Clinical Question [patient/problem, intervention, (comparison), outcome]: In a child with phonological impairment of unknown origin, is a Metaphon approach effective in improving speech accuracy (e.g., as measured by PCC, error analysis, or consonant probe) over time?


Design/Method: Descriptive, multiple subject case study design.

Participants: 12 participants, aged 6:1 to 8:5 (4 girls, 8 boys), mean age 7.2 from an original group of 19 subjects were re-evaluated 3 years later. No statistical difference between the 12 who participated and the 7 who did not in terms of phonology or metaphonology scores at end of original study. Prior to intervention, children had normal hearing, oral motor function & language comprehension. All but 1 had delayed expressive language. In previous study, subjects received 16 weeks non-linear phonological intervention & 4 weeks metaphonology (specifically rhyme, alliteration, segmentation and word restructuring). Testing at end of 16 weeks showed significant gains on all measures.

Experimental Group: Participants tested in own homes by 2nd author over 2 - 3 x 1.5hr sessions. Assessment covered phonology, word discrimination, metaphonology, language comprehension, language production, verbal memory, non-verbal skills, reading, spelling & arithmetic. Standardised tests provided norm references as there was no control group for comparison.

Control Group: No

Results: The majority of subjects were wnl's in areas of phonology, metaphonology and literacy. Only 2/12 children had below average reading skills; although 5/12 children had below average spelling skills. No statistical significance between phonology and academic skills.

- for phonology, post intervention severity was more reliable indicator of ongoing problems than pre-intervention severity.
- post-intervention metaphonology was the only variable that significantly correlated with later reading and spelling skills (specifically alliteration production & final consonant deletion). Authors suggest that, for metaphonology skills, the rate of change in phonology and metaphonology intervention may be predictive of future skills in that area.
- phonological working memory appeared related to performance on a number of verbal tasks but statistical significance occurred only on various sub-tasks rather than a collection of tasks. Further investigation is required into role of verbal memory for both phonology and metaphonology.

Comments – Strengths/weaknesses of paper

Strength – being a follow-up of original participants adds to strength of original data as well as adding to body of growing data on phonological & metaphonological outcomes.

Weaknesses – small numbers means effects occurred in only 1-2 subjects at times; all but 3 participants received further speech pathology intervention between the 2 studies (no details given).

Level of Evidence (NH&MRC): IV

Appraised By: Members of the EBP paediatric speech group

Clinical Group: Paediatric Speech Group

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