

The effectiveness of the Lee Silverman Voice Treatment (LSVT) for improving speech and voice production at 12 and 24 months post-treatment in patients with Parkinson's disease: A Critical Review of the literature

Kristin Hayes

M.Cl.Sc (SLP) Candidate

University of Western Ontario: School of Communication Sciences and Disorders

This critical review examines the long term (12 and 24 month) effectiveness of LSVT on improving speech and voice production in patients with Parkinson's disease. Study designs reviewed included two randomized control trial studies, two single subject multiple baseline studies, and one single group pre-posttest study. Results provided suggestive evidence

Treatment) OR (Voice therapy)). The search was limited to articles written in English. There was no limitation on the date of articles. An examination of the reference section of articles returned yielded further studies for inclusion.

Selection Criteria

Studies selected for inclusion in this critical review paper were required to investigate the long term, (12 and 24 months), effects of LSVT in improving speech and voice production in patients with Parkinson's disease. No limits were set on the etiology of Parkinson's disease, time since diagnosis, stage, or severity of the disease in research participants.

Data Collection

Results of the literature yielded the following types of articles congruent with the aforementioned selection criteria: Randomized control trial studies (3), single subject ABA designed studies (2) and a within-group pre-posttest study (1).

Results

Randomized control trial studies

In a randomized control trial study, Ramig, Countryman, O'Brien, Hoehn and Thompson (1996) evaluated the short and long term (6 and 12 months) effects of LSVT compared with a placebo (respiration) treatment on the speech and voice

were found to be comparable pre-treatment on age, time since diagnosis, speech severity rating, voice severity rating and stage of disease. Data was collected by a primary investigator blind to the form of treatment each participant received. SPL and STSD measures were obtained as participants performed maximum duration of sustained vowel, reading of the "Rainbow Passage" and in 25-30 seconds of monologue. Results were analyzed using repeated measures analysis of variance (ANOVA) and revealed that at the 24 month follow-up, mean SPL was significantly higher for the LSVT group compared to the RET group during maximum sustained vowel phonation [$p=0.000$] and reading [$p=0.0460$], but not in conversation. Mean STSD was also significantly higher for the LSVT group compared to the RET group during reading only [$p=0.016$] when retested at 24 months. When compared to pre-treatment results, the LSVT group significantly improved SPL and STSD scores across all tasks at 24 months while the RET group did not.

The strengths of these studies are found in their

- Sapir, S., Ramig, L., & Fox, C. (2008). Speech and swallowing disorders in Parkinson's disease. *Current Opinion in Otolaryngology and Head Neck Surgery* (3), 205-210
- Sapir, S., Ramig, L., Hoyt, P., Countryman, S., O'Brien, C., & Hoehn, M. (2002). Speech loudness and quality 12 months after intensive voice treatment (LSVT) for Parkinson's disease: a comparison with an alternative speech treatment. *Journal of Phonetics and Logopedics*, 4(6), 296-303.
- Yorkston, K., Hakel, M., Beukelman, D., & Fager, S. (2007). Evidence for effectiveness of treatment of loudness, rate, or prosody in dysarthria: A systematic review. *Journal of Medical Speech-Language Pathology* (2), 11-36.