

Critical Review:

What are the effects of language intervention on pro-social behaviours in children with behavioural disorders?

Erin Broxterman

M.Cl.Sc (SLP) Candidate

University of Western Ontario: School of Communication Sciences and Disorders

This critical review examines the effects of language intervention on pro-social behaviour in children with behavioural disorders in four studies. Study designs included: one case study, two group studies, and one cohort study. Overall, the evidence failed to provide statistically significant support for the beneficial effects of language intervention on pro-social behaviour, although evidence supported the achievement of language goals. Articles suggested that parents, teachers, and therapists perceived benefits in self-esteem, confidence, and improved behaviours following intervention; however, standardized measures were unable to demonstrate statistically significant differences. Additional studies involving more subjects, use of control groups, and standardized measures are recommended to assist in the development of best practice techniques with this population.

Introduction

Numerous young children have complex learning, language and emotional or behavioural problems. These difficulties can influence academic performance and social-emotional adjustment (Cross, Blake, Tunbridge & Gill, 2001). Recent research has highlighted increasing evidence that communication impairments often go undetected in children with emotional and behavioural problems (Cohen, Davine & Meloche-Kelly, 1989; Giddan, Milling & Campbell, 1996; Cross, 1999). Under-identification presents a unique challenge as untreated communication impairments may exacerbate behavioural difficulties and have been linked with psychiatric problems (Cross *et al.*, 2001). Furthermore, research has shown that children with severe aggression and conduct problems who do not improve at a young age are at an increased risk for developing violent behaviours, additional mental health problems, substance abuse behaviours, increased school dropout, occupational difficulties, marital and family problems, and criminal behaviour (Drugli, Larsson, & Morch, 2008; Warr-Leeper, Grey, Mah, & Van Reenan, 2003). Thus, the implications of undetected and untreated language and behavioural impairments can be detrimental across an individual's lifespan.

Language is the primary means of establishing and maintaining social relationships (Warr-Leeper *et al.*, 2003). Current research supports the notion that language difficulties in children can prevent meaningful communicative exchanges, which in turn limits social opportunities and therefore impacts the child's social-behavioural development (Clegg, Stackhouse, Finch, Murphy, & Nicholls, 2009). This further increases the gap in language and social skills in this population as a result of reduced opportunities for social interaction.

Professionals who work with children with behavioural problems have hypothesized that intervention targeting deficient language abilities in this population, particularly pragmatic skills (the social use of language), may result in a reduction of negative behaviours. This concept is of particular interest as Speech and Language Pathologists (SLPs) will encounter children with social, emotional, and behavioural disorders and will not only need to be aware of the high incidence of language problems in this population, but will also need to have proven strategies to manage the language and behaviour impairments.

Objectives

The primary objective of this paper is to outline and critically evaluate selected studies that have examined the effects of language intervention on pro-social behaviours in children with behavioural disorders.

Methods

Search Strategy

Computerized databases, including CINAHL, SCOPUS, PubMed, ProQuest Dissertations and Theses, ComDisDome, Medline, PsycINFO, and the University of Western Ontario's libraries search engine were employed using the following search strategy: (Behaviour Disorders) AND (Communication Disorders) AND (Intervention). The search was limited to English language articles. Additionally, a previous review (Parow, 2009) of the literature was examined to identify additional studies not found through the computer search. Lastly, an ancestral search (i.e., references in identified studies) was conducted on the studies identified during the first two steps.

Selection Criteria

Studies included in this critical review were required to examine the effects of language intervention on the behaviour of children with externalizing behavioural disorders. An age limit of younger than 18 was chosen as the desired criteria for study participants. No additional limits were set on the demographics (gender, culture, race, or socioeconomic status) of research participants, or type of behavioural disorder (oppositional defiant behaviour, aggression, etc.) investigated. Studies included those conducted in North America and Europe.

Data Collection

Results of the literature search yielded four articles consistent with the selection criteria: one case study, two group studies, and one cohort study.

