Lori Davis, Ed.D., CCC-SLP
Associate Professor
University of Tulsa
Department of Communication Disorders
Cognitive-communicative skills after traumatic brain injury
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Introduction

• Communication problems from brain injury are unique from deficits from other causes.
• Brain damage is extensive and affects more than just language areas
• Called cognitive-communication disorders, because both linguistic & nonlinguistic (memory, attention, perception) deficits are present.
Introduction

• Not aphasia but has some of the same characteristics as aphasia + other problems

• Generalized memory and cognitive deficits cause language problems
Introduction

• Person with a severe TBI is cognitively disorganized, has difficulty processing language.

• Many traditional tests are not sensitive enough to pick up these complex deficits
Cognition and Language Relationship

• Language is a cognitive instrument
• Language involves cognitive processing
• Cognition = attention, discrimination, sequencing, memory, organization, comprehension, reasoning, problem solving, and executive functions that monitor all of the previous functions.
Speed of Information Processing

- Decreases after TBI
- Auditory processing and word retrieval deficits are common
- Person may only understand part of a message and may interpret info incorrectly.
Higher Cognitive Processes: Possible Deficits

- Insight
- Reasoning
- Problem solving
- Integration

- Accurate self-perception
- Interpreting other’s reactions
- Interpreting sarcasm
Higher Cognitive Processes: Possible Deficits

- Connotations
- Alternate word meanings
- Appropriate use of nonverbal skills

- Part-whole relationships
- Figurative language
- Planning and execution
Cognitive-Communicative Disorders

• Communication after TBI is described as somewhat aphasic, anomic or irrelevant

• Patients after TBI “talk better than they communicate” and are often very fluent
Specific Deficits in Communication Competency

- Failure to integrate social, emotional, cognitive and language components. Deficits not well identified by std. tests
- 1. Expressive probs: tangential communication both verbal and written. “loose connection of thoughts and ideas and a tendency to stray”.
- Lack integration, focus, organization of ideas
Communication Competency

• Too much detail, excessive talking
• Inattentiveness to communication parameters and to feedback from partners
• May be repetitive to give themselves cues about what they are talking about.
• Difficulty with ambiguity, metaphors, figurative language, sarcasm
Narratives/Discourse

- Patients with TBI use fewer cohesive devices in narratives, are ambiguous. Conversational skills may be normal.

- Poor topic maintenance, use of references in narratives, over-presuppose
Narratives/Discourse

• Frontal lobe damage decreases pragmatic skills – emotional control, social perception, self-regulation.
• These problems lead to social dysfunction, isolation, withdrawal, depression
• Patients are often unable to follow social rules after TBI
Conversational Skills

- Problems may be in turn-taking, topic maintenance, providing excessive info, redundancy.
- Other problems: giving hints, understanding indirectness and sarcasm, changing communication style to match the partner, being subtle
Conversational Skills

• 4 maxims of conversation:
  • Quantity: enough to be informative
  • Quality: nothing untrue
  • Relation: be relevant
  • Manner: be brief and orderly
Nonverbal Skills

• Even at higher levels of functioning, person may have problems with correct use of speech rate, pitch, tone, quality, intensity
• Also deficits with using and interpreting facial expression, eye contact and proxemics
Basic Assessment Principles

- Clinical judgment is valuable
- Use familiar tests
- Good normative data is not available
- Observe clients in real world
- Remember the client’s premorbid history and prior functioning level
Basic principles of assessment

• Consider the family

• Expect variability in performance

• Individualize testing scenario
Assessment Principles

• Patients with TBI are difficult to test.

• Determine why a person scores as they do, not just the test score. What process is impaired? How does the person function in their environment?
Pre-injury Information

• Case History: obtain info through educational records, family interview.

• What was patient’s personality like? Their learning style? Goals for vocation and education?
Treatment basics

• Focus on basic processes (like attention) until this seems to plateau and then shift to compensatory and accommodation strategies

• Determine how the underlying impairments contribute to disabilities for this individual
Treatment basics

• Use personally-relevant materials in settings that are consistent with pre-injury lifestyles

• Need a multidisciplinary treatment plan
Treatment of orientation

• External aids and verbal cues
Treatment for memory

• External aids like watches, sticky notes,
• Mnemonics: chunking for things like phone numbers
• Remembering lists by quantifying
• Visual imagery
• Storytelling for lists of items
• Verbal rehearsal – goes well with chunking
Treatment Principles

• 1. Should be based on theory.
• 2. Should be functional adaptation, compensation, adjustment not an attempt at restoration of function.
• 3. Therapy is driven by functional needs and desired long-term outcomes
• 4. Tasks should resemble real-life events
Treatment Principles

• 5. Communication goals should be clearly defined and targeted by all team members (ie “get to the point, speak up, think first”).

• 6. Family, peers, others in social network should be brought into therapy (natural supports and help social reintegration).

• 7. Utilize self-evaluation and monitoring
Long-Term Goal Setting

• Funding source? What is the time frame for rehab?
• Family support
• Consider patient’s goals – helps to avoid learned helplessness and their sense of loss of control.
• Consider reality – patient’s strengths, hurdles that exist
General Treatment Strategies

• People with TBI have the capacity to learn as long as training techniques match their cognitive abilities and learning styles.

• 1. Patient needs clear, consistent instructions, organized tasks, immediate feedback about their performance, rationale for the task.
General Treatment Strategies

• 2. Skills should be taught in hierarchy – simple to complex. Move from max to less structure, max to less cues – weaning process.

• 3. Teach individuals a process and problem solving approach so they learn strategies and not just skills – this is the path to independence!
General Treatment Strategies

4. Teach verbal mediation – verbalize steps to task (talk to yourself). This is shown to increase self-monitoring in individuals with TBI.

5. Analyze and organize tasks into component parts so easier to learn. Then chain parts into task. Use the steps to make checklists for an external cueing method.
General Treatment Strategies

- 6. Determine the reason why the task was not successful – usually failure is due to using wrong approach. Treat patients as adults and with respect, use age-appropriate stimuli. Most patients try very hard – use whatever works best for them.
- 7. Use natural consequences – can see the results of their actions, decisions. Clinician should be mentor, facilitator. Patient needs at least a perception of control.
Techniques to Facilitate Learning

• 1. Review personal goals each session and relate them to the task of the day.
• 2. Use direct instructions and scripts – ie talk about nonverbal communication skills, how to use them, what they are, when to use. Then practice using these with a script.
• 3. Model and imitate
• 4. Behavioral rehearsal – precursor to role play
Techniques to Facilitate Learning

• 5. Role play – real-life situations
• 6. Shape approximations into goal: first teach attending to conversational partner (reinforce this); then require patient to ask one question (reinforce); gradually progress to equal turn-taking.
• 7. Fade cues: delay prompting, use less direct or less specific cues over time.
Techniques to Facilitate Learning

8. Use feedback to facilitate self-evaluation and monitoring – video, feedback from staff and peers. Be positive and tell patient what can be improved upon.

9. Social reinforcement – praise, attention, recognition. Encourage others in the social environment to reinforce patient’s positive behaviors as well.