Overview of a Cognitive Strategy Framework and its Application to Interventions with People with Parkinson’s Disease

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AOTA Short Course Objectives

- Objective 1: At the conclusion of this session, participants will be able to identify major elements of the Cognitive Strategy Framework presented by Toglia, Rodger, and Polatajko (1).
- Objective 2: At the conclusion of this session, participants will become familiar with which strategy attributes and uses are most salient in effective interventions with people with Parkinson’s disease.
- Objective 3: At the conclusion of this session, participants will be able to reflect upon their own use of cognitive strategies and become familiar with one framework to analyze their use of cognitive strategies in practice.

Strategy Framework & Purpose

- Purposes:
  - Describe what cognitive strategies are
  - How they are used to facilitate performance
  - Analyze characteristics of strategy use for intervention
  - Improve therapist’s professional reasoning
  - Ascertain fit with knowledge, client goals, and client’s preferences
What are cognitive strategies?

- Cognitive strategies
  - mental plans of action that help a person to learn, problem solve, and perform (Toglia et al., 2012; Westwood, 2004)
  - can improve an individual’s learning, problem solving, and task performance in terms of efficiency, speed, accuracy, and consistency” (Toglia et al., 2012, p.227).

Types of Strategies

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modality Specific</td>
<td>Sensory cues: visual, auditory, kinesthetic</td>
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<tr>
<td>Mental or self-verbalization</td>
<td>Techniques that involve mental operations, inner speech or imagery, or thinking and talking aloud</td>
</tr>
<tr>
<td>Task Modification</td>
<td>Strategies that involve specifying, changing, or adjusting the task stimuli or arrangement</td>
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</tbody>
</table>

Purpose of Strategy Use

- Skill acquisition or re-acquisition
- Self-regulation during task
- Improve quality of performance
- Problem-solving
- Learning
- Memory
- Generalization and Transfer

Note: one strategy could be used for multiple purposes
- mental imagery - support motor skill acquisition, or self-regulation
Strategy Use: Client and Therapist

- How closely does strategy use align with the person or client’s characteristics?
  - Prerequisites to effective strategy use
  - Strategy execution
  - Quality of strategy use
  - Effectiveness of strategy use
  - Caregiver willingness to support strategy practice – can fade cues as strategies become more self-guided

- What are prerequisites for OT?
  - Comfortable with active learning strategies
  - Knowledge of a practice model to guide clinical reasoning
  - Beneficial to take training course

Framework Aims

- Both attributes and client’s use ensure application to real life.
- Cognitive strategies are not a “quick fix” – requires practice and a process to refine what is useful for a specific client.
- Strategy(ies) has to match client’s abilities and learning preferences.
- “Showing and doing” are not enough to learn a cognitive strategy (Toglia, 2012). Have to practice, evaluate and revise as needed.
- Using cognitive strategies is a dynamic process in therapy, and in life overall.
Application Time!
- Think about a time you successfully used a cognitive strategy in practice.
- Visualize where you were at, what the client looked like, what he or she was doing, how you engaged with the client, what you said, and the cognitive strategy used?
- What type of strategy was it (modality-specific, mental/self-verbalization, task modification)? What was the intended purpose?
- How did you facilitate transfer to other tasks or generalizing to other environments?
- Talk with someone near you and find out if you came up with similar ideas of cognitive strategies.

How and where to start?

Select Cognitive Intervention Model

**COOP**
(Polatajko & Mandich)

- Specific emphasis on global cognitive strategies
- Guided discovery strategies
- Children with DCD, CVA, TBI

**DIA**
(Toglia)

- Specific emphasis on teaching strategies
- General to specific
- Clients with executive dysfunction (TBI)

In common:
- Cog Strategies
- Occupations
- Task Specific
- Self efficacy
- Generalization
- Transfer
- Participation
- Children
- Adults
Use of COOP model with Individuals who have Parkinson’s Disease

Focus of Research and Practice for those with Parkinson’s Disease

- Increased attention to nonmotor symptoms of PD
  - Depressive symptoms, psychosis, sleep dysfunction, and cognitive impairment (Raggi et al., 2011)
  - 40 to 50% show deficits in memory, visual spatial skills, and attention/executive dysfunction (Aarsland et al. 2010)
  - Mild cognitive impairment has been associated with a decline in everyday functioning (Perneczky, 2006)

PD and Cognitive Interventions

- Cognitive rehabilitation in its infancy (Calleo et al., 2012)
- Types of cognitive intervention address impairments
  - Using computerized software (McKinlay et al. 2010)
  - Computer software and pencil and paper tasks
  - Attention process training
  - Working memory tasks (Mohlman et al., 2011)
- No studies regarding cognitive interventions to improve participation in everyday activities.
Origin of Case Participants

Specific objectives:
- To implement the Cognitive Orientation to Occupational Performance (CO-OP) with people with Parkinson’s disease with mild cognitive impairment and document specific therapeutic approaches utilized.
- To collect data on the efficacy of the CO-OP intervention with this population for trained tasks.
- To study whether any intervention effects generalize and transfer to nontrained tasks post intervention and at the 3-month follow-up.