Results

Case Study. Cross, Blake, Nicola, and Gill (2001) investigated the effectiveness of an integrated treatment approach to target communication skills in an individual with complex emotional, learning and language difficulties. Researchers collected detailed background information from a 14-year-old male student including: early history, psychotherapy, cognitive skills, receptive language, expressive language, vocabulary, social communication skills, and speech production. The study focused on improving outcomes while the participant's foster care providers, teacher, psychotherapist, and SLP worked together to plan and refine an intervention program. Speech and language intervention was administered by an SLP in individual sessions once a week. A pull-out intervention method (i.e., leave the class and work in a quieter environment) was adopted as this was the participant's preference. Therapy focused on improvement in use of idioms, vocabulary, basic narrative skills, and rate of speech. Social communication skills were targeted using a group therapy method that was administered by the SLP in the participant's class. The group was run and targets were set in liaison with the class teacher and with reference to the communication needs of the whole class. Psychotherapeutic intervention was also administered by the participant's psychotherapist as part of the treatment plan.

The participant's language skills developed, as did his emotional and behavioural maturity, following the multidisciplinary intervention program. He was able to achieve all of his communication goals for the term, including measurable progress on standardized tests (score on the formulated sentences subtest on the *Clinical Evaluation of Language Fundamentals (CELF;*

Wiig, 1998) had increased from 3 to 4; score on the figurative usage subtest on the *Test of Word Knowledge (TOWK;* Wiig and Secord, 1992) had increased from 3 to 5). The mean standard score for both the *CELF* and the *TOWK* is 10, with a standard deviation of three. Thus, the participant had moved from three standard deviations below the mean to two standard deviations below the mean on both tests following intervention. The participant's behaviour was also reportedly improved in both the classroom and at home. He was better able to express and confront difficulties without resorting to the withdrawal behaviour he had previously demonstrated. Researchers commented that this led to more positive academic progress and an increase in his self-esteem. His behaviour was also noted to be less extreme following intervention.

The case study design of this article enabled the authors to examine in detail the targeted communication skills and to draw conclusions about the multidisciplinary intervention's effectiveness on the subject's improvement in communication and behaviour. Use of standardized tests commonly used in current clinical practice adds to the face validity of progress measures. It may be difficult to generalize conclusions to the greater population of children with language and behaviour disorders due to the single-subject design of this article. Statistical manipulation of the data was not used in the case study analysis to verify statistically significant changes in either language skills or pro-social behaviour.

Group Study #1. Hyter, Rogers-Adkinson, Self, Simmons, and Jantz (2001) investigated the effectiveness of a classroom-based pragmatic intervention program on the use of pro-social behaviour in six male participants between the ages of 8;6 (years; months) and 12;11 who attended a specialized educational facility for children with emotional or behavioural disorders. Subjects participated in pre-testing, the pragmatic intervention, and post-testing. Formal measures of progress included:

1. the *Test of Language Development: Intermediate (TOLD: I-2;* Newcomer and Hammill, 1988), considered a global measure to assess receptive and expressive language skills;
2. the *Test of Pragmatic Language (TOPL;* Phelps-Teraski and Phelps-Gunn, 1992), a formal measure of pragmatic language functioning using verbal and pictorial stimulus items that elicit expressive responses;
3. the *Behavioural Evaluation Scale-2 (BES-2;* McCarney, 1994), a formal observational checklist completed by the special education teacher to assess behavioural functioning.

The informal measure in the analysis included an interactive communication task administered by the SLPs to assess pragmatic skills used in more natural contexts. The student was read a description of a hypothetical situation and asked to role play the situation described while their responses were videotaped for later analysis. Participants' pragmatic language abilities were analyzed on this task using an adaption of the *Discourse Skills Checklist: A Molar Analysis* (Bedrosian, 1985) and Prutting and Kirchner's *Pragmatic Protocol* (1983). The four pragmatic situations used during assessment and treatment were describing objects, providing step-by-step directions, stating opinions about inappropriate behaviour, and negotiating for some desired outcome. Post-testing involved different hypothetical situations to assess the skills developed.

