Focusing Your OT Lens on Executive Functions

Presenters:
Sally Stauffer, MOTR/L
Rachel Renick COTA/L, Autism Consultant

Overview

• Executive function (EF) definition
• Who experiences EF challenges
• Areas of occupation involved
• Assessment of EF
• Intervention/Accommodations
What are executive functions?

- Specific mental functions especially dependent on the frontal lobes of the brain, including complex goal directed behaviors such as decision making, abstract thinking, planning and carrying out plans, mental flexibility and deciding which behaviors are appropriate under what circumstances.

  (World Health Organization, 2001)

Specific EFs

- **Working Memory**: The ability to hold information in memory while performing complex tasks.

- **Sustained Attention**: The capacity to maintain attention to a situation or task in spite of distractibility, fatigue or boredom.

- **Goal-directed persistence**: The capacity to have a goal, follow through to the completion of that goal and not be put off by or distracted by competing interests.

  (Dawson & Guare, 2009)
• **Emotional Control**: The ability to manage emotions in order to achieve goal, complex tasks or control and direct behavior.

• **Flexibility**: The ability to revise plans in the face of obstacles, set backs, new information or mistakes.

• **Organization**: The ability to create and maintain systems to keep track of information or materials.

(Dawson & Guare, 2009)

• **Time Management**: The capacity to estimate how much time one has, how to allocate it and how to stay within the time limits and deadlines.

• **Stress Tolerance**: The ability to thrive in stressful situations and to cope with uncertainty, change and performance demands.

• **Metacognition**: The ability to stand back and take a bird's-eye view of yourself in a situation to observe how you problem-solve.

(Dawson & Guare, 2009)
• **Response Inhibition:** The capacity to think before you act.

• **Task Initiation:** The ability to begin projects without undue procrastination in an efficient or timely fashion.

• **Planning/Prioritization:** The ability to create a roadmap to reach a goal or to complete a task. It also involves being able to make decisions about what’s important to focus on and what’s not important.

  - (Dawson & Guare, 2009)

---

**Common Diagnoses Associated with EFD**

- Autism
- ADD/ADHD
- General Learning Disability
- TBI
- OCD
- Depression
- Fetal Alcohol Syndrome
- Parkinson’s Disease
- Stroke
- Tourette’s Syndrome
- Schizophrenia
- Bipolar Disorder
Assessment

- Behavior Rating Inventory of Executive Function (BRIEF)
  - What?: standardized questionnaire
  - Typically administered: Psychologists or trained professionals
  - Reporters: teacher, parent, self
  - Environment: school and home
  - Ages: preschool (3-5 y/o), self-report (13-18 y/o) and adult self-report (18-90 y/o)
  - Administration/scoring: 35 min
Executive Function Performance Test

- **What?:** Performance-based occupational therapist-developed assessment
- **Administered by:** no formal training required, but practice with cuing system recommended
- **Environment(s):** home or clinic (needs access to stove and sink)
- **Ages:** adolescent (13-17), adult (18-64), elderly adult (65+)
- **Administration/scoring time:** 1 hr, 15 min

Executive Skills Questionnaire (ESQ)

- **What?:** non-standardized questionnaire
- **Administered by:** anyone
- **Reporters:** self, parents, teachers
- **Environment(s):** home, school
- **Ages:** Preschool/K; Grades 1-3, 4-5, 6-8; teen and adult versions
- **Administration/scoring time:** 30 min
Allen Cognitive Levels Screen Ax-5 (ACLS-5/LACLS-5)

• What?: standardized functional cognition screen
• Administered by: OTs and other trained professionals
• Environment: anywhere
• Ages: adolescents, adults and elderly adults
• Administration/scoring time: variable

*Not recommended to be used in isolation of other assessments and as a diagnostic tool.

