ARTICULATORY VERSUS RHYTHM THERAPY IN THE TREATMENT OF APRAXIA OF SPEECH

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Introduction

- Apraxia affects 80% of patients with Broca’s aphasia (Rosen et al., 2001).
- Apraxia affects motor planning ability.
- Treatment efforts should focus on improvement of motor planning ability in addition to linguistic abilities.
- Rate/rhythm or articulatory/kinematic techniques can activate the right hemisphere of the brain in order to re-learn language.
- Melodic Intonation Therapy (MIT) works to activate the right hemisphere through the use of rate and rhythm techniques.

PICO Question: Is there a difference in gains in intelligibility as measured by words understood by a novel listener (C) in individuals with apraxia (P) who undergo Melodic Intonation Therapy (MIT) (I) than those who undergo a program of Sound Production Treatment combined with Melodic Intonation Therapy (C)?

Scenario

I am a graduate student clinician at the University of Nevada, Reno. I have a 64 year-old client diagnosed with apraxia of speech (AoS). He is working towards being able to verbally communicate with his wife, Carol, and with his employees at his business.

In my course on dysphasia, I learned about the Melodic Intonation Therapy (MIT) for clients with aphasia/apraxia. This therapeutic technique uses rate and rhythm to activate the right hemisphere to assist with motor planning.

Additional research revealed that articulatory/kinematic styles of therapy incorporate physical cues to assist in motor planning of phonemes. A technique called Sound Production Therapy (SPT) incorporates a deep-style of training on one phoneme until the point of mastery (typically 80%-90%).

I want to know if using a combination of rate/rhythm technique and articulatory/kinematic therapy focused on phoneme acquisition will increase my client’s intelligibility during daily communicative activities.

Results

<table>
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<tr>
<th>Author</th>
<th>Design</th>
<th>Participants</th>
<th>Description</th>
<th>Dependent Variable</th>
<th>Results</th>
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<tr>
<td>Conklyn, Novak, Besoy, Bethoux, &amp; Chemali (2012)</td>
<td>Randomized, controlled, single-blind</td>
<td>N = 30</td>
<td>• mild to severe aphasia</td>
<td>Sound Production Accuracy (SPA)</td>
<td>SPA: p = .02</td>
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<tr>
<td>Schlaug, Marchina, &amp; Norton (2009)</td>
<td>Single subject design</td>
<td>N = 6</td>
<td>• moderate to severe non-fluent aphasia</td>
<td>Number of fibers (NoF)</td>
<td>NoF: p = .04</td>
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<tr>
<td>Wambough &amp; Martinez (2004)</td>
<td>Single subject, multiple baseline</td>
<td>N = 1</td>
<td>• mild-moderate apraxia of speech</td>
<td>Sound production accuracy (SPA)</td>
<td>SPA: 72% increase for correct words and 91% for correct consonants</td>
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<tr>
<td>Wambough &amp; Mauszycki (2010)</td>
<td>Single subject, multiple baseline</td>
<td>N = 1</td>
<td>• severe AoS characterized by disrupted prosody and slow rate.</td>
<td>Accuracy of articulation (AA)</td>
<td>AA: d = 14.1; f = 1.79; f2 = .09</td>
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<td>Wambough, Nessler, Cameron &amp; Mauszycki (2012)</td>
<td>Single subject design</td>
<td>N = 10</td>
<td>• adults with chronic AoS and nonfluent, agnostic aphasia</td>
<td>Sound Production Accuracy (SPA)</td>
<td>SPA: 8 out of 30 participants showed increases (d = .87)</td>
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<tr>
<td>Wambough &amp; Nessler (2012)</td>
<td>Single subject, multiple baseline</td>
<td>N = 1</td>
<td>• moderate aphasia</td>
<td>Sound Production Accuracy (SPA)</td>
<td>SPA: Production of all 3 sounds ranged from 88%-100%</td>
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Discussion

- All external evidence demonstrated significant results from either MIT or SPT treatment.
- Client has demonstrated significant gains in /s/ productions through the SPT program and increased accuracy for syllable and prosodic elements with the MIT program.
- Client has expressed interest in the MIT program. He requested it at the beginning of the semester and continues to do so.

References