



NSW Speech Pathology Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE: The use of a biofeedback device (Vocalite) did not result in improved speech intelligibility in Parkinson's. The use of this device could potentially be considered for those patients with prosodic abnormality but further research is required to determine whether it results in more significant improvements than speech therapy alone.

Clinical Question [patient/problem, intervention, (comparison), outcome]: In patients with acquired dysarthria, does the use of biofeedback improve intelligibility?

Citation: Scott, S., Caird, F.I. (1983). Speech therapy for Parkinson's Disease. *Journal of Neurology, neurosurgery and psychiatry*, 46, 140-144.

Design/Method: A group comparison study with random allocation to one of two treatment groups. Assessments conducted within the participants' homes at the same time of day for each patient and were conducted before and after a 2-week period of no intervention. Both groups received 1-hour therapy, five days per week for 2-3 weeks.
Group A-This group received 2 weeks of prosodic therapy with the Vocalite. (based on Halliday 1970).
Group B: This group received two weeks of prosodic then assessed again after 2 weeks of prosodic exercises with Vocalite and Group B after 2 weeks of therapy without the Vocalite, were reassessed and then had an additional week of therapy with the Vocalite.
Both groups were assessed before treatment, after a 2-week non-treatment period, after two weeks treatment (Groups A, B), after and additional week treatment (group B) and 3-months following treatment. Assessment measures included prosodic abnormality scale, intelligibility measures, visual analogue scale and carer report. There was good reliability between prosodic measures.

Participants: 26 patients with PD. Exclusion criteria: only mild communication difficulty, presence of intellectual impairment (? Do they mean dementia), history of stroke or other disorder likely to affect speech, significant hearing impairment, participants was likely to have some changes to drug therapy in the proceeding weeks, inability to cooperate in an intensive rehabilitation program. Random allocation to treatment groups (although doesn't state how random allocation occurred). Medications being used by patients in both groups are described.

Experimental Group: Group A-6F, 7M. Mean age 66 (SD 6).

Control Group: Group B: 2F, 11M. Mean age 66 (SD 8). Duration of PD 10 years (SD 4). This group could also be considered to be experimental as a result of the additional week of treatment.

Results:

- No significant differences between group measures following no-treatment period.
- More males, more speech impairment and more anticholinergic drugs in Group B (the authors report that there isn't a relationship between this and changed speech measures).
- Both groups showed change with therapy but the only measures that was really significant was the prosodic abnormality. Slightly better performance for Group A in relation to prosodic abnormality scale.
- No significant benefit to having the additional week of therapy with the Vocalite.
- No significant differences between the groups in relation to the intelligibility or visual analogue scales.
- All relatives reported the treatment to be worthwhile and also reported various improvements in communication.
- Deterioration in performance for both groups at 3-month follow up but some residual improvement when compared to baseline measures.
- The authors report that Vocalite could result in up to 25% better performance and could be of benefit with patients who are more severely dysarthric.

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Comments – Strengths/weaknesses of paper Therapy could have been better described as could the Vocalite device.

Level of Evidence (NH&MRC): III-2

Appraised By:
Clinical Group: Adult Speech Group

Date: 4 February 2008