

A pilot study of the Webster-Stratton Incredible Years Therapeutic Dinosaur School programme

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The Webster-Stratton Incredible Years (IY) Therapeutic Dinosaur School intervention was evaluated in clinically referred children with behavioural disorders. Results suggest that this is an effective intervention.

THE DIAGNOSIS Conduct Disorder (CD) is used to refer to severely disruptive, aggressive or destructive behaviour characterised by a repetitive and persistent pattern of anti-social behaviour in children and adolescents with an estimated prevalence between 1.5 and 3.4 per cent (Woolfenden, Williams & Peet, 2002).

For conduct-disordered children the need to learn and use effective relationship skills in social situations is paramount. Considerable evidence has demonstrated that programmes which enhance parenting skills result in significant improvements in the behaviour of these children (Kazdin, 1995) and parent training is seen as the intervention of choice for them. However, there is a place for interventions that teach relevant skills directly to children alongside or, when this is not possible, instead of working with parents.

The IY Dinosaur School programme (Webster-Stratton *et al.*, 2001) is one of a set of interlocking programmes for parents, children and teachers. It was developed as a clinical child-training intervention for small groups of children aged four to eight years. It teaches children to develop more appropriate social and problem solving skills.

Webster-Stratton and Hammond (1997) compared the effectiveness of this child training (CT) intervention, with the IY parent training (PT) intervention, and a combination of the two (CT+PT). All three

interventions resulted in improved child behaviour, but only children who received CT demonstrated significantly more positive solutions to social problems and conflict management with peers compared with the control and PT only group.

Although UK studies have reported positive outcomes for the IY parenting programme with parents of clinically referred children (Scott *et al.*, 2001) there have been no reports on the use of the therapeutic Dinosaur School programme with clinically referred children in the UK.

The Dinosaur School programme comprises 18–22 weekly, two-hour sessions covering six separate programmes:

- making new friends and learning school rules;
- Dina Dinosaur teaches how to do your best in school;
- understanding and detecting feelings;
- Detective Wally teaches problem-solving steps (including anger management);
- Molly Manners teaches how to be friendly;
- Molly explains how to talk to friends.

Wally, Molly and Dina Dinosaur are puppets. Children relate better to puppets than to therapists and are more likely to imitate their appropriate behaviour (Webster-Stratton *et al.*, 2001). Each session includes activities such as 'feelings' and 'let's suppose' games, cooperative art projects and guessing games to improve cooperation skills. Group leaders praise and reward appropriate behaviours by labelling the behaviour and awarding 'dinosaur chips' as tokens that children can spend on small gifts such as pencils or stickers. Weekly homework activities involve children talking to their parents about

what they have learned to encourage positive parent-child interaction.

Method

The present study is a replication of the Dinosaur School programme with a clinic-referred population in North Wales over 17 two-hour weekly sessions. The leader (the first author) had undertaken the two-day IY Therapeutic Dinosaur School basic group leader training and was a certified leader for the IY parenting programme (Webster-Stratton & Hancock, 1998). This was her first attempt at running the programme and she received feedback from an IY trainer in Seattle to ensure implementation fidelity.

Based on the findings of Webster-Stratton and Hammond (1997), it was anticipated that children would demonstrate a reduction in inappropriate behaviour and an increased use of the skills taught at Dinosaur School at both home and in school.

The sample

Nine children aged between 7 and 11 years ($M = 9$ years, 3 months) attended the group. All exhibited significant behavioural difficulties at home and in school. The sample consisted of eight boys and one girl. Five participants had a diagnosis of conduct disorder only, and four conduct disorder and attention deficit hyperactivity disorder (which also includes hyperactivity, impulsivity and inattention). Three participants were in mainstream schooling, four were attending pupil referral units, one was attending a special school and one was excluded from school at the time of the start of the study. Five children were residing with their mothers, one with both parents, one with their father and stepmother, one with their grandmother and one with foster parents.

Evaluation

Evaluation included pre-intervention and post-intervention measures collected from parents and teachers.

Parent measures

Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). This 25-item measure

yields total scores for hyperactivity, conduct and/or peer problems, pro-social skills and a measure of the impact of behavioural problems on the child's life.

The Self-Control Rating Scale (SCRS; Kendall & Wilcox, 1979). This is a 33-item parent and/or teacher report measure of self-control and impulsivity, rated along a seven-point scale, where 1 indicates maximum self-control and 7 indicates maximum impulsivity.