Classroom intervention occurred over an eight-week period and was scheduled twice weekly for 30-minutes each session. The primary focus of the intervention was to develop communicative competence in the four pragmatic situations identified during assessment. Four lessons were taught targeting each area. Each lesson was covered two times per week for one week and then recycled. Each lesson was structured to include an introduction of the activity to the participants, oral and written step-by-step instructions of the activity, and a role-played model of the desired communication provided by the special education teacher and the SLP.

Using pseudo Bonferroni correction to control for Type I error based on small sample size, *t* tests yielded statistically significant differences at the .01 level between pre- and post-test scores on the *TOPL* and for the *TOLD:I-2*, but not for the *BES-2*. Researchers also found that all participants scored in the below-average range during their pre-test of the *TOPL*; however, following intervention, all participants demonstrated scores in the average or above-average range. Similarly, pre-test scores on the *TOLD:I-2* showed that all participants were in the poor or below-average range while post-test scores showed that all participants' scores increased to the average range.

Informal measures of pragmatic skills were also analyzed using a series of *t* tests for informal dependent samples. Results indicated statistically significant differences at the .05 and .01 levels, between pre- and post-test scores of the pragmatic behaviours of describing objects to others and providing step-by-step directions. Researchers also noted there was a significant increase in the number of post-test speaking turns. Higher-level pragmatic skills, including making judgments about inappropriate behaviour and

negotiating for desired outcomes, did not demonstrate significant improvement following intervention.

Strengths of this study include the integration of formal and informal measures of progress in communication and pro-social skills. Researchers also attempted to analyze data using statistical techniques to control for biases in the data. Generalization of the results is guarded, however, due to the limited sample size. Additionally, researchers may have "taught to the tests" by using assessments to evaluate progress that were taught during the intervention period.

Group Study #2. Heneker (2005) examined the effectiveness of speech and language therapy support for students with behavioural, emotional, and social difficulties. Participants were between the ages of 5;0 and 11;0 who were either full-time or part-time students who participated in a Pupil Referral Unit (PRU) and mainstream school. A training session for the staff at the PRU was carried out at the beginning of the project to raise awareness of the nature of communication difficulties; their impact on learning and socialization; and the risk factors and indicators associated with speech and language difficulties. Participants' literacy skills were assessed as well as their speech and language strengths and needs. Assessments comprised of information collected from school staff as well as through observation and formal assessment. Formal measures included:

1. the *CELF-UK3*, to assess understanding and use of language in word structure (morphology), sentence structure (syntax), word meaning (semantics), and memory of spoken language (auditory memory);
2. the *TOWK*, to assess understanding and use of vocabulary
3. the *Social Use of Language Programme* (SULP; Rinaldi, 1995), a communication skills rating chart was completed in collaboration with the class teacher to assess communication skills.

Based on the researcher's clinical judgement, a participant's ability to understand ambiguous language was assessed using *Understanding Ambiguity* (Rinaldi, 1996) and their phonological skills were assessed using the *South Tyneside Assessment of Phonology* (Armstrong & Ainley, 1988), if it was felt the student had difficulties in these areas. Each participant's speech and language profile was analyzed based on information from formal assessments, observations, discussions with class staff, and the impact of their difficulties on their learning and socialization.

Direct intervention was provided based on the profile created. Each student receiving intervention was reassessed in the summer term using the same series of assessments. Staff members were also administered the same questionnaires.

Ten out of the 11 students assessed were found to have speech and language difficulties and six were identified as requiring further intervention, as these difficulties were perceived to be significantly impacting their learning and socialization. Intervention provided to each student varied based on the needs identified: three students received weekly individual therapy targeting vocabulary skills; two students received weekly individual therapy targeting general language skills (e.g., tenses, plurals); two students received weekly group therapy targeting social skills; and one student received individual therapy twice a week targeting speech skills. Two students were provided with more than one intervention.

