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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 Burtingham, 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

Telepractice:
- The application of telecommunications technology to the delivery of speech-language pathology and audiology professional services at a distance
  - 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

METHODS

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

Inclusionary

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

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<td>Adult (≥18)</td>
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</tr>
<tr>
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<td>Individuals with concomitant language impairment not associated with aphasia</td>
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<td>Telehealth service delivery Treatment</td>
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<td>Outcomes focused on reading, comprehension, written output, and social/emotional changes</td>
</tr>
<tr>
<td>Published in the last 10 years Published in peer-reviewed journal Written in English</td>
<td>Not published in the last 10 days Non-peer reviewed published Non-English publications</td>
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</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

| # 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 excluded after screening title & abstract: 30 | # of studies screened: 75 | # of full text articles retrieved: 33 |

<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>Studies that Reached Statistical Significance</th>
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<tbody>
<tr>
<td>CAT Pitt, Theodoros, Hill, &amp; Russell (2017)</td>
<td></td>
</tr>
<tr>
<td>NSM Agostini et al. (2014)*a</td>
<td>Macou, Sauvageau, Boissy, Tousignant, &amp; Tousignant (2017)</td>
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<tr>
<td></td>
<td>Meyer, Getz, Brennan, Hu, &amp; Friedman (2016)*a</td>
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<td></td>
<td>Palmer et al. (2012)</td>
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<td></td>
<td>Woofel et al. (2016)*a</td>
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<td>WAB Archibald, Orange &amp; Jamieson (2009)</td>
<td>Cherry et al. (2011)*a</td>
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<td></td>
<td>Choi, Park &amp; Paik (2016)</td>
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<td></td>
<td>Friddler et al. (2012)*a</td>
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<td></td>
<td>Steele, Baird, McCall &amp; Haynes (2015)</td>
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| # of studies excluded after reading full text articles: 15 | # 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

5. Cherney, L. R., & Burningham, L. W. (2010). Unreliable technology and/or variety of platforms that can be used for therapy - Teletherapy.
11. Agostini et al. (2014)*a | 12. Cherney, L. R., & Burningham, L. W. (2010). Unreliable technology and/or variety of platforms that can be used for therapy - Teletherapy.
14. Cherney, L. R., & Burningham, L. W. (2010). Unreliable technology and/or variety of platforms that can be used for therapy - Teletherapy.
16. Cherney, L. R., & Burningham, L. W. (2010). Unreliable technology and/or variety of platforms that can be used for therapy - Teletherapy.