NSW Speech Pathology Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE: Item specific semantic retraining is essential for improving semantic comprehension within treated categories, although there may be some generalisation to items within the same category.

Clinical Question [patient/problem, intervention, (comparison), outcome]:
What are the effective therapy techniques currently being used to improve auditory comprehension deficits in people with aphasia?

Citation: Behrmann, M. & Lieberthal, T. (1989). Category-specific treatment of a lexical-semantic deficit: A single case study of global aphasia. *British Journal of Disorders of Communication*, 24, 281-299.

Design/Method:
- Single case study

Participants:
- 57 year old male who sustained a left MCA CVA in 1984 (5 years prior to study publish date) involving frontal, temporal and parietal lobes as well as the internal capsule.
- No usable speech or auditory comprehension, unable to repeat words or read aloud.
- Assessment found severe comprehension impairment regardless of modality (auditory, written, picture).
- Authors suggest impairment was a central semantic deficit - specifically an inability to obtain a precise semantic specification of an item

Experimental Group:
Pre-therapy: Preliminary semantic testing included the Peabody Picture vocabulary test (spoken and written) and the Lexical Understanding with Visual and Semantic Distractors Task (LUVS), The Auditory Choice Vocabulary Test, An Odd-Man-Out test, Category specificity task.
- Pre-therapy baseline was obtained to exclude spontaneous recovery – category sorting was compared across 3 testing sessions with no changes observed.
- **Therapy program:** 15 x 1 hour sessions over 6 weeks

a category-specific approach - studying whether there would be generalisation within and across categories.
Two major stages of therapy: 1) teaching meaning at a general level of description, i.e. teaching the superordinate features of each category (similarity of group identity).
2) teaching specific details (or semantic features) of items leading to the precise identification of these items (selection to definition with increasingly close semantic distractors).
- Categories randomly selected to be treated
- 3 treated categories (transport, body parts, furniture): 1 group of treated words (60 words 20 transport, 20 body parts, 20 furniture) and 1 group of untreated words (60 words) (control for the above, 20 in each of the 3 categories).
- 3 untreated categories (colours, animals, foods).
- Auditory semantic task was done first by category (e.g. taking apart a doll and describing because they are all body parts.
- Items were presented one-by-one verbally by the SP and the picture shown with the word present (using an auditory, spoken and written approach).
- Semantic features of each category were explained using objects, written and spoken words
- Word-picture matching tasks performed
- Subject selected semantic features (e.g. 4 wheels, on land) from array for item (e.g. car)
- Homework included: written word-picture matching and dictionary exercises
- **Interim Measures:** Following every 5 therapy sessions an assessment of progress was conducted.
- Control items were assessed pre and post treatment.
- **Post therapy Measures:** conducted over 3 sessions over 3 weeks. Commenced 1 week post completion of therapy on all items of all categories.
- Included narrow→wide choice semantic tests, categorisation of items, TROG (no change predicted)

Control Group:

- Half of items (words within categories) were in control group/non-treatment group
- Plus three untreated categories

Results:

● All treated items showed increased comprehension both intra- and post- therapy compared with pre-therapy.
● Significant generalisation from treated items to untreated items overall. However, a breakdown of scores revealed marked generalisation in 1/3 categories only.
● No significant generalisation to untreated categories (although marked improvement is shown for one category).
● Improved access to superordinate/broad based semantic information compared with subordinate details.

Comments – Strengths/weaknesses of paper

- **Strengths**: - thorough description of research within similar/related area
- Multiple points of testing to increase validity
- **Weakness**: single case study, needs replication.
- whilst the overall effects are as described, within the treated categories only one category showed a marked improvement on untreated items, and within the untreated categories marked improvement is also shown for one category.

Level of Evidence (NH&MRC): IV

Appraised By: EBP group
Clinical Group: Language EBP

Date: May 2009