Results were calculated based on standard score changes on formal assessments and informal assessment results. Statistical manipulation of data across participants was not undertaken, but rather individual comparisons between pre- and post-test measures were made. Results demonstrated that all the pupils who received speech and language therapy intervention made progress in the area targeted for therapy. The researcher also claimed the students gained confidence in communication. The author commented that although confidence was not specifically measured, information from clinical records at the beginning and end of the project suggested gains in confidence, however this was not further elaborated on within the discussion. Progress on language and vocabulary-based interventions was measured using standardized assessments. Progress in social skills was assessed through analysis of speech and language therapy clinical records and staff perceptions. Outcomes for the students' conduct, emotional, and learning behaviours were analyzed based on the emotional and behavioural profiles maintained by the staff. The researcher concluded that progress was made in conduct, emotional, and learning behaviours; however, variation was evident between individual participants. The positive results related to gains in confidence and changes in pro-social behaviour should be considered with caution given that these results were based on staff reports only.

This article made comparisons between pre- and post-test measures, rather than across participants. This method allowed her to draw individual conclusions related to the effectiveness of intervention, which provides important clues regarding the influence of language

therapy on pro-social behaviour. A larger sample size, use of a control group, and a more objective approach to measure social skills would have been beneficial to improve the reader's confidence in the results.

Cohort Study. Law and Sivyer (2003) investigated the impact of speech and language interventions on children with emotional or behavioural difficulties currently excluded from school or at risk of exclusion. Researchers hypothesized that progress would be made in language, self-esteem, and behaviour in relation to a comparison group. Participants consisted of 31 children drawn from an inner city area of London, England between the ages of 9 and 11 years (mean 10;8). Ninety-two percent of participants involved in this study were male. Attempts were made to minimize sampling bias by sending referral requests across the whole borough. Participants were referred by specialist teachers of children with emotional and behavioural difficulties, educational psychologists, class teachers, or the head of the Primary Pupil Referral Unit (PRU). All participants were identified as having language and communication difficulties as well as emotional and behavioural difficulties and were already excluded from mainstream school or were perceived by their head teacher as being at risk of exclusion.

Children were assigned to two groups: Group I, the study group, and Group II, the comparison group, each containing 10 children. Group I received weekly language and communication therapy while Group II received no intervention, but would subsequently receive an intensive block of speech and language therapy. Group I was further subdivided into two groups of five children: Group IA were attending the PRU, having already been excluded from mainstream school; Group IB contained children identified as "at risk" of exclusion. Baseline scores were obtained for each group and no statistical differences were identified between the two groups for age or baseline scores. Groups were also matched for gender, with one girl in each group.

Children in Groups IA and IB received weekly intervention for one term, a total of 10 sessions of 45 minutes each. During this time, Group II did not receive any intervention. Children in both groups were reassessed at the end of the school term, in which the initial assessments were repeated. Intervention adopted a holistic approach that treated specific language and social communication skills, and also dealt with behavioural management, issues of self-esteem, and general emotional well-being. Sessions were implemented by the SLP with the support of a speech and language therapy assistant. Language activities focused on developing lexical organization skills (for

storage and retrieval of vocabulary); description of objects by class, function, location, and attribute; categorization/semantic links; classification/semantic connections; and higher level language skills (asking and responding to questions, reasoning, inference and problem solving skills, and narrative techniques). Social communication activities focused on the development of basic listening skills, reinforcement of pro-social behaviour, and the development of a sense of shared experience and empathy.

Language was assessed using a selection of tests and subtests from the *School Age Oral Language Assessment (SAOLA; Allen et al., 1993)*. Language outcomes were measured relative to the changes in total scores on the *SAOLA Narrative Assessment and Semantic Skills Assessment*. Social communication skills were scored using the *Social Use of Language Programme: Primary and Pre-School Assessment Pack (Rinaldi, 1995)* using filmed clips of participants in structured listening activities involving peers and the SLP. All of the above assessments were videotaped and scored by an independent SLP tester who was blinded to the Group assignments of the children. Videos were presented in random order for scoring. Behaviour was assessed using *The Strengths and Difficulties Questionnaire (Goodman, 1997)* to ascertain the views of parents and teachers concerning emotional and behavioural issues relating to the children. Self-esteem was measured using a non-standardized questionnaire "What I Think About Myself" (Kosmoski, Pollak, & Estep, 1994).

