Can motor-based speech intervention be effectively administered via telepractice? Does intervention intensity affect accuracy outcomes?

Is telepractice SATPAC effective?

Treated Sound: YES
Both children who have completed the intervention program thus far demonstrated significant accuracy gains of greater than 50%. Most remaining errors were non-adult-like lengthened productions, rather than true errors.

PCC: YES
Both children who have completed the intervention program thus far demonstrated significant PCC gains of nearly 20%.

Does session frequency and duration affect phonological outcomes?

Treated Sound: NO
The child in the 15-minutes, 4x/week condition had a TAU-U score that was similar to that of the child in the 30-minutes, 2x/week condition.

PCC: NO
The child in the 15-minutes, 4x/week condition had a TAU-U score that was similar to that of the child in the 30-minutes, 2x/week condition.

Discussion

- Motor-based speech intervention is efficient and effective. School-age children with residual /ɹ/ errors might require an intense intervention program based on the Principles of Motor Learning (Maas et al., 2008).
- Large amount of practice trials
- Blocked practice followed by random practice
- Variable practice with complex tasks
- Knowledge of Performance & Knowledge of Results
- Intervention intensity matters, but it might be child-specific. All children received 1 hour of intervention each week and made similar gains. The weekly distribution of sessions might not matter. There could be a minimum, and a maximum, number of trials necessary to elicit change.

SATPAC Session Structure (Flipsen & Sacks, 2015)

<table>
<thead>
<tr>
<th>Phase</th>
<th>Target</th>
<th>Examples</th>
<th>Sessions</th>
<th>Trials</th>
<th>Sessions</th>
<th>Trials</th>
<th>Sessions</th>
<th>Trials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Treatment</td>
<td>Placement</td>
<td>/ɹ/</td>
<td>1 to 4</td>
<td>200</td>
<td>1 to 8</td>
<td>641</td>
<td>1 to 20</td>
<td>821</td>
</tr>
<tr>
<td>Establishment</td>
<td>Varied stress on seed word</td>
<td>/ɹ/</td>
<td>5 to 12</td>
<td>457</td>
<td>9 to 10</td>
<td>158</td>
<td>21 to 27</td>
<td>382</td>
</tr>
<tr>
<td></td>
<td>Phrases with sentences</td>
<td>A boy bought a new /ɹug/</td>
<td>13 to 16</td>
<td>292</td>
<td>11</td>
<td>98</td>
<td>26 to 30</td>
<td>173</td>
</tr>
<tr>
<td>Practice</td>
<td>List 1</td>
<td>/ɹug/</td>
<td>17</td>
<td>27</td>
<td>793</td>
<td>12</td>
<td>17</td>
<td>435</td>
</tr>
<tr>
<td></td>
<td>Practice</td>
<td>/ɹug/</td>
<td>27</td>
<td>46</td>
<td>16</td>
<td>24</td>
<td>363</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice</td>
<td>/ɹug]/tʃ/</td>
<td>28</td>
<td>29</td>
<td>156</td>
<td>25</td>
<td>26</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td>Practice</td>
<td>/ɹuʃ]/tʃ/</td>
<td>30</td>
<td>32</td>
<td>205</td>
<td>27</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice</td>
<td>/ɹuʃ]/tʃ/</td>
<td>33 to 38</td>
<td>519</td>
<td>28 to 30</td>
<td>349</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice</td>
<td>Did you meet an /ɹug/ walking home?</td>
<td>39 to 40</td>
<td>134</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalization</td>
<td>Phrases with sentences</td>
<td>Rachel was too poor to buy a new car</td>
<td>41 to 50</td>
<td>1020</td>
<td>31 to 34</td>
<td>549</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

- More trials were elicited in shorter 15-minute sessions, which likely led to faster change. BUT, there might be a ceiling for how many trials are necessary for change.

It Depends

- Accuracy of treated sound in untreated words depended on child’s initial stimulability and accuracy level. Potentially both intervention schedules elicited a similar amount of change.
- More trials were elicited in shorter 15-minute sessions, which likely led to faster change. BUT, there might be a ceiling for how many trials are necessary for change.

Selected References, Disclosure, Acknowledgements


We would like to thank the children and their families for participating. The authors have no financial or nonfinancial relationships to report.