The Effect of Direct Attention Treatment and Compensatory Strategies for Individuals with Right Hemisphere Damage

Lisamarie Wynne, B.S. & Abbie Olszewski, Ph.D., CCC-SLP
University of Nevada, Reno

Introduction

- Right hemisphere strokes affect many aspects of communication including divided attention.
- Divided attention can affect an individual’s ability to effectively communicate.
- Treatments for impairments in divided attention include direct attention treatment and compensatory strategies.

PICO Question

Does direct attention treatment (I) significantly improves divided attention (O) in individuals who have suffered right hemisphere strokes (P) as compared to those individuals who are taught compensatory strategies (C)?

Case Scenario

Lisamarie is a graduate student clinician at the University of Nevada, Reno Speech and Hearing Clinic. She serves an 84 year old client who has suffered a right hemisphere stroke. Due to infrequent right hemisphere strokes and limited research, Lisamarie is having a hard time finding external evidence to treat the various deficits from right hemisphere damage.

During the reassessment of her client’s strengths and weaknesses, the clinician noticed that her client was experiencing difficulty with divided attention. Attention deficits is one of the key symptoms of right hemisphere damage. The clinician has limited knowledge of therapy approaches for right hemisphere as this is her first semester of graduate school.

Methods

Search terms
right hemisphere stroke, cognitive impairment, attention treatment, cognitive rehabilitation and traumatic brain injury

Databases
ERIC, PubMed

Inter-rater reliability
Studies were analyzed using CATE form (10 point scale) or CASM (10 point scale). Interrater reliability of 80% or better was achieved.

Results

<table>
<thead>
<tr>
<th>Authors (Date)</th>
<th>Research Design</th>
<th>Participants</th>
<th>Purpose</th>
<th>Dependent Variable</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carney, Chestnut, Maynard, Mann, Patterson, &amp; Heffland (1999)</td>
<td>Systematic Review</td>
<td>N=32</td>
<td>The effectiveness of cognitive rehabilitation methods to improve outcomes of individuals with Traumatic Brain Injury.</td>
<td>Functional ability (including Attention)</td>
<td>Compensatory strategies improve functional ability with person with TBI. Restorative strategies did not have significant evidence in improving functional ability with person with TBI.</td>
</tr>
<tr>
<td>Hoffman, Bennet, Koh, Mphill, &amp; Mckenna (2010)</td>
<td>Systematic Review</td>
<td>N=4</td>
<td>To determine whether interventions for people with cognitive impairment after a stroke improve their functional performance (ADL’s).</td>
<td>Functional Ability</td>
<td>Not enough adequate number of high quality trials to be able to make recommendations to support or refute the use of specific cognitive retraining interventions to improve functional outcomes in stroke.</td>
</tr>
<tr>
<td>Lee &amp; Solberg (2013)</td>
<td>Single Subject, Multiple baseline design</td>
<td>N=4</td>
<td>Investigated the impact of direct attention training combined with metacognitive facilitation on reading comprehension in individuals with aphasia.</td>
<td>Reading Comprehension + Attention</td>
<td>2 of the study’s 4 participants demonstrated improvements in maze reading comprehension. All participants demonstrated improvements in attention.</td>
</tr>
<tr>
<td>Parks &amp; Ingles (2003)</td>
<td>Meta Analysis</td>
<td>N=30</td>
<td>To evaluate quantitatively the effectiveness of rehabilitation programs that attempted to directly treat attention. Identify methodological factors that may contribute to variability in training efficacy across studies. Whether direct retraining and specific skill approaches differ in their effectiveness.</td>
<td>Cognitive Performance (measured by attention, learning, and memory)</td>
<td>Overall cognitive performance (attention, learning, and memory) improved 52% that received direct attention training (e.g., series of repetitive exercises or drills). 69% of the participants improved who received specific skill training (e.g., driving, ADLs).</td>
</tr>
</tbody>
</table>

Discussion

- External evidence: The external research is inconclusive because there were not enough studies comparing compensatory strategies and direct attention treatment in individuals with divided attention deficits who have suffered right hemisphere stroke.
- Internal evidence to clinical practice: I observed functional skill implementation T1 is more beneficial to adult clients than drill sets such as direct attention treatment.
- Evidence internal to client: The client wants to get back to her premorbid skill state. Client’s desire is to become independent and complete activities of daily living (ADLS).
- What treatment am I going to implement: I am going to implement functional specific skill treatment (compensatory) due to client’s needs for functional skills for completing ADL’s.

References


