



NSW Speech Pathology Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE: A Broad Target Recast treatment approach used with children with severe expressive language and speech impairments and an MLU < 2, has no clinically significant effect on MLU or speech intelligibility either post-treatment or 8 months later. There is limited evidence (weak-moderate effect size) that it may benefit children with more severe pre-treatment speech skills.

Clinical Question [patient/problem, intervention, (comparison), outcome]:

In Children with Specific Language Impairment with an MLU <2 what therapy approaches are effective?

Citation: Yoder, P., Camarata, S. & Gardner, E. (2005) Treatment Effects on Speech Intelligibility and Length of Utterance in Children with Specific Language and Intelligibility Impairments. *Journal of Early Intervention, 28 (1), 34-49*

Design/Method: A randomized group experiment. The purpose was to i) test effectiveness of BTR (Broad Target Recast) treatment on increasing MLU and speech intelligibility in children with severe expressive language and articulation impairments at post-treatment and 8 months later; ii) test whether pre-treatment speech accuracy predicted response to treatment.

Participants who met the study criteria were given a 2nd 20min language sample to provide a more stable MLU and estimate of speech intelligibility. Children were then randomized to a BTR group or control group using a computer program- 12 pre-treatment variables were evaluated.

BTR group- received 3 x 30min treatment sessions p/wk for 6 months. The treatment was administered by a psychologist, trained and monitored weekly by a SP. Therapy occurred in a 1:1, play based setting with the therapist following the child's lead, asking questions and encouraging the child to speak. When the child spoke, the therapist chose whether to use a speech recast or a sentence length recast. If the child's utterance contained few speech errors the therapist gave a sentence length recast (i.e. recasted with added grammar and/or vocabulary). If the child's utterance contained many speech errors a speech recast was provided (ie an exact or reduced imitation with correct pronunciation). The target recast rate was 4 p/min.

Control group -received nil treatment, however were allowed to access outside intervention.

At post-treatment (6 months after study entry) and follow-up (14 months after entry), all children had 2 x 20 min language samples taken to measure intelligibility and MLU. Language samples were transcribed (by a blinded outsider) and entered into the SALT and Computerized Profiling software to derive MLU and proportion of fully intelligible utterances at pre-treatment, post-treatment and follow-up. Pre-treatment speech accuracy was also measured using the AAPS and %VC and %CC from the initial sample.

Participants: 52 Preschoolers with severe expressive language and articulation impairments (mean age 3.65 yrs). All met the criteria for SLI: MLU at least 1.3 SD below or SS of <80 on expressive scale of PLS-3, IQ at least in borderline range, nil hearing deficits, nil oral motor disorders and all from monolingual English background. All had articulation impairments (scored 1.3 SD below the mean on the Arizona Articulation Proficiency Scale). In a 20 min language sample with the examiner, had to have MLU < 2.5 and use at least 10 different words.

Experimental Group: BTR group – 26 participants, mean age 43.2 months, mean Leiter IQ 102.8, mean receptive language SS of 88.1 & mean expressive language SS of 74 on PLS-3, mean MLU 1.53, mean T score on AAPS of 23.8 (M=50), mean % utterances fully intelligible was 47%

Control Group: 26 participants, mean age 44.3 months, mean Leiter IQ 101.8, mean receptive language SS of 78.2 & mean expressive language SS of 68.6 on PLS-3, mean MLU 1.65, mean T score on AAPS of 25.1 (M=50), mean % utterances fully intelligible was 51%

May 2002

Results: Preliminary analysis – No significant differences between groups on 12 pretreatment variables indicating random assignment was successful. Tested between group differences on amount of 'non-project treatment participation' and found that the control group received significantly more intervention, however this was due to attendance at Non-SP sessions (eg. OT, physio, Early intervention etc).

Tests of research questions – No statistically significant difference between the groups on MLU or intelligibility at either post-treatment or follow-up. Children with lower pre-treatment speech accuracy (below 46 raw score on the AAPS) showed improvement in MLU (at both post-treatment and follow up) and intelligibility (at follow-up only). The effect sizes for the entire group are weak-moderate.

Level of Evidence (NH&MRC): Level II

Appraised By:
Clinical Group: Paediatric Language

Date: August 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