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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, anomie 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.