NSW Speech Pathology
Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE: For children with Down Syndrome, recasting techniques may be effective in improving speech comprehensibility (understandable spoken language) and MLU.

Clinical Question [patient/problem, intervention, (comparison), outcome]: In Children with Specific Language Impairment with an MLU <2 what therapy approaches are effective?

Citation: Camarata, S., Yoder, P. & Camarata, M. (2006) Simultaneous Treatment of Grammatical and Speech Comprehensibility Deficits in Children with Down Syndrome. *Down Syndrome Research and Practice, 11 (1), 9-17.*

Design/Method: A multiple baseline, multiple probe design.
The purpose was to examine the effects of BTR (Broad Target Recast) treatment on the speech comprehensibility and utterance length of children with Down Syndrome.
Examined the speech comprehensibility and grammatical skills as measured using MLU.
Speech comprehensibility and grammatical measures derived from spontaneous speech and language samples collected in 3-5 baseline samples and 6 treatment sessions. Conducted by staff other than clinician doing treatment.
Group received twice weekly integrated speech comprehensibility and language intervention program over six months.
Dependent variables were measured in generalisation conversational samples.
Naturalistic intervention – staff-implemented speech and grammatical recasts applied to children's non-imitative utterances to facilitate children's grammatical and speech development.
Verbal routines and questions were used to increase probability of a comprehendible platform utterance.
Clinicians were trained to use both speech and grammatical recasts to address speech or grammatical structures that were missing as long as such were developmentally appropriate.
Aimed for at least 4 recasts per minute.
Emphasis of speech and grammatical recasts varied depending on the speech comprehensibility of the child.

Participants: Six children with Down Syndrome with diagnosis based on the results of physician report. Good health. Major medical complications treated prior to enrolment. No history of cleft palate. Passed audiometric screening. MLUs above 1.0. In 20 minute conversational sample all had at least 20 utterances that were at least partially comprehensible.
Age range: 4.3 to 7.4. 3 Females, 3 males.
Mean Leiter R score 66.5. Mean SS of 63 on grammatical morphology subtest of the Test of Auditory Comprehension of Language 3rd Ed. MLU 1.38.

Experimental Group: As above

Control Group: None

Results: Growth: defined in study as increase in mean levels of a dependent measure; MLU or speech comprehensibility during treatment when compared with that in the baseline phase.

- Speech comprehensibility growth seen in 4 out of 6 participants.
- MLU growth seen in 5 out of 6 participants. Therefore evidence of growth in majority of participants on both dependant variables.
- 2 participants showed evidence of treatment effects on speech comprehensibility in generalisation sessions.
- 2 participants showed evidence of treatment effects on MLU in generalisation sessions.

Comments – Strengths/weaknesses of paper

- No control group (no group receiving no treatment) – cannot rule out maturation
- Small sample size
- Didn't show their method for determining significant growth in results.

Level of Evidence (NH&MRC): Preliminary study, Level IV

Appraised By:
Clinical Group: Paediatric Language

Date: October 2012

Guidelines for completion of the CAP

Clinical Bottom Line
The consensus of the reviewers on implications of the paper on clinical practice. Whilst this may be somewhat subjective, it is hoped that robust discussion, the Level of Evidence and your comments on the design will enable you to produce a practical/realistic 'bottom line'. Many of the

papers in Speech Pathology may have limitations, but the Clinical Bottom line should be aimed to help clinicians apply what evidence there is.

Clinical Question
This should ideally include four components:

- the patient or problem
- the intervention (or diagnostic test or prognostic factor)
- the comparison intervention or test *(optional)*
- the outcome

Design
Refer to pages 12 to 15 of the EBPIG Resource Package for guidance in reviewing the design used.

Comments on Design
Pages 12 to 15 of the Resource Manual should again assist here. You may also find it useful to refer to the forms 'Evaluating case studies/case series' and 'Critical appraisal sheet' adapted from Dr Lil Mikuletic's (see 'Critiquing/Appraising the Evidence).

Level of Evidence
It is recommended that the paper you are reviewing be rated against the NH&MRC Levels of Evidence, as reproduced here. The levels may be updated from time to time by the NH&MRC, but use of the ratings listed here will ensure consistency across CATs and groups. These levels are listed with comments on pages 15 and 16 of the Resource Package.

LEVEL

I. Evidence obtained from a systematic review of all relevant controlled trials

II. Evidence obtained from at least one properly designed randomised controlled trial

III. **1** Evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method)

2 Evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case-control studies, or interrupted time series with a control group

3 Evidence obtained from comparative studies with historical control, two or more single-arm studies or interrupted time series without a parallel control group

IV. Evidence obtained from case series, either post-test or pre-test and post-test