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Performance Based Cognitive Assessment After Stroke

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Learning Objectives

• By the end of this course, participants will be able to identify a comprehensive model of performance based cognitive assessment.

• By the end of this course, participants will be able to describe the differences between standard cognitive testing and performance based cognitive testing.

• By the end of this course, participants will be able to recognize the properties of at least three performance based assessments.
Outline

- Approaches to cognitive & perceptual assessment
- Assessing and documenting the impact of cognitive & perceptual impairment on everyday living: A 2 step process
- Review clusters of neurobehavioral impairments observed during everyday function
- Review of potential standardized assessments for adoption
- Questions & comments…..

Two schools of thought regarding evaluating cognitive and perceptual impairments.
Documenting Cognitive/Perceptual Impairment(s)

Documenting the impact of cognitive and perceptual impairments on daily life. Independence and safety!
Documenting the impact of cognitive and perceptual impairments on daily life... 2 steps.

STEP 1
Level of Self-Awareness

STEP 2
Performance Based Testing
Ascertaining Level of Self-Awareness (Crosson et al.)

- Anticipatory Awareness
- Emergent Awareness
- Intellectual Awareness

Awareness Evaluation

- Questionnaires (self or clinician rated)
- Interviews
- Rating scales
- Functional observations
- Comparisons of self-ratings and ratings made by others such as significant others, caretakers, or rehabilitation staff
- Comparisons of self-ratings and ratings based on objective measures of function or cognitive constructs
Awareness Assessments

- Self-Awareness of Deficits Interview (Fleming & Strong)
- Self-Regulation Skills Interview (Ownsworth, et al.)
- The Patient Competency Rating Scale (Prigatano)
- Awareness Questionnaire (Sherer, et al.)
- Awareness Interview (Anderson & Tranel)
- Assessment of Awareness of Disability (Kottorp & Tham)

Skewed Self-Awareness
Skewed Ability to Predict Everyday Function

Safety!
Poor awareness compensations to improve everyday function.
Engagement in any daily activity requires multiple cognitive and perceptual processes to support function.

Impaired cognitive or perceptual processing may limit daily performance and result in an observable error during attempts to function.
**Evaluate Cognition/Perception in Context**

- Tasks performed in context are ecologically valid.
- Require multitasking.
- Require access to a variety of supporting processes.
- Valid, reliable, accurate.

**Performance Based Cognitive Assessment**
Mechanics of Performance Based Cognitive Assessment

- Everyday activities that a patient wants to do, needs to do, and/or has to do.

- “Fly on the wall”: Let safe errors occur (awareness and problem solving observed).

- Intervene for safety concerns or breakdown in performance prevents continuation.

Mechanics of Performance Based Cognitive Assessment

- Error analysis based on operational definitions and descriptive terminology.

- Structured cuing procedures to support performance.

- Identifies the impact of impaired cognitive/perceptual processing that limits everyday function.

- Identifies cognitive and perceptual processes that support everyday function.
Let safe errors occur...

Observe for patterns of neurobehavioral deficits.

Examples......
Lack of an idea of what to do
Poor initiation
Performance latency
Incorrect tool use
Mouthing objects
Inability to organize and sequence
Flat affect
Poor awareness and judgment (safety!)
Loss of the foundation of everyday performance
May co-exist with aphasia

Ideational Apraxia: Cluster of Behaviors

Does not know how to perform
Clumsy movements
May impact limbs and/or trunk activities
Gross and fine mobility tasks impaired
Static/awkward hand postures
Poor manipulation
Difficulty crossing midline
Easily frustrated
May co-exist with expressive aphasia

Motor Apraxia: Cluster of Behaviors
Unilateral Spatial Neglect: Cluster of Behaviors

- Hypo-attentive to the left side of the world
- Hyper-attentive to the right side of the world
- Can impact any sensory system
- Poor awareness
- Decreased leftward limb and eye movements
- Presents with topographical disorientation
- Occasionally attends to left (attentional bias)
- Difficulty crossing midline towards left
- May present related to near space, far space, or both
- May or may not co-exist with a field cut
- Safety concerns during mobility

