goal Attainment Scaling

<table>
<thead>
<tr>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUCH More than Expected Outcome</td>
<td>+2</td>
</tr>
<tr>
<td>MORE than Expected level of outcome</td>
<td>+1</td>
</tr>
<tr>
<td>EXPECTED Level of outcome</td>
<td>0</td>
</tr>
<tr>
<td>LESS than Expected level of outcome</td>
<td>-1</td>
</tr>
<tr>
<td>MUCH Less than expected Outcome</td>
<td>-2</td>
</tr>
</tbody>
</table>

Bouwens et al., 2009
ABCs of Project Management

- Assess
- Breakdown
- Complete
FIGURE 6.2 Work breakdown structure in chart form.

From The Portable MBA, The Fast Forward MBA in Project Management, Eric Verzuh (1999), pg 103
MISC COMPENSATORY STRATEGIES
Sorting Mail - TRAF

• Trash or Toss
• Review or Research Later
• Act
• File
“Everything has a home”
Pre-Made Packing List

Available for purchase at Amazon:

https://www.amazon.com/Knock-Pack-This-Pad/dp/1601061560
Pre-Made Shopping List
Available for purchase at Amazon
https://www.amazon.com/Knock-All-Note-Blue-12226/dp/1601061935/ref=pd_sbs_14_img_1?_encoding=UTF8&psc=1&refRID=DDPR7Q6AXY9PCRR6XNXG

Templates online are also available
Out-the-door List

What are the essential items you need each day?

- Cell phone
- Glasses
- Wallet
- Car keys
- Planner
- Pen
- Water
Thank you!

Questions?
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