Mann-Whitney tests were used to analyze and compare the progress made by the treatment and comparison groups. Significant differences were observed in social communication skills ($p = .005$), narrative skills ($p = .012$) and semantic skills ($p < .001$), which demonstrated that relative to the comparison group the treatment group showed greater improvement. Significant differences were also found using a Mann-Whitney test in participants' changes in self-esteem ($p = .028$). Changes in behaviour were analyzed using discussions with parents and teachers following intervention and *Goodman's Strengths and Difficulties Questionnaire*. Discussions indicated that parents and teachers perceived an improvement in the children's emotional and behavioural status; however, analysis of the questionnaire using Mann-Whitney tests indicated that the differences were not statistically significant.

This study utilized scientifically rigorous methodology in its attempt to isolate the impact of speech and language intervention on communication and behavioural outcomes. Further, robust statistical techniques were employed to adjust for the small

sample size, attrition rates, and to prevent sample and rater biases (i.e., non-parametric statistics Mann-Whitney U tests). Results indicated that following intervention, children had beneficial effects, particularly with regard to their language, social communication skills, and self-esteem. Although there was some suggestion that their behaviour may have been modified, the differences between the two groups did not reach statistical significance.

The strength of this article is its use of a control group in order to strengthen the notion that observed changes were due to the intervention and not confounding variables. The variety of measurement tools used to measure target skills and the scientifically rigorous methodology to analyze results increases the reader's confidence in the conclusions drawn. Attrition should be considered when considering these results, with 20 students remaining to the end of the study from the original 31 children referred at the beginning of the project. Difficulties with attendance also may have influenced results. However, the methodology employed inspires confidence when considering the results.

Discussion

Findings from the four articles discussed in this critical review indicates differences in the effectiveness of language intervention on pro-social behaviours in children with behavioural disorders. All studies agree that statistically significant differences are obtained in language and pragmatic scores when specifically targeted as part of an intervention program. Use of individual or group therapy was effective at producing change in these areas, although the common method to target pragmatic skills was group therapy.

More controversial evidence is provided regarding the improvement of pro-social behaviour following language intervention. All studies included reported evidence, from parents, teachers, clinical records, etc., of improvements in behaviour; however, no study was able to support reported improvements with statistically significant changes in standardized measures. It is possible that standardized tests are not sufficient to detect changes in this target skill. However, based on the evidence provided in this review it is not possible to conclude that language intervention causes significant changes in pro-social behaviour in children with behavioural disorders.

Results should be interpreted with caution due to the small sample sizes (1-31 subjects) of all of the studies. In addition, the experimental methodologies used in these studies were quite diverse, which made it difficult

to draw comparisons across studies. Only one study was designed to include a control group, making it difficult to attribute results only to the intervention or to rule out the potential of the *Hawthorne effect*, whereby subjects improve their behaviour simply in response to the fact they are being studied. Many of the studies also relied heavily on clinical records and reported improvements to measure changes in pro-social behaviour.

Recommendations

The implications of this review for practicing SLPs support the effectiveness of targeting deficient language skills in this at-risk population. Language therapy will also not interfere with behavioural difficulties and may help improve additional areas of functioning, such as self-esteem and confidence. Additionally, it is not known if, over time, language intervention will ultimately result in changed behaviour once the skills have been generalized due to limited longitudinal evidence. Educating other professionals working with this population is recommended as it may also produce additional beneficial effects for the child that extends beyond those of language intervention.

More research, particularly long-term focused research, is required in order to provide more conclusive evidence in this area. Future studies should attempt to standardize the assessment of both language and behavioural changes in this population in order to provide more scientific evidence of positive or negative effects. This task will be difficult, however, due to the social and naturalistic context in which these skills need to be measured.

Conclusion

The conclusion of the present review is that language intervention for children with co-occurring behavioural disorders is effective in the treatment of language and pragmatic deficits. Additionally, treatment helps to educate caregivers and teachers of the underlying language difficulties that may influence overt behaviour. Pro-social behaviour has reportedly been improved as a result of language intervention, however, methodologically sound studies to support this notion are lacking in the present body of research.