Unilateral Body Neglect: Cluster of Behaviors

- Hypo-attentive to the left side of the body
- Hyper-attentive to the right side of the body
- Attentional bias towards the right side of the body
- Higher % of time managing the right side of the body
- Poor awareness
- Errors related to personal space and body management
- Safety
Incorrect end point when reaching or stepping
Figure-ground impairment
Difficulty way finding
Difficulty spatially orienting objects to each other or to self
“Lost in space”
Safety concerns
Perseverative errors
Easily frustrated
May co-exist with decreased overall attention

Visual-Spatial Impairment: Cluster of Behaviors

Difficulty multi-tasking
Poor decision making
Poor problem solving
Difficulty task switching
Poor abstraction
Impulsive
Lack of insight
Disorganization
Impaired sequencing
Decreased time pressure management
Safety

Executive Dysfunction: Cluster of Behaviors
From Non-Standardized Observations to Standardized Assessment

Ecological Validity is a Critical Factor to Consider....
A-ONE

Analysis of everyday performance
- Dressing
- Grooming and Hygiene
- Transfers and Mobility
- Feeding
- Communication

Cognitive processes that support/limit performance
- Organization
- Sequencing
- Neglect
- Spatial Dysfunction
- Initiation
- Alertness
- Attention
- Memory
- Ideation
- Etc.
### Catherine Bergego Scale (CBS)

(Azouvi, 2003)

**Analysis of everyday performance**
- Dressing
- Grooming/hygiene
- Mobility
- Feeding
- Social interactions
- 10 items in total

**Cognitive processes that support/limit performance**
- Lateralized Attention Deficit
- Awareness
- Topographical Disorientation

Note: Kessler Foundation Neglect Assessment Process (KF-NAP)

### Executive Function Performance Test (EFPT)

(Baum et al., 2008; Katz et al., 2007; Goverover et al., 2005)

**Analysis of everyday performance**
- Cooking Oatmeal
- Making Phone Call
- Taking Medication
- Paying a Bill
- Cooking Pasta
- Sorting Meds
- Order from a catalogue
- Calling MD

**Cognitive processes that support/limit performance**
- Initiation
- Organization
- Sequencing
- Safety and Judgment
- Completion
**Multiple Errands Test**  
(Knight, Alderman, & Burgess, 2002; Shallice & Burgess, 1991)

**Analysis of everyday performance**
- Multi tasking during a shopping/community experience
- Purchase 3 items, pick up an envelope from reception, use telephone, post the envelope
- Writing down four items re: information (ex. gift shop hours)
- Meet assessor and ask the time
- Inform assessor that the test was completed

**Cognitive processes that support/limit performance**
- Executive functions
- Dysexecutive syndrome
- Initiation
- Planning
- Attentional switching
- Working memory

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**Assesment of Disabilities in patients with Apraxia**  
(Van Heugten, 1999, 2000)

**Analysis of everyday performance**
- Hygiene
- Dressing
- Preparing food
- Patient chosen activity

**Cognitive processes that support/limit performance**
- Initiation
- Planning
- Ideation
- Control
- Execution
- Awareness of errors
The Kettle Test
(Hartman-Maeir, Armon, & Katz, 2005)

Analysis of everyday performance

- Making two hot beverages with different ingredients using an electric kettle.
- 13 discrete steps in total.

Cognitive processes that support/limit performance

- Screening for a broad range of basic and higher level cognitive processes.
- Executive functions
- Working memory
- Awareness/safety

Weekly Calendar Planning Activity
(Toglia, 2015)

Analysis of everyday performance

- Ability to use a list, follow rules, and enter information accurately into a weekly schedule.

Cognitive processes that support/limit performance

- Executive functions: planning, working memory, organization, self-monitoring, self-regulation, etc.
Questions, comments, thank you!