A Comparison of Two Forms of Intensive Voice Treatment for Parkinson’s Disease

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INTRODUCTION

- Two forms of voice treatment, LSVT LOUD® and the SpeechVive™, are effective at increasing vocal intensity in people with Parkinson’s Disease (PD) [1,2].
- LSVT LOUD and the SpeechVive differ substantially in cue type, with LSVT LOUD relying on internal cuing and the SpeechVive providing external cuing to elicit increased vocal intensity.

RESEARCH AIM 1: Examine the effect of internal and external loudness cuing on speech and pause characteristics in individuals with PD.

METHODS

PARTICIPANTS
- Participants with idiopathic PD were assigned to one of two treatment groups:
  - LSVT LOUD, n=9 (Mean age=69 years, SD±4 years)
  - SpeechVive, n=9 (Mean age=68 years, SD±4 years)
- No recent (within one year) history of speech therapy
- Mild to moderate hypophonia; Hoehn & Yahr stage 2-3
- Pharmacological management of PD symptoms

TREATMENT PROGRAM
- Standard LSVT® LOUD protocol was administered by LSVT LOUD-certified clinician unaffiliated with the study
- Additional four weeks of home practice facilitated by LSVT LOUD Homework Helper
- SpeechVive
  - Participants wore the device 2-8 hours per day during communication for eight weeks
  - Participants were instructed to read aloud 30 minutes daily
  - SpeechVive amplitude adjusted at onset and biweekly to account for expected inter-subject differences in response to treatment

ACOUSTIC DATA COLLECTION
- Omnidirectional head-mounted microphone at fixed distance

RESULTS

ARTICULATION RATE:
- No significant effect of Session by Group, Wilk’s Lambda=0.719, p=0.085

PERCEIVED EFFORT:
- Significant effect of Session, Wilk’s Lambda=0.860, F(2, 15)=2.925, p<0.001
- No significant effect of Session, Wilk’s Lambda=0.901, F(2, 15)=0.821, p=0.322

CONCLUSION
- LSVT LOUD and training with the SpeechVive result in similar improvements to SPL and a decrease in pause duration post-tx.
- Neither treatment had appreciable effects on articulation rate or pause frequency in the current study.
- SpeechVive training was significantly less physically and mentally effortful than LSVT LOUD.

REFERENCES