References

- Allen, L., Leitão, S. and Donovan, M. (1993). *School age oral language assessment – Manual*. South Fremantle, Australia: Language-Learning Materials.
- Armstrong, S., and Ainley, M. (1988) *South Tyneside Assessment of Phonology*. Northumberland: STASS Publications.
- Bedrosian, J.L. (1985). An approach to developing conversational competence. In N. Ripich & F.M. Spinelli (Eds.), *School discourse problems* (pp. 231-258). San Diego: College-Hill Press.
- Clegg, J., Stackhouse, J., Finch, K., Murphy, C., & Nicholls, S. (2009). Language abilities of secondary age pupils at risk of school exclusion: A preliminary report. *Child Language Teaching and Therapy*, 25, 1, 123-140.
- Cohen, N.J., Davine, M.D. and Meloche-Kelly, M. (1989). Prevalence of unsuspected language disorders in a child psychiatric population. *Journal of the American Academy of Child and Adolescent Psychiatry*, 28, 107-111.
- Cross, M. (1999). Lost for words. *Child and Family Social Work*, 42, 249-257.
- Cross, M, Blake, P, Tunbridge, N, & Gill, T. (2001). Collaborative working to promote the communication skills of a 14-year-old student with emotional, behavioural, learning and language difficulties. *Child and Language Teaching Therapy*, 227-246.
- Drugli, M.B., Fossum, S., Larsson, B., & Mørch W.T. (2008). Characteristics of young children with persistent conduct problems 1 year after treatment with the Incredible Years program. *European Child & Adolescent Psychiatry*, 19, 559-565.
- Giddan, J.J., Milling, L., and Campbell, N.B. (1996). Unrecognized language and speech deficits in preadolescent psychiatric inpatients. *American Journal of Orthopsychiatry*, 66,291-295.
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581-586.
- Heneker, S. (2005). Speech and language therapy support for pupils with behavioural, emotional and social difficulties (BESD) – A pilot project. *British Journal of Special Education*, 32[2], 86-91.
- Hyter, Y.D., Rogers-Adkinson, D.L., Self, T.L., Simmons, B.F., & Jantz, J. (2001). Pragmatic language intervention for children with language and emotional/behavioural disorders. *Communication Disorders Quarterly*, 23[1], 4-16.
- Kosmoski, G. J., Pollak, D. R. and Estep, S. G. (1994). Reliability of children's self-esteem assessment: What I think about myself. *Psychological Reports*, 75, 83-88.
- Law, J., and Sivyer, S. (2003). Promoting the communication skills of primary school children excluded from school or at risk of exclusion: An intervention study. *Child Language, Teaching and Therapy*, 19, 1-27.
- McCamey, S.B. (1994). *Behavioural Evaluation Scale-2*. Columbia, MO: Hawthorne Educational Press.
- Newcomer, P. and Hammill, D. (1988). *Test of language development-Intermediate* (2nd ed.). Austin, Tx: PRO-ED.
- Parow, B. (2009). Working with children with social, emotional and behavioural difficulties: A view from speech and language therapists. *Emotional and Behavioural Difficulties*, 14[4], 301-314.
- Phelps-Teraski, D. and Phelps-Gunn, T. (1992). *Test of pragmatic language*. Austin, TX: PRO-ED.
- Prutting, C.A., and Kirchner, D.M. (1983). Applied pragmatics. In T.M. Gallager & C.A. Prutting (Eds.), *Pragmatic assessment and intervention issues in language* (pp. 29-64). San Diego: Singular.
- Rinaldi, W. (1995). *Social use of language programme: Primary and preschool teaching packs 1 and 2*. Guildford: Child Communication and Learning.
- Rinaldi, W. (1996). *Understanding Ambiguity – an assessment of pragmatic meaning and comprehension*. Windsor: NFER Nelson.
- Warr-Leeper, G., Grey, R., Mah, S., & Van Reenan, T. (2003). The Effects of ECE-mediated Social Communication Skills in Children at risk for Social Failure. In *Enhancing Caregiver Language Facilitation in Child Care Settings*, (7) 1-7. Toronto: Hanen Early Language Program.
- Wiig, E.H. (1998). *The clinical evaluation of language fundamentals*. New York: Psychological Corporation.
- Wiig, E.H. and Secord, W.A. (1992). *Test of word knowledge*. San Antonio, TX: Psychological Corporation.