The Eyberg Child Behaviour Inventory (ECBI; Eyberg, 1980). This is a 36-item parental report measure of behaviour problems in children aged 2–16 years. The measure yields two scores: an Intensity score (I) and a Problem score (P).

Procedure

The principal caregivers of eight of the children and their teachers completed pre- and post-course (approximately one month after the end of the programme) standardised questionnaires.

Results

Paired t-tests were used to analyse the pre- and post-intervention, which is reported in Table 1.

Statistically significant improvements were found on three measures of child behaviour; the ECBI-I, SCRS and the impact score of the SDQ, with the mean SCRS falling below the clinical cut-off after the intervention. The ECBI and SDQ baseline mean scores were well above the clinical cut-off and, despite large, and in two cases statistically significant improvements, the post-intervention means remained at or above the clinical cut-off.

However, statistical significance does not necessarily equate to clinical improvement, especially in small samples. Using Cohen's 1988 guidelines for effect sizes, a clinically significant improvement was achieved for all of the above measures. Therefore, despite a small sample, clinically significant improvements were made on all measures, even though the post-intervention means did not fall below the clinical cut-off for every measure.

Table 1: Means and standard deviations of the parent report measures of child behaviour pre- and post-intervention ($N = 8$)

Measure	Pre-intervention	Post-intervention	Clinical cut-off	P-value
ECBI-I	165.75 (30.87)	133.38 (47.36)	127	$p < .05^*$
ECBI-P	19.75 (9.44)	13.00 (11.31)	11	$p < .10$
SDQ	23.75 (4.86)	19.25 (7.63)	17	$p < .10$
SDQ Impact	5.75 (1.83)	2.13 (1.96)	2	$p < .01^{**}$
SCRS	180.81 (30.06)	136.75 (55.51)	160	$p < .05^*$

* significant at the .05 level, ** significant at the .01 level

Table 2: Means and standard deviations of the teacher report measures of child behaviour pre- and post-intervention ($N = 7$)

Measure	Pre-intervention	Post-intervention	Clinical cut-off	P-value
SDQ (teacher)	20.00 (3.42)	13.00 (4.28)	17	$p < .05^*$
SCRS (teacher)	163.00 (19.49)	123.71 (29.94)	160	$p < .05^*$

*significant at the .05 level

Teacher data

Class teachers of seven children completed the SDQ and the SCRS, both pre- and post-intervention. Paired t-tests displayed in Table 2 show significant improvements on both measures. The mean SDQ score moved from the abnormal into the borderline range following intervention. Clinical significance levels reflect the statistical findings for teacher data; that is, large clinical effect sizes were found for the SDQ and the SCRS for the difference in scores between pre- and post-intervention (1.86 and 1.6 respectively).

Discussion

This study assessed whether the IY Therapeutic Dinosaur School programme was effective with conduct-disordered children in a Welsh setting by:

- reducing inappropriate behaviours;
- generalising these improvements to both the home and the school setting.

The data summarised here suggest that these goals were achieved. However, this evaluation has several limitations and cannot be

seen as a true replication of the IY Dinosaur School programme for a number of reasons, as outlined below.

The group leader was inexperienced in the programme and the group was larger (nine children) than that for which the programme was devised (six children). The children were older, from a bilingual environment, and it was not possible to undertake the recommended follow-up sessions for children who missed sessions, or all weekly phone calls to parents. The programme ran for 17 sessions instead of the usual 18–22. Furthermore, there was no control group and the children were in receipt of special educational support so gains made could be attributed to other services.

Despite these limitations significant improvements in the children's behaviour and use of the skills taught at Dinosaur School were reported both at home and in school and were attributed by parents and teachers to the children's attendance on the programme. These findings are, therefore, consistent with those found by Webster-Stratton and Hammond (1997).

The programme successfully engaged very challenging children from a much wider age range than the four- to eight-year-olds for whom it was developed, and changed their behaviour in a pro-social direction which generalised to both school and home settings without the direct involvement of parents or teachers. However, despite significant gains, three children remained within the clinical range, suggesting that gains achieved by this older more challenging population may not be as great as for children in the programme's stipulated age range.

Since running this group the first author has continued to use the programme with six- to eleven-year old-clinic-referred children, has become a certified programme leader, and is now training people to use the programme.

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This creates the possibility of further evaluation of this programme in Wales, preferably within clinical services as an additional intervention in the treatment of CD.

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