2018

The Efficacy of Tele-practice on Expressive Language Outcomes for Adults with Aphasia

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# The Efficacy of Telepractice on Expressive Language Outcomes for Adults with Aphasia: A Systematic Review

**Morgan Bailey B.S., Lauren Burningham, B.S., B.A., Erin Fifield, B.A.**

**BACKGROUND**

Aphasia:
- Acquired neuropathy
- Caused by stroke, head injury, brain tumors, toxemia, infections or abscesses
- Disrupts an individual’s ability to speak, comprehend and/or produce language
- 2,000,000+ people with aphasia currently live in the United States*1

Telepractice:
- “The application of telecommunications technology to the delivery of speech-language pathology and audiologic professional services at a distance”*2
  - Teletherapy involves live access to a trained clinician that occurs in real-time
  - Telehabilitation includes services and activities that do not require the direct involvement of the SLP

Expressive Language
- The use of oral language to convey messages to communicative partners

**PURPOSE**

To determine if telepractice services produce positive expressive language outcomes and whether those outcomes are comparative to live, face-to-face therapy.

**METHODS**

**Sources:** 4 indexed databases (Ovid MEDLINE, CINAHL, PubMed and PsychINFO)

<table>
<thead>
<tr>
<th>Inclusionary</th>
<th>Exclusionary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POPULATION</strong></td>
<td></td>
</tr>
<tr>
<td>Adult (18+)</td>
<td>Individuals less than 18 years of age</td>
</tr>
<tr>
<td>Formal diagnosis of aphasia</td>
<td>Individuals with concomitant language impairment not associated with aphasia</td>
</tr>
<tr>
<td><strong>INTERVENTION</strong></td>
<td>Combination telehealth and face-to-face service delivery</td>
</tr>
<tr>
<td>Telehealth service delivery Treatment</td>
<td>Assessment</td>
</tr>
<tr>
<td><strong>COMPARISON</strong></td>
<td>Combination telehealth and face-to-face service delivery</td>
</tr>
<tr>
<td>Control group comparison</td>
<td>Therapy using face-to-face service delivery model</td>
</tr>
<tr>
<td><strong>OUTCOME</strong></td>
<td>Outcomes focused on reading, comprehension, written output, and social/emotional changes</td>
</tr>
<tr>
<td>Outcomes related to expressive language</td>
<td></td>
</tr>
<tr>
<td><strong>STUDY TYPE</strong></td>
<td>Published in the last 10 years</td>
</tr>
<tr>
<td>Published in peer-reviewed journal</td>
<td>Not published in the last 10 days</td>
</tr>
<tr>
<td>Written in English</td>
<td>Non-peer reviewed published Non-English publications</td>
</tr>
</tbody>
</table>

**Search Terms:** Broca’s Aphasia, Primary Progressive Aphasia, Dysaphasia, Telehabilitation, Telepractice, Telemedicine, Teletherapy, E-Health, Videoconferencing

**Data Extraction:** Articles were read by 3 independent appraisers who then extracted data and input it into a study summary table

**Quality Assessment:** Articles were independently assessed by 3 appraisers using a standardized form

**RESULTS**

<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>Studies That Reached Statistical Significance</th>
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<tbody>
<tr>
<td>CAT</td>
<td>Pitt, Theodoros, Hill, &amp; Russell (2017)</td>
</tr>
<tr>
<td>NSM</td>
<td>Agostini et al. (2014)*</td>
</tr>
<tr>
<td>WAB</td>
<td>Archibald, Orange &amp; Jamieson (2009)</td>
</tr>
<tr>
<td>Comprehension</td>
<td>Choi, Park &amp; Paik (2016)</td>
</tr>
<tr>
<td>Expressive Language</td>
<td>Fridler et al. (2012)*</td>
</tr>
<tr>
<td>Social/emotional changes</td>
<td>Steele, Baird, McCall &amp; Haynes (2015)</td>
</tr>
</tbody>
</table>

**WAB = Western Aphasia Battery, CAT = Comprehensive Aphasia Test, NSM = Non-standardized measures**

# of studies identified through database search:
- Ovid MEDLINE: 34
- CINAHL: 24
- PsychINFO: 28
- PubMed: 24

# of studies identified through manual search or other sources: 20

# of studies screened: 75

# of studies excluded after screening title & abstract: 30

# excluded based on date: 12

# of full text articles retrieved: 33

# of studies excluded after reading full text articles: 15

12 excluded for not including expressive language outcomes
3 excluded for having both face-to-face and teletherapy treatment at the same time

# of studies included in qualitative synthesis: 18

**CONCLUSION**

- Studies showed that a telepractice method of service delivery yielded positive expressive language outcomes
- The majority of studies reached the level of statistical significance (11 total), with the remainder producing positive but not statistically significant results (7 total)
- Five studies indicate that similar language based outcomes were received through telepractice when compared to traditional face-to-face service delivery

**LIMITATIONS**

- Small sample sizes
- Variability in courses of intervention and assessments used
- Concerns with patient confidentiality and privacy
- Lack of information regarding billable services
- Standardized, clinical training of individuals providing treatment
- Unreliable technology and/or variety of platforms that can be used for therapy

**RECOMMENDATIONS**

- Further research to address the feasibility and possible financial benefits of funding telepractice
- Inclusion of targeted, high powered studies which control for patient characteristics
- Studies directly comparing telepractice outcomes to those received through face-to-face intervention

**SELECTED REFERENCES**


Department of Communication Sciences and Disorders