CO-OP – One Type of Strategy Training Model

- Cognitive Orientation to Occupational Performance (COOP) (Polatajko & Mandich, 2004)
- Motor-based goals (Polatajko et al., 2001)
- Social and organizational goals (Rodger et al., 2007)
- Other populations
  - Adults with TBI (Dawson et al., 2009)
  - Adults post-stroke (Meenan et al., 2010)

Cognitive Orientation to Occupational Performance (CO-OP)

- COOP Program structure – by phases
  - Approximately 20 sessions – 60 minutes X 2/week
  - Caregiver needs to participate
  - Preparation phase (evaluation)
  - Acquisition phase
- Session 1: Teach cognitive strategy use (global strategies)
- ONGOING SESSIONS
  - Global strategy (iterative process) – Goal-Plan-Do-Check
  - Dynamic Performance Assessment
  - Guided discovery of Domain Specific Strategies
  - Bridging – promote generalization and transfer
### Case #1 & Case #2

<table>
<thead>
<tr>
<th>Factors</th>
<th>Walt</th>
<th>Douglas</th>
</tr>
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<tbody>
<tr>
<td>Age</td>
<td>68</td>
<td>67</td>
</tr>
<tr>
<td>MOCA Score</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Total Sessions</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Demeanor</td>
<td>Pleasant, reserved, thoughtful</td>
<td>High-energy, talkative, impulsive</td>
</tr>
<tr>
<td>Work Status</td>
<td>Retired, teaching business classes, high achieving life trajectory</td>
<td>Retired entrepreneur, high achieving life trajectory</td>
</tr>
</tbody>
</table>

**Goal: Drive safely**

#### Breakdown points: Decreased scanning, attention, visual-spatial skills

<table>
<thead>
<tr>
<th>Type of Strategy</th>
<th>Specific Strategy/Plan</th>
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<tbody>
<tr>
<td>Task simplification</td>
<td>Fix radio before going</td>
</tr>
<tr>
<td>Rote script</td>
<td>Left, right, left at stop sign</td>
</tr>
<tr>
<td>Rote script</td>
<td>Sweep mirrors: 1, 2, 3</td>
</tr>
<tr>
<td>Task specification</td>
<td>Anticipate traffic and slow down</td>
</tr>
<tr>
<td>Task specification</td>
<td>Before lane change, check but don’t drift</td>
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### Logs in Strategy Training

**Goal: Recalling Student Names in Class**

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<tbody>
<tr>
<td>Use one new name in each face-to-face class</td>
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<tr>
<td>Watch video of students and repeat names</td>
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<td></td>
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<tr>
<td>Arrive 1 min. early to class</td>
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</table>

**Task Breakdown: Lack of compensation for 1 memory**

- Use one new name in each face-to-face class
- Watch video of students and repeat names
- Arrive 1 min. early to class
Your Turn!

Goal: Keep track of glasses, keys, phone and wallet (G, K, P, & W)

Breakdown points: Could not remember where he last put item, ↓ attention and memory

<table>
<thead>
<tr>
<th>Type?</th>
<th>Specific Strategy?</th>
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What Worked for Douglas

Goal: Keeping track of glasses, keys, phone and wallet (G, K, P, & W)

Breakdown points: Could not remember where he last put item, ↓ attention and memory

<table>
<thead>
<tr>
<th>Type</th>
<th>Specific Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task modification (organization)</td>
<td>Check &quot;home&quot; that G, K, P, &amp; W are there</td>
</tr>
<tr>
<td>Task modification (task specification)</td>
<td>Log how many times items are lost each day</td>
</tr>
<tr>
<td>Task modification (task specification)</td>
<td>Use different &quot;home&quot; when traveling</td>
</tr>
</tbody>
</table>

Framework and PD

- Use – How does the client use the strategy?
  - Prerequisites to effective strategy use – People with PD are using strategies actively. Believe cognitive strategies can influence their participation. Able to self-generate cognitive strategies, but not always effectively.
  - Strategy execution – Initiation of strategy is difficult because of executive function issues. Can handle multiple strategies if adopted in an incremental way.
Framework and PD

- **Use** – How does the client use the strategy?
  - Quality of strategy use – For people with PD with mild cognitive impairment, it takes a significant effort to use strategies
  - Effectiveness of strategy use – The participants report positive outcomes, their logs reflect this, appear to have more self-efficacy and sense of hope managing their condition and activities.

Questions

- Which parts of this framework do you or could you use in your practice?
- What do you see as the advantages or disadvantages of this framework?
- What are your challenges with using cognitive strategies?
- What has facilitated your use of cognitive strategies?

References