Telehealth vs. Face-to-Face Voice Therapy for Clients with Acquired Speech and Language Disorders

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Introduction

Access to conventional face-to-face (FtF) speech pathology services can present a challenge for people with an acquired speech or language disorder (Hill, Theodoros, Russell, & Ward, 2008). There have been reports of successful intervention with the delivery of telehealth (TH) for patients with an acquired speech or language disorder (Rangarathnam et al., 2015). It is unclear to speech-language pathologists if therapy via telehealth is an effective treatment for those presenting with an acquired speech or language disorder compared to conventional face-to-face therapy.

Case Scenario

- Stephanie is a graduate speech-language pathology student at the University of Nevada, Reno.
- Patients who have voice disorders with or without concomitant disabilities, may face challenges in attending their weekly visits. These challenges may be due to lack of mobility, geographical location, or transportation.
- Stephanie plans to graduate in May 2017 and wants to know if telehealth is a more effective delivery approach of therapy compared to FtF therapy for people with acquired speech and language disorders.

Research Question

For clients with acquired speech and language disorders, is speech therapy via telehealth associated with improvement of the acquired speech or language skills, as measured with various standardized assessments, as compared to face-to-face therapy only?

Methodology

- **Search terms:** telehealth, telerehabilitation, telepractice, voice, speech therapy, aphasia, face-to-face, apraxia
- **Databases:** PubMed, ERIC, and PsychINFO electronic databases
- **Study selection criteria:** included were studies that used a modified version of Dollaghan’s (2008) Critical Appraisal of Treatment Evidence (CATE). The modified version of the CATE consisted of nine appraisal points, with a rating scale of: 7 = “compelling,” 6 = “suggestive,” and 0-3 = “equivocal.”
- **Search strategy:** a comprehensive search was conducted using the search terms noted above.
- **Study quality assessment:** four articles were selected citing direct relevance to the purpose of this investigation. These scored in the ‘compelling’ range according to the modified version of the CATE.
- **Inter-rater reliability:** 94% inter-rater reliability was achieved with a colleague in the same graduate school.
- **Note:** For the purpose of consistency, telehealth will be used in all contexts in place of telepractice, telerehabilitation, video therapy, etc.

Table 1: Study and Descriptive Statistics

<table>
<thead>
<tr>
<th>Authors, Dates, Design, Appraisal Points</th>
<th>Purpose</th>
<th>Participants (N, Age, Dx)</th>
<th>Dependent Variable</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Fridler, Rosen, Menahemi-Falkow, Herzberg, Lev, Kaplan, Feldman, Grossberg, Hildesheimer, &amp; Shani (2012)</td>
<td>Experimental Appraisal points: 9</td>
<td>If speech and language therapy facilitated via telehealth had similar effects as conventional FtF therapy for clients with aphasia.</td>
<td>N = 8</td>
<td>Hebrew version of the WAB</td>
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<tr>
<td>Hill, Theodoros, Russell, &amp; Ward (2008)</td>
<td>Experimental Appraisal points: 8</td>
<td>If a valid and reliable assessment of AoS using a standardized assessment tool was feasible via telehealth.</td>
<td>N = 11</td>
<td>Aphasia Quotient (AQ)</td>
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<tr>
<td>Mashima, Birkmire-Peters, Syms, Hoitell, Burgess, &amp; Peters (2003)</td>
<td>Experimental Appraisal points: 9</td>
<td>Acoustic analysis scale</td>
<td>Mean age: 45 years</td>
<td>Mean age: 45 years</td>
</tr>
<tr>
<td>Rangarathnam, G.H. McCullogh, Pickett, Zaick, Tulunay-Ugur, &amp; K. McCullogh (2014)</td>
<td>Experimental Appraisal points: 8</td>
<td>To investigate the utilization of telehealth for delivering flow phonation exercises to clients with primary muscle tension dysphonia (MTD).</td>
<td>N = 14</td>
<td>Auditory Perceptual</td>
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<td>Ages: 16 years</td>
<td>Ages: 16 years</td>
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<td>Dx: Primary MTD</td>
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</tbody>
</table>

Discussion

- **E1:** Researchers found that telehealth was as good or better than FtF after therapy (Fridler et al., 2012; Hill, Theodoros, Russell, and Ward, 2008; Mashima et al., 2003; and Rangarathnam et al., 2014)
- **E2:** Some of these clients may not have access to a computer or the internet and would not be interested in participating in telehealth. For those clients who do have access to the computer and the internet may have mobility, geographical location, or transportation restraints, it is likely they would consider telehealth therapy.
- **E3:** Researchers found that telehealth was as good or better than FtF after therapy (Fridler et al., 2012; Hill, Theodoros, Russell, and Ward, 2008; Mashima et al., 2003; and Rangarathnam et al., 2014)
- **E4:** Researchers found that telehealth was as good or better than FtF after therapy (Fridler et al., 2012; Hill, Theodoros, Russell, and Ward, 2008; Mashima et al., 2003; and Rangarathnam et al., 2014)
- **E5:** Researchers found that telehealth was as good or better than FtF after therapy (Fridler et al., 2012; Hill, Theodoros, Russell, and Ward, 2008; Mashima et al., 2003; and Rangarathnam et al., 2014)
- **E6:** Researchers found that telehealth was as good or better than FtF after therapy (Fridler et al., 2012; Hill, Theodoros, Russell, and Ward, 2008; Mashima et al., 2003; and Rangarathnam et al., 2014)
- **E7:** Researchers found that telehealth was as good or better than FtF after therapy (Fridler et al., 2012; Hill, Theodoros, Russell, and Ward, 2008; Mashima et al., 2003; and Rangarathnam et al., 2014)
- **E8:** Researchers found that telehealth was as good or better than FtF after therapy (Fridler et al., 2012; Hill, Theodoros, Russell, and Ward, 2008; Mashima et al., 2003; and Rangarathnam et al., 2014)

References

Mashima et al., Birkmire-Peters, Syms, Hoitell, Burgess, & Peters (2003). Acoustic analysis scale. To determine whether voice therapy can be delivered via telehealth effectively. VHI | Acoustic analysis via Visi-Pitch II (Kay Elements, 1996b) | VHI | N/A |
Rangarathnam et al., G.H. McCullogh, Pickett, Zaick, Tulunay-Ugur, & K. McCullogh (2014). To investigate the utilization of telehealth for delivering flow phonation exercises to clients with primary muscle tension dysphonia (MTD). | N = 14 | Auditory Perceptual | VHI | Although there were no significant differences, (p = 0.354), clients reported a positive effect on their functional voice. |
| | | | Ages: 16 years | Ages: 16 years | Acoustic | VHI | N/A |
| | | | Dx: Primary MTD | Dx: Primary MTD | Aerodynamic Assessments | N/A |

Results

- **N/A:** The study suggested that valid assessment of apraxia of speech using the ABA-2 over the internet is feasible (p = 0.06 – 0.68). These p values include the DDK, increasing word length, AOS, Utterance time for polysyllabic words, and repeated trials. However, clients exhibiting severe AoS may be better suited for FtF assessment.
- **N/A:** Results for service delivery between groups was comparable, having no statistical significance.
- **N/A:** Although there were no significant differences, (p = 0.0620), however Visi-Pitch resulted in an improvement.
- **N/A:** To investigate the utilization of telehealth for delivering flow phonation exercises to clients with primary muscle tension dysphonia (MTD).