



# NSW Speech Pathology Evidence Based Practice Interest Group

## Critically Appraised Paper (CAP)

### CLINICAL BOTTOM LINE:

- Brief parent pivotal response training is effective for most families in providing an immediate, cost-effective intervention to improve communication (functional verbal utterances), decrease 'no responses' and increase expressive language of children 2-5 years with Autism. Children younger than 36 months who have a more significant cognitive delay may require an extended intervention program

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

In Children with Autism, does joint attention (JA) intervention improve social communication skills?

### Citation:

Coolican, J. Smith, I. Bryson, S. *Brief parent training in pivotal response treatment for preschoolers with autism*. The Journal of Child Psychology and Psychiatry.

### Design/Method:

A non-concurrent multiple baseline design across participants was used. Parents were seen individually for three 2-hour training sessions on Pivotal Response Treatment (PRT). Child and parent outcomes were assessed before, immediately after, and 2-4 months following training using standardised tests questionnaires and behaviour coded directly from video recordings.

### Participants:

Eight families of preschool children newly diagnosed with Autism (7 children were boys and 1 girl with following ages between 2;4 years – 4;8 years) The 8 preschool children were on a waiting list for a publicly funded early intervention intensive intervention programme, who were diagnosed with Autism by an independent developmental paediatrician and psychologist, living within 30km of the IWK Health centre. The preschoolers had severe expressive and receptive language delays and cognitive abilities ranged from <1<sup>st</sup> percentile-16<sup>th</sup> percentile. Pre-language ranged from 1-word approximations to short phrases.

One parent attended for each child (5 mothers, 3 fathers) Parents had to have a minimum Grade 8 education. All families spoke English as primary language and were from middle to upper-middle socio-economic status.

Children were excluded if their child was receiving some form of ABA treatment or had any major sensory, motor or neurological impairment.

All but 2 families had completed the Hanen 'More than words' programme within 1-2 months of beginning the study

### Experimental Group:

#### Parent training sessions

Parents received three 2-hour training sessions over 2 consecutive weeks for a total of 6 hours of individual training in PRT. First 2 parent trainings were conducted in the clinical lab and the 3<sup>rd</sup> session conducted in the family home. Session 1 – introduced to PRT principles and the trainer modelled the techniques with the child.

Session 2 – parents implemented PRT techniques with their child in the clinic, while the trainer provided feedback as well as problem solving on issues that occurred the previous week

Session 3 – parents implemented PRT techniques at home for generalisation purposes (same outline as session 2) Parents delivered PRT in context play and routines at home.

#### Outcome measures

##### **Child Outcomes**

Communication: Functional Verb Utterances (FVU) and types of utterances were used to measure changes in child communication. The presence and absence of FVU's were coded from 15second intervals of a 10 minute video recording.

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5 minute video segments were coded for whether the child utterances were appropriate or inappropriate and the prompting provided (model prompt, indirect prompt or child initiated.)

Language: 2 standardised assessments were used (PLS-4 and PPVT-III) to determine whether expressive and receptive language improved at follow-up.

Disruptive behaviour: coded occurrence and non-occurrence during 15 second intervals of a 10 minute video. Disruptive behaviour included – vocal (screaming, whinging, crying) physical (hitting, kicking, throwing, pushing) and oral (biting, spitting).

### **Parent Outcome Measures**

Fidelity of PRT implementation: 10, 1 minute intervals were used to code fidelity of implementation. Coded as correct or incorrect for each 5 techniques – clear opportunities, child choice, contingent, natural rewards and reward attempts. Criteria for fidelity implementation was 75%.

Self-efficacy: parental Self-Efficacy Scale was used to measure parents' perceived self-efficacy related to their child's challenging behaviours. (parent questionnaire)

Satisfaction: questionnaire was completed by parents' assessing their satisfaction with the training.

Inter-observer reliability: primary coder for each outcome measure was blind. An independent coder coded 30% of videos.

**Control Group:** No control group

### **Results:**

#### **Child outcome measures –**

##### Communication:

Functional Verbal Utterances (FVU) – 8 children demonstrated increase in FVUs (minimal for child 1). 3 children made gains in FVUs post training and at follow up while 3 other children made slight decrease in FVUs post training and follow up. Average increase (25.8%) comparable to prior study involving 20 hour parent training.

Nature of child's utterances - overall their responsiveness increased significantly following training and was maintained at follow up. Percentage of initiations did not change nor did the number of inappropriate responses decrease, but the percentage of 'no' responses improved.

Language: no difference in age equivalent scores for auditory comprehension between pre-training and follow up. Higher age equivalent scores at follow up compared to pre-training for expressive communication. No significant difference in age-equivalent scores on PPVT-III. Parents reported qualitative changes in their children's language skills.

Disruptive Behaviour – minimal disruptive behaviour in all but 2 children for all phases. Child 1 displayed disruptive behaviour during pre-training phase which decreased immediately following training and was maintained at follow up. Overall no group change in disruptive behaviours.

#### **Parent Outcome Measures**

Fidelity of PRT implementation: pre-training → no parents met criteria; post-training – 5 out of 8 parents met criteria; 4 parents met criteria at follow up.

Self-efficacy – parents demonstrated high levels of perceived self-efficacy pre-training; 2 parents with low self-efficacy at pre-training scored within average range at follow up. Overall, no significant difference between pre-post training.

Parent satisfaction: overall, whole training experience very helpful, training in PRT very helpful in increasing their child's language than decreasing disruptive behaviour. Qualitative comments very positive.

Time Implementing PRT – parents spent between 4-10 hours a week. Incorporated PRT into everyday routines therefore difficult to estimate the amount of time.

Relationship to parent fidelity and child communication – no significant correlation found pre-training and post-training but moderate correlation from pre-training and follow up.

### **Comments**

#### Strengths

- This study is consistent with previous studies that have shown increases in children's communication following parent training in PRT. Despite only 6 hours of training, the average increase in FVU's from pre-post training is 25.8% it is comparable to Openden (2005) following 20 hours of group parent training (18.5%)
- Parents in this study (6 hours training; 62%) demonstrated more mastery of PRT techniques post training compared to parents in Stahmer and Gist (2001) study who received more training (12 hours; 36%). The authors acknowledge that a more concentrated program (6 hours over 2 weeks vs 12 hours over 12 weeks) may enhance parent learning. Other factors include parents completing More than Words program prior to this study.
- Due to long waiting lists, providing parents with early brief training focussing on children's communication may improve their prognosis.

Weaknesses /acknowledgements and considerations

- Very young (under 36 months) cognitively delayed children may take longer to respond to treatment than older or more advanced developmental level preschool children.
- Larger sample size may replicate larger numbers in demonstrating the increased trends in language.
- It was acknowledge that it is unknown whether PRT training was enhanced by the parents' previous training in Hanen's More than Words
- Future research to measure parent satisfaction at follow up as well as immediately after training.
- Parents who volunteered to participate were from middle –upper socioeconomic status. Therefore results may not generalise to other families with preschoolers with autism.

**Level of Evidence (NH&MRC): IV**

**Appraised By:**  
**Clinical Group:** Autism EBP

**Date:** 07/06/2011

***DISCLAIMER—THIS CAP WAS COMPLETED by PRACTISING SLPs. YOU ARE STRONGLY ENCOURAGE TO READ THE ARTICLE FOR YOURSELF BEFORE MAKING ANY CLINICAL DECISIONS ASSOCIATED WITH THE CLINICAL QUESTION. ALSO —PLEASE NOTE THE DATE WHEN THIS CAP WAS COMPLETED, and the YEAR OF PUBLICATION OF THE ARTICLE. THE CLINICAL BOTTOMLINE MAY HAVE CHANGED IN LIGHT OF MORE RECENT RESEARCH.***

## 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