More on Allen Cognitive Levels Screen Ax-5 (ACLS-5/LACLS-5)

• While it's intended purpose is not to measure EF skills, it can be used as a performance-based screen to observe EF skills:
  – Response inhibition - Working memory
  – Emotional control - Task Initiation
  – Sustained attention - Planning/prioritization
  – Flexibility - Stress tolerance
  – Goal-directed persistence
Time Use Log

- What?: non-standardized measure
- Administered by: anyone
- Environment: home/natural environment
- Age: any age (self-report or parent/guardian’s report)
- Administration/scoring time: 24 hours to collect data + 30 min to score

Response Inhibition

*Intervention*

- Stop and Think cue (pre-teach and provide cue)
- Review rules in advance when individual will be placed in situations that require impulse control
- First/Then schedules help develop delayed gratification
- Having individual earn things he/she wants teaches delayed gratification
- Structuring environment (reduce distractions, organize physical environment, use physical barriers to define safe spaces)
- Support alternative to verbal impulse control (i.e. journal ideas when in a group, write down questions, schedule opportunities for individual to review ideas)
Working Memory

Intervention

- Avoid competing distractions in environment
- Make eye contact when communicating important information
- Ask for information to be paraphrased to ensure understanding
- Use written reminders
- Use technological solutions (smartphones, Google maps, texting, digital calendars, apps, widgets, alarms)
- Providing visual checklists of task breakdown
- Routine schedule

Emotional Control

Intervention

- Proactive stress management
- Positive self-talk
- Using a structured self-regulation check-in
- Clear expectations
- Anticipating stressful events and problem-solving self-care strategies
Sustained Attention

*Intervention*

- Using visual schedule to break down steps of task
- Visual timer
- Embedding movement breaks into daily schedule
- Explore sensory supports (i.e. chewing gum, seating options, fidgets, snacks, white noise)
- Incentive programs to increase attention
- Limit distractions in environment

Task Initiation

*Intervention*

- Technology (alarms, timers, calendars)
- Predictable schedule
- Clear expectations (presented visually)
- Partnering with peer for support
- Incentive program (rewards can be social, preferred activity)
Planning/Prioritization

Intervention

- Visuals (checklists, flow charts, graphic organizers)
- “Let’s make a plan”—sit and develop plan together to model process and prioritize
- Visual schedule
- Think out loud to model planning thought process

Organization

Intervention

- Establishing a baseline where everything has its own place (photograph spaces and post near space of what is “expected”)
- Labels, color-coded bins/files, binders of important paperwork
- Build in opportunities to regularly re-organize spaces into schedule (dispose, shred, donate)
- Establish regular monitoring for accountability and problem-solving
- Limit need for physical materials (use virtual files on computer, when possible)
**Time Management**

*Intervention*

- Use time use log to establish balanced routine schedule
- Break down steps of task into quantities of time
- Visual timer
- Use daily calendar (wall, smartphone or online)
- Strategies to improve efficiency (i.e. schedule similar activities together in routine)
- Using technology to alert/pre-warn deadlines

---

**Goal-directed persistence**

*Intervention*

- Identify/assign visual and concrete goals
- Limit distractions in environment
- Break down task into steps
- Use incentive program to motivate goal completion
- Use technology to provide reminders
- Seek help of professionals/trusted supports to map out steps to big-picture goal when needed
- Start with intrinsically-motivating goal to teach process and build from there
Flexibility

Intervention

• Positive self-talk
• Stress management techniques
• Maintaining schedules and routines whenever possible with only minimal change introduced
• Provide advanced warning for what’s coming next
• Pre-plan changes in routine/environment
• Scripting how to handle a situation (offer choices/default strategy)
• Social stories

Metacognition

Intervention

• Establish performance evaluations (internal and external)
• Assess: reading facial expressions, voice tones, clues to someone’s feelings and identifying how one’s actions may make someone feel
• Journaling/self-reflecting
• Routine practice answering:
  – What is the problem I need to solve?
  – What is my plan?
  – Am I following my plan?
  – How did I do?
Stress Tolerance Intervention

- Self-regulation programs to increase self-awareness and to understand triggers/strategies
  - 5-point scale
  - ALERT Program
  - Zones of Regulation
- Establishing regular exercise routine
- Determining individual’s occupational balance
- Support groups/counseling
- Identify safety plan and share with circle of support

